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Research in Academic Library Collection Management

Mary F. Casserly

This chapter describes the empirical quantitative and qualitative research and case studies pertaining to collection management practice in academic libraries published between 1990 and 2007. The topics covered include collection size and growth, material cost, library expenditures, budgets and budgeting, collection development policies, collection composition, organization and staffing for collection management, selection, and the evaluation of the collection development process and the collection itself. The chapter identifies the most influential and useful studies and the most active areas of research. The collection management research literature was limited in the methodologies employed (surveys and case studies), statistical analyses applied (basic and descriptive), and the scope of the problems addressed (inputs and processes). More studies that focus on effectiveness, outcomes, and impact are needed.

Introduction

This chapter continues the review of academic library collection management research conducted and published in 1990 by Osburn.¹ Like Osburn, the author consulted annual and multiyear reviews of the collection management literature published between 1990 and 2007.² These proved to be very useful both for identifying reports of research and for the analyses of findings. Beyond these, the author conducted literature searches, followed citations, and browsed the tables of contents of prominent collection management journals. The majority of the works cited in this chapter were published in the profession's monographs, journals, and conference proceedings. All were published in English, and most document academic library practice in the United States. In order to make manageable the voluminous literature, some limitations were placed on the breadth of collection management-related subjects included. For this reason, with a few exceptions, the literatures of selection for storage, preservation, weeding, scholarly communication, resource sharing, and acquisitions have been excluded.

The focus of this chapter, like that of the book as a whole, is on research. One of the problems that emerged almost as soon as the author

began to consider this writing project was the question of how to define *research*. The editors did not offer a definition, wisely allowing authors wide latitude in the selection of literature to be included. This author's goal was to examine the way those in the library profession have employed research methods to investigate the questions, issues, and problems relative to the academic library collection. Therefore, in addition to the empirical quantitative and qualitative research projects identified and discussed here, she has included selected local studies. Although they vary greatly in sophistication and quality, these serve as case studies and are important because they reflect the types of recent challenges those in the trenches faced and the strategies they used to address them.

Technological and economic factors have transformed academic library collection development from a largely solitary effort conducted within the library to one that, with growing frequency, requires collaboration with a wide range of library and campus units, as well as with other libraries. Likewise, the collection itself has been redefined by the placelessness and volatility of electronic resources, the changing landscape of scholarly communication, and user expectations of any time/any place access. Collection management research, with its successes and limitations, was both the product of, and a contributor to, this transformation.

Size and Growth of Collections

Rightly or wrongly, collection size has long been considered an indicator of collection quality. By the early 1980s, collection managers generally understood that the goal of a "comprehensive" collection was unrealistic. But during the 1990s and early 21st century, it was the concept of a shrinking national collection and local collection loss that provided the context in which collection management was practiced and research on it conducted.

University Libraries and Scholarly Communication, or "The Mellon Report," set the framework for its discussion of the principles of scholarly communication and the role of research libraries by identifying historical trends in collections, expenditures, and publishing. The analysis it offered of the 1912–1991 collection expenditure data of 24 members of the Association of Research Libraries (ARL) documented the volatility of collection growth, the declining percentage of library expenditures vis-à-vis university budgets, and a growing crisis in serial pricing.³ Other ARL

publications provided further evidence of the shrinking aggregate print research library collection. "Research Libraries in a Global Context: An Exploratory Paper" described an increase in worldwide book publication, increases in serials prices, a weakening U.S. dollar, and a resulting decline in the percentage of published foreign resources purchased by research libraries annually.⁴ Reed-Scott's background paper on foreign acquisitions characterized the coverage of foreign materials in U.S. research libraries as "deteriorating."⁵ The authors of both papers observed and expressed concern about the trend toward collection homogeneity. *Changing Global Book Collection Patterns in ARL Libraries* provided a profile of the holdings of all ARL libraries, based on a snapshot of the WorldCat database, by publication date and world regions. The average number of ARL library holdings decreased for nine of the most widely held countries between 1980 and 2004, suggesting that libraries were acquiring fewer books from these countries than they had in the early 1980s. This study raised questions about the meaning of this downward trajectory and provided a baseline for future studies.⁶ In addition, ARL tracked trends in research library acquisitions and collection growth in its annual compilations of data on member libraries.⁷

Other studies furthered the concern about the national collection's size and diversity. Using 1967–1987 data on volumes held by the Bowdoin List (of 40 liberal arts colleges) and ARL libraries, Werking found that, contrary to Fremont Rider's widely accepted thesis on collection growth, three quarters of the college libraries and one half of ARL libraries had not doubled in size every 16 years.⁸ Perrault analyzed the growth of non-serial imprints based on data from 72 ARL libraries. She found an overall decline in monographic acquisitions among these libraries, as well as significant declines in the numbers of nonserial imprints by broad subject groups and decreases in the percent of total imprints acquired. Perrault also documented a shift toward the acquisition of science and English language nonserial materials. Her data on the mean number of libraries owning titles supported the conclusion that the aggregate collection was becoming less diverse in subject coverage and language.⁹

National trends in serials collections were explored by Chrzastowski and Schmidt by studying ARL library serial holdings records for 1992–1994. This research built on their previous studies of cancellations by five ARL libraries, in which they found that the overlap of serials titles cancelled

had grown from 4.3% to 7.2%.¹⁰ Recognizing the need to look at serials collections collectively, the researchers created an aggregate library based on serials records from 10 ARL libraries, which they then used to analyze collection and cancellation rates and characteristics. Their findings included an accelerating rate of cancellation; a 63% overlap in domestic serials, with 37% of titles unique to only one library; and a cancellation overlap rate of 8.3%.¹¹ Chrzastowski's closer look at the science serials in the aggregated collection documented similar patterns of collection shrinkage, with higher subscription overlap and serials cancellations as measured in dollars among the science serials than had been found in the aggregate collection.¹²

A number of studies that were smaller in scope provided additional evidence of shrinking serials collections. For example, Rowley documented the erosion of the Iowa academic libraries' aggregated serials collection, and Burnam found that the collections of scientific literature were not growing at the majority of the private liberal arts college libraries that participated in his study.¹³ Most recently, in a study of print science serials in 75 Illinois academic libraries, Chrzastowski, Naun, Norman, and Schmidt found 59% of these titles to be unique in that they were held by only one library, with another 14% owned by only two of the libraries included in the study.¹⁴

Researchers have only recently begun to focus on the size and growth of the national *digital* collection. In 2007, Lavoie, Connaway, and O'Neill examined the aggregate digital collection as reflected in the combined digital holdings in WorldCat. Their analysis revealed that this aggregate collection is small but growing rapidly and at a much faster pace than the WorldCat database as a whole. They identified the widely held items as government documents and netLibrary e-books and analyzed these digital resources by holdings patterns and material types.¹⁵

Cost of Information Resources

Rising prices of materials were one of the chief reasons for the shrinking national collection. Periodical price surveys based on data from EBSCO Subscription Services continued to be published each spring in *Library Journal*. These annual analyses typically included average cost per title by subject area and country of origin, as well as price projections for the coming year.¹⁶ Annual price analyses for periodicals and serials based

on data provided by Faxon, and more recently Swets, included average prices by subject area and cumulative price increases over multiples years. The periodical price increases were also presented by LC Classification categories.¹⁷ *The Bowker Annual* included data on prices paid by academic libraries, including average prices and price indices for U. S. and foreign publications, books, periodicals, and other material types.¹⁸

Collection managers also had access to a number of longitudinal studies and analyses of serial prices by subject. Price increases for journals for academic veterinary medical libraries were published from 1990 to 2000. Analyses included annual price increases and comparisons with 1983 and 1997 prices.¹⁹ Marks, Neilsen, and Petersen published a longitudinal price study focused on scientific journals. The data for this study were the 1967–1987 prices for 370 titles. In addition to measuring price increases, this study also analyzed titles by price per page and publisher nationality. The authors found that prices from foreign commercial publishers were higher and had risen faster than domestic titles.²⁰ Sapp conducted an analysis of mathematics journal prices with similar findings.²¹ Schmidle and Via analyzed the pricing trends for library and information science (LIS) journals from 1997 to 2002. They identified variations between commercial and professional and academic presses and documented price increases related to commercial publisher acquisitions of established journals.²² These authors also calculated cost per citation for selected LIS journals as a measure of return on investment of acquisitions dollars.²³

Library Expenditures

In addition to data on the prices of information resources, collection managers needed reliable data on what other academic libraries and, in particular, what their peer institution libraries were spending. As previously noted, The Mellon Report provided a historical look at expenditures, as did the Werking study.²⁴ In addition, Prabha and Ogden analyzed expenditures by ARL and ACRL libraries between 1982 and 1992 and found increases in overall expenditures and growth in the proportion of expenditures that were being used for serials.²⁵ Petrick's study of expenditures by SUNY libraries indicated that between 1994 and 2000 expenditures for electronic resources increased, although the increases were not consistent in that period. He found that the funding to support these increased expenditures did not come from funding for print and audiovisual materials

and concluded that e-resources were “augmenting rather than replacing” traditional formats. Like Werking, Petrick noted difficulties encountered in comparing expenditure data.²⁶ Annual expenditure data, in the aggregate and institution-specific, were made available by ARL and ACRL.²⁷ *The Bowker Annual* reported the academic library acquisitions expenditures by state and material type.²⁸ In 1998, *Library Journal* surveyed 1,000 academic libraries and analyzed their expenditures by size and type of institution.²⁹ The survey was repeated in 2001, and the researchers identified changes in the percent of spending on types of materials and in subject areas.³⁰

Acquisitions Budgets

Academic libraries have faced ever-increasing materials costs and acquisitions budgets that were not growing as fast as those of their parent institutions. Despite this, very little research was conducted on how, or how successfully, collection managers advocated for additional or inflation funding. Jenkins published a case study that described the University of Dayton Library's experience using benchmarking to advocate for acquisitions fund increases.³¹ A 1994 survey of 230 academic libraries conducted by Allen showed that, as a group, libraries relied on university entitlements for their acquisitions budgets and generated very few independent funds. Allen also found that libraries at private institutions were more successful at fundraising for acquisitions than those at public institutions.³²

New information resource formats and services, as well as the need for hardware and software, put additional pressure on already stretched acquisitions budgets. In 1990, 99% of the ARL libraries responding to a SPEC Kit survey reported that they used their materials budgets to acquire, not only books and serials, but other formats such as microforms, videos, and sound recording. Eighty-seven percent reported acquiring bibliographic files, and 15% computer hardware.³³ Seventy percent of the respondents in Allen's study agreed that certain technology costs should be charged to the library materials budget. Almost 84% agreed that funding such costs in this manner continued a long-standing trend.³⁴

The research on methods used by library collection managers to allocate the funds available to them focused on identifying defensible criteria for making these allocations. In his 1990 review of the literature of allocation formulas, Budd commented that while academic libraries use allocation as a means of distributing acquisitions funds, the use of

allocation formulas “appears not to be as pervasive as it was a relatively short time ago.”³⁵ Indeed, the research literature suggests that the majority of academic libraries did not use allocation formulas. In 1990, only 14% of the libraries completing a SPEC Kit survey reported that they used a numerical formula to allocate and there was “little consistency among the formula elements.”³⁶ A survey published by ACRL four years later indicated that about 40% of small college and university libraries used allocation formulas. The variables most frequently included in these formulas were book prices and number of faculty and students per department; course level was the most frequent weighting factor.³⁷

From 1990 to 2007, a handful of methodological studies—i.e., studies designed and conducted for the purpose of testing an allocation method, formula, or formula variable(s)—were published. Brownson tried to quantify the library’s selection policy and use it, along with shelf counts and circulation data, to construct a model that explained variation in expenditure by subject.³⁸ Based on deviations from the 80/20 Rule, which states that 80% of collection use will be from only 20% of the materials in that collection, Britten quantified “relative levels of use” in selected LC subject classes and discussed the use of this measure as a basis for allocating book acquisitions funds.³⁹

Crotts explored the relationships among expenditures, enrollment, and circulation, determined that circulation was the best indicator of relative demand for books, and developed an allocation model based on his findings.⁴⁰ Young applied seven allocation formulas to the same data and compared the results. For four science departments he then compared allocations calculated from these formulas with the average expenditures of 60 libraries. He found that the formula allocations were fairly consistent for the broad subject areas of humanities, social sciences, and sciences but varied when applied to more specific science subject areas. The mean allocations from the formulas and the survey libraries were also very similar.⁴¹ Wise and Perushek tested an allocation methodology using lexicographic linear goal programming and determined that it successfully allocated funding within the context of multiple, incommensurable, and conflicting collection development goals.⁴² Canepi conducted a meta-analysis of 75 fund allocation formulas, identified the variables used and their frequency of use, and employed factor analysis to identify related variables and variables found within the same formula.⁴³

Case studies consisted of descriptions of local efforts to develop formulas for effectively allocating funds. Bandelin and Payne described the process of developing an allocation formula in a collaborative, rather than faculty-driven, collection development program.⁴⁴ German and Schmidt developed a formula to allocate new money and then described the process by which the Library Allocation Steering Committee addressed the issue of how well the collections budget supported campus priorities and how responsive it was to change.⁴⁵ Arora and Klabjan described their efforts to develop a formula that would maximize journal usage over library units and branch libraries.⁴⁶ Sorgenfrei presented a failure analysis of the development and use of an allocation formula at the Colorado School of Mines Library.⁴⁷ Lowry described the development of a matrix formula for budget allocation that was the product of cooperation among three academic libraries and that allowed individual libraries to select variables appropriate to their situations.⁴⁸ Lafferty, Warning, and Vlies reported on their efforts at the University of Technology in Sydney to incorporate literature dependence into their formula.⁴⁹ Kalyan, Weston, and Evans described the development of budget allocation formulas at Seton Hall, Portland State, and Monash University libraries.⁵⁰ Bailey, Lessels, and Best used data from Georgia’s University Borrowing Program to allocate monograph funds at Auburn University Library.⁵¹

Collection Development Policies

The literature pertaining to collection development policies included calls to rethink the need for, and purpose and content of, the collection development policy.⁵² At the same time, numerous manuals, articles, and texts offering assistance with writing traditional collection development policies appeared.⁵³ The body of published research on collection development policies is relatively modest in both the number of studies published and the variety of research methods employed. Those who conducted research on this topic relied heavily on the survey approach, the methodology that characterized this literature in the 1980s.

The survey conducted by Futas for the third edition of *Collection Development Policies and Procedures* asked whether libraries had collection development policies, where they were written, by whom, and how often they were reviewed.⁵⁴ Vignau and Maneses surveyed academic libraries in Cuba regarding the status of, and need for, collection development

policies.⁵⁵ College libraries were surveyed about their audiovisual policies in 1991 by Brancolini, and community colleges about their collection development policies by Boyarkski and Hickey.⁵⁶ Sayles studied collection policies covering textbooks and found a disconnect between policy and practice.⁵⁷ Hsieh and Runner surveyed collection development policies and collection development and acquisitions practices for textbooks and leisure reading materials.⁵⁸ E-journal policies were the subject of a 1994 SPEC Kit survey; Straw surveyed the Web pages of the ARL libraries to determine the presence of collection development policy statements; and based on their survey of SPARC member web pages, Hahn and Schmidt described how libraries used their pages to convey information about their collections, collecting policies and scholarly communication issues.⁵⁹

The case studies on policy development described the process of revising the collection development policy statement at St. Johns University and developing policies for electronic resources, communications materials, and materials on contemporary topics.⁶⁰ Intner, a faculty member at Simons College Graduate School of Library and Information Science, presented the structure of the model policy based on her course on collection development and management and described how the course assignments could be used by a practitioner to create a collection development policy and procedures manual.⁶¹

Collection Composition

As previously described, the research on collection growth documented the decrease in collection subject and language diversity as changes in collection composition. Other research focused on the extent to which library collections included specific subject matter and material types. More recent research related to collection composition was dominated by concerns about electronic resources.

In 1993, Brancolini and Provine conducted a SPEC Kit survey that focused on video and multimedia (CD-ROMs) collection policies and procedures.⁶² In 1997, Brancolini presented the results of that survey along with the findings of one conducted in 1995 that covered all facets of selecting, budgeting, and managing these types of materials.⁶³

Crawford and Harris studied ownership of 110 fiction and 120 nonfiction best sellers published from 1940 to 1990 and concluded that future scholars may not have access to these popular culture materials.⁶⁴ They

also surveyed ownership of religious texts and found that, while texts in English were widely held, those in their original languages were not.⁶⁵ Krieger's survey of popular Catholic periodicals indicated that they are not widely collected, and Schwartz reported on the gap between book publication output and holdings in 71 ARL libraries in the area of Judaic studies.⁶⁶ Stoddart and Kiser conducted an informal survey of 20 libraries that collected self-published magazines or "zines" and provided some information about how they were collected, cataloged, accessed, and preserved.⁶⁷ Marinko and Gerhard studied holdings of alternative press titles by ARL libraries and called for the expansion of national holdings of these materials.⁶⁸ Mulcahy found that library holdings of award-winning science fiction novels varied widely in ARL libraries, with few collecting science fiction comprehensively.⁶⁹ A survey of ARL libraries by Pellack revealed that as of 2003, about half of the respondents acquired and maintained a collection of historic industry standard, and 60% reported that they acquired standards on demand.⁷⁰ The 2005 SPEC Kit survey, *Spatial Data Collections and Services*, revealed that 89% of the responding ARL libraries collected digital data sets.⁷¹

Many of the large research libraries began investigating and defining their roles regarding e-journals early in the 1990s, and these reports were collected in *Electronic Journals in ARL Libraries*. A survey conducted for that 1994 SPEC Kit identified the challenges libraries faced and the trends in making e-journals available.⁷² Another SPEC Kit survey conducted in 1994 revealed that a significant numbers of ARL members were at the stage of either investigating or offering local and remote access to e-journals and that they were following traditional methods for selecting, acquiring, processing, and cataloging them.⁷³ In 1999, Ashcroft and Langdon found that all but one of the research libraries they surveyed included e-journals in their collections.⁷⁴ Ninety-six percent of the UK and North American academic libraries surveyed by Ashcroft in 2002 made e-journals available to their users.⁷⁵ ARL surveys reported by Case indicated that 75% of a small sample of ARL libraries reported that they were selectively cancelling print journals in favor of electronic versions.⁷⁶ An information survey conducted by DeVoe in 2005 revealed that 85% of the respondents had canceled print and kept the electronic versions of journals.⁷⁷ Robbins, McCain, and Scrivener found evidence that ARL libraries were gradually shifting from print reference materials to their electronic counterparts.⁷⁸ The research

on the access to free scholarly e-journals conducted by Fosmire and Young suggested that, as of 2000, libraries were not "collecting" these types of resources. Almost half of the 213 e-journals in their sample had no holding symbols attached to their OCLC bibliographic record.⁷⁹ However, seven years later a SPEC Kit survey on open access resources revealed that 97% of the respondents provided links to open access journals, and Lavoie, Connaway, and O'Neill found that the number of digital materials in WorldCat was growing faster than the database as a whole.⁸⁰

Organization and Staffing for Collection Management

The research literature on organization and staffing illustrated the many variations on the ways in which academic libraries translated collection management into practice.

Organization and Administration

The *Guide to Collection Development and Management Administration, Organization, and Staffing* provided an overview of the organizational models used in all types of libraries.⁸¹ *Organization of Collection Development*, a SPEC Kit published in 1995, described the organizational models employed at ARL libraries and found only subtle changes in the formal organization of collection development since the 1987 SPEC Kit survey. These changes included an increase in the number of part-time professional staff involved in collection management and some organizational changes in response to the increase in information resources in electronic format.⁸² Kenselaar conducted interviews about collection development administration with librarians at selected research libraries. Topics covered included the use of advisory committees, manner and frequency of communication with selectors, use of full-time bibliographers, collection development policies, budget allocation, assessment, and preservation.⁸³ Bryant compared the interview data she collected on collection development organizational structures in 1989–1990 with responses to an inquiry about changes in 1995 and found that collection development officers were losing their separate identity within the library organization and that collection development librarians' responsibilities were broadening in terms of the range of material formats they selected and the types of activities assigned to them. She also found that these changes were occurring in a wide variety of organizational structures.⁸⁴ Fisher conducted a survey of

multitype libraries, of which the overwhelming majority of respondents were from academic libraries, and did not find consensus about collection development and acquisitions organizational structures. More than half of his respondents indicated that their organizational structures had not changed over the previous six years.⁸⁵

Although the research indicated that change was not widespread in this period, some academic libraries did experiment with major organizational change in collection management and these experiences were reported in the literature as case studies. Webb reported on combining the collections and systems functions at Washington State University Libraries.⁸⁶ The team management approach to collection management was taken at the University of Nevada Las Vegas Library and documented by Biery.⁸⁷ Eckwright and Bolin described the organizational benefits at the University of Idaho resulting from the creation of a hybrid position that included both collection management and cataloging responsibilities.⁸⁸

Collection Management Responsibilities and Requirements

A number of important theoretical, personal opinion, and prescriptive articles on the changing responsibilities of those involved in collection management were published since 1990.⁸⁹ Earlier, the research that examined collection management responsibilities and requirements consisted of analyses of position announcements. In more recent years, researchers used surveys to identify and document changing roles and responsibilities.

Robinson reviewed 433 collection management position announcements that appeared in *College and Research Libraries News* between 1980 and 1991 and found that the majority of these advertised positions had combined responsibilities, generally with reference, and required a strong subject background but not an advanced degree. Forty-six percent of the positions required or preferred foreign language competence, but few required supervisory or budget experience or knowledge of automation. Robinson also found little change in the responsibilities and qualifications included in announcements during the decade studied.⁹⁰ Haar examined the 35 advertisements for bibliographer positions that appeared in the *Chronicle of Higher Education* between March and October 1990 and found that liaison and reference duties, bibliographic instruction, and online searching were the most frequently listed responsibilities. He also found

that the LIS master's degree, advanced subject degree, foreign language ability, and collection management experience were the qualifications most often required and preferred, and that few advertisements required reference or budget skills or experience.⁹¹ In his study of position announcements for academic subject specialists in business, social sciences, and science from 1990 to 1998, White found that the majority included collection development, reference, and bibliographic instruction responsibilities, and he identified a trend toward including technology-related responsibilities.⁹²

In 1999 and 2000, Intner used surveys and interviews to investigate how the Internet had affected the work of collection development librarians. Her findings included an extensive list of activities for which these librarians used the Internet, and her data indicated that their responsibilities included collecting Internet resources. She also interviewed library administrators from six academic libraries, who confirmed that the importance of Internet resources was growing and that these resources were causing changes in the types of materials they bought, how they made the materials available, and the patrons they served.⁹³ McAbee and Graham surveyed 138 librarians in medium-sized academic libraries to determine subject specialist responsibilities, how much time they spent on their tasks, whether they had enough time, and the value to their position of the tasks they performed.⁹⁴ Wilson and Edelman focused on the effect of increasing interdisciplinarity on the selector/bibliographer. Their analysis of the intellectual endeavors of the faculty of one library science graduate program illustrated the difficulties a selector would have in establishing selection parameters.⁹⁵ Hardy and Corral surveyed 32 English, law, and chemistry subject/liaison librarians at universities in the United Kingdom and found that they carried out a wide range of similar responsibilities and required similar competencies.⁹⁶

The most ambitious study of the changing roles of collection managers was published by Dorner in 2004. Using data from four focus groups, he developed a Web-based survey to which he received responses from collection managers at academic and special libraries in five major English-speaking countries. The study found that over the previous five years, collection managers had increased responsibilities that were primarily related to digital resources in an environment where funding remained static. They reported spending more time on collection management re-

lated to digital resources, including on activities related to physical access and technology issues, and on attending education and training sessions. Collection managers involved in consortial work reported increases in time spent liaising about such activities.⁹⁷

Education and Training for Collection Management

A number of collection management texts were published between 1990 and 2007, while the research on education for collection management included surveys of practitioners and reviews of LIS graduate programs.⁹⁸ Haar reviewed twelve 1990–1991 program bulletins and found that only half of these programs offered collection development courses.⁹⁹ Budd and Brill surveyed LIS educators and practitioners in 1994 regarding specific aspects of course instruction. Although both groups agreed on what needed to be taught, practitioners indicated that their formal instruction in collection management had not been adequate. Practitioners also ranked the value of on-the-job training higher than did the educators.¹⁰⁰ Metz conducted an informal review of 10 LIS program catalogs and found that most did not require a course on collection development. He also compared the content of the courses with an earlier study of fundamental elements of a basic course in collection development and found that topics such as organization and arrangement, history of publishing, and distribution infrastructure had been replaced by resource sharing and fund allocation. Based on this review, he called for such curricular additions as access vs. ownership, electronic and digital resources, and organizational structure for collection development.¹⁰¹

In their review and discussion of the status of and challenges facing collection management education, Blake and Surprenant cited Blake's finding that 87.4% of the ALA-accredited schools had at least one faculty member with an interest in collection management. In his review of catalog descriptions of collection management courses, Blake found fewer programs in which collection management courses were required than did Metz, but his review of topics covered in those courses yielded a similar list.¹⁰² Liu and Allen addressed the need for subject-specific training/education for business information specialists. Their interviews of 147 academic business librarians indicated that the majority did not have the level of business and economics expertise that they would have if they had academic degrees in those disciplines. The researchers also surveyed

instructors of business information resources courses in ALA-accredited LIS programs and determined that their courses covered major business topics, including management, marketing, and finance.¹⁰³

Given that collection management was not necessarily required for those enrolled in LIS master's programs and that bibliographer responsibilities were changing, it is not surprised that many guides and handbooks for collection practitioners were published.¹⁰⁴ However, research on training and professional development was scant. Casserly and Hegg surveyed 246 academic libraries in four-year educational institutions to determine how those who participated in collection development were trained and evaluated. They found that more than half of the respondents were given training and that the most common type was the orientation program. The researchers developed a profile of the libraries most likely to have training programs.¹⁰⁵ Forte and others offered a case study of the development of a collection manager training program and manual at the UC-Santa Barbara Library. The training sessions consisted of a series of panel discussions on topics included in the *ALA Guide for Training Collection Development Librarians*. It had an evaluation component and was found to benefit both new and seasoned collection managers.¹⁰⁶ Lyons compared the relevancy of two professional development opportunities, the annual conference of the ALA and that of the American Political Science Association (APSA), from the point of view of librarians with collection development responsibilities and found strong evidence of the importance of academic conferences.¹⁰⁷ Using case studies and a survey of experts, Dilevko and others provided evidence that by carefully reading and analyzing scholarly book reviews, academic librarians can derive significant knowledge about the intellectual and historical context of a subject area in which they may not have formal training, but for which they may have reference, instruction, or collection development responsibilities.¹⁰⁸

Evaluation of Collection Management Librarians

Evaluation of those involved in the collection management process is an important, yet infrequently addressed, topic. Casserly and Hegg found that librarians responsible for collection development in academic libraries tended to be involved in the evaluation of their bibliographers/subject specialists as a colleague during the peer review process and, outside that process, only when these individuals were evaluated for promotion or

tenure.¹⁰⁹ The survey that served as the basis for a 1992 SPEC Kit found that supervisors of those involved in collection management conducted annual performance reviews and that peer review was used by only 32% of the respondents. The survey identified the types of documentation bibliographers/selectors provided as part of their peer review process and indicated that some libraries required selectors and bibliographers to submit monthly reports and obtain input from faculty in their assigned academic departments as part of that evaluation process.¹¹⁰ Kenselaar's interview subjects described their approaches to meeting with, but not necessarily evaluating, selectors.¹¹¹

A methodology for evaluating the effectiveness of selectors was developed by Dennison, who compared library monographic and journal holdings with subject-specific, tiered checklists and applied a goodness of fit statistical test to the results.¹¹² Based on a very small number of interviews, Gonzalez-Kirby identified attributes of bibliographers associated with effective collection development, including specialized subject knowledge, research, and support for and contact with faculty.¹¹³

The Selection Process

The research that examined selection focused on partnerships with faculty, the identification of selection criteria, and the tools and data that informed the process.

Working with Faculty Partners

The question of *who* should select reflected an awareness that collection managers and faculty need to work together to build collections and that collection managers need to know more than they typically do about how their faculty partners selected materials.

Jenkins found that faculty at the College of Mount St. Joseph ranked selection fifth out of a list of seven secondary activities, which included serving on campus committees, advising students, and miscellaneous duties assigned by their department chair.¹¹⁴ In a later study at the same institution, he found that faculty used reviews to select materials less frequently than did librarians.¹¹⁵

At Kean University, Kuo found that faculty most often used publisher catalogs and journal book reviews to inform their selection, that those with one to five years of ordering experience were the most active selectors,

and that faculty most often ordered books for undergraduates, employing the criteria of "good for students" and "good for teaching."¹¹⁶ Kushkowski surveyed business faculty at three Iowa universities and found that faculty perceived their own areas as more important to their institution's business curriculum than other business subjects.¹¹⁷ Chu's study focused on the lateral relationship between academic faculty and librarians who share responsibilities for collection development and underscored these groups' differing understandings of collaboration, constraints, and possibilities.¹¹⁸ Neville, Williams, and Hunt described the College of Charleston's liaison program and offered case studies of how it worked in departments at opposite ends of the spectrum of faculty involvement in the collection development process. The researchers also conducted a survey of their faculty liaisons and identified issues concerning selection of these liaisons, training, and recognition of effort.¹¹⁹ White's case study of the development and evolution of the selection and assessment process for electronic resources to support the College of Business Administration at Pennsylvania State University revealed that a strong partnership in collection building carried over into enhanced support for faculty research and instruction.¹²⁰ University of Manitoba researchers found that most librarians believed that their interactions with faculty substantially impacted the collection, improved communications with faculty, and helped the librarians become aware of new resources and identify areas in which the collections were inadequate.¹²¹ Walther used a Web-based survey to explore the librarian-faculty relationship at one urban academic institution from the perspective of journal cancellations. He found that the factors used by librarians and faculty for identifying journals to be cancelled were similar and that librarians used input from faculty rather than acting arbitrarily.¹²²

Lee conducted a historical case study of collection development for women's studies, using analyses of historical documents and archival records as well as personal interviews. She found that the personal ideologies of those involved in collection development influenced their determination of information needs and the means by which to address those needs and that collection development had been influenced by institutional bureaucracy and politics, especially with respect to operating structures, the politics of interdisciplinarity, personnel deployment, and aspiration for prestige.¹²³

Criteria Used for Selection

In studying the strategies used by academic libraries to mitigate the impact of price discrimination, Haley and Talaga found that libraries selected and deselected journals based on factors other than price alone and therefore were vulnerable to price discrimination.¹²⁴ Spencer and Millson-Martula identified the factors considered important by college and small university libraries when cancelling print serials. The top five factors considered were indexing, cost, evaluation, availability in print locally or in electronic format, and use.¹²⁵ Metz and Stemmer surveyed heads of collection management at ARL and Oberlin Group libraries and found strong positive correlations among their familiarity with publishers, opinions about a publisher's academic relevance, and their perceptions of a publisher's intellectual and editorial quality. The researchers also found that selectors used publisher reputation as an evaluation criterion, especially when other information, such as a review, was not available.¹²⁶ Lewis asked 56 members of the ACRL Law and Political Science Section with responsibilities for selecting political science materials to evaluate the quality of political science books published by 62 publishers and compared their responses with the results of a similar survey of faculty who were members of the APSA. She found that university press titles were more highly ranked by librarians and that textbook publishers were more highly ranked by APSA members.¹²⁷ Sweetland and Christensen surveyed 33 Wisconsin academic libraries about their languages and literatures collection practices and compared their holdings with the *Choice* list of outstanding academic books. They found that selection in most libraries was based on faculty suggestions and curriculum-related needs, while criteria that addressed future needs or availability at other libraries were not considered.¹²⁸

More recently, concerns about burgeoning electronic resources resulted in research on criteria for selecting these types of materials. In 2001, the Digital Library Federation (DLF) published Jewell's study of library practices related to the selection and presentation of commercially available electronic resources. Based on interviews and discussions with academic librarians involved with electronic resources, reviews of Web sites, and quantitative data, Jewell identified best practices.¹²⁹ That same year, the DLF also issued a report by Pitschmann on free Web resources. Pitschmann used data gathered from interviews, Web sites, and subject

gateways to identify practices to help libraries develop and sustain collections of free third-party Web resources.¹³⁰

Collection-Building Tools and Data

The tools that facilitate and the data that inform collection development range from approval plans to publisher-generated use statistics for electronic resources. This review indicated ongoing interest in the traditional tools and a growing interest in usage data.

Mechanical Selection

Loup and Snoke conducted a survey of 28 ARL libraries to determine how they supplemented their approval plans in the areas of philosophy and political science. They found that the responding libraries used standing orders and, to a lesser extent, retrospective purchasing. The researchers also collected data on approval plan expenditures.¹³¹ In 1996, 93% of the respondents to an ARL SPEC Kit survey indicated that they used approval plans and that they spent at least \$100,000 on these plans. The survey also indicated that use of such plans to acquire foreign or specialized materials had not decreased since a similar survey was conducted in the 1980s. Respondents identified advantages and disadvantages of such plans and described how their plans were administered.¹³² Calhoun, Bracken, and Firestein developed a method to determine the publishers that should be included in a core collection for large- and medium-sized research libraries based on the 80/20 rule and estimated the costs of approval plans that would supply core materials.¹³³ Dali and Dilevko surveyed Slavic collection development specialists to determine the extent to which academic libraries in North America acquired books in Slavic and other Eastern European languages through approval plans and to identify the extent to which they used other collection strategies, including bookstores, gifts, exchanges, independent book agents, and book fairs.¹³⁴

Several case studies illustrated the range of approaches that were taken to evaluate and improve blanket order and approval plans. Pulkithiel conducted an evaluation of the approval plan used by the Centre for Development Studies in terms of faculty participation, subject and publisher distribution of books received, expenditures, and imprints.¹³⁵ Galbraith's case study was motivated by an engineering library's need to reduce its approval plan return rate. She compared the effectiveness of

selection using Blackwell's Collection Manager database with the approval plan and, based on the results, discontinued the plan.¹³⁶ Sennyey assessed the performance of two blanket-order vendors that supplied French and Spanish books to the University of Illinois Library based on both the number of materials they supplied and the quality of those materials. Sennyey proposed this methodology as a way of evaluating blanket-order suppliers on an ongoing basis.¹³⁷ Calhoun analyzed a core collection for the libraries in the California State University system in terms of reviews, holdings, and publishers and presses to develop strategies to improve approval plan effectiveness.¹³⁸ Brush compared the circulation rate of engineering approval plan books with that of books in the engineering section of the collection—i.e. the books classified in the *Ts*—and found that the approval books were much more heavily used.¹³⁹

Reviews

Much of the research into reviews and reviewing focused on small or alternative press titles and *Choice* as the providers. Serebnick's study of reviewing patterns of small press titles indicated that the percentage of small press books reviewed had decreased since 1980 and that a small number of journals published the majority of reviews.¹⁴⁰ Dilevko and Dali also addressed the availability of reviews of alternative or small press titles and found that titles featured in *Counterpoise* were frequently reviewed in other sources. The researchers also analyzed favorable reviews and characterized the books featured only in *Counterpoise*.¹⁴¹

Carlo and Natowitz used content analysis to study a sample of *Choice* reviews of titles in American history, geography, and area studies and found that the majority received favorable ratings and were recommended for purchase. They also found that reviewers most frequently applied criteria of quality or originality of analysis, completeness of research, and readability or quality of narrative.¹⁴² Jordy, McGrath, and Rutledge used *Book Review Digest* to assess the quality of publishers' output and developed a profile of *Choice* as a source of book reviews. They found that *Choice* opinions were similar to those from other sources in their sample, that *Choice* and other reviewers were equally likely to judge a book to be outstanding, but that *Choice* reviewers were significantly more likely to judge a book to be "very good."¹⁴³ Sweetland compared criteria for evaluating Web sites developed by the Southern California Online Users Group, the University

of Georgia, and Rettig and Laguardia with *Choice* reviews and found that *Choice* did not generally include information on authority, reliability, and other traditional measures of quality.¹⁴⁴ Williams and Best determined that *Choice* could not be used to predict circulation for political science, public administration, and law books at Auburn University.¹⁴⁵

Integrated Library System (ILS) Data

Chief collection development officers at 108 ARL libraries were surveyed by Carrigan regarding the availability and usefulness of data from their ILSs. His research indicated that less than half of the libraries regularly used the data produced by their systems to inform collection development decisions. Carrigan then analyzed how the data were used and why they were not used.¹⁴⁶ Casserly and Ciliberti surveyed collection management librarians at small- and medium-sized institutions using DRA and Innovative Interfaces Inc. ILSs about the availability and usefulness of 18 types of collection management data. They found that the data were less useful than available.¹⁴⁷ Kraemer and Markwith reported on the integration of subscription agent and ILS data to inform collection-building decisions at the Medical College of Wisconsin.¹⁴⁸

E-Journal and Database Publisher Data

By the beginning of the present decade, collection managers were all too aware of the shortcomings of vendor-supplied use data and of the incompatibility of use measures across information resources. In a white paper sponsored by the Council on Library and Information Resources, Luther identified library and publisher issues surrounding e-journal usage statistics.¹⁴⁹ In 1999, Dawson compared the variety of use statistics from the BUBL Journals service and developed a search-to-browse ratio as a means of comparing use of individual titles.¹⁵⁰ Two years later, Blečić, Fiscella, and Wiberley compared the use data supplied by 51 vendors with the International Coalition of Library Consortia's categories of data, identified additional useful measures, and made recommendations to vendors and libraries about generating, analyzing, and interpreting use data.¹⁵¹ Shim and McClure reported and made recommendations based on efforts to standardize vendor usage statistics as part of the ARL's E-Metrics Project. E-Metrics Project studies included surveys of libraries about problems associated with usage reports and field tests of vendor statistics.¹⁵² Hahn and

Faulkner derived three metrics to evaluate the value and performance of e-journals based on use statistics provided by High Wire Press and used these to develop benchmarks for evaluating potential purchases. After applying these benchmarks to two test titles, the researcher concluded that they were reliable.¹⁵³

Evaluating the Collection Development Process

Only a few researchers chose to tackle the problem of assessing the collection development program, or as Carrigan characterized it "to determine how effectively collection developers allocate the resources at their disposal."¹⁵⁴

Bias was investigated by Harmeyer, who evaluated one aspect of the collection development process in California academic and public libraries. His survey of library holdings of eight prochoice and prolife books indicated that non-religiously affiliated academic and public libraries were three times as likely to hold prochoice than prolife books.¹⁵⁵ Ochola and Jones reported the results of their survey of teaching faculty and librarian assessments of the Baylor University's library liaison program. The data were used to develop recommendations to help invigorate the program.¹⁵⁶ Mozenter, Sanders, and Welch described the restructuring of the liaison program at the University of North Carolina at Charlotte and their survey of teaching faculty to assess the effectiveness of their assigned subject librarians. The researchers identified program planning, responsibility, training, evaluation, and communication characteristics that were associated with an effective liaison program.¹⁵⁷ Yang also approached the evaluation of the library liaison program by surveying the faculty. Faculty at Texas A&M University identified updates about the services available, consulting on supporting instructional needs, and ordering books or serials as the primary services they needed. These services were compared with those offered by the library, and library services were found to be fairly consistent with faculty expectations. However, faculty were unaware of some of the services the library provided.¹⁵⁸ Dinkins evaluated library and faculty selection at Stetson University by comparing the percent of selections that circulated at least once during the period of the study.¹⁵⁹ As part of an evaluation of George Washington University Libraries' monograph acquisitions program, Stebelman compared the titles acquired by the library with those reviewed by *Choice* and analyzed the findings by subject and publisher type.¹⁶⁰

Cooperative Collection Development

Much as been written about cooperative collection development both pre- and post-1990. In recent years, electronic resources and the resulting increased importance of consortia have provided a wealth of opportunities for cooperation and collaboration. A number of authors provided the historical, theoretical, and organizational contexts in which to consider cooperative collection development efforts.¹⁶¹ The research literature included efforts to quantify cooperative efforts and characterize and measure their success. Case studies reflected the range of these efforts.

The majority of respondents to the 1998 ARL survey on cooperative collection management programs had at least one collaborative relationship and one consortium membership. The most common reason for collaboration was to expand services and collections, and the acquisition of materials—usually electronic—was the most common form of collaboration. The researchers noted that cooperative efforts for print resources occurred most frequently in area studies.¹⁶² A working group formed by the Center for Research Libraries (CRL) surveyed libraries in order to “map” cooperative collection development activities and also found that cooperative projects for print materials frequently focused on area studies. The working group identified 89 projects, most of which began after 1990, and the majority of survey respondents reported that at least one of their cooperative activities was the shared purchase of electronic resources.¹⁶³

A number of qualitative studies and analyses that identified factors related to successful programs mostly focused on print-based cooperative programs. Dominguez and Swindler researched the history of the Triangle Research Libraries Network’s cooperative programs from the 1930s to the early 1990s and identified seven factors that promoted successful collection development.¹⁶⁴ Butler described seven law library cooperative collection development programs and identified institutional culture, economic incentives, and increased interlibrary loan efficiency and effectiveness as factors that had contributed to program success.¹⁶⁵ Hightower and Soete reviewed the physical science translation journal collaborative collection development project at the University of California. Based on the experiences and the problems encountered by the participating libraries they identified 12 strategies for successful collaborative collection management.¹⁶⁶ Dannelly provided cases studies of OhioLINK and the Committee

on Institutional Cooperation and identified characteristics common to productive programs.¹⁶⁷ Based on his analysis of Latin American studies cooperative collection development projects, Hazen identified seven conditions for success.¹⁶⁸ The projects studied by the CRL Best Practices Working Group included those that focused on electronic as well as print materials and on access, storage, and preservation. The group found best practices in the areas of communication and consultation, goals and focus, flexibility and adaptability, and technological structure.¹⁶⁹

Only a handful of researchers presented quantitative analysis of the benefits of cooperative programs. Erickson described the Tri-College University’s cooperative collection development program for books. He then presented the results of three historical studies in which effectiveness was measured by the savings resulting from the number of consorcially purchased titles that each library did not need to purchase.¹⁷⁰ The California State University Libraries’ study of their multicampus shared e-book collection included an analysis of use statistics and a user survey. The researchers identified strategies for expanding the e-book cooperative acquisitions program.¹⁷¹ Kingma compared the cost of interlibrary loan in one research library consortium with the savings that could be achieved through cooperative collection development and concluded that the savings would not cover the costs of coordinating consortium collection development.¹⁷² Scigliano’s analysis compared the costs and benefits of a database acquired through a consorcial purchase with those of its paper counterpart. She calculated benefits in terms of the value of time saved by the users of the electronic resource and net library savings for the electronic versions.¹⁷³ CRL’s Working Group for Qualitative Evaluation of Cooperative Collection Development developed performance measures for evaluating a cooperative project in terms of reduced costs, increased access to information, and increased use and user satisfaction.¹⁷⁴ Kohl and Sanville provided evidence that OhioLINK had improved cost-effectiveness for member libraries as measured by expanding access to, and use of, journal literature.¹⁷⁵

The literature of the period also included case studies of how consortia and cooperative projects operated and functioned. Gammon and Zeoli reported on the “Not Bought in Ohio” cooperative collection development program for books.¹⁷⁶ Curl and Zeoli reported on the CONSORT Libraries’ cooperative collection development project, which is based on

a shared approval plan. They presented a list of lessons learned based on their experiences with its development and implementation.¹⁷⁷ Rohe, O'Donovan, and Hanawalt described three PORTAL libraries' projects, the most extensive of which was an effort to expand access to titles listed in *Books for College Libraries* at the 12 participating academic libraries.¹⁷⁸ Dole and Chang described the use of the OCLC/AMIGOS Collection Analysis System to compare the monographic holding of the State University of New York (SUNY) University Center libraries.¹⁷⁹ Dwyer described the California State University libraries' cooperative buying program and the process by which electronic resources were identified and evaluated for the core collection.¹⁸⁰ A number of collection assessments for cooperative projects employed strategies and frameworks adapted from the *Conspectus*, a tool developed in the 1980s by RLG to facilitate the identification of collection strengths and weaknesses with the ultimate goal of coordinating regional and national collection development. Cochenour and Rutstein reviewed the Colorado Alliance of Research Libraries' (CARL) experience conducting overlap studies, documenting collecting levels, and creating collection management reports in order to create a cooperative collection development environment.¹⁸¹

Medina and Highfill documented the history and development of the Network of Alabama Academic Libraries and that network's use of collection assessment methodologies based on the RLG *Conspectus*.¹⁸² The Alaska multitype library collection assessment project, described by Stephens, employed a modified *Conspectus* framework that evolved into the WLN *Conspectus*.¹⁸³

Collection Evaluation and Assessment

All vital academic libraries employ some methods of collection assessment, and since 1990, interest in these efforts has been intense. A number of very useful reviews of the large body of collection evaluation and assessment literature were published, as were evaluation and assessment guides and manuals aimed at the practitioner.¹⁸⁴ Most of the accounts of collection evaluation and assessment published since 1990 reported on the process of conducting evaluations on the local level and their outcomes. These local studies often employed multiple methodologies, included both collection-based and user-based assessments, and were conducted to inform decisions about subscription renewals, cancellations, and storage.

The literature included fewer reports of collection managers' efforts to develop or improve collection evaluation and assessment methodologies.

Local Holdings Studies

Many of the local holdings studies were facilitated by access to the National/North American Title Count, the OCLC/Amigos Collection Analysis System, and recently by R. R. Bowker's Ulrich's Serials Analysis System (USAS). Practitioners analyzed and compared all holdings, or holdings in selected subject areas, as the basis of their local collection assessments. Dole used the OCLC/AMIGOS Collection Analysis System to compare monograph holdings of one ARL library with those of a peer group chosen by the university president and a peer group consisting of similarly ranked ARL libraries. Her analysis yielded information on overlap with these peer groups and identified collecting patterns that needed to be changed.¹⁸⁵ Perrault and others conducted an evaluation of the monograph holdings at 28 community college libraries in Florida and found that the overall median age of their materials was 24 years. They also calculated the median age and provided a distribution analysis of date of publication by subject area.¹⁸⁶ The researchers conducted a follow-up survey to assess the impact of their analysis.¹⁸⁷ Paskoff and Perrault sampled the shelflist to profile the Louisiana State University library collection by age and language of publication, duplication, and subject distribution.¹⁸⁸ Metz and Gasser used USAS to analyze serials subscriptions held by the members of the Virtual Library of Virginia and used their data to identify potential new publisher partners.¹⁸⁹

Pancheshnikov compared the percentage of books and serials pertaining to agricultural sciences courses in the University of Saskatchewan Library with the percentage available in the National Agriculture Library.¹⁹⁰ Webster assigned National Title Count Classification categories to history courses offered at the University of Central Arkansas and compared that library's holding in those categories with holdings of peer institutions. He then compared the results with student enrollment data in order to identify collection strengths and weaknesses.¹⁹¹

Dodd and Gyeszly compared the business collection shelflist count at Texas A&M University with ARL peer institution holdings to identify collection gaps.¹⁹² Grover used data from the National Shelflist Count to analyze Brigham Young University Library's foreign language and area

studies collections. He compared holding with five randomly selected libraries and with all participating libraries and then compared the circulation of these materials with that of the total collection.¹⁹³ Ciliberti reported on the use of the OCLC / AMIGOS Collection Analysis System as part of a pilot methodology to assess special education and counseling monographs.¹⁹⁴ Lotlikar employed list checking, along with circulation data, to assess the political science collection at Millersville University.¹⁹⁵

Use

Use studies employed a wide range of measures, including circulation, in-house use, interlibrary loan data, and vendor-supplied use statistics. Green used the slip method to record use of current journal issues and factored in the length of time each title had been available in order to develop a usage index for science and engineering journals.¹⁹⁶ Chrzastowski and Olesko reported the results of three studies conducted between 1988 and 1996 at the University of Illinois in which use data were collected from reshelving counts, interlibrary loan returns, and circulation returns.¹⁹⁷ The sweep method was used by McBride and Behm to gather data for their year-long study of print and microfilm journal use. The results helped them identify titles for retention, storage, and cancellation.¹⁹⁸ Dole and Chang reported on the journal use surveys and analyses conducted in the early 1990s at SUNY Stony Brook. The methods they used to measure collection demand included reshelving counts, faculty rankings of journals to which the libraries subscribed, and analyses of titles cited by faculty and doctoral students.¹⁹⁹ Ruppel analyzed monographs borrowed through interlibrary loan at the University of Southern Indiana Library and determined that the majority were indicators of subject needs, favorably reviewed, recent publications, and easy to obtain. She concluded that a buy-on-demand program would be appropriate.²⁰⁰

Several other researchers incorporated faculty rankings or other measures of faculty evaluation into their use studies. Lent's study of the women's studies journal collection at the University of New Hampshire focused on faculty reading habits. Her analysis compared data from a faculty survey of journal titles they read and browsed with subscribed titles, titles included in databases heavily used by students, and interlibrary loan statistics.²⁰¹ Bustion and Eltinge asked faculty at George Washington University to rank journals on a scale of 1 to 5, with 1 being essential to

instruction and research and 5 being not related to the instruction and research program. The researchers compared rankings by department with price data and used these findings to identify titles for cancellation.²⁰² At Louisiana State University Medical Center, Tucker surveyed faculty to identify the importance of subscribed titles to the department's work. She used these data, along with use, cost, and impact factor to cancel subscriptions.²⁰³

Knieval, Wicht, and Connaway analyzed the English language monograph collection at the University of Colorado at Boulder, using interlibrary loan and circulation in combination with holdings data. Their findings demonstrated the importance of combining different types of data for collection development decision making.²⁰⁴

Ochola employed "percentage of expected use" and "ratio of borrowings to holdings" measures to analyze interlibrary loan and circulation data to evaluate the monograph collection at Baylor.²⁰⁵ Littman and Connaway compared the use of print and electronic versions of books in the libraries at Duke University and found that, although the patterns of use by subject were similar, the electronic versions were used 11% more than the print.²⁰⁶ Bailey found that between 2003 and 2004 the use of netLibrary books increased while the use of print materials decreased.²⁰⁷ Chrzastowski, Blobaum, and Welshmer studied the use of Beilstein's *Handbuch der Organischen Chemie* at the University of Illinois and University of Delaware. Based on the low level of use they found and the title's high subscription price, they concluded that it was cost-ineffective.²⁰⁸ Black analyzed the cost effectiveness of the College of St. Rose library's journal collection in terms of price per use, expenditure per enrollment, enrollment per subscription, and journal use per enrollment.²⁰⁹ Samson, Derry, and Eggleston reported on efforts at the University of Montana-Missoula to review the networked resources collection using cost, subject coverage, and content overlap as well as usage data.²¹⁰

Citation Analysis

Practitioners used citations from theses and dissertations, student papers, faculty publications, and textbooks and other course materials to help assess the adequacy of their collections. Herubel compared serial citations in philosophy dissertations written at Purdue University with library holdings to determine the extent to which the library provided in-house support

for dissertation research.²¹¹ Sylvia and Leshner used citations in psychology and counseling theses and dissertations, along with cost-per-use and shelving statistics, to evaluate the collection at St. Mary's University in San Antonio.²¹² Smith conducted a longitudinal study of the usefulness of the University of Georgia Library collection to graduate students by analyzing dissertation and theses citations and comparing cited works to works held by the libraries.²¹³ Haycock investigated citations to monographs and journals included in 43 education dissertations written at the University of Minnesota and used the data to determine journal retentions and cancellations. She also calculated the serial-monograph citation ratio and compared it to ratios found by other researchers.²¹⁴ In order to develop a rank-ordered list of serials, Waugh and Ruppel explored citations from dissertations and theses on workforce education and applied a weighting formula to reflect the frequency with which each title was cited across all of the source documents included in the study.²¹⁵ Sylvia conducted an analysis of citations in graduate and undergraduate student psychology papers.²¹⁶ Leiding analyzed the citations in advanced undergraduate research papers written at James Madison University in terms of material type, publication date, format, and discipline. She compared citations with library holdings to determine levels of local availability.²¹⁷ Using undergraduate papers written at four institutions, St. Clair and Magrill analyzed citations by subject of paper, formats cited, numbers of citations, and publication date.²¹⁸

By and large, researchers who studied citations in faculty publications focused on science and, to a lesser extent, social science disciplines. Hughes used journal titles cited by molecular and cellular biologists at Pennsylvania State University, titles in which these faculty published, and Journal Citation Report data to create a core list of titles as part of a larger collection assessment project.²¹⁹ Lascar and Mendelsohn examined citations in publications by structural biologists, along with anecdotal data on journal use from these faculty, and used the results to support a proposal for additional journal subscriptions.²²⁰ Crotteau reviewed citations in biology faculty publications and Journal Citation Reports to evaluate library support for these researchers. He then conducted a survey to determine how these faculty authors obtained cited titles not held in the library.²²¹ Haas and Lee assessed the adequacy of the forestry journal collection at the University of Florida by studying titles faculty cited and the journals in which they published.²²²

Lightman and Manilov used faculty citations to and in their publications, along with comparisons to standardized lists and availability at other libraries, to assess Northwestern's economics collection.²²³ Similarly, Dykeman investigated citations to monographs, periodicals, proceedings, other serials, technical reports, theses, and government documents included in publications authored by Georgia Institute of Technology faculty, and Schaffer examined citations in psychology faculty publications at Texas A&M University by material type, subject, date, availability as electronic full text, and source of electronic full text.²²⁴ Gao and Yu's study of citations in publications by faculty in the departments of surveying and mapping at Wuhan University enabled them to identify collection strengths and gaps.²²⁵ Stelk and Lancaster evaluated the religious studies collection at the University of Illinois by checking the bibliographic references in the religious studies course textbooks.²²⁶ Rupp-Serrano based a needs assessment of social work students on materials cited in course syllabi.²²⁷

Student Surveys

Prior to the introduction of LibQUAL+, which measures student expectations and perceptions about, among other things, collection adequacy, very few local collection evaluations included a student opinion component. Weaver administered a survey to undergraduate students in selected social sciences, humanities, and life science courses and conducted follow-up interviews with course instructors as a means of assessing the library's local book collection.²²⁸ At Oakland University, Condit surveyed students about the types of materials they would purchase in a tight budget environment and their satisfaction with the library's book and journal collection.²²⁹ At the University of Northern Colorado, Rathe and Blankenship gathered patron opinions about the importance and usefulness of the recreational reading collection.²³⁰

Methodological Studies

The researchers conducting methodological studies tested the effectiveness, usefulness, and/or accuracy of collection evaluation methods. In some cases, their purpose was to better understand what they were measuring, and in others, it was to develop better evaluation tools.

Holdings

In an effort to develop a core list of titles for undergraduate libraries, Hardesty and Mak performed an overlap study of the holdings of 427 undergraduate libraries. The wide divergence they found in the titles owned led them to conclude that such a core list did not exist.²³¹ Siverson developed a method of scaling standard bibliographies in order to introduce local collecting priorities into the interpretation of the results of the checklist collection evaluation method.²³²

Using the measures of existing collection strength specified in the Music Conspectus documents of 17 RLG libraries, McGrath and Nuzzo tested the hypotheses that "existing collection strength" can serve as a proxy for shelflist counts. After correlating 138 LC ranges across the libraries and within individual libraries, they concluded that the existing collection strength measure can be used as a proxy for shelflist within individual libraries but cannot be used to compare libraries.²³³ White developed "brief tests of collection strength," a methodology for assigning or verifying Conspectus collection levels without conducting extensive holdings comparisons and analyses.²³⁴ Twiss conducted two "brief tests" on the Soviet history collections in five libraries and compared the results with the levels these libraries had assigned to their collections. His findings supported the validity of White's methodology and illustrated the ease with which it could be applied.²³⁵ To identify the strengths and weaknesses of both evaluation methods, Benedetto Beals and Gilmour used the "brief test" method and OCLC's WorldCat Analysis System to analyze the zoology collections in three academic libraries.²³⁶ In his study of the composition of WorldCat records, Bernstein provided evidence that the range of holdings for the Conspectus' Research Level should be revised.²³⁷

Use

Britten and Webster identified characteristics of books that actively circulated to develop an assessment methodology that could serve as an alternative to costly, time-consuming use studies.²³⁸ Banks also studied relationships between several characteristics of books and circulation. She found shelf level to be the strongest determinant of circulation.²³⁹ Selth, Koller, and Briscoe studied the circulation and in-house use of books in a large research library and found evidence to contradict the results of

previous studies in which the two types of use were highly correlated.²⁴⁰ In a test of widely held assumptions about how often students browse to identify useful library resources and about the need to develop just-in-case collections, Ridley and Weber found that student browsing was uncommon.²⁴¹ Use of transaction log data to describe e-book use was explored by Connaway and Snyder. They identified unobtrusiveness and the ability to conduct both micro and macro analyses as advantages to this method, but identified the large quantity of data in these logs and other issues related to how they collect and store data as drawbacks to their use.²⁴²

A study of the use of current issues of journals by Sauer found that unused titles continue to receive little or no use after they are bound or replaced with microfilm.²⁴³ Naylor compared the results of a journal reshelving study and a self-reported use study conducted at the same research library and discovered that the reshelving method reported higher use.²⁴⁴

Although research on the meaning and validity of vendor-generated use statistics is still in its infancy, the literature includes a small body of methodological studies. Davis studied title use reported by HighWire Press and found that the user population could be estimated based on the number of downloads and that this relationship was consistent over time and across institutions.²⁴⁵ Culpepper compared the usage reports generated by three database vendors with locally produced usage reports and faculty assessments of the utility of specific databases in order to demonstrate the usefulness of the vendor reports.²⁴⁶ In response to concern over the lack of standardization of vendor-supplied use measures, Bauer developed two indexes, one to measure change in print usage and another to measure change in electronic resource usage based on statistics the library tracked in house, rather on data obtained from publishers and vendors.²⁴⁷

Duy and Vaughan addressed the need for standardized vendor statistics by studying the relationship between locally collected usage data of electronic resources at North Carolina State University and the vendor-supplied usage data. Findings indicated that over the course of a year, the data collected by the libraries' Web server logs and those provided by the vendors showed similar use patterns, but that the quantitative measures were not the same.²⁴⁸ In their study of vendor-supplied usage data for electronic journals, these authors found a statistically significant correlation between these data and print usage data for journals in chemistry,

biology and related fields.²⁴⁹ McDowell and Gorman found no correlation between the types of vendor-supplied use statistics with those preferred by New Zealand academic collection development librarians. Their data support the need for customizable usage statistics.²⁵⁰

Citation Analysis

Beile, Botte, and Killingsworth explored the validity of using doctoral dissertation citations to evaluate collections by comparing citations in dissertations written at three institutions in terms of their quality and availability in the home libraries. They found that the quality of the sources cited varied and that doctoral students tended to cite materials available to them. The researchers concluded that citations studies could be used to identify local use but advised caution when using them to assess collection adequacy.²⁵¹ Zipp determined that theses and dissertation citations could serve as surrogates for faculty publication citations in evaluating research collections.²⁵² Millson-Martula and Watson compared the effectiveness of determining undergraduate serial needs by using citations from student papers, reshelving and ILL data, and surveys and concluded that the citation method was the most effective indicator of met and unmet needs.²⁵³

Nisonger demonstrated the bias inherent in averaging Impact Factor data from multiple years and proposed an adjusted Impact Factor as an alternative.²⁵⁴ He also addressed the question of whether the rate of self-citation affected journal rankings and concluded that it did not.²⁵⁵ Altmann and Gorman studied the relationship between Impact Factor and journal use to determine if Impact Factor data could substitute for the more costly-to-collect use data. They concluded that it was not an effective predictor of use.²⁵⁶ Chung found that Impact Factors could not be used as substitutes for local citation scores and developed a method of combining these two scores to measure the cost-effectiveness of a journal collection.²⁵⁷ Working only with mathematics journals, Moline concluded that there was no relationship between price per character and Impact Factor.²⁵⁸ Dilevko and Atkinson developed a procedural model for determining the quality of journals without Impact Factors.²⁵⁹ Kreider correlated the global citation data from Journal Citation Reports with the Local Journal Utilization Report for the University of British Columbia and found that high global citation counts correlated with local citation

counts but that this correlation became weaker as the number of counts decreased.²⁶⁰ Goldstein found that impact factors and ranking were correlated with, and therefore could predict, local use of chemistry journals in a small departmental library.²⁶¹ Coleman calculated measures of journal affinity, association, and consumption factor for the *Journal of Education for Library and Information Science* and contrasted these with the journal's Impact Factor in order to illustrate the limitations of the Impact Factor as a measure of journal value.²⁶² An and Qiu found a statistically significant correlation between Journal Impact Factors and the Web Impact Factors of the journal Web sites for 42 Chinese engineering journals.²⁶³

Lancaster and others explored the possibility of using the relationship between scatter and journal availability to evaluate collections in departmental libraries, the library system to which they belong, and an overarching library network.²⁶⁴ Calhoun developed a model of an academic library serial collection using titles included in several abstracting and indexing services and explored the correlation between journal subject category rank and union holdings rank in order to determine if the correlation could be extended to the arts and humanities literature.²⁶⁵

Conclusion

The studies that exerted the most influence during the past decade and a half were those that documented the shrinking national and local collections. These were conducted early in the 1990s, and none of the later studies matched their impact. They quantified what collection managers intuitively knew was happening, and the jolt they gave to the profession affected immediate collection management practice and laid the foundation for the profession's interest in changing the scholarly communication process.

The most useful studies for collection manager's day-to-day work were those that provided data on collection growth, prices, and expenditures over time. These also contained some analyses, but they were primarily important as sources of reliable, comparable data that collection managers could use to advocate for new funding and plan for ubiquitous budget reductions. Studies that described the way collection management was carried out at other academic libraries were also valuable to practitioners. Since 1990, surveys and, to a lesser extent, other types of quantitative studies provided snapshots of how member libraries were organized

for collection management, trained their bibliographers, selected their information resources, documented their collection practices, and allocated their acquisitions funds. Qualitative studies were also published that described how libraries managed their collections of electronic resources and participated in cooperative collection development. Unfortunately, the literature included far fewer studies that could help practitioners measure the *effectiveness* of these collection management processes.

Collection evaluation and assessment was arguably the most active collection management research category. Much of this research employed multiple methodologies or at least multiple methods of measuring the variables under study. Researchers conducted both user- and collection-centered evaluations. Collection evaluations and assessments were predominantly local efforts motivated by budgetary considerations, and most operationalized “collection value” as “use.” However, this category also included research on the evaluation methods themselves, the purpose of which was to improve assessment accuracy, the quantity and quality of data that could be collected, and/or the ease or efficiency with which evaluations could be conducted. As a group, these studies, along with those that addressed collection size and growth, constituted the best-designed and most methodologically sophisticated and interesting research.

The previous examples notwithstanding, overall the collection management research literature was limited in the breadth of methodologies and statistical analyses employed, as well as in the scope of problems addressed. It was predominantly survey- and case study-based and, with the exception of annual statistics on library operations and industry sales, most studies were conducted only once; the literature included few reports of follow-up or replication studies. The majority of researchers used only basic descriptive statistics to analyze their data. Many never fully explored the relationships among the variables in their studies, even when the data they would have needed to do so were presented in the results of the study. The research literature was also limited in scope in that most of it focused on collection management inputs and processes. Collection managers conducted most of their research in order to gather the information they needed to continue to function within a climate of unrelenting change. However, what they learned frequently had a short shelf-life. As Peter Herson observed:

[W]ith the pace of change so great, it can be difficult to produce research having long-term value—conceptually and practically. *Change*

and managerial needs may outpace the ability of researchers to deliver insights useful to the future, let alone the present. In some instances, by the time that researchers have gathered and presented the data, a new culture with new needs and solutions may have emerged.²⁶⁶

In an environment in which colleges and universities are increasingly under pressure to demonstrate and quantify the value of the educational experience they offer, the agenda for future collection management research must focus on effectiveness, outcomes, and impact. At the very least, collection managers will need to move from describing the components of the collection management process to assessing process effectiveness, a task that will grow increasingly more complicated as new information resource formats, open-access content, and mass digitization projects alter the concept of the academic library collection. Beyond that, they will need to employ sophisticated research designs and data analysis to learn more about student and faculty information needs and preferences, and their use of the information resources available to them. Data from this type of research will more effectively inform collection managers' day-to-day decision making and longer range planning and will enable them to contribute to library-wide efforts to identify outcomes and assess the impact of collections and services.

References

1. Charles B. Osburn, “Collection Development and Management,” in *Academic Libraries: Research Perspectives*, ed. Mary Jo Lynch, 1–37 (Chicago: American Library Association, 1990).
2. Literature reviews consulted included those for 1990–1992 by David S. Sullivan, William S. Monroe, Stephen Lehmann, and James H. Spohrer that appeared in volumes 35–37 of *Library Resources and Technical Services*; those for 1996 and 1997 by Thomas E. Nisonger that appeared in volumes 17–18 of *Collection Building*; and Linda L. Phillips and Sara R. Williams, “Collection Development Embraces the Digital Age: A Review of the Literature, 1997–2003,” *Library Resources and Technical Services* 48, no. 4 (2004): 273–299.
3. Anthony M. Cummings and others, *University Libraries and Scholarly Communication: A Study Prepared for the Andrew W. Mellon Foundation* (Washington, DC: Association of Research Libraries, 1992).
4. Association of Research Libraries Committee on Collection Development, “Research Libraries in a Global Context: An Exploratory Paper,” rev. ed. (Washington, DC: Association of Research Libraries, 1992), <http://www.arl.org/resources/pubs/aaufa/background.shtml> (accessed March 31, 2008).

5. Jutta Reed-Scott, *Scholarship, Research Libraries, and Global Publishing: The Result of a Study Funded by The Andrew W. Mellon Foundation* (Washington, DC: Association of Research Libraries, 1996).
6. Mary E. Jackson and others, *Changing Global Book Collection Patterns in ARL Libraries* (Washington, DC: Association of Research Libraries, 2006), http://www.arl.org/bm~doc/grn_global_book.pdf (accessed March 31, 2008).
7. The Association of Research Libraries has issued annual compilations of member statistics since 1961–1962. The most recent edition is Martha Kyriallidou and Mark Young, eds., *ARL Statistics 2004–2005* (Washington, DC: Association of Research Libraries, 2006).
8. Richard Hume Werking, "Collection Growth and Expenditures in Academic Libraries: A Preliminary Inquiry," *College and Research Libraries* 52, no. 1 (1991): 5–23.
9. Anna H. Perrault, "The Shrinking National Collection: A Study of the Effects of the Diversion of Funds from Monographs to Serials on the Monograph Collections of Research Libraries," *Library Acquisitions: Practice and Theory* 18, no. 1 (1994): 3–22.
10. Tina E. Chrzastowski and Karen A. Schmidt, "Surveying the Damage: Academic Library Serial Cancellations 1987–88 through 1989–90," *College and Research Libraries* 54, no. 2 (1993): 93–102; Tina E. Chrzastowski and Karen A. Schmidt, "Collections at Risk: Revisiting Serial Cancellations in Academic Libraries," *College and Research Libraries* 57, no. 4 (1996): 351–364.
11. Tina E. Chrzastowski and Karen A. Schmidt, "The Serials Cancellation Crisis: National Trends in Academic Library Serial Collections," *Library Acquisitions: Practice and Theory* 21, no. 4 (1997): 431–443.
12. Tina E. Chrzastowski, "National Trends in Academic Chemistry Serial Collections, 1992–1994," *Science and Technology Libraries* 16, no. 3/4 (1997): 191–207.
13. Gordon Rowley, "Academic Libraries in Iowa Cope with Serials Cutbacks," *Collection Building* 14, no. 2 (1995): 24–28; Paul D. Burnam, "Private Liberal Arts Colleges and the Costs of Scientific Journals: A Perennial Dilemma," *College and Research Libraries* 59, no. 5 (1998): 406–420.
14. Tina E. Chrzastowski and others, "Feast AND Famine: A Statewide Science Serial Collection Assessment in Illinois," *College and Research Libraries* 68, no. 6 (2007): 517–532.
15. Brian F. Lavoie, Lynn Silipigni Connaway, and Edward T. O'Neill, "Mapping WorldCat's Digital Landscape," *Library Resources and Technical Services* 51, no. 2 (2007): 106–115.
16. Annual price data and analyses based on data provided by EBSCO were published in the April 15 issue of *Library Journal*. The most recent is Lee Van Orsdel and Kathleen Born, "Serials Wars," *Library Journal* 132, no. 7 (2007): 43–48.
17. Annual periodical and serial data and analysis based on data provided by

- Faxon and Swets were published in *Library Acquisitions: Practice and Theory*, *American Libraries*, and *Library Resources and Technical Services*. The most recent are available on the ALCTS Web site: Barbara Dingley, "U.S. Periodical Prices—2005," Association for Library Collections and Technical Services, <http://www.ala.org/ala/alcts/pubs/pubresources/resources.cfm> (accessed March 31, 2008); Nancy Chaffin and Ajaye Bloomstone, "U.S. Serial Services Price Index for 2003–2004," Association for Library Collections and Technical Services, <http://www.ala.org/ala/alcts/pubs/pubresources/resources.cfm> (accessed March 31, 2008).
18. *The Bowker Annual* included statistics and analyses of book output and prices. The most recent edition is: Dave Bogart, ed., *The Bowker Annual: Library and Book Trade Almanac*, 52nd ed. (Medford, NJ: Information Today, Inc., 2007).
19. Annual price increase studies for journals in veterinary medicine were conducted for a 17-year period. All studies published prior to 1990 are cited in David C. Anderson, "Journals for Academic Veterinary Medical Libraries: Price Increases, 1977–1990 and 1983–1990," *Serials Librarian* 18, no. 3/4 (1990): 73–86. All studies published thereafter are cited in Victoria T. Kok and Eleanor P. Garrison, "Journals for Academic Veterinary Medical Libraries: Price Increases, 1983–2000," *Serials Librarian* 41, no. 1 (2001): 21–30.
20. Kenneth E. Marks, Steven P. Neilsen, and Craig H. Petersen, "Longitudinal Study of Scientific Journal Prices in a Research Library," *College and Research Libraries* 52, no. 2 (1991): 125–138.
21. Gregg Sapp, "A Cost/Inflation Model for Mathematics Research Journals," *Serials Librarian* 18, no. 1/2 (1990): 155–172.
22. Deborah J. Schmidle and Barbara J. Via, "Physician Heal Thyself: The Library and Information Science Serials Crisis," *portal: Libraries and the Academy* 4, no. 2 (2004): 167–203.
23. Barbara J. Via and Deborah J. Schmidle, "Investing Wisely: Citation Rankings as a Measure of Quality in Library and Information Science Journals," *portal: Libraries and the Academy* 7, no. 3 (2007): 333–373.
24. Cummings and others, *University Libraries and Scholarly Communication*; Werking, "Collection Growth and Expenditures in Academic Libraries."
25. Chandra Prabha and John E. Ogden, "Recent Trends in Academic Library Materials Expenditures," *Library Trends* 42, no. 3 (1994): 499–513.
26. Joseph Petrick, "Electronic Resources and Acquisitions Budget: SUNY Statistics, 1994–2000," *Collection Building* 21, no. 3 (2002): 123–133.
27. See note 7; the Association of College and Research Libraries published annual statistical data from academic libraries in all Carnegie classifications. The most recent edition is Association of College and Research Libraries, *2005 Academic Library Trends and Statistics* (Chicago: Association of College and Research Libraries, 2007).
28. See note 18.

29. Barbara Hoffert, "Book Report, Part 2: What Academic Libraries Buy and How Much They Spend," *Library Journal* 123, no. 18 (September 1, 1998): 144–146.
30. Andrew Richard Albanese, "Moving from Books to Bytes," *Library Journal* 126, no. 14 (September 1, 2001): 52–54.
31. Fred W. Jenkins, "Benchmarking Library Budgets: Positioning the Library in a Competitive Environment," in *Advances in Library Administration and Organization*, vol. 16, ed. Delmus E. Williams and Edward D. Garten, 301–313 (Stamford, CT: JAI Press, 1999).
32. Frank R. Allen, "Materials Budgets in the Electronic Age: A Survey of Academic Libraries," *College and Research Libraries* 57, no. 2 (1996): 133–143
33. Peggy Johnson, *Materials Budgets in ARL Libraries: SPEC Kit 166* (Washington, DC: Association of Research Libraries, 1990).
34. Allen, "Materials Budgets in the Electronic Age."
35. John M. Budd, "Allocation Formulas in the Literature: A Review," *Library Acquisitions: Practice and Theory* 15, no. 1 (1991): 97.
36. Johnson, *Materials Budgets in ARL Libraries*, unnumbered introduction.
37. Jane H. Tuten and Beverly Jones, eds., *Allocation Formulas in Academic Libraries: CLIP Note 22* (Chicago: College Libraries Section, Association of College and Research Libraries, 1995).
38. Charles W. Brownson, "Modeling Library Materials Expenditure: Initial Experiments at Arizona State University," *Library Resources and Technical Services* 35, no. 1 (1991): 87–103.
39. William A. Britten, "A Use Statistic for Collection Management: The 80/20 Rule Revisited," *Library Acquisitions: Practice and Theory* 14, no. 2 (1990): 183–189.
40. Joseph Crotts, "Subject Usage and Funding of Library Monographs," *College and Research Libraries* 60, no. 3 (1999): 261–273.
41. Ian R. Young, "A Quantitative Comparison of Acquisitions Budget Allocation Formulas Using a Single Institutional Setting," *Library Acquisitions: Practice and Theory* 16, no. 3 (1992): 229–242.
42. Kenneth Wise and D. E. Perushek, "Linear Goal Programming for Academic Library Acquisitions Allocations," *Library Acquisitions: Practice and Theory* 20, no. 3 (1996): 311–327.
43. Kitti Canepi, "Fund Allocation Formula Analysis: Determining Elements for Best Practices in Libraries," *Library Collections, Acquisitions, and Technical Services* 31, no. 1(2007): 12–24.
44. Janis M. Bandelin and John K. Payne, "Collaboration and Reallocation: Implementing a New Collection Development Model," *Against the Grain* 12, no. 5 (2000): 40–45.
45. Lisa B. German and Karen A. Schmidt, "Finding the Right Balance: Campus Involvement in the Collections Allocation Process," *Library Collections,*

- Acquisitions, and Technical Services* 25, no. 4 (2001): 421–433.
46. Anish Arora and Diego Klabjan, "A Model for Budget Allocation in Multi-Unit Libraries," *Library Collections, Acquisitions, and Technical Services* 26, no. 4 (2002): 423–438.
47. Robert Sorgenfrei, "Slicing the Pie: Implementing and Living with a Journal Allocation Formula," *Library Collections, Acquisitions, and Technical Services* 23, no. 1 (1999): 39–45.
48. Charles B. Lowry, "Reconciling Pragmatism, Equity, and Need in the Formula Allocation of Books and Serials Funds," *College and Research Libraries* 53, no. 2 (1992): 121–137.
49. Susan Lafferty, Peter Warning, and Billie Vlies, "Foundation Resources: Formula-Based Allocation of an Acquisition Budget in a University Library," *Australian Academic and Research Libraries* 27, no. 4 (1996): 289–293.
50. Sulekha Kalyan, "Library Materials Budget Allocation Strategy for a Mid-Size Academic Library: A Case Study," *Acquisitions Librarian* 15, no. 29 (2003): 119–131; Claudia V. Weston, "Breaking with the Past: Formula Allocation at Portland State University," *Serials Librarian* 45, no. 4 (2004): 43–53; Merran Evans, "Library Acquisitions Formulae: The Monash Experience," *Australian Academic and Research Libraries* 27, no. 1 (1996): 47–57.
51. Timothy P. Bailey, Jeannette Barnes Lessels, and Rickey D. Best, "Using Universal Borrowing Data in the Library Book Fund Allocation Process," *Library Collections, Acquisitions, and Technical Services* 29, no. 1 (2005): 90–98.
52. Examples include Richard Snow, "Wasted Words: The Written Collection Development Policy and the Academic Library," *Journal of Academic Librarianship* 22, no. 3 (1996): 191–194; Dan C. Hazen, "Collection Development Policies in the Information Age," *College and Research Libraries* 56, no. 1 (1995): 29–31; G. Edward Evans, "Needs Analysis and Collection Development Policies for Culturally Diverse Populations," *Collection Building* 11, no. 4 (1992): 16–27; Glenn S. McGuigan and Gary W. White, "Subject-Specific Policy Statements: A Rationale and Framework for Collection Development," *Acquisitions Librarian* 15, no. 30 (2003): 15–32; Richard Fyffe, "Technological Change and the Scholarly Communications Reform Movement: Reflections on Castells and Giddens," *Library Resources and Technical Services* 46, no. 2 (2002): 50–61.
53. Examples include Joanne S. Anderson, ed., *Guide for Written Collection Policy Statements*, 2nd ed. (Chicago: American Library Association, 1996); Amanda Maple and Jean Morrow, *Guide to Writing Collection Development Policies for Music* (Lanham, MD: Scarecrow Press, 2001); Richard J. Wood and Frank Hoffman, *Library Collection Development Policies: A Reference and Writers' Handbook* (Lanham MD: Scarecrow Press, 1996).
54. Elizabeth Futas, ed., *Collection Development Policies and Procedures*, 3rd ed. (Phoenix, AZ: Oryx Press, 1995).

55. Barbara Susana Sanchez Vignau and Grizly Meneses, "Collection Development Policies in University Libraries: A Space for Reflection," *Collection Building* 24, no. 1 (2005): 35–43.
56. Kristine Brancolini, *Audiovisual Policies in College Libraries: CLIP Note 14*. (Chicago: Association of College and Research Libraries, 1991); Jennie S. Boyarski and Kate Hickey, eds., *Collection Management in the Electronic Age: A Manual for Creating Community College Collection Development Policy Statements* (Chicago: Community and Junior College Libraries Section, Association of College and Research Libraries, 1994).
57. Jeremy Sayles, "The Textbooks-in-College-Libraries Mystery," *College and Undergraduate Libraries* 1, no. 1 (1994): 81–93.
58. Cynthia Hsieh and Rhonelle Runner, "Textbooks, Leisure Reading, and the Academic Library," *Library Collections, Acquisitions, and Technical Services* 29, no. 2 (2005): 192–204.
59. Elizabeth Parang and Laverna Saunders, eds., *Electronic Journals in ARL Libraries: Policies and Procedures: SPEC Kit 201* (Washington, DC: Association of Research Libraries, 1994); Joseph Straw, "Collection Management Statements on the World Wide Web," *Acquisitions Librarian* 15, no. 30 (2003): 77–86; Karla L. Hahn and Kari Schmidt, "Web Communications and Collections Outreach to Faculty," *College and Research Libraries* 66, no. 1 (2005): 28–37.
60. Lois Cherepon and Andrew Sankowski, "Collection Development at SJU Libraries: Compromises, Missions and Transitions," *Acquisitions Librarian* 15, no. 30, (2003): 63–76; Gary W. White and Gregory A. Crawford, "Developing an Electronic Information Resources Collection Development Policy," *Collection Building* 16, no. 2 (1997): 53–57; Ann T. Power and Jeanne Pavy, "Collection Development in the Field of Communication Studies," *Collection Building* 14, no. 2 (1995): 9–23; Ashley Robinson, "Acquisitions Policy for Contemporary Topics in an Academic Library: Managing the Ephemeral," *Acquisitions Librarian* 15, no. 30, (2003): 87–100.
61. Sheila S. Intner, "Using a Collection Development Curriculum as a Model for Developing Policy Documents in Practice," *Acquisitions Librarian* 15, no. 30 (2003): 49–62.
62. Kristine Brancolini and Rick E. Provine, *Video Collections and Multimedia in ARL Libraries: SPEC Kit 199* (Washington DC: Association of Research Libraries, 1993).
63. Kristine Brancolini, *Video Collections and Multimedia in ARL Libraries: Changing Technologies*, OMS Occasional Paper 19 (Washington DC: Association of Research Libraries, 1997).
64. Gregory A. Crawford and Matthew Harris, "Best Sellers in Academic Libraries," *College and Research Libraries* 62, no. 3 (2001): 216–225.
65. Matthew Harris and Gregory A. Crawford, "The Ownership of Religious Text by Academic Libraries," *College and Research Libraries* 63, no. 5 (2002): 450–458.

66. Michael T. Krieger, "The History and Collection of Popular American Catholic Periodicals," *Serials Librarian* 30, no. 2 (1996): 45–61; Charles A. Schwartz, "Empirical Analysis of Literature Loss," *Library Resources and Technical Services* 38, no. 2 (1994): 133–138.
67. Richard A. Stoddart and Teresa Kiser, "Zines and the Library," *Library Resources and Technical Services* 48, no. 3 (2004): 191–197.
68. Rita A. Marinko and Kristin H. Gerhard, "Representations of the Alternative Press in Academic Library Collections," *College and Research Libraries* 59, no. 4 (1998): 363–371.
69. Kevin P. Mulcahy, "Science Fiction Collections in ARL Academic Libraries," *College and Research Libraries* 67, no. 1 (2006): 15–34.
70. Lorraine J. Pellack, "Industry Standards in ARL Libraries: Electronic and On-Demand," *Collection Building* 24, no. 1 (2005): 20–28.
71. Joseph A. Salem, Jr., *Spatial Data Collections and Services: SPEC Kit 291* (Washington, DC: Association of Research Libraries, 2005).
72. Elizabeth Parang and Laverna Saunders, *Electronic Journals in ARL Libraries: Issues and Trends: SPEC Kit 202* (Washington, DC: Association of Research Libraries, 1994).
73. Parang and Saunders, *Electronic Journals: SPEC Kit 201*.
74. Linda Ashcroft and Colin Langdon, "Electronic Journals and University Library Collections," *Collection Building* 18, no. 3 (1999): 105–114.
75. Linda Ashcroft, "Issues in Developing, Managing and Marketing Electronic Journals Collections," *Collection Building* 21, no. 4 (2002): 147–154.
76. Mary M. Case, "A Snapshot in Time: ARL Libraries and Electronic Journal Resources," *ARL Bimonthly Report*, no. 235 (2004): 1–10.
77. Kristen DeVoe, "When Can Subscriptions Become Electronic-Only? Developing Guidelines for Decision Making," *Against the Grain* 17, no. 6 (2005/2006): 37–42.
78. Sarah Robbins, Cheryl McCain, and Laurie Scrivener, "The Changing Format of Reference Collections: Are Research Libraries Favoring Electronic Access over Print?" *Acquisitions Librarian* 18, no. 35/36 (2006): 75–95.
79. Michael Fosmire and Elizabeth Young, "Free Scholarly Electronic Journals: What Access Do College and University Libraries Provide?" *College and Research Libraries* 61, no. 6 (2000): 500–508.
80. Anna K. Hood, *Open Access Resources: SPEC Kit 300* (Washington, DC: Association of Research Libraries, 2007); Lavoie, Connaway, and O'Neill, "Mapping WorldCat's Digital Landscape."
81. Mary H. Munroe, John M. Haar, and Peggy Johnson, eds., *Guide to Collection Development and Management Administration, Organization, and Staffing* (Landam, MD: Scarecrow Press, 2001).
82. Gordon Rowley, *Organization of Collection Development: SPEC Kit 207* (Washington, DC: Association of Research Libraries, 1995).

83. Robert Kenselaar, "Collection Development Administration at Selected Major U.S. Research Libraries," *Collection Building* 15, no. 1 (1996): 4-9.
84. Bonita Bryant, "Staffing and Organization for Collection Development in a New Century," in *Collection Management for the 21st Century: A Handbook for Librarians*, ed. G. E. Gorman and Ruth H. Miller, 191-206. (Westport, CT: Greenwood Publishing, 1997).
85. William Fisher, "Impact of Organizational Structure on Acquisitions and Collection Development," *Library Collections, Acquisitions, and Technical Services* 25, no. 4 (2001): 409-419.
86. John Webb, "Collections and Systems: A New Organizational Paradigm for Collection Development," *Library Collections, Acquisitions, and Technical Services* 25, no. 4 (2001): 461-468.
87. Susan S. Biery, "Team Management of Collection Development from a Team Member's Perspective," *Collection Management* 25, no. 3 (2001): 11-22.
88. Gail Z. Eckwright and Mary K. Bolin, "The Hybrid Librarian: The Affinity of Collection Management with Technical Services and the Organizational Benefits of an Individualized Assignment," *Journal of Academic Librarianship* 27, no. 6 (2001): 452-456.
89. Chief among these were these articles describing the experience at Cornell's Mann Library: Samuel Demas, "Collection Development for the Electronic Library: A Conceptual and Organizational Model," *Library Hi Tech* 12, no. 3 (1994): 71-80; Samuel Demas, Peter McDonald, and Gregory Lawrence, "The Internet and Collection Development: Mainstreaming Selection of Internet Resources," *Library Resources and Technical Services* 39, no. 3 (1995): 275-290.
90. William C. Robinson, "Academic Library Collection Development and Management Positions: Announcements in *College and Research Libraries News* from 1980 through 1991," *Library Resources and Technical Services* 37, no. 2 (1993): 134-146.
91. John Haar, "Scholar or Librarian? How Academic Libraries' Dualist Concept of the Bibliographer Affects Recruitment," *Collection Building* 12, no. 1/2 (1993): 18-23.
92. Gary W. White, "Academic Subject Specialist Positions in the United States: A Content Analysis of Announcements from 1990 through 1998," *Journal of Academic Librarianship* 25, no. 5 (1999): 372-382.
93. Sheila S. Intner, "Impact of the Internet on Collection Development: Where Are We Now? Where Are We Headed?: An Informal Study," *Library Collections, Acquisitions, and Technical Services* 25, no. 3 (2001): 307-322.
94. Sonja L. McAbee and John-Bauer Graham, "Expectations, Realities, and Perceptions of Subject Specialist Librarians' Duties in Medium-Sized Academic Libraries," *Journal of Academic Librarianship* 31, no. 1 (2005): 19-28.
95. Myoung Chung Wilson and Hendrik Edelman, "Collection Development in an Interdisciplinary Context," *Journal of Academic Librarianship* 22, no. 3 (1996): 195-200.

96. Georgina Hardy and Sheila Corral, "Revisiting the Subject Librarian: A Study of English, Law and Chemistry," *Journal of Librarianship and Information Science* 39, no. 2 (2007): 79-91.
97. Daniel G. Dorner, "The Impact of Digital Information Resources on the Roles of Collection Managers in Research Libraries," *Library Collections, Acquisitions, and Technical Services* 28, no. 3 (2004): 249-274.
98. Examples include Peggy Johnson, *Fundamentals of Collection Development and Management* (Chicago: American Library Association, 2004); G. Edward Evans and Margaret Z. Saponaro, *Developing Library and Information Center Collections*, 5th ed. (Westport CT: Libraries Unlimited, 2005); Peter Clayton and G. E. Gorman, *Managing Information Resources in Libraries: Collection Management in Theory and Practice* (London: Library Association Publishing, 2001); Clare Jenkins and Mary Morley, *Collection Management in Academic Libraries*, 2nd ed. (Aldershot, UK: Gower Publishing, 1999).
99. Haar, "Scholar or Librarian?"
100. John M. Budd and Patricia L. Brill, "Education for Collection Management: Results of a Survey of Educators and Practitioners," *Library Resources and Technical Services* 38, no. 4 (1994): 343-353.
101. Paul Metz, "Collection Development in the Library and Information Science Curriculum," in *Recruiting, Educating, and Training Librarians for Collection Development*, ed. Peggy Johnson and Sheila S. Intner, 87-97 (Westport CT: Greenwood Press, 1994).
102. Virgil L. P. Blake and Thomas T. Surprenant, "Navigating the Parallel Universe: Education for Collection Management in the Electronic Age," *Library Trends* 48, no. 4 (2000): 891-922.
103. Lewis-Guodo Liu and Bryce L. Allen, "Business Librarians: Their Education and Training," *College and Research Libraries* 62, no. 6 (2001): 555-563.
104. Examples include Vicki L. Gregory, *Selecting and Managing Electronic Resources: A How-to-Do-It Manual for Librarians* 101 (New York: Neal-Schuman, 2000); Donnelly Curtis, Virginia M. Scheschy, and Adolfo R. Tarango, *Developing and Managing Electronic Journal Collections: A How-to-Do-It Manual for Librarians* 102 (New York: Neal-Schuman, 2000); Stuart Lee, *Building an Electronic Resource Collection: A Practical Guide* (London: Library Association Publishing, 2002); Susan L. Fales, ed., *Guide for Training Collection Development Librarians* (Chicago: American Library Association, 1996); Andrew White and Eric Djiva Kamal, *E-Metrics for Library and Information Professionals* (New York: Neal-Schuman, 2006).
105. Mary F. Casserly and Judith L. Hegg, "A Study of Collection Development Personnel Training and Evaluation in Academic Libraries," *Library Acquisitions: Practice and Theory* 17, no. 3 (1993): 249-262.
106. Eric Forte and others, "Developing a Training Program for Collection Managers," *Library Collections, Acquisitions, and Technical Services* 26, no. 3 (2002): 299-306.

107. Lucy Elconore Lyons, "The Dilemma for Academic Librarians with Collection Development Responsibilities: A Comparison of the Value of Attending Library Conferences versus Academic Conferences," *Journal of Academic Librarianship* 33, no. 2 (2007): 180–189.
108. Juris Dilevko and others, "Investigating the Value of Scholarly Book Reviews for the Work of Academic Reference Librarians," *Journal of Academic Librarianship* 32, no. 5 (2006): 452–466.
109. Casserly and Hegg, "Study of Collection Development Personnel Training and Evaluation."
110. Jack Siggins, ed., *Performance Appraisal of Collection Development Librarians: SPEC Kit 181* (Washington, DC: Association of Research Libraries, 1992).
111. Kenselaar, "Collection Development Administration."
112. Russell F. Dennison, "Quality Assessment of Collection Development through Tiered Checklists: Can You Prove You Are a Good Collection Developer?" *Collection Building* 19, no. 1 (2000): 24–27.
113. Diana Gonzalez-Kirby, "Case Studies in Collection Development: Setting an Agenda for Future Research," *Collection Building* 11, no. 2 (1991): 2–9.
114. Paul O. Jenkins, "Faculty Priorities: Where Does Material Selection Stand?" *Collection Building* 15, no. 1 (1996): 19–20.
115. Paul O. Jenkins, "Book Reviews and Faculty Book Selection," *Collection Building* 18, no. 1 (1999): 4–5.
116. Hui-Min Kuo, "Surveying Faculty Book Selection in a Comprehensive University Library," *Collection Building* 19, no. 1 (2000): 27–35.
117. Jeffrey D. Kushkowski, "A Method for Determining Faculty Preferences for Monographs," *Collection Building* 19, no. 1 (2000): 17–32.
118. Felix T. Chu, "Librarians-Faculty Relations in Collection Development," *Journal of Academic Librarianship* 23, no. 1 (1997): 15–20.
119. Robert Neville, James Williams III, and Caroline Hunt, "Faculty-Library Teamwork in Book Ordering," *College and Research Libraries* 59, no. 6 (1998): 524–533.
120. Gary W. White, "Collaborative Collection Building of Electronic Resources: A Business Faculty/Librarian Partnership," *Collection Building* 23, no. 4 (2004): 177–181.
121. Ada M. Ducas and Nicole Michaud-Oystryk, "Toward a New Venture: Building Partnerships with Faculty," *College and Research Libraries* 65, no. 4 (2004): 334–348.
122. James H. Walther, "Case Examination of Decision-Making Factors: Do Faculty and Librarians Agree on Criteria Upon Which to Cancel Journals?" in *Advances in Library Administration and Organization*, vol. 23, ed. Edward D. Garten, Delmus E. Williams, and James M. Nyce, 281–331 (Stamford, CT: JAI Press, 2006).
123. Hur-Li Lee, "Collection Development as a Social Process," *Journal of Academic*

- Librarianship* 29, no. 1 (2003): 23–31.
124. Jean Walstrom Haley and James Talaga, "Academic Library Responses to Journal Price Discrimination," *College and Research Libraries* 53, no.1 (1992): 61–70.
125. John S. Spencer and Christopher Millson-Martula, "Serials Cancellations in College and Small University Libraries: The National Scene," *Serials Librarian* 49, no. 4 (2006): 135–155.
126. Paul Metz and John Stemmer, "A Reputational Study of Academic Publishers," *College and Research Libraries* 57, no. 3 (1996): 234–247.
127. Janice Steed Lewis, "An Assessment of Publisher Quality by Political Science Librarians," *College and Research Libraries* 61, no. 4 (2000): 313–323.
128. James H. Sweetland and Peter G. Christensen, "Developing Language and Literature Collections in Academic Libraries: A Survey," *Journal of Academic Librarianship* 23, no. 2 (1997): 119–125.
129. Timothy D. Jewell, *Selection and Presentation of Commercially Available Electronic Resources: Issues and Practices* (Washington, DC: Digital Library Federation Council on Library and Information Resources, 2001).
130. Louis A. Pitschmann, *Building Sustainable Collections of Third-Party Web Resources* (Washington, DC: Digital Library Federation Council on Library and Information Resources, 2001).
131. Jean L. Loup and Helen Lloyd Snoke, "Analysis of Selection Activities to Supplement Approval Plans," *Library Resources and Technical Services* 35, no. 2 (1991): 202–216.
132. Susan Flood, *Evolution and Status of Approval Plans: SPEC Kit 221* (Washington, DC: Association of Research Libraries, 1997).
133. John C. Calhoun, James K. Bracken, and Kenneth L. Firestein, "Modeling an Academic Approval Program," *Library Resources and Technical Services* 34, no. 3 (1990): 367–379.
134. Keren Dali and Juris Dilevko, "Beyond Approval Plans: Methods of Selection and Acquisition of Books in Slavic and East European Languages in North American Libraries," *Library Collections, Acquisitions, and Technical Services* 29, no. 3 (2005): 238–269.
135. Joseph Kurien Pulikuthiel, "Book Procurement on Approval Basis in the Centre for Development Studies Library: A Micro Level Study," *Acquisitions Librarian* 15, no. 29 (2003): 133–148.
136. Betty Galbraith, "Evaluating Blackwell's Collection Manager as a Replacement for Approval Books," *Science and Technology Libraries* 20, no. 4 (2001): 5–12.
137. Pongracz Sennyey, "Assessing Blanket Order Effectiveness: A Neglected Task in Collection Development," *Library Acquisitions: Practice and Theory* 21, no. 4 (1997): 445–454.
138. John C. Calhoun, "Reviews, Holdings, and Presses and Publishers in Aca-

- demical Library Books Acquisitions," *Library Resources and Technical Services* 45, no. 3 (2001): 127-177.
139. Denise Brush, "Circulation Analysis of an Engineering Monograph Approval Plan," *Collection Building* 26, no. 2 (2007): 59-62.
 140. Judith Serebnick, "Selection and Holdings of Small Publishers' Books in OCLC Libraries: A Study of the Influence of Reviews, Publishers, and Vendors," *Library Quarterly* 62, no. 3 (1992): 259-294.
 141. Juris Dilevko and Keren Dali, "Reviews of Independent Press Books in Counterpoise and Other Publications," *College and Research Libraries* 65, no. 1 (2004): 56-77.
 142. Paula Wheeler Carlo and Allen Natowitz, "Choice Book Reviews in American History, Geography, and Area Studies: An Analysis for 1988-1993," *Library Acquisitions: Practice and Theory* 19, no. (1995): 153-165.
 143. Matthew L. Jordy, Eileen L. McGrath, and John B. Rutledge, "Book Reviews as a Tool for Assessing Publisher Reputation," *College and Research Libraries* 60, no. 2 (1999): 132-142.
 144. James H. Sweetland, "Reviewing the World Wide Web: Theory Versus Reality," *Library Trends* 48, no. 4 (2000): 748-768.
 145. Karen Carter Williams and Rickey Best, "E-Book Usage and the Choice Outstanding Academic Book List: Is there a Correlation?" *Journal of Academic Librarianship* 32, no. 5 (2006): 474-478.
 146. Dennis P. Carrigan, "Data Guided Collection Development: A Promise Unfulfilled," *College and Research Libraries* 57, no. 5 (1996): 429-437.
 147. Mary F. Casserly and Anne C. Ciliberti, "Collection Management and Integrated Library Systems," in *Collection Management for the 21st Century: A Handbook for Librarians*, ed. G. E. Gorman and Ruth H. Miller, 58-80 (Westport, CT: Greenwood Publishing, 1997).
 148. Alfred Kraemer and Michael Markwith, "Integrating Vendor Supplied Management Reports for Serials Evaluation: The Medical College of Wisconsin Experience," *Acquisitions Librarian* 12, no. 24 (2000): 65-74.
 149. Judy Luther, *White Paper on Electronic Journal Usage Statistics* (Washington, DC: Council on Library and Information Resources, 2000).
 150. Alan Dawson, "Inferring User Behaviour from Journal Access Figures," *Serials Librarian* 35, no. 3 (1999): 31-41.
 151. Deborah D. Blecic, Joan B. Fiscella, and Stephen E. Wiberley, Jr., "The Measurement of Use of Web-Based Information Resources: An Early Look at Vendor-Supplied Data," *College and Research Libraries* 62, no. 5 (2001): 434-453.
 152. Wonsik Shim and Charles R. McClure, "Improving Database Vendors' Usage Statistics Reporting through Collaboration between Libraries and Vendors," *College and Research Libraries* 63, no. 6 (2002): 499-514.
 153. Karla L. Hahn and Lila A. Faulkner, "Evaluative Usage-Based Metrics for

- the Selection of E-Journals," *College and Research Libraries* 63, no. 3 (2002): 215-227.
154. Dennis P. Carrigan, "Collection Development: Evaluation," *Journal of Academic Librarianship* 22, no. 4 (1996): 274.
 155. Dave Harmeyer, "Potential Collection Development Bias: Some Evidence on a Controversial Topic in California," *College and Research Libraries* 56, no. 2 (1995): 101-111.
 156. John N. Ochola and Phillip J. Jones, "Assessment of the Liaison Program at Baylor University," *Collection Management* 26, no. 4 (2001): 29-41.
 157. Freda Mozenter, Bridgette T. Sanders, and Jeanie M. Welch, "Restructuring a Liaison Program in an Academic Library," *College and Research Libraries* 61, no. 5 (2000): 432-440.
 158. Zheng Ye (Lan) Yang, "University Faculty's Perception of a Library Liaison Program: A Case Study," *Journal of Academic Librarianship* 26, no. 2 (2000): 124-128.
 159. Debbi Dinkins, "Circulation as Assessment: Collection Development Policies Evaluated in Terms of Circulation at a Small Academic Library," *College and Research Libraries* 64, no. 1 (2003): 46-53.
 160. Scott Stebelman, "Using Choice as a Collection Assessment Tool," *Collection Building* 15, no. 2 (1996): 4-11.
 161. Examples include Adrian W. Alexander, "Toward 'The Perfection of Work': Library Consortia in the Digital Age," *Journal of Library Administration* 28, no. 2 (1999): 1-14; Barbara McFadden Allen, "Consortia and Collections: Achieving a Balance between Local Action and Collaborative Interest," *Journal of Library Administration* 28, no. 4 (1999): 85-90; Ross Atkinson, "Uses and Abuses of Cooperation in a Digital Age," *Collection Management* 28, no. 1/2 (2003): 3-20; Bart Harloe, ed., *Guide to Cooperative Collection Development* (Chicago: American Library Association, 1994).
 162. George Soete, *Collaborative Collections Management Programs in ARL Libraries: SPEC Kit 235* (Washington, DC: Association of Research Libraries, 1998).
 163. John Haar, "Assessing the State of Cooperative Collection Development: Report of the Working Group to Map Current Cooperative Collection Development Projects," *Collection Management* 28, no. 3 (2003): 183-190.
 164. Patricia Buck Dominguez and Luke Swindler, "Cooperative Collection Development at the Research Triangle University Libraries: A Model for the Nation," *College and Research Libraries* 54, no. 6 (1993): 470-496.
 165. A. Hays Butler, "Cooperative Collection Development Programs in Law Libraries: Barriers and Benefits," *Legal Reference Services Quarterly* 20, no. 3 (2001): 13-25.
 166. Christy Hightower and George Soete, "The Consortium as Learning Organization: Twelve Steps to Success in Collaborative Collections Projects," *Journal of Academic Librarianship* 21, no. 2 (1995): 87-91.

167. Gay N. Dannelly, "Cooperation Is the Future of Collection Management and Development: OhioLINK and CIC," in *Collection Management for the 21st Century: A Handbook for Librarians*, ed. G. E. Gorman and Ruth H. Miller, 249–262 (Westport, CT: Greenwood Press 1997).
168. Dan C. Hazen, "Cooperative Collection Development: Compelling Theory, Inconsequential Results?" in *Collection Management for the 21st Century: A Handbook for Librarians*, ed. G. E. Gorman and Ruth H. Miller, 263–283 (Westport, CT: Greenwood Press, 1997).
169. Cynthia Shelton, "Best Practices in Cooperative Collection Development: A Report Prepared by the Center for Research Libraries Working Group on Best Practices in Cooperative Collection Development," *Collection Management* 28, no. 3 (2003): 191–222.
170. Rodney Erickson, "Choice for Cooperative Collection Development," *Library Acquisitions: Practice and Theory* 16, no. 1 (1992): 43–49.
171. Marc Langston, "The California State University E-Book Pilot Project: Implications for Cooperative Collection Development," *Library Collections, Acquisitions, and Technical Services* 27, no. 1 (2003): 19–32.
172. Bruce R. Kingma, "Interlibrary Loan and Resource Sharing: The Economics of the SUNY Express Consortium," *Library Trends* 45, no. 3 (1997): 518–530.
173. Marisa Scigliano, "Consortium Purchases: Case Study for a Cost-Benefit Analysis," *Journal of Academic Librarianship* 28, no. 6 (2002): 393–399.
174. Stephen Bosch and others, "Measuring Success of Cooperative Collection Development: Report of the Center for Research Libraries/Greater Western Library Alliance Working Group for Quantitative Evaluation of Cooperative Collection Development Projects," *Collection Management* 28, no. 3 (2003): 223–239.
175. David F. Kohl and Tom Sanville, "More Bang for the Buck: Increasing the Effectiveness of Library Expenditures through Cooperation," *Library Trends* 54, no. 3 (2006): 394–410.
176. Julia A. Gammon and Michael Zeoli, "Practical Cooperative Collecting for Consortia: Books-Not-Bought in Ohio," *Collection Management* 28, no. 1/2 (2003): 77–105.
177. Margo Warner Curl and Michael Zeoli, "Developing a Consortial Shared Approval Plan for Monographs," *Collection Building* 23, no. 3 (2004): 122–128.
178. Terry Ann Rohe, Patrice O'Donovan, and Victoria Hanawalt, "Cooperative Collection Development in PORTALS," *Acquisitions Librarian* 12, no. 24 (2000): 89–101.
179. Wanda V. Dole and Sherry S. Chang, "Consortium Use of the OCLC/AMIGOS Collection Analysis CD: The SUNY Experience," *Library Resources and Technical Services* 41, no. 1 (1997): 50–57.
180. James R. Dwyer, "Consortial Review and Purchase of Networked Resources: The California State University Experience," *Bottom Line* 12, no. 1 (1999): 5–11.
181. Donnice Cochenour and Joel S. Rutstein, "A CARL Model for Cooperative Collection Development in a Regional Consortium," *Collection Building* 12, no. 1/2 (1993): 34–40.
182. Sue O. Medina and William C. Highfill, "Statewide Cooperation to Improve Academic Library Resources: The Alabama Experience," in *Advances in Collection Development and Resource Management*, vol. 1, ed. Thomas W. Leonhardt, 101–137 (Greenwich, CT: JAI Press, 1995).
183. Dennis Stephens, "Multi-Type Library Collection Planning in Alaska: A Conspectus-Based Approach," in *Collection Assessment: A Look at the RLG Conspectus*, ed. Richard J. Wood and Katina Strauch, 137–156 (New York: Haworth Press, 1991).
184. Examples of reviews include Bonnie MacEwan, "An Overview of Collection Assessment and Evaluation," in *Collection Management for the 1990s: Proceedings of the Midwest Collection Management and Development Institute, University of Illinois at Chicago, August 17–20, 1989*, ed. Joseph J. Branin, 95–104 (Chicago: American Library Association, 1992); Bonnie Strohl, *Collection Evaluation Techniques: A Short, Selective, Practical, Current, Annotated Bibliography, 1990–1998* (Chicago: American Library Association, 1999); G. E. Gorman and Ruth H. Miller, "Changing Collections, Changing Evaluation," in *International Yearbook of Library and Information Management 2000–2001: Collection Management*, ed. G. E. Gorman, 309–338 (London: Library Association Publishing, 2000); Kristine R. Brancolini, "Use and User Studies for Collection Evaluation," in *Collection Management for the 1990s: Proceedings of the Midwest Collection Management and Development Institute, University of Illinois at Chicago, August 17–20, 1989*, ed. Joseph J. Branin, 63–94 (Chicago: American Library Association, 1992); Nancy J. Butkovich, "Use Studies: A Selective Review," *Library Resources and Technical Services* 40, no. 4 (1996): 359–368; Thomas E. Nisonger, *Evaluation of Library Collections, Access and Electronic Resources: A Literature Guide and Annotated Bibliography* (Westport, CT: Libraries Unlimited, 2003); Thomas E. Nisonger, *Collection Evaluation in Academic Libraries: A Literature Guide and Annotated Bibliography* (Englewood, CO: Libraries Unlimited, 1992). Examples of guides and manuals include Dora Biblarz, Stephen Bosch, and Chris Sugnet, eds., *Guide to Library User Needs Assessment for Integrated Information Resource Management and Collection Development* (Lanham MD: Scarecrow Press, 2001); Danny P. Wallace and Connie Van Fleet, eds., *Library Evaluation: A Casebook and Can-Do Guide* (Englewood, CO: Libraries Unlimited, 2001).
185. Wanda V. Dole, "Myth and Reality: Using the OCLC/AMIGOS Collection Analysis CD to Measure Collections against Peer Collections and against Institutional Priorities," *Library Acquisitions: Practice and Theory* 18, no. 2 (1994): 179–192.
186. Anna H. Perrault and others, "The Effects of High Median Age on Currency of Resources in Community College Library Collections," *College and Research Libraries* 60, no. 4 (1999): 316–339.

187. Anna H. Perrault and others, "The Florida Community College Statewide Collection Assessment Project: Outcomes and Impact," *College and Research Libraries* 63, no. 3 (2002): 240–249.
188. Beth M. Paskoff and Anna H. Perrault, "A Tool for Comparative Collection Analysis: Conducting a Shelflist Sample to Construct a Collection Profile," *Library Resources and Technical Services* 34, no. 2 (1990): 199–215.
189. Paul Metz and Sharon Gasser, "Analyzing Current Serials in Virginia: An Application of the Ulrich's Serials Analysis System," *portal: Libraries and the Academy* 6, no. 1 (2006): 5–21.
190. Yelena Pancheshnikov, "Course-Centered Approach to Evaluating University Library Collections for Instructional Program Reviews," *Collection Building* 22, no. 4 (2003): 177–185.
191. Michael G. Webster, "Using the AMIGOS/OCLC Collection Analysis CD and Student Credit Hour Statistics to Evaluate Collection Growth Patterns and Potential Demand," *Library Acquisitions: Practice and Theory* 19, no. 2 (1995): 197–210.
192. Jane A. Dodd and Suzanne D. Gyeszly, "Automated Collection Analysis and Development: Business Collection," in *Advances in Library Administration and Organization*, vol. 11, ed. Gerald B. McCabe and Bernard Kreissman, 201–215 (Greenwood, CT: JAI Press, 1993).
193. Mark Grover, "Large Scale Collection Assessment," *Collection Building* 18, no. 2 (1999): 58–66.
194. Anne C. Ciliberti, "Collection Evaluation and Academic Review: A Pilot Study Using the OCLC/AMIGOS Collection Analysis CD," *Library Acquisitions: Practice and Theory* 18, no. 4 (1994): 431–445.
195. Sarojini D. Lotlikar, "Collection Assessment at the Ganser Library: A Case Study," *Collection Building* 16, no. 1 (1997): 24–29.
196. Paul Robert Green, "Monitoring the Usage of Science and Engineering Journals at the Edward Boyle Library, University of Leeds," *Serials Librarian* 25, no. 1/2 (1994): 169–180.
197. Tina E. Chrzastowski and Brian M. Olesko, "Chemistry Journal Use and Cost: Results of a Longitudinal Study," *Library Resources and Technical Services* 41, no. 2 (1997): 101–111.
198. Regina C. McBride and Kathlyn Behm, "A Journal Usage Study in an Academic Library: Evaluation of Selected Criteria," *Serials Librarian* 45, no. 3 (2003): 23–37.
199. Wanda V. Dole and Sherry S. Chang, "Survey and Analysis of Demand for Journals at the State University of New York at Stony Brook," *Library Acquisitions: Practice and Theory* 20, no. 1 (1996): 23–38.
200. Margie Ruppel, "Tying Collection Development's Loose Ends with Interlibrary Loan," *Collection Building* 25, no. 3 (2006): 72–77.
201. Robin Lent, "Women's Studies Journals: Getting the Collection Right!" *Serials Librarian* 35, no. 1/2 (1998): 45–58.

202. Marifran Bustion and John L. Eltinge, "Relationships among Faculty Ratings, Academic Area, and Price for Current Periodicals in a Large Land-Grant University Library," *Library Acquisitions: Practice and Theory* 18, no. 3 (1994): 265–276.
203. Betty E. Tucker, "The Journal Deselection Project: The LSUMC-S Experience," *Library Acquisitions: Practice and Theory* 19, no. 3 (1995): 313–320.
204. Jennifer Knievel, Heather Wicht, and Lynn Silipigni Connaway, "Collection Analysis Using Circulation, ILL, and Collection Data," *Against the Grain* 16, no. 6 (2004/2005): 24–26.
205. John N. Ochola, "Use of Circulation Statistics and Interlibrary Loan Data in Collection Management," *Collection Management* 27, no. 1 (2002): 1–13.
206. Justin Littman and Lynn Silipigni Connaway, "A Circulation Analysis of Print Books and E-Books in an Academic Research Library," *Library Resources and Technical Services* 48, no. 4 (2004): 256–262.
207. Timothy P. Bailey, "Electronic Book Usage at a Master's Level 1 University: A Longitudinal Study," *Journal of Academic Librarianship* 32, no. 1 (2006): 52–59.
208. Tina E. Chrzastowski, Paul M. Blobaum, and Margaret A. Welshmer, "A Cost/Use Analysis of Beilstein's *Handbuch der Organischen Chemie* at Two Academic Chemistry Libraries," *Serials Librarian* 20, no. 4 (1991): 73–84.
209. Steve Black, "Journal Collection Analysis at a Liberal Arts College," *Library Resources and Technical Services* 41, no. 4 (1997): 283–294.
210. Sue Samson, Sebastian Derry, and Holly Eggleston, "Networked Resources, Assessment and Collection Development," *Journal of Academic Librarianship* 30, no. 6 (2004): 476–481.
211. Jean-Pierre V. M. Herubel, "Philosophy Dissertation Bibliographies and Citations in Serials Evaluation," *Serials Librarian* 20, no. 2/3 (1991): 65–73.
212. Margaret Sylvia and Marcella Leshner, "What Journals Do Psychology Graduate Students Need? A Citation Analysis of Thesis References," *College and Research Libraries* 56, no. 4 (1995): 313–318.
213. Erin T. Smith, "Assessing Collection Usefulness: An Investigation of Library Ownership of the Resources Graduate Students Use," *College and Research Libraries* 64, no. 5 (2003): 344–355.
214. Laurel A. Haycock, "Citation Analysis of Education Dissertations for Collection Development," *Library Resources and Technical Services* 48, no. 2 (2004): 102–106.
215. C. Keith Waugh and Margie Ruppel, "Citation Analysis of Dissertation, Thesis, and Research Paper References in Workforce Education and Development," *Journal of Academic Librarianship* 30, no. 4 (2004): 276–284.
216. Margaret J. Sylvia, "Citation Analysis as an Unobtrusive Method for Journal Collection Evaluation Using Psychology Student Research Bibliographies,"

- Collection Building* 17, no. 1 (1998): 20–28.
217. Reba Leiding, "Using Citation Checking of Undergraduate Honors Thesis Bibliographies to Evaluate Library Collections," *College and Research Libraries* 66, no. 5 (2005): 417–429.
 218. Gloriana St. Clair and Rose Mary Magrill, "Undergraduate Use of Four Library Collections: Format and Age of Materials," *Collection Building* 11, no. 4 (1992): 2–15.
 219. Janet Hughes, "Use of Faculty Publication Lists and ISI Citation Data to Identify a Core List of Journals with Local Importance," *Library Acquisitions: Practice and Theory* 19, no. 4 (1995): 403–413.
 220. Claudia Lascar and Loren D. Mendelsohn, "An Analysis of Journal Use by Structural Biologists with Applications for Journal Collection Development Decisions," *College and Research Libraries* 62, no. 5 (2001): 422–433.
 221. Mark Crotteau, "Support for Biological Research by an Academic Library: A Journal Citation Study," *Science and Technology Libraries* 17, no. 1 (1997): 67–83.
 222. Stephanie C. Haas and Kate Lee, "Research Journal Usage by the Forestry Faculty at the University of Florida Gainesville," *Collection Building* 11, no. 2 (1991): 23–25.
 223. Harriet Lightman with Sabina Manilov, "A Simple Method for Evaluating a Journal Collection: A Case Study of Northwestern University Library's Economics Collection," *Journal of Academic Librarianship* 26, no. 3 (2000): 183–190.
 224. Amy Dykeman, "Faculty Citations: An Approach to Assessing the Impact of Diminishing Resources on Scientific Research," *Library Acquisitions: Practice and Theory* 18, no. 2 (1994): 137–146; Thomas Schaffer, "Psychology Citations Revisited: Behavioral Research in the Age of Electronic Resources," *Journal of Academic Librarianship* 30, no. 5 (2004): 354–360.
 225. Shi Jian Gao and Wang Zhi Yu, "A Local Citation Analysis in China: From Wuhan University Faculty in Surveying and Mapping," *Journal of Academic Librarianship* 31, no. 5 (2005): 449–455.
 226. Roger Edward Stelk and F. Wilfrid Lancaster, "The Use of Textbooks in Evaluating the Collection of an Undergraduate Library," *Library Acquisitions: Practice and Theory* 14, no. 2 (1990): 191–193.
 227. Karen Rupp-Serrano, "Putting Theory into Practice: Social Sciences Needs Analysis," *Library Collections, Acquisitions, and Technical Services* 25, no. 4 (2001): 435–447.
 228. Patricia Weaver, "A Student-Centered, Classroom-Based Approach to Collection Building," *Journal of Academic Librarianship* 25, no. 3 (1999): 202–210.
 229. Kristine Condic, "Student Preferences for Purchase Given Limited Library Budgets," *Collection Building* 23, no. 1 (2004): 5–12.
 230. Bette Rathe and Lisa Blankenship, "Recreational Reading Collections in

- Academic Libraries," *Collection Management* 30, no. 2 (2005): 73–85.
231. Larry Hardesty and Collette Mak, "Searching for the Holy Grail: A Core Collection for Undergraduate Libraries," *Journal of Academic Librarianship* 19, no. 6 (1994): 362–371.
 232. Scott E. Siverson, "Bibliographic Checking and Qualitative Assessment; A Modified Approach," in *Acquisitions '91: Conference on Acquisitions, Budgets, and Collections, April 10 and 11, 1991, Minneapolis, Minnesota: Proceedings*, ed. David C. Genaway, 279–290 (Canfield, OH: Genaway & Associates, 1991).
 233. William E. McGrath and Nancy B. Nuzzo, "'Existing Collection Strength' and Shelflist Count Correlations in RLG's *Conspectus for Music*," *College and Research Libraries* 52, no. 2 (1991): 194–203.
 234. Howard D. White, *Brief Tests of Collection Strength* (Westport, CT: Greenwood, 1995).
 235. Thomas M. Twiss, "A Validation of Brief Tests of Collection Strength," *Collection Management* 25, no. 3 (2001): 23–37.
 236. Jennifer Benedetto Beals and Ron Gilmour, "Assessing Collections Using Brief Tests and WorldCat Collection Analysis," *Collection Building* 26, no. 4 (2007): 104–107.
 237. Jay H. Bernstein, "From the Ubiquitous to the Nonexistent: A Demographic Study of OCLC WorldCat," *Library Resources and Technical Services* 50, no. 2 (2006): 79–90.
 238. William A. Britten and Judith D. Webster, "Comparing Characteristics of Highly Circulated Titles for Demand-Driven Collection Development," *College and Research Libraries* 53, no. 3 (1992): 239–248.
 239. Julie Banks, "Weeding Book Collections in the Age of the Internet," *Collection Building* 21, no. 3 (2002): 113–119.
 240. Jefferson P. Selth, Nancy Koller, and Peter M. Briscoe, "The Use of Books within the Library," *College and Research Libraries* 53, no. 3 (1992): 197–205.
 241. Dennis R. Ridley and Joseph E. Weber, "Toward Assessing In-House Use of Print Resources in the Undergraduate Academic Library: An Inter-Institutional Study," *Library Collections, Acquisitions, and Technical Services* 24, no. 1 (2000): 89–103.
 242. Lynn Silipigni Connaway and Clifton Snyder, "Transaction Log Analyses of Electronic Book (eBook) Usage," *Against the Grain* 17, no. 1 (2005): 85–89.
 243. Jean S. Sauer, "Unused Current Issues: A Predictor of Unused Bound Volumes?" *Serials Librarian* 18, no. 1/2 (1990): 97–107.
 244. Maiken Naylor, "Comparative Results of Two Current Periodical Use Studies," *Library Resources and Technical Services* 38, no. 4 (1994): 373–388.
 245. Philip M. Davis, "For Electronic Journals, Total Downloads Can Predict Number of Users," *portal: Libraries and the Academy* 4, no. 3 (2004): 379–392.
 246. Jetta Carol Culpepper, "Watch Out and Listen: Faculty Assess Electronic

- Resources," *Acquisitions Librarian* 12, no. 24 (2000): 29–40.
247. Kathleen Bauer, "Indexes as Tools for Measuring Usage of Print and Electronic Resources," *College and Research Libraries* 62, no. 1 (2001): 36–42.
248. Joanna Duy and Liwen Vaughan, "Usage Data for Electronic Resources: A Comparison Between Locally Collected and Vendor-Provided Statistics," *Journal of Academic Librarianship* 29, no. 1 (2003): 16–22.
249. Joanna Duy and Liwen Vaughan, "Can Electronic Journal Usage Data Replace Citation Data as a Measure of Journal Use? An Empirical Examination," *Journal of Academic Librarianship* 32, no. 5 (2006): 512–517.
250. Nicola McDowell and G. E. Gorman, "The Relevance of Vendors' Usage Statistics in Academic Library E-Resource Management: A New Zealand Study," *Australian Academic and Research Libraries* 35, no. 4 (2004): 322–343.
251. Penny M. Beile, David N. Botte, and Elizabeth K. Killingsworth, "A Microscope or a Mirror?: A Question of Study Validity Regarding the Use of Dissertation Citation Analysis for Evaluating Research Collections," *Journal of Academic Librarianship* 30, no. 5 (2004): 347–353.
252. Louise S. Zipp, "Thesis and Dissertation Citations as Indicators of Faculty Research Use of University Library Journal Collections," *Library Resources and Technical Services* 40, no. 4 (1996): 335–342.
253. Christopher Millson-Martula and Mary Frances Watson, "Evaluating Students' Serials Needs: Effective Methodologies for College Libraries," *College and Undergraduate Libraries* 3, no. 2 (1996): 75–89.
254. Thomas E. Nisonger, "A Methodological Issue Concerning the Use of Social Sciences Citation Index Journal Citation Reports Impact Factor Data for Journal Ranking," *Library Acquisitions: Practice and Theory* 18, no. 4 (1994): 447–458.
255. Thomas E. Nisonger, "Use of the *Journal of Citation Reports* for Serials Management in Research Libraries: An Investigation of the Effect of Self-Citation on Journal Rankings in Library and Information Sciences and Genetics," *College and Research Libraries* 61, no. 3 (2000): 262–275.
256. Klaus G. Altmann and G. E. Gorman, "Can Impact Factors Substitute for the Results of Local Use Studies? Findings from an Australian Case Study," *Collection Building* 18, no. 2 (1999): 90–94.
257. Hye-Kyung Chung, "Evaluating Academic Journals Using Impact Factor and Local Citation Score," *Journal of Academic Librarianship* 33, no. 3 (2007): 393–402.
258. Sandra R. Moline, "Mathematics Journals: Impact Factors and Cents per Thousand Characters," *Serials Librarian* 20, no. 4 (1991): 65–71.
259. Juris Dilevko and Esther Atkinson, "Evaluating Academic Journals without Impact Factors for Collection Management Decisions," *College and Research Libraries* 63, no. 6 (2002): 562–577.
260. Janice Kreider, "The Correlation of Local Citation Data with Citation Data

- from Journal Citation Reports," *Library Resources and Technical Services* 43, no. 2 (1999): 67–77.
261. Sandra E. Goldstein, "The Role of Citation Analysis in Evaluating Chemistry Journals: A Pilot Study," in *Advances in Library Administration and Organization*, vol. 10, ed. Gerald B. McCabe and Bernard Kreissman, 97–112 (Greenwood, CT: JAI Press, 1992).
262. Anita Coleman, "Assessing the Value of a Journal Beyond the Impact Factor," *Journal of the American Society for Information Science and Technology* 58, no. 8 (2007): 1148–1161.
263. Lu An and Junping Qiu, "Research on the Relationships between Chinese Journal Impact Factors and External Web Link Counts and Web Impact Factors," *Journal of Academic Librarianship* 30, no. 3 (2004): 199–204.
264. F. W. Lancaster and others, "The Relationship between Literature Scatter and Journal Accessibility in an Academic Special Library," *Collection Building* 11, no. 1 (1991): 19–22.
265. John C. Calhoun, "Serials Citations and Holdings Correlation," *Library Resources and Technical Services* 39, no. 1 (1995): 53–77.
266. Peter Hernon, "Going Beyond 'Same Old, Same Old,'" *Journal of Academic Librarianship* 23, no. 3 (1997): 169.