

The Trending Academic Library Job Market: An Analysis of Library Position Announcements from 2011 with Comparisons to 1996 and 1988

Therese F. Triumph and Penny M. Beile

The primary objective of the study was to describe the number, types and titles, requested qualifications and skills, salary information, and locations of positions advertised in 2011 on the ALA JobLIST and ARL Job Announcements websites and in the print version of the Chronicle of Higher Education for purposes of determining the current state of the academic library job market in the United States. To investigate changes in the academic library job market and identify emerging trends over a 23-year period, results also were compared to studies that analyzed position announcements from 1996 and 1988. Content analysis of 957 unique academic library job advertisements revealed relative stasis in the market regarding the number of positions advertised, presence of administrative duties, geographic distribution of positions, and, to some extent, educational requirements. However, other comparisons were more dynamic. Specifically, there has been a decline in foreign language skills and prior work experience requirements over time while computer skills are increasingly sought. Perhaps most striking is the proliferation of new position titles that have emerged over time, which serves as an indication that library positions are becoming increasingly specialized.



ask almost any recently graduated librarian about the state of academic library jobs and he or she will tell you they are scarce, the market is extremely competitive, and most jobs require previous work experience. Further, a 2012 *Forbes* article reporting on the best and worst master's degrees, based on salary and employment outlook, stated "library and information science degree-holders bring in \$57,600 mid-career, on average.... and there are expected to be just 8.5 percent more of them by 2020. The low pay rank and estimated growth rank make library and information science the worst master's degree for jobs right now."¹ The U.S. Bureau of Labor Statistics projection of a sluggish growth rate in the number of

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openings over the near future adds to this dismal view.² At the same time, the skills and qualifications a librarian needs for entry into academic librarianship are also debated. Some sources posit that a minimum requirement for entry into the library profession includes a master's degree in library science (or other library or information science degree, such as the MLIS or MIS, which are used interchangeably in this article), while others suggest this prerequisite is not enough to be competitive in the job market.³

The *Occupational Outlook Handbook* reports strong computer skills (along with qualities such as excellent communication and interpersonal skills) are essential for librarians entering the profession, while *C&RL News'* "2012 Top Ten Trends in Academic Libraries" emphasizes the need for new computer skill sets due to emerging roles related to "data curation, digital resource management and preservation, assessment, scholarly communication and support for faculty instruction and student learning."⁴ John Budd adds that academic librarians practice a style of librarianship that may require more than the basic MLS degree, leading him to ponder whether students interested in a career in academic libraries should take coursework specific to these skills for an entry-level job.⁵

Reports and anecdotal observations like these paint a bleak picture of the academic library job market and in turn motivated the researchers to update studies conducted by Reser and Schuneman, who analyzed academic library positions using job announcements advertised in 1988, and Beile and Adams, who used job advertisements from 1996, by examining position announcements from 2011.⁶ This cross-sectional technique allows for a three-point comparison of academic library jobs over a 23-year period. Researcher and author Earl Babbie asserts that "approximate conclusions about processes that take place over time" can be drawn from several cross-sectional studies; thus, using this approach allows for inferences to be drawn about trends in the academic library job market.⁷

The primary objective of the study was to describe the number, types and titles, requested qualifications and skills, salary information, and locations of positions advertised from January 1 through December 31, 2011, on the ALA JobLIST and ARL Job Announcements websites and in the print version of the *Chronicle of Higher Education* for purposes of determining the current state of the academic library job market in the United States. To investigate changes in the academic library job market over time and identify emerging trends, results also were compared to studies using 1996 and 1988 position announcements.

Literature Review

The state of the academic library job market and required skills and qualifications associated with academic library positions have been the topic of numerous investigations, and a search for studies using position announcements as an indication of the job market yielded a variety of reports in the professional literature. These studies tended to fall into distinct categories: reports that investigated particular job titles⁸ or job titles with specific skills⁹ over time, those that looked at experience levels requested in position announcements,¹⁰ and those that focused on the call for unique skills across the spectrum of library job advertisements.¹¹

Although each report adds to our understanding of the ongoing evolution of academic library jobs and skills (both across all position announcements and those limited to specific job titles), Beile and Adams' 1996 investigation is the last reported study that looked at the breadth of academic library position vacancies advertised in one year and analyzed the announcements across a number of dimensions. The following review summarizes literature that has been published since the Beile and Adams report and is limited to research studies based on position descriptions for four-year academic libraries in the United States.

Cardina and Wicks examined the changing roles of reference librarians over time and reported the mean number of responsibilities associated with the position increased from 10.65 to 14.07 between 1991 and 2001.¹² The traditional tasks of in-person reference, collection development, and instruction have evolved to include a number of technology-driven duties, such as e-mail reference service, web page design, and online tutorial development.¹³ Cardina and Wicks concluded computer technologies have impacted the reference librarian position by increasing the type and number of skills required for the position. Wang, Tang, and Knight likewise studied the “contemporary development” of reference librarians in their content analysis of advertised positions from 1966 to 2009.¹⁴ Wang et al. reported “a strong growth in reference services” in comparison to other academic library positions and identified new duties and responsibilities associated with the position, including liaison and outreach.

Boff, Singer, and Stearns described the evolution of the outreach librarian position and report that the position can have two very different job responsibilities.¹⁵ The first type focuses on outreach to students and faculty who learn or teach remotely, which requires a librarian with strong computer, reference, and online teaching skills.¹⁶ The second type of outreach position provides outreach to targeted populations and concentrates on reference, instruction, and collection development to those populations.¹⁷ Looking specifically at Latin American and Caribbean studies (LACS) librarians, an example of the second type of outreach librarian, Alonso-Regalado and Van Ullen commented on educational requirements when they state, “the ideal educational background for a LACS librarian is an MLS and also a master’s degree in a field related to Latin American studies.”¹⁸ In addition, experience in collection development, reference and instruction, general technology skills, and strong Spanish language skills with a working knowledge of Portuguese were all desirable or required skills in the LACS position announcements.¹⁹ Alonso-Regalado and Van Ullen’s conclusions support Zhang’s findings related to foreign language skill requirements in job advertisements. Zhang found foreign language requirements have decreased since the mid-1980s; however, foreign language skills are still valued in positions like bibliographer and area studies, cataloging, and special collections.²⁰

Another study conducted by John Shank investigated the “blending” of position responsibilities and found that the number and specialization of positions is increasing.²¹ Shank defines a blended librarian as “an academic librarian who combines the traditional skill set of librarianship with the information technologist’s hardware/software skills, and the instructional or education designer’s ability to apply technology appropriately in the teaching-learning process.”²² Shank went on to emphasize that librarians need to possess a variety of skills for this position and reported that the majority of job ads related to the position require candidates to possess computer skills, be conversant with Internet capabilities, and be able to use emerging instructional technologies.²³ In another study related to instruction librarian positions, Gold and Grotti add that administrative skills, subject expertise, and leadership skills appeared more often in position announcements than position-specific qualifications, such as knowledge or expertise with ACRL’s proficiency standards.²⁴

Limiting their research to science librarian positions, Bychowski, Caffrey, Costa, Moore, Sudhakaran, and Zhang used content analysis to compare two time periods, 1998–2001 and 2008–2010, to examine “how the requirements and recommended skills for science librarian positions have changed over the past decade.”²⁵ The authors concluded that, although “science librarianship itself may have changed, the qualities expected in job applicants have not.”²⁶ Bychowski et al. suggest that what employers are looking for with regard to science librarians has not changed over time, and job qualifications are still centered on a basic grounding in library science and good people

skills.²⁷ Perhaps due to differing data collection time frames, this is in stark contrast to what others have reported, including Kim, Addom, and Stanton, who analyzed the skills required of eScience librarians.²⁸ Kim et al. describe eScience librarians as the bridge between the science professional and the IT professional, noting that managing “the deluge of scientific information” requires highly specialized skills like data curation, database design, project management, and essential knowledge of scientific research and information system management, among several others.²⁹

Comparable trends are seen in technical services positions. Deeken and Thomas tracked changes in technical services position announcements over a ten-year period, finding a large increase in the number of job titles as well as an increase in the number of advertisements over time.³⁰ More dramatically, they report computer skills and previous work experience are required for almost all technical service jobs and hypothesize that the 10 percent of jobs reposted is due to the difficulty in filling technical services jobs because of previous work experience requirements.³¹ Similarly, Hanna Kwasik’s study of job openings for serial librarians found specialized knowledge of cataloging was required along with “high levels of knowledge and competency in the position.”³² Kelli Hansen’s investigation of special collections openings revealed that entry-level openings were scarce; instead, these positions generally require experience, prefer a second master’s degree, and desire specialized subject knowledge of the collection.³³

Researchers who investigated specific job titles over time tend to agree that traditional position titles have become increasingly segmented or specialized, quite often attributing this to the impact of technology and changing position responsibilities.³⁴ Many of these studies also have reported additional, specialized requirements beyond the MLS degree, such as a second master’s degree, foreign language proficiency, and experience or a high level of competency related to the position responsibilities.³⁵ Still other researchers have focused on the requirement of the MLS or prior work experience, or technology skills requested across all types of academic library jobs. Results of studies that examined the requirement of an MLS degree in academic library job ads report unequivocally that the MLS remains an essential requirement for the vast majority of academic librarian positions.³⁶ Based on a review of 4,000 job advertisements over thirty years (1975–2005), Grimes and Grimes add that “the MLS degree is still a prerequisite for a majority of academic librarian positions” with the qualification that non–customer service types of librarian positions do not require a master’s degree as often.³⁷ Wang et al. also determined that the MLS remains the “standard” for minimum educational requirements related to academic library job positions.³⁸

Several studies that explored the prevalence and associated requirements of entry-level job advertisements appeared in the literature. Detmering and Sproles conducted two studies; one analyzed reference positions and another looked at entry-level openings in the Southeastern United States.³⁹ Summaries of both studies included reports that job advertisements for entry-level positions often require information literacy and instruction experience, awareness of scholarly communication changes in the academy, and basic or specialized technology skills. The study, confined to the Southeast, added that entry-level openings in the technical services area still require some experience and knowledge.⁴⁰ Similarly, Eamon Tewell’s analysis of employment opportunities finds nearly “75 percent of the positions were non-entry level” due to the experience requirements listed in the advertisement.⁴¹ In a related study, Reeves and Hahn found that most entry-level jobs are in the public services division and suggest that experience should be “part of every student’s portfolio.”⁴² Overall, researchers have established that, even at the entry level, a variety of responsibilities are expected of new librarians, many related to emerging technologies.⁴³

Tracking how technology has affected job requirements, Mathews and Pardue analyzed the request for information technology skills across all job openings in a five-month period in 2007 to 2008.⁴⁴ They reported that 72 percent of jobs require at least one information technology–related skill, and over half of those ads asked for at least one additional technology skill.⁴⁵ Lori Goetsch commented on the changing requirements of an academic librarian after looking at vacancy announcements during three specific years—1995, when the Netscape browser went public; 2000, when Google was introduced to the world; and 2005, when YouTube was rolled out—and concluded that the number of job titles is expanding and “we have quickly transitioned from viewing technology-related skills as special or unique to considering them essential.”⁴⁶

With the exception of the Bychowski et al. study, which reported that qualities expected in science library job applicants had not changed over a ten-year period throughout the early part of the century, other studies consistently found that 1) additional, specialized duties associated with a particular position are often technology-driven, 2) the MLS degree remains the minimum educational requirement for entry into the field, and 3) most positions require prior work experience or facility with a particular skill. However, no studies were uncovered that investigated these questions across the wealth of academic library job postings in a particular year or compared them to earlier studies. As such, a study that relied on the methods developed by Reser and Schuneman in 1988, and used by Beile and Adams in their 1996 update, was conducted to address the following questions:

- What is the current state of academic library jobs as it relates to geographic location and types of positions available, skills and requirements sought, and salaries offered?
- Is the number of academic library job announcements increasing or decreasing over time?
- What other emerging trends with academic library positions can be discerned, as indicated by an analysis of job announcements?

Methodology

To compare results of the current study to the Beile and Adams analysis of 1996 job postings and Reser and Schuneman’s 1988 investigation, a similar methodology was employed.⁴⁷ All academic library job advertisements that were posted to the ALA JobLIST and ARL Job Announcements websites or that appeared in the *Chronicle of Higher Education* in 2011 were collected. Position announcements collected for the 1996 and 1988 studies relied on print advertisements that appeared in *American Libraries*, *College & Research Libraries News*, and the *Chronicle of Higher Education*. Current researchers kept the same sources but relied on online position announcements for *American Libraries* and *C&RL News* supplemented with files generated by ALA JobLIST and ARL Careers, which contained 1,476 and 409 online and placement ads, respectively. The ALA JobLIST contained advertisements for private, school, and public libraries, in addition to academic libraries, but only academic library announcements were retained.

Further, all academic library position announcements that included a specific website were retrieved; if the website provided more information than the initial listing, the additional information was coded and entered into the database. No listservs, local papers, or online job boards were used in this data search. Upon gathering all academic library position announcements from 2011, duplicates were identified and discarded, as were positions advertised for less than one year, those from two-year colleges, and those with less than full-time status. Earlier studies did not include dean

and director positions, so, for purposes of comparison, those job announcements also were not analyzed. This resulted in 957 unique position announcements, which were coded using categories initially developed by Reser and Schuneman.⁴⁸ The categories were state and region, job title, division (electronic, public, or technical), presence of administrative duties (department or division head), computer and foreign language skills, level of prior experience requested, educational requirements, and minimum advertised salary.

The geographic location of each position was coded to the state level, and states were grouped into regions defined by the *ALA-APA Salary Survey*, thus allowing for state-by-state and region-by-region comparisons.⁴⁹ Each position announcement was coded for the presence of work experience and then further classified into required or preferred. If work experience was not mentioned, then positions were coded as “not stated.” The 1988 and 1996 studies both placed entry-level positions into a broader category of “none/not stated.”⁵⁰ For the purposes of this study, entry-level positions were maintained as a separate category but combined into “none/not stated” when comparing to earlier studies.

Similarly, computer skills were coded as required, preferred, or not stated. A coding of “implied” was used when ads did not specifically state the need for computer skills; but, based on listed responsibilities, such as OCLC searching or creating library guides, it was apparent that computer skills were required for the job. Job announcements were also coded for any mention of foreign language skills, whether required or preferred, and further distinguished by level of proficiency. Education requirements were coded as either ALA-accredited MLS or not, as well as requests for additional advanced degrees. Advanced degrees were further coded by type of degree and included doctorate, unspecified additional graduate degree, law degree, or second master’s degree.

Three people coded the position announcements. To verify that coders were coding announcements similarly, 30 job advertisements were coded by each person and then compared across the group. Questions related to coding were discussed and a response decided upon as they emerged. For example, special collections job ads in 1996 were classified as public services while preservation job ads were classified as technical services. In the current study, the archivist/curator position appeared, but a question arose as to whether they should be coded as public or technical services positions. After discussing this with librarians in the position, a decision was made to code archivist/curator positions under technical services unless the announcement emphasized distinct public services-type skills, such as instruction or outreach. Thus, archivist/curator positions could be considered either public or technical, depending on the description. Likewise, other positions, such as scholarly communication and special collections, appeared in different divisions, depending on responsibilities described in the position announcement.

Further, if the job advertisement included more than one position, the initial job title was coded; and if any job title appeared in less than six advertisements, those titles were grouped into an “other” category under the specific division. Finally, 947 job titles fell within the broad divisions of electronic services, public services, and technical services; however, ten job advertisements—human resources, development, and business operations—did not fall neatly into those divisions and were labeled “administrative.” The administrative announcements were included in all analyses unless otherwise noted. All data were input into Microsoft Excel by a single librarian, reviewed collectively by the primary researchers, and analyzed using SPSS, version 22.

Results

The U.S. Bureau of Labor Statistics (BLS) reports that 156,100 librarians were employed in 2010 and projects the profession will grow only by 7 percent by 2020. This is markedly lower than projections for total United States employment, which is expected to increase at an average rate of 14 percent between 2010 and 2020.⁵¹ The BLS includes all types of librarian positions (public, special, school/media, and academic) in their report; however, the current study was limited solely to academic library positions. Although not a one-to-one comparison, academic library positions advertised in 2011 (n=957) were 6.3 percent higher than 1996 (n=900), which is a rate similar to projections for the total library job market from 2010 to 2020. In reviewing the overall job openings and the relative consistent growth rate, our study did not see a spike in openings due to the “graying” of the profession or for any other specific reason. The slow growth rate in recent history is congruent with projections for the job market over the next few years.

Among the more striking observations to emerge from comparing results of this study to earlier studies is the proliferation in the number of library job titles over time. Reser and Schuneman reported twelve job titles in their 1988 study, while Beile and Adams found 19 unique titles (with six or more ads) in 1996.⁵² However, the “other” category was present in each of the three divisions, bringing the total number of job title categories to 22 in 1996. Thirty job titles with six or more announcements were found in the current study, with titles appearing fewer than six times categorized as “other,” for a total of 33 job title categories. The increasing number of new job titles appears mainly to be driven by emerging technologies or responsibilities associated with managing digital materials. Technology-related skills requested by employers ranged from web-based searching, building online instruction tutorials, and using the library’s management system (LMS) to computer programming and website design. Table 1 includes a comparison of job titles that appeared in the 1996 Beile and Adams study with those found in 2011. Note that some positions now appear in more than one division.

Job titles that emerged in the electronic services division include digital, electronic resources, scholarly communication, and web services. Two categories created by Beile and Adams for the 1996 study, electronic/technical (primarily concerned with implementing and maintaining compact disks, LANs, and computer hardware and software) and electronic/public (responsible for website development and online searching), were not used in the current study.

Job titles in the public services division that appeared in sufficient quantity to be coded as new job titles for the current study are access services, assessment, general librarian, liaison, outreach, resident, scholarly communication, and user services librarian. It is interesting to note that, with the advent of access services librarians, only four circulation positions were advertised (and placed into the “other public services” category), possibly indicating a trend toward having one librarian over both units. Seven resident job announcements had a public services emphasis and were placed in the public services division, while two were coded as electronic services (but integrated into “other electronic services,” as there were fewer than six entries for that particular title). It is presumed that the number and types of resident positions advertised will vary by year.

Also, although reference and liaison librarian position descriptions are similar and could feasibly be combined for analysis, they were deemed sufficiently different to be coded as separate positions due to varying emphases of the positions. Positions were coded as reference if duties described in the ad were primarily focused on reference, instruction, and collection development, while liaison librarian responsibilities stressed outreach to academic departments and faculty and were expected to create partnerships and increase the visibility of the library and its services on campus.

TABLE 1
Comparison of Job Titles from 1996 to 2011
 (Ten Administrative Positions are Excluded)

Electronic Services		Public Services		Technical Services	
1996	2011	1996	2011	1996	2011
Head of ES	Head of ES	Reference	Reference	Cataloging	Cataloging
Electronic/ Technical		Head of PS	Head of PS	Head of TS	Head of TS
Electronic/ Public Services		Branch	Branch	Acquisitions	Acquisitions
Systems	Systems	Circulation	Categorized as "Other"	Serials	Serials
Other	Other	Collection Development	Collection Management	Preservation	Preservation
		Government Documents	Government Documents	Other	Other
		ILL	ILL		
		Instruction	Instruction		
		Music			
		Special Collections	Special Collections		
		Other	Other		
Titles That Emerged by 2011					
	Digital		Access Services		Archivist/ Curator
	Electronic Resources		Assessment		Electronic Resources
	Scholarly Communication		General Librarian		Metadata
	Web Services		Liaison		Special Collections
			Outreach		
			Resident		
			Scholarly Communication		
			User Services		

Finally, job titles that emerged in the technical services division include archivist/curator, electronic resources, metadata, and special collections. Depending on the description of responsibilities found in the position announcement and line of reporting (when available), the title of scholarly communication tended to be classified as either electronic services or public services; electronic resources was coded in either electronic services or technical services; and special collections was coded as either

public services or technical services. Emerging technologies positions (n=9) appeared for the first time but were divided across all three divisions. Any job title that had less than six openings was consolidated into the “other” job title category; thus, emerging technologies does not appear as a discrete job title in the analysis.

Division

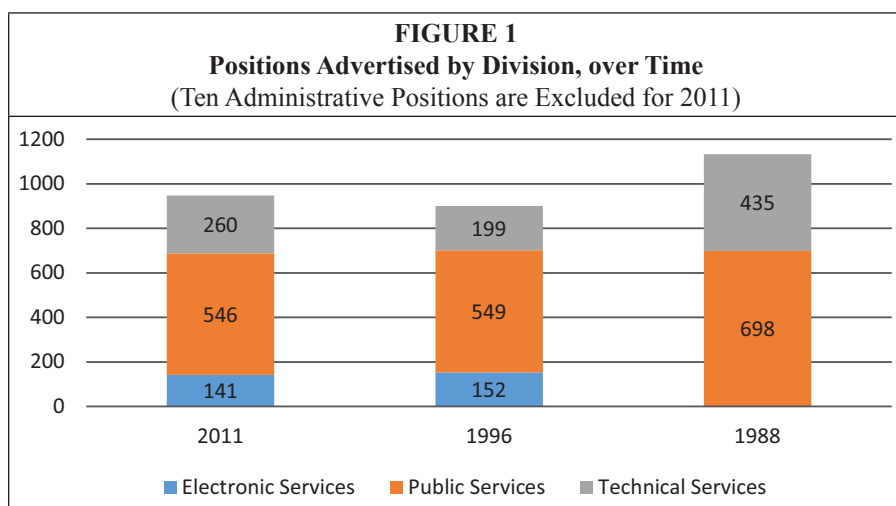
Public services job announcements comprised 57.2 percent (n=546) of the total advertisements for 2011 compared to 27.2 percent (n=260) for technical services and 14.7 percent (n=141) for electronic services. Although the current study is not limited to the entry-level job market, the results support Reeves and Hahn’s study, which reported that the public services division dominates the entry-level job market.⁵³ More than half, or 17 of the 33 total 2011 job titles, are public services positions. As shown in table 2, the top three position titles most widely sought all fall within the public services

TABLE 2
Positions Advertised by Division and Job Title, 2011
 (Ten Administrative Positions are Excluded; n=947)

Electronic Services			Public Services			Technical Services		
Title	n	%	Title	n	%	Title	n	%
Digital	44	4.6	Reference	158	16.7	Archivist/ Curator	60	6.3
Systems	40	4.2	Liaison	98	10.3	Cataloging	46	4.9
Electronic Resources	19	2.0	Instruction	67	7.0	Special Collections	33	3.4
Scholarly Communication	13	1.4	Collection Development	42	4.4	Metadata	26	2.7
Web Services	11	1.1	Head PS	39	4.1	Acquisitions	23	2.4
Head of ES	6	0.6	Access Services	17	1.8	Electronic Resources	22	2.3
Other ES	8	0.8	Branch	13	1.4	Head of TS	21	2.2
			Outreach	13	1.4	Preservation	9	0.9
			Special Collections	13	1.4	Serials	7	0.7
			ILL	10	1.0	Other TS	13	1.4
			Scholarly Communication	10	1.0			
			Assessment	9	0.9			
			General Librarian	8	0.8			
			Government Documents	7	0.7			
			Resident	7	0.7			
			User Services	6	0.6			
			Other PS	29	3.0			
TOTAL			TOTAL			TOTAL		
Electronic	141	14.7	Public	546	57.2	Technical	260	27.2

division and include reference (n=158, 16.7%), liaison* (n=98, 10.3%) and instruction (n=67, 7.0%). The two technical services job titles with the most advertisements were archivist/curator (n=60, 6.3%)† and cataloging (n=46, 4.9%), and the two electronic services jobs with the largest number of advertisements were digital (n=44, 5.3%)‡ and systems (n=40, 4.2%).

The total number of positions advertised by division (see figure 1) has fluctuated somewhat over time. Although still comprising more than half of all advertised positions, 2011 public services job advertisements (n=546, 57.1%) have decreased slightly compared to 1996 (n=549, 61.0%) and 1988 (n=698, 61.6%).⁵⁴ Technical services position advertisements also have waxed and waned; the number and percent of technical services jobs in 2011 (n=260, 27.2%) have increased compared to 1996 (n=199, 22.1%), but they are still well below the high in 1988 (n=435, 38.4%).⁵⁵ Finally, electronic services advertisements for 2011 (n=141, 14.7%) have remained relatively steady compared to 1996 (n=152, 16.9%).⁵⁶ No electronic services positions were coded for the 1988 study.



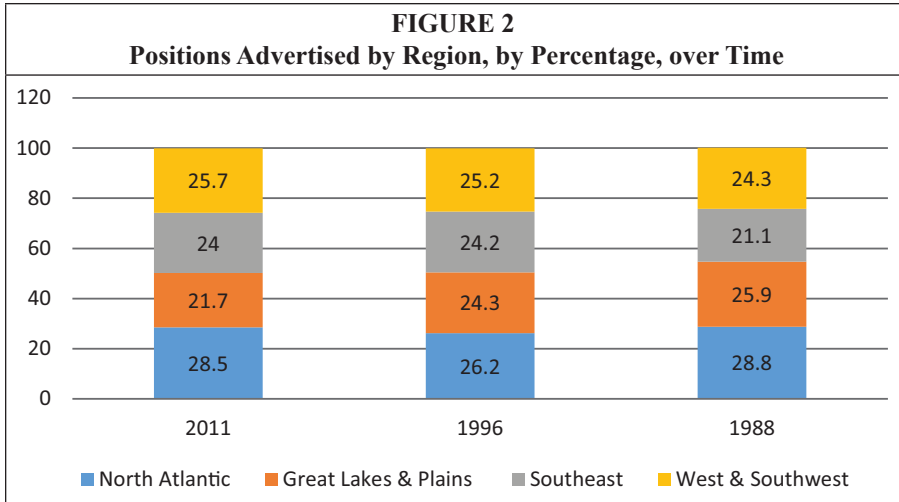
Geographic Location

Academic library positions were available in all 50 states with the exception of Delaware, which did not have any position announcements that met the study’s criteria for inclusion. As shown in figure 2, the number of positions advertised by region is fairly evenly distributed and has remained remarkably constant over time. Similar to the 1996 and 1988 studies, the North Atlantic region has the highest number of position announcements (n=273, 28.5%) compared to the remaining regions. The West and Southwest region enjoys the second most advertisements (n=246, 25.7%), while the Southeast (n=230, 24%) and the Great Lakes and Plains (n=208, 21.7%) regions complete the breakdown. The Great Lakes and Plains region is seeing a slight downward trend in the percent of positions advertised; from a high of 25.9 percent in 1988 to 24.3 percent in 1996 to a low of 21.7 percent in 2011.

* Note that 100 liaison positions were identified; 98 were coded as public services and two were coded as technical services.

† Similarly, a total of 63 archivist/curator positions were identified; 60 were coded as technical services and three were coded as public services.

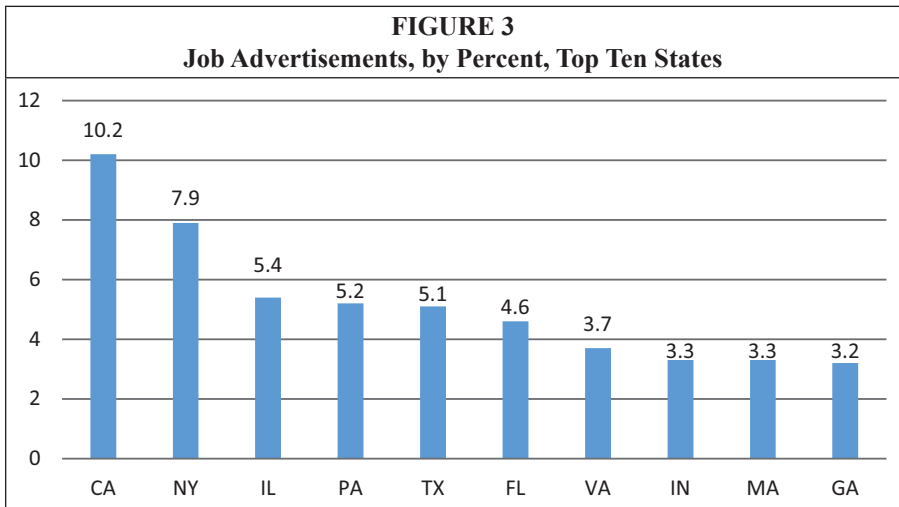
‡ A total of 51 digital positions were identified; 44 were coded as electronic services, five were coded technical services, and two were coded as public services.



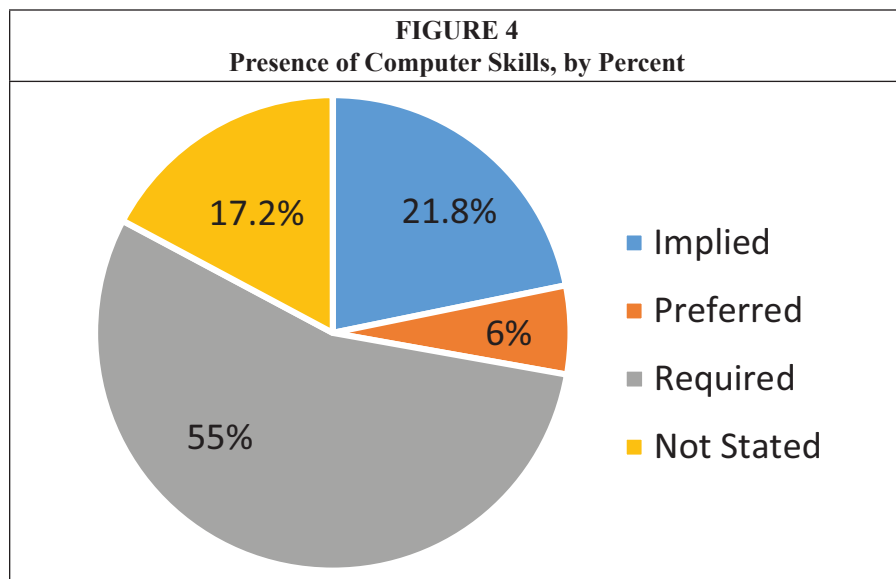
Not unexpectedly, the most populated states in each region tended to advertise for the greatest number of positions. The top three recruiting states from the North Atlantic region were New York (n=76, 7.9%), Pennsylvania (n=50, 5.2%), and Massachusetts (n=31, 3.2%). The top three from the West and Southwest region were California (n=98, 10.2%), Texas (n=49, 5.1%), and Oregon (n=16, 1.1%); from the Southeast region, Florida (n=44, 4.6%), Virginia (n=35, 3.7%), and Georgia (n=31, 3.2%); and from the Great Lakes and Plains region, Illinois (n=52, 5.4%), Indiana (n=32, 3.3%), and Michigan (n=22, 2.3%). The states with the largest number of job advertisements are listed in figure 3. More than 50 percent (n=498, 51.9%) of all job advertisements were located in ten states: California, New York, Illinois, Pennsylvania, Texas, Florida, Virginia, Indiana, Massachusetts, and Georgia.

Computer Skills

As previously mentioned, the proliferation of library job titles over time suggests the profession is becoming increasingly specialized, and much of this appears to be driven by new technologies and digital materials. Computer skills were required in



526 (55.0%) position announcements, preferred in 57 (6.0%), implied in 209 (21.8%), and not stated in 165 (17.2%). Computer skills were coded as “implied” when ads did not specifically state the need for computer skills but based on listed responsibilities, such as OCLC searching or creating library guides, but it was apparent that computer skills were required for the job (see figure 4).



Further, many of the position ads were very brief and did not list responsibilities or skills in depth, so it is quite plausible that the 165 ads that did not address computer skills still expect candidates to be conversant with software and applications relative to their areas of specialization. This finding supports Shank and other researchers who also discuss the prevalence of technology and/or computer skills in their studies.⁵⁷

Data from 2011 show a 23.7 percent increase in the request for computer skills compared to 1996 results and more than a 100 percent increase compared to 1988 results.⁵⁸ In a breakdown by division, computer skills were present in 97.2 percent (n=137) of jobs in the electronic services division, 83.8 percent (n=218) of technical services openings, and 79.3 percent (n=433) of public services openings. Based on these findings and many of the aforementioned studies, computers—and the skills needed to use them—are pervasive in the library profession, and it is expected that librarians have an array of basic and specialized computer skills to be competitive in the academic library job market.⁵⁹

Foreign Language Skills

Of the 957 ads, only 96 (10%) required (n=52, 5.4%) or preferred (n=44, 4.6%) a foreign language. This is a decrease of 6.3 percent compared to the 1996 study (n=147, 16.3%) and a decrease of 14.1 percent compared to the 1988 study (n=273, 24.1%).⁶⁰ The number of position announcements listing a foreign language preference has steadily declined over time.

The 96 position announcements from 2011 that listed a foreign language preference were spread across thirteen job titles, with most concentrated in the areas of cataloging (n=19, 41.3% of the job title), liaison (n=27, 27.5%), special collections (n=8, 24.2%), archivist/curator (n=10, 16.7%), collection development (n=7, 16.7%), and reference (n=10, 6.3%). By job title, acquisitions, branch, digital, head of technical services, ILL, metadata,

and resident had five or fewer positions with foreign language preferences. Cataloging, liaison, and special collections are the heaviest requestors of foreign language skills by percentage of position announcements requesting foreign language skills.

By division, positions that required or preferred foreign language skills were concentrated in technical services (n=43, 16.5% of positions in that division), followed by public services (n=52, 9.5%) and electronic services (n=1, <1%). Over time, the percentage of job advertisements in technical services requiring or preferring foreign language skills has decreased 14.2 percent compared to the 1996 study (n=61, 30.7%) and 20.5 percent compared to the 1988 study (n=162, 37%).⁶¹ Public services positions requiring or preferring foreign language skills have likewise declined, from 16.0 percent in 1988 to 14.4 percent in 1996 to 9.5 percent in 2011, as has electronic services, with a decrease from 4.6 percent in 1996 to less than 1 percent in 2011. Table 3 summarizes foreign language skills, by division.

The level of foreign language skill was also collected, with skill levels coded as working, reading, and fluent as used by the 1988 and 1996 studies. As seen in table 4, and similar to earlier studies, this investigation likewise found that, although technical services position ads required or preferred foreign language skills at a higher level than other divisions, those positions were less likely to require fluency of the language. Instead, positions requesting fluency were more than twice as likely to be found in public services (n=22, 42.3% of those advertisements requesting language skills) than technical services (n=9, 20.9%). At the working knowledge level, these findings are reversed; technical services position ads (n=20, 46.5%) are almost twice as likely to request working knowledge of a foreign language as public services ads (n=13, 25%).

TABLE 3
Foreign Language Skill Requirements, by Division*

Foreign Language Skills	Electronic Services		Public Services		Technical Services	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Not stated	140	99.3%	494	90.5%	217	83.5%
Preferred	0	0%	19	3.5%	25	9.6%
Required	1	.7%	33	6.0%	18	6.9%
TOTAL	141	100%	546	100%	260	100%

*Ten administrative positions are excluded; n=947.

TABLE 4
Foreign Language Fluency Requirements, by Division*

Foreign Language Fluency	Electronic Services		Public Services		Technical Services	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Not stated	0	0%	1	2.0%	0	0%
Working	1	100%	13	25.0%	20	46.5%
Reading	0	0%	16	30.7%	14	32.6%
Fluent	0	0%	22	42.3%	9	20.9%
TOTAL	1	100%	52	100%	43	100%

*Analyzed for the 96 positions that indicated foreign language requirements or preferences.

Work Experience

Of the 957 unique position announcements, 570 (59.6%) required work experience, 137 (14.3%) preferred work experience, 236 (24.7%) did not state any requirements, and 14 (1.5%) were classified as entry-level positions. Significant differences in the levels of work experience among divisions were found. Supporting Deeken and Thomas' findings, the technical services division (n=174, 66.9%) required work experience at a higher level than electronic services positions (n=81, 57.4%) and public services positions (n=309, 56.6%).⁶² Table 5 lists levels of work experience requested, by division.

Prior Work Experience	Electronic Services		Public Services		Technical Services	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Not Stated	40	28.4%	138	25.3%	56	21.5%
Entry Level	2	1.4%	10	1.8%	2	.8%
Preferred	18	12.8%	89	16.3%	28	10.8%
Required	81	57.4%	309	56.6%	174	66.9%
TOTAL	141	100%	546	100%	260	100%

*Ten administrative positions are excluded; n=947.

Although only 26.2 percent (n=250) of positions advertised in 2011 were entry level or not stated, the specification of required or preferred prior work experience has decreased over time. The number and percentage of position announcements that required or preferred prior work experience in 2011 (n=707, 73.9%) were lower than 1996 ads (n=719, 79.9%) and 1988 ads (n=932, 82.4%).⁶³

Administrative Duties

Administrative responsibilities, such as head or assistant head of a department, unit, or division were found in 248 (25.9%) of positions advertised. This is a slight increase from the 22.4 percent (n=202) of positions with administrative duties advertised in 1996, but a marked decrease from the 39 percent (n=436) reported for the 1988 study.⁶⁴ Of the 248 positions with administrative duties, 143 were department heads, 95 were division heads, nine were assistant department heads, and one was an assistant division head.

As shown in table 6, the percentage of job advertisements with administrative responsibilities has declined over time but is fairly comparable across divisions. The technical services division (n=70, 26.9% of technical services positions) has the highest percent of jobs with administrative duties, followed by public services (n=142, 26.0%) and electronic services (n=33, 23.4%).

The percent of technical services positions with administrative duties has declined precipitously over time, from 46.0 percent in the 1988 study to 34.7 percent in the 1996 study to 26.9 percent in 2011.⁶⁵ This is compared to public services positions with administrative duties, which had a high of 34 percent in 1988, a low of 20.2 percent in 1996, and 26.0 percent in 2011.⁶⁶ Electronic services positions with administrative duties increased from 14.5 percent in 1996 to 23.4 percent in 2011.⁶⁷

Education Requirements

Degree requirements were found in 909 (95.0%) of the 957 position advertisements in 2011. The ALA-accredited MLS was explicitly required in 862 of job advertisements, which is 90.1 percent of all job advertisements, or 94.8 percent of those with education

TABLE 6
Administrative Duties, by Division*

Administrative Duties	Electronic Services		Public Services		Technical Services	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
None	108	76.6%	404	74.0%	190	73.1%
Assistant Department Head	1	0.7%	6	1.1%	2	0.8%
Department Head	17	12.1%	82	15.0%	43	16.5%
Assistant Division Head	0	0%	1	0.2%	0	0%
Division Head	15	10.6%	53	9.7%	25	9.6%
TOTAL	141	100%	546	100%	260	100%
*Ten administrative positions are excluded; n=947.						

requirements appearing in the ad. This is slightly lower than the 1996 report, which found 90.6 percent of all job advertisements required an ALA-accredited MLS, and much lower than the 1988 study, which reported that 98 percent of all ads required the ALA-accredited MLS.⁶⁸

By division, electronic services educational requirements appeared in 133 ads and the ALA MLS was required in 119 (89.5%). This is in contrast to public services at 96.7 percent (520 ads listed educational requirements and 503 required the ALA MLS) and technical services at 96.0 percent (248 ads listed educational requirements and 238 required the ALA MLS). It is also worth noting that, of the ten administrative announcements, two did not state educational requirements; of the remaining eight, only two required the ALA MLS. There appears to be a trend toward lessening requirements for an ALA-accredited MLS as entry into the profession, and it is seen most dramatically in administrative services and electronic services positions.

Requirements found in the remaining 47 advertisements where education level was mentioned ranged from a bachelor degree (n=24, 2.5%) to non-ALA MLS (n=5, .5%) and no MLS (n=18, 1.8%). There was not a pattern tying these 47 openings with a specific job title; they ranged from one archivist/curator opening not requiring an MLS but requiring a graduate degree to a data set position not requiring a MLS but requiring a doctorate. It is quite plausible that institutions that advertised for degrees outside of the ALA MLS were seeking other skill sets. For example, five of the 24 bachelor degree ads preferred graduate degrees, as well as two of the five non-ALA MLS ads and 16 of the 18 non-MLS ads. Approximately half (n=23, 49%) of the 47 ads that stated educational requirements but did not require an ALA-accredited MLS went on to indicate other types of graduate degrees that were preferred or accepted.

The request for advanced degrees was classified as not stated, preferred, or required. Of the 957 position announcements, 221 (23.1%) listed additional educational requirements; of those, 159 (16.6%) were preferred and 63 (6.6%) were required. Compared to the 235 (26.1%) job ads requesting additional educational requirements in 1996 and 268 (23.7%) in 1988, this trend has remained markedly stable over time.⁶⁹

Of the job ads that listed an advanced degree as preferred (n=159, 16.6%), nine requested a doctorate; 102, an unspecified additional graduate degree; eight, a law degree; and 40, an additional master's degree. Of the 63 (6.6%) of advertisements that required advanced degrees, four required a doctorate; 29, an unspecified additional graduate degree; ten, a law degree; and 20, an additional master's degree.

As summarized in table 7, advanced degrees were required or preferred in 156 (28.6%) of public services advertisements, 40 (15.4%) in the technical services division, and 21 (14.9%) in the electronic services division. Of the 217 job ads that preferred or required an advanced degree, 71.9 percent (n=156) were found in public services, followed by technical services (n=40, 18.4%) and electronic services (n=21, 9.7%). Table 8 reports the number and percent of job ads requiring or preferring an advanced degree by division, across the three studies. Over time, public services ads requiring or preferring advanced degrees (n=156) have fluctuated by 10.6 percent, from a high of 82.5 percent in 1996 to a low of 71.9 percent in 2011. Electronic services ads have remained markedly stable, with approximately 10 percent of ads that prefer or require advanced degrees found in this division. Technical services ads have seen the most fluctuation; from a high of 21.1 percent in 1988 to 8.5 percent in 1996 and back up to 18.4 percent in 2011.

Advanced Degree Requirements	Electronic Services		Public Services		Technical Services	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
None/Not Stated	120	85.1%	390	71.4%	220	84.6%
Preferred	15	10.6%	112	20.5%	31	11.9%
Required	6	4.3 %	44	8.1%	9	3.5%
TOTAL	141	100%	546	100%	260	100%

*Ten administrative positions are excluded; n=947

Division	2011		1996		1988	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Electronic Services	21	9.7%	21	9.0%	NA	NA
Public Services	156	71.9%	194	82.5%	214	79.9%
Technical Services	40	18.4%	20	8.5%	54	20.1%
TOTAL	217	100%	235	100%	268	100%

*Ten administrative positions are excluded; n=947.

Minimum Salary

Salary information was present in only 35.2 percent (n=337) of all job advertisements for 2011. This relatively small percent, combined with the fact that only minimum salaries were entered and do not include any additional benefits such as healthcare, retirement, or vacation that would be awarded upon accepting the job, limits the salary information noted in this section and therefore should not serve as an indication of what the market is bearing for any particular position. Salary surveys that rely on actual salaries will yield more reliable information for job seekers.

Given these qualifications, salaries ranged from \$28,500 to \$200,000 (mean=\$48,731, median=\$45,320) for the 337 ads reporting minimum salaries. It bears mentioning that the \$200,000 salary is an outlier; the next highest salary is \$105,000. The median salary

of \$45,320 was low compared to the U.S. Bureau of Labor Statistics May 2010 report of \$54,500 and the \$66,260 disclosed in the 2010–2011 *ARL Annual Salary Survey*.⁷⁰ This discrepancy could be due to the small number of positions advertising minimum salaries, the use of minimum salaries offered compared to actual wages collected by the Bureau of Labor Statistics, and possibly that higher earning positions are less likely to be vacated and therefore advertised. Mean minimum salaries of advertised positions by job title are summarized in table 9.

Title	N	n	Mean Salary (\$)
Access Services	17	6	47,639
Acquisitions	23	8	47,706
Archivist/Curator	63	21	46,087
Cataloger	46	16	46,411
Collection Development	42	13	53,637
Digital	51	22	48,674
Electronic Resources	41	17	44,469
Instruction	67	25	47,553
Liaison	100	29	44,955
Metadata	26	10	46,062
Reference	158	64	46,302
Scholarly Communication	24	8	42,257
Systems	40	16	47,865
*Only positions with six or more advertised minimum salaries are reported.			

The average minimum advertised salary for electronic services (n=61), public services (n=182), and technical services (n=88) minimum advertised salaries were very similar across division, at \$47,987, \$48,292, and \$48,648 respectively. Not surprisingly, increasing administrative duties tended to result in higher advertised minimum salaries. Electronic services division head salaries (n=4 with reported salaries) ranged from \$40,000 to \$81,699 with a mean average of \$69,174. Public services division head salaries (n=10) ranged from \$47,000 to \$200,000 with a mean of \$78,551 but, when adjusted for the outlier salary of \$200,000, dropped to \$65,057. Technical services division head salaries (n=7) ranged from \$32,000 to \$105,000 with a mean of \$61,814.

Electronic services department head salaries (n=8) ranged from \$34,833 to \$75,000 with a mean average of \$53,921, compared to public services department head salaries (n=26), which ranged from \$38,000 to \$76,500 with a mean of \$54,453, and technical services department head salaries (n=13), which ranged from \$45,000 to \$90,000 with a mean of \$55,575. This is in contrast to salaries for electronic services positions with no administrative duties (n=49), which ranged from \$28,500 to \$63,190 with a mean average of \$45,288; nonadministrative public services salaries (n=143), which ranged from \$30,000 to \$75,000 with a mean of \$44,957; and nonadministrative technical services salaries (n=66), which ranged from \$29,000 to \$60,000 with a mean of \$45,831.

The mean salary for division head positions fluctuated across divisions by more than 10 percent, or \$7,360; however, having only four electronic services division

TABLE 10
Average Salaries across Division, by Administrative Levels*

	Title	N	Mean Salary (\$)
Division Heads	Electronic Services	4	69,174
	Public Services	10	65,057**
	Technical Services	7	61,814
Department Heads	Electronic Services	8	53,921
	Public Services	26	54,453
	Technical Services	13	55,575
No Administrative Duties	Electronic Services	49	45,288
	Public Services	143	44,957
	Technical Services	66	45,831
*Ten administrative positions are excluded, as are assistant department head and assistant division head positions			
**Adjusted for \$200,000 outlier			

head salaries and relatively small numbers for public and technical salaries precludes drawing any significant conclusions about the range in salaries for advertised division head positions. Reser and Schuneman likewise found variation at the division head level, with heads of public services enjoying salaries approximately 10 percent higher than technical services division heads.⁷¹ This is in contrast to Beile and Adams, who reported very little difference in salaries across divisions for heads of those units.⁷²

Salaries for department head positions across divisions were fairly evenly distributed, with a difference of \$1,654 from the low of \$53,921 for electronic services department heads to a high of \$55,575 for technical services department heads. Even less variation was seen regarding the average salaries for positions without administrative responsibilities across division. "Frontline" librarian salaries ranged from \$44,957 for public services positions to \$45,831 for technical services librarians, a difference of \$874. Reser and Schuneman also reported minimal differences between divisions at the department head and frontline levels, although Beile and Adams found that salaries for systems positions with no administrative duties were significantly higher than reference and cataloging positions.⁷³ Table 10 shows average salaries across division, by administrative level.

Discussion

The primary purpose of the study was to investigate the state of the academic library job market based on criteria such as the number, types, and titles of open positions, qualifications and skills sought, and salary information and geographic locations of positions. Of equal importance was the comparison of 2011 data to results of studies that analyzed position ads from 1988 and 1996 to identify changes over time. Results indicate that characteristics of position announcements have remained relatively static in some areas, such as the number of positions being advertised, presence and levels of administrative duties, geographic distribution of positions, educational requirements, and prior work experience.

Foremost among the findings is the actual number of positions posted. In 2011, 957 job advertisements met the criteria for inclusion. This illustrates an increase of 6.3 percent in open positions compared to 1996 and is in line with the somewhat sluggish growth projections for the profession. The increase in positions advertised may

serve as one indicator of the health of the market; however, library science students and those considering library school would do well to investigate other factors, such as the number of new graduates entering the market each year, to estimate the competitiveness of the market.

In a 2011 blog post, Brett Bonfield argues that the number of library school graduates is trending upward over time and that library schools may be graduating more people than the market can bear.⁷⁴ Studies that investigate the health of the market or librarianship as a profession must take into account the number of graduates relative to the number of positions. Even then it is difficult to estimate the number of job openings per graduate, for two reasons: first, not all library school graduates will move into academic libraries, even if it is their first choice; and second, it is even more difficult to measure the number of job-holding librarians who are in the job market.

A qualification that has remained relatively stable over time is the ALA-accredited MLS, which is still a foundational requirement for academic library positions. Of the job advertisements that listed educational requirements, 94.8 percent required an ALA-accredited MLS—a finding that validates other research reports.⁷⁵ Even the study of a single job title like Kwasiik's review of serial librarian positions states "a master's degree in Library and Information Science from an accredited institution was the one constant requirement in all job advertisements studied."⁷⁶ However, while the ALA MLS requirement appeared in 96.7 percent of public services and 96.0 percent of technical services jobs, over 10 percent of positions advertised for electronic services sought educational credentials other than the ALA MLS.

Other positions, especially those that tend to reside in Administration (human resources, external relations, and the like) and those that require new skill sets, like data set, institutional repository, or data management librarians, also tended to require the ALA MLS slightly less than traditional library positions in public and technical services. This may be due to academic libraries not being able to recruit librarians with the requisite skills to serve in these positions, thus leading them to advertise for candidates with degrees or experience that matches the responsibilities of the position. To prepare students for academic library work and to maintain enrollment levels, it would behoove library schools to develop curricula in support of new and emerging skill sets required by academic libraries.

While the ALA MLS continues to be a foundational requirement for most academic library jobs, previous work experience also continues to be highly sought. Although the percent of advertised positions that require or prefer work experience has declined by 8.5 percent since 1988, it was present in almost 74 percent of ads in 2011. This finding supports Tewell's report that new and entry-level librarians were eligible for only 20.7 percent of academic library jobs posted in 2010–2011.⁷⁷ Detmering and Sproles add that 53 percent of all entry-level public services advertised positions still require or prefer experience in information literacy or library instruction, which suggests that even entry-level librarians would do well to have experience and skills relevant to the position being sought.⁷⁸

Although characteristics of advertisements mentioned above were somewhat stable over time, others were much more dynamic. The request for foreign language skills has declined, while computer skills are increasingly sought. Foreign language skill requirements have decreased from a high of 24.1 percent in 1988 to 10 percent of position announcements in 2011. This supports Zhang's report that fewer positions now call for foreign language skills.⁷⁹ Zhang further added that those announcements that continue to request foreign language skills tend to be clustered around particular positions, specifically cataloging, special collections, and area studies and bibliographer librarians. Results of this study likewise found that position announcements listing a

foreign language preference tended to be concentrated in certain positions. The top three positions requesting foreign language skills included cataloging, liaison, and special collections.

Further, by coding position announcements on the level of foreign language skill requested (working, reading, or fluent), results of the current study indicate that technical services positions are more likely to require working knowledge of a language, while positions in public services were more likely to request fluency. Specific languages being requested were not coded; therefore, the researchers were not able to investigate relationships among type of position and language, or various states or geographic regions and language. Collecting and analyzing this type of information could reveal whether fluency in a language tended to be associated with large populations of non-English speakers or speakers of English as a second language.

Of course, it was not surprising to see the dramatic increase in the request for computer skills over time. This trend alone, however, adds little to our understanding of the evolution of academic library jobs. Studies from 1996 and 1988 only coded for the presence and level of computer skills in position announcements, and not for knowledge of specific applications or specialized skills. Doing so in future studies could offer support for the assumption that it is not just computer skills typically found in academic libraries that are being sought, but that librarians are now expected to have new skill sets that support new and evolving roles.

If the proliferation of position titles is any indication, academic library jobs are becoming increasingly specialized—and many require new job skills. This phenomenon has been reported in other studies,⁸⁰ and several attribute it to the impact of technology on the field.⁸¹ Among the job titles that first appear in the 2011 study are digital, electronic resources, emerging technologies, metadata, scholarly communication, and web services librarians. These titles likewise indicate that the primary drivers are emerging technologies and digital materials. The 2012 Top Ten Trends article adds that “data curation, digital resource management and preservation, assessment, scholarly communication, and support for faculty instruction and student learning” require new computer skill sets.⁸² Certainly, positions from all levels and across all divisions require librarians to be adept with a variety of computer and online technologies and to have a wide array of specialized skills.

Libraries are responding to these needs in a variety of ways. Some institutions have looked internally and “grew their own” specialist by retraining librarians and reorganizing their reporting structures. When asked about his ongoing search for a scholarly communication librarian, a collection development officer at a large academic institution relayed that, after three failed searches, he had approached someone at his institution serving in a different capacity and asked her to take over the role, then provided the professional development and training needed for her to be effective in the new position.⁸³ Others have conducted external searches and successfully found candidates who have the needed skill sets or the potential to develop them. In some cases, libraries are hiring candidates who already possess specialized skill sets, whether they have the ALA MLS or not. The ALA MLS remains the standard minimum requirement for entry into the profession, but it is losing ground, especially in electronic services and some new positions. This phenomenon should be tracked over time to ascertain whether it is a trend, and, if so, what might be the implications for library schools and libraries over the long term.

In addition to the proliferation of job titles over time, the researchers found that many of the job titles appeared across divisions for the first time. Position titles and responsibilities are no longer constrained to a particular division. Traditional position titles, like reference, cataloging, and systems, are still firmly entrenched in the tradi-

tional division structure of public services, technical services, and electronic services, but it was common to find other titles appearing in multiple divisions. For example, emerging technologies librarian positions were placed in all three divisions based on either the line of reporting or the primary responsibility of the position. Scholarly communication, electronic resources, and special collections positions also crossed division lines, illustrating the variety and types of duties associated with each position.

Library managers may want to consider the changing nature of academic library work in light of emerging positions and make changes that support new roles and responsibilities. After reviewing job titles that emerged primarily in public services against division priorities, one of the authors adjusted position assignments and descriptions. Some traditional services, such as face-to-face instruction and reference desk transactions, had been declining over time, while others (notably online instruction support and virtual reference) were growing dramatically. The shift in the use of library services and a newly implemented subject librarian model led to reducing assignment allocations to services with declining use and implementing dedicated outreach responsibilities for first-year experience students, undergraduate research students, graduate students, and international students. The rebalancing of existing duties also allowed the library to internally "grow" an emerging technologies/end user experience librarian. Administrators who are planning to advertise for vacant positions or those who are considering new positions or restructuring existing positions may likewise find results of the study of use.

This article reports results of an analysis of academic library positions posted in 2011 and compares results to 1996 and 1988 studies. This three-point study can inform other analyses of position descriptions (most often conducted to investigate skills and qualifications needed in general or for a specific type of position) and serve as a basis for continuing examination of the overall academic library job market. Certainly, further replication of this study will strengthen our understanding of the evolving job market and emerging trends identified to date. Further, researchers who are tracking particular job titles or specific skills and qualities by using content analysis of position announcements can request access to the data set of results of the study, with use determined by agreement.

Notes

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