

Sharing the Load: Distribution of Electronic Resources Management Responsibilities Among US Academic Librarians

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The Version of Record of this manuscript has been published and is available in *Serials Review*,
2019, DOI: 10.1080/00987913.2018.1553089.

Abstract: While electronic resources now constitute a major component of most academic library collections, and the Electronic Resources Librarian (ERL) position has become commonplace, the field of Electronic Resources librarianship is still not entirely standardized. Responsibility for the various tasks associated with electronic resources management (ERM) may fall on a single specialized professional, or be divided up among positions in the organization; responsibility for a given task may or may not be shared by multiple personnel. This article presents the results of a survey of academic librarians in the US who work with electronic resource collections, asking them about the range of tasks for which they are responsible, whether these responsibilities are shared, and how this work may be combined with other areas of responsibility. The results indicate that librarians who work in the field of ERM are responsible for a roughly similar workload whether or not they hold the title of ERL, though certain tasks are more likely to be the responsibility of ERLs. ERM responsibilities in general are frequently shared by multiple personnel within academic libraries. At institutions that spend more on electronic resources, certain specialized responsibilities associated with ERLs are much more frequently shared with paraprofessionals.

Keywords: academic libraries, electronic resources management, job responsibilities

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Introduction

As we approach the end of the second decade of the 21st century, online electronic information resources can no longer be regarded as a new phenomenon for academic libraries. Electronic resources (ER) are now firmly in the mainstream of academic library collections, and may even predominate over physical items in some institutions; at the same time, the position of Electronic Resources Librarian (ERL), or some variant of this title, has become commonplace.

Research and discussions published over the past twenty years indicate that the evolution of the technical characteristics of ER, and the growth of the relative importance of these resources in academic library collections, has been accompanied by changes in the kinds of tasks associated with managing them, and in the ways organizations have organized the efforts of professionals and paraprofessionals to perform this work. While the early days of ER librarianship were characterized by attempts to deal with the challenges of managing new formats, the field has now settled to the point where a certain practical understanding exists regarding the kinds of work normally associated with ER. This is reflected, for example, in the widespread acceptance of the ER lifecycle model (Pesch, 2009), as well as in the programming of specialized professional forums such as the Electronic Resources & Libraries (ER&L) and NASIG conferences. Nevertheless, it is still not altogether clear to what extent individual ERLs

are working at a similar set of tasks, nor whether they are the sole professionals responsible for the management of ER at their institutions. More broadly, we might ask whether academic libraries are concentrating responsibility for all the work associated with the management of ER collections in the hands of a single librarian or self-contained unit, or are dispersing these responsibilities among a variety of positions in the organization. Are the properties of ER so complex and unique that a specialist position, with specialized knowledge and abilities, is required to handle them? Or, has their novelty worn off to the extent that they have become just another format, integrated into the wider acquisition and resource management workflows of academic libraries?

The present study is intended to contribute to our knowledge of the state of ER librarianship at a recent point in time (the autumn of 2016), by analyzing responses to a survey of US academic librarians about their responsibility for a range of tasks commonly associated with electronic resources management (ERM). Rather than focusing exclusively on ERLs, the research takes as a starting point the various *tasks* normally involved in ERM, investigating how they are taken on by professionals who may have a variety of titles and roles; it specifically addresses how responsibilities in various areas may be shared among multiple librarians and paraprofessionals, or conversely, concentrated in the workload of a single position, and looks at how librarians responsible for various aspects of ERM combine this work with other areas of responsibility.

Literature Review

Evolution of ER Librarianship

While ER were included in academic library collections during the 1980s, mainly in the form of CD-ROMs (Ferguson, 1988), sustained consideration of issues related to the management of such resources emerged only when internet-based resources, and World Wide Web use in general, became current in the second half of the 1990s. The earliest mention of a specialized ER librarian role in the literature was He & Knee's discussion of the Electronic Services Librarian, a position they characterized as a "hallmark of the electronic age" (1995, p. 7). They described this role as occupying a space between public services and systems departments, delivering instruction, technical support, and reference services for internet-based information resources.

Subsequent early discussions of ER (Dygert, 1998; Duranceau, 1998; Montgomery & Sparks, 2000; Miller, 2000) centered on the challenges posed by the new online formats themselves, focusing mainly on the electronic serials which were emerging as the predominant type of ER in this period. At this point, challenges were typically associated with the novelty of the format, as illustrated by the range of issues listed by Hall (1997), which includes:

determining how access can best be provided; developing selection criteria and incorporating e-journals into traditional collection development policies; determining whether to store or archive electronic journals; developing appropriate acquisitions

procedures; determining how electronic materials should be indexed and cataloged; and considering staff training and other resource costs (p. 21, quoted in Miller, 2000, p. 650).

Dygert (1998) and Duranceau (1998) identified new complexities involved in the ongoing management of online journals with respect to acquisition (particularly licensing), metadata, and user outreach, that demanded new skills from librarians and called for relatively high-level paraprofessional staff support compared to their print counterparts. Montgomery & Sparks (2000) also remarked on the demand for higher skill levels from staff imposed by the shift to electronic journals at Drexel University from 1998 onward.

Early case studies of the shift to ER in academic library collections (Montgomery & Sparks, 2000; Duranceau, 1998; Gerhard, 1998) discuss, in varying degrees of detail, the development of new professional positions with a specialized focus on the tasks involved in the acquisition and management of these resources. Later studies appearing in the 2000s (Zhang & Haslam, 2005; Jasper & Sheble, 2005; Graves & Arthur, 2006; Dollar, Gallagher, Glover, Marone, & Crooker, 2007; Clendenning, Duggan, & Smith, 2010) described situations in which ERLs (or librarians in a related position) were already in place. The emphasis in these later discussions was generally on new workflows and adaptation of paraprofessional staff roles to new ways of managing technical services tasks and processes mainly related to electronic journals; they focused on the distribution of elements of the ERM workflow among retrained paraprofessional staff working under the guidance of the specialist librarian, with little attention to the specific workload on the librarians working in this area. Dollar, Gallagher, Glover, Marone, & Crooker (2007), and Clendenning, Duggan, & Smith (2010), however, did note that assigning various

more routine ER acquisition-related responsibilities to paraprofessionals allowed librarians to focus on more complex tasks such as ERM system implementation, licensing, and e-journal package management.

Many discussions of the ERL role appearing around the turn of the 21st century, and in subsequent years as well, emphasized that the management of electronic resources required types of work transcending the boundaries of traditional departmental lines in the academic library, and involving contributions from multiple departments or divisions that may have worked more independently up to that point. For example, Gerhard wrote that "ER management crosses not only departmental but divisional lines" (1998, p. 282), while Duranceau stated that

digital resources have driven the creation of new roles while causing the traditional lines between public and technical service to blur. In this new digital world, the lines between acquisitions, collections, and systems work seem particularly fluid and unclear (1998, p. 94).

Statements such as these suggest that it was the novelty of the format itself that called for the institution of a specialized professional position devoted to managing the various processes associated with acquisition and maintenance of ER, an observation made explicitly by Hsiung:

The creation of the ER librarian position was meant to fill a void generated by the need for special skills that were unique in the management of the digital environment..... So far, the position of the ER librarian has been assigned a wide variety of responsibilities as well as to many, different library units (2007, p. 35).

Boss & Schmidt's somewhat later discussion of the role of ERL (2007) returned to this theme of hybridity to highlight the unique nature of the position with respect to traditional library work:

The ER Librarian is a cross between a reference librarian, a collection development officer, an acquisitions manager, a cataloger, and an information technology specialist.

An ER librarian also has to be familiar with contracts and be a skilled negotiator (121).

This indicates that workflows and departmental structures were perhaps not adapting as quickly as they might to accommodate the requirements of the increasingly prevalent electronic formats.

Staffing for ERM: Concentration versus Distribution of Responsibilities

A central focus of more general reflections on staffing for ERM (for example, Collins, 2008; Elguindi & Schmidt, 2012) has been the question of whether responsibilities are better distributed across existing positions in various departments or units of the library (for example, collection development, acquisitions, serials, systems, and so on), or concentrated in a specialized position or unit devoted to ER. While the ERL typically figures in both models, the coordinating function of this role takes on greater importance in the distributed arrangement. Geller's review of literature on ERM practices (2006) identified varying trends for dealing with ER duties, with some institutions adding them on to existing job descriptions and others creating new positions. She discerned no clear pattern in how different institutions were addressing the need for new staff in terms of numbers added, reporting lines, or assignment of responsibilities. Duranceau & Hepfer (2002) argued that the distributed model is preferable in

that "it allows all of the staff to work with the resources that are becoming the most significant and predominant in libraries today" (pp. 317-318), noting that this type of arrangement requires a team approach involving good communication. Conger (2004), on the other hand, recommended centralizing ER responsibilities in one or two positions, who would nevertheless need to encourage contributions to ER work from staff throughout the organization. Stachokas (2009) appears to have been alone in advocating for the creation of a separate department devoted to ER, based on the specialized requirements of the format, and the need for almost continuous contact with vendors throughout the ER lifecycle. He stressed that a single librarian supported by a single paraprofessional is not sufficient to support all the work involved in maintaining such a significant component of a library's collections, and also compared ER to special collections as "a specialized department with its own unique functions and best practices" (p. 210), notably licensing. Elguindi & Schmidt's more recent discussion (2012) argued against the notion of siloing electronic resources work in a specialized department, regarding this model as another way of treating ERM simply as an "add-on" to print workflows that are diminishing in importance. Echoing the comments of Duranceau & Hepfer from 10 years earlier (2002), they maintain that sidelining ERM as a specialized workflow puts the skills of staff who continue in traditional technical service positions in danger of becoming obsolete.

Research on Electronic Resources Librarianship and ERM

The discussions summarized above demonstrate that academic librarians have long been reflecting on how best to address the complex requirements associated with the management

of ER collections. Alongside this work, a number of empirical studies have been conducted on the ways in which academic libraries actually handled ERM responsibilities. Duranceau & Hepfer's survey (2002) on staffing levels for tasks related to ER acquisition and maintenance was the earliest published inquiry into how electronic resources were managed at academic libraries: responses from fifteen institutions indicated to the authors that, while libraries had been adding staff to deal with these tasks, mainly by assigning new responsibilities to existing positions, the level of staff increase did not correspond to the growth of the electronic collections requiring management. Grahame & McAdam (2004) analyzed 69 responses to a survey of ARL libraries regarding organizational and staffing issues related to ERM: 70% of these had created new positions dedicated to ER (though it was not noted whether these were librarian or paraprofessional positions), 62% had rewritten existing job descriptions, and 58% had reassigned positions. The survey asked about distribution of responsibilities for only some of the ERM tasks addressed, finding that ER selection, cataloging, and acquisitions activities were more commonly distributed among multiple personnel, while negotiation, signature, and management of licenses were more often the responsibility of a single individual. Link maintenance and troubleshooting duties were also reported to be frequently distributed, often across multiple departments. Albitz & Shelburne conducted a survey of ERLs and library directors at ARL institutions to accompany their analysis of position announcements (2007), with responses indicating that most ERLs were at this point working in technical services or collections departments rather than in public services, and, interestingly, that their positions almost always originally included responsibilities that were subsequently transferred to other

personnel, including online catalog support, web management, reference, online searching, instruction, and scholarly communications.

Collins (2008) analyzed survey responses from 13 academic libraries regarding staffing for ERM, looking at responsibility for new subscriptions and trials, licensing, resource registration and authentication for access, cataloging, e-journal management tools, acquisitions, and usage statistics. Responses identified 56 positions as primarily responsible in some way for these tasks at the respondent institutions, of which 75% were held by librarians and 25% by paraprofessional staff; slightly less than half of the positions had been created within the five years previous to the survey, in a variety of departments and covering a variety of functions, but a greater number had resulted from reassignment of responsibilities to existing positions. While Collins discussed in general terms the pros and cons related to the issue of centralization versus distribution of ERM responsibilities, her survey did not address this aspect of ERM staffing. Abrams (2015) conducted a survey targeted specifically at electronic resource managers, focusing on ERM workflow and the responsibility of librarians and paraprofessional staff in different departments for various ER-related tasks. Of the 353 respondents, 81.2% were in positions requiring an MLS or equivalent degree; 67.7% spent half of their time or more managing ER in some way. ERM was reported to be handled by an ER department in 41% of responses; in the remaining 59%, this was accomplished largely through cross-departmental collaboration, mainly involving some combination of Acquisitions, Serials, and Technical Services departments. Professional librarians predominantly had responsibility for license negotiation, usage statistics analysis, catalog record loads, and ERM system (ERMS) record management. Paraprofessionals were most commonly reported to be involved in usage

statistics collection, though librarians were frequently involved in supervising this activity.

Abrams noted that many comments expressed a desire to shift responsibility for more basic tasks such as ERMS record management to paraprofessionals.

Erb & Erb (2015) surveyed paraprofessionals working in ERM, asking about their level of responsibility for an extensive list of specific ERM-related tasks. They cited Zhu's observation (2012) that the ERM responsibilities of paraprofessionals had been increasing, particularly with respect to compiling usage data and activating new resources, while their involvement in activities such as license negotiation was minimal. Erb & Erb's survey results confirmed that paraprofessional staff continued to be increasingly involved in ERM, with 44% reporting an increase in the number of staff engaged in ERM over the previous five years; at the same time, 74% strongly agreed that their electronic resources workload had increased over this same period, and 59% either agreed or strongly agreed that work performed by librarians had shifted to their position. However, only 42% of respondents reported working solely in ERM.

Paraprofessionals most frequently reported having responsibility for tracking databases and journal package coverage, managing ERM records, journal package title reconciliation, troubleshooting, knowledge base updates, compiling usage data, and configuring authentication for access. They reported being less frequently involved with maintaining license records, analyzing usage, loading catalog records, trialing and selecting electronic resources for acquisition, managing budgets, and negotiating pricing or license terms.

Analyses of the kinds of duties listed in announcement of ERL position openings, and the required or desired qualifications for these positions, represent the most popular type of research related to the study of ERM work, particularly in the early years of the 2000s when the

specialization was still in its emergent stages. The earliest studies of published announcements of position openings in the ER field (Albitz, 2002; Croneis & Henderson, 2002; Fisher, 2003; Heimer, 2002) identified a clear emphasis on public services functions among posted job descriptions; later analyses (Albitz & Shelburne, 2007; Collins, 2008; Cuesta, 2005) found a greater focus on acquisitions and technical services work, consistent with the increasing importance of ER as components of library collections, as well as with the diminishing need for assistance among staff and patrons who were becoming more familiar with personal computers and the internet. Hartnett's study of job announcements over the period 2000 to 2012 (2014) supported Albitz & Shelburne's observations (2007) by indicating that responsibilities peripheral to the core areas of licensing, acquisition, access management, troubleshooting, and usage reporting started appearing less frequently as the specialty became more established in the years after 2000. Hartnett's analysis indicated that the array of responsibilities typically associated with the ERL specialization had contracted somewhat over time, in comparison with the relatively wide range of competencies identified by Sutton, et al. (2013) on the basis of Sutton's analysis of job postings from 2005 to 2009 (2011).

The literature on ER librarianship published over the last two decades thus shows both an evolution in conceptions of this specialization as ER became a more mainstream component of academic library collections, and a continuing tension between possible approaches to organizing library work to manage these collections, tending either towards the concentration of related responsibilities in a single position, or a dispersal of duties within the organization. However, there has been relatively little recent empirical research into the ways in which ERM

responsibilities are actually distributed in academic libraries, and no studies have focused specifically on how such responsibilities are shared between library personnel.

Methodology

With the intention of contributing to the general understanding of how electronic resources management (ERM) work is accomplished in academic libraries, a research project was designed to answer the following questions:

1. Are tasks typically associated with ERM the responsibility of Electronic Resources Librarians (ERLs), or others?
2. Are such tasks the responsibility of single librarians, or are they shared by multiple personnel? If they are shared, with whom?
3. What other kinds of library work are performed by librarians who are responsible for ERM tasks?

To answer these questions, the author developed an online survey using a tool provided by his institution, to collect data about the various areas of ERM for which academic librarians (in any position) were responsible, the sharing of these responsibilities with librarians and paraprofessionals, the sharing of responsibilities between departments, and the other workload of librarians who are responsible for ERM (see Appendix 1).

Survey results were limited to respondents working in a library at a four-year degree granting institution in the United States, in a position requiring a Master's degree in Library

Science (MLS) or the equivalent, and who had responsibility for one or more of the 14 types of ERM-related work addressed in the survey (Table 1). The limitation of the survey population to librarians working in the United States is consistent with context of previous studies covered in the literature.

Task	Category
Budget planning for ER acquisition	Collection Development
Communicating with librarians and ER vendors to plan, set up and evaluate ER trials	Collection Development
Participating in the decision-making process for selecting ER	Collection Development
Assessing ER through analysis of usage statistics, expenditures, and user feedback	Collection Development
Reviewing and negotiating license terms for ER	Complex Communications
Negotiating pricing for ER	Complex Communications
Serving as liaison with consortial organizations for purposes of ER acquisition	Complex Communications
Configuring ER platforms, and local systems such as link resolvers and proxy servers, to enable discovery of and access to licensed ER	Technical
Performing coverage/MARC record loads for ER	Technical
Troubleshooting ER access problems	Technical
Maintaining records of administrative and license information of ER in an ERMS	Data Management
Maintaining records of ER holdings in a knowledge base, A-Z list, and/or other systems	Data Management
Tracking the contents of e-journal packages over time; reconciling vendor title lists with core subscriptions	Data Management
Coordinating the collection and management of ER usage statistics	Data Management

Table 1. Areas of ERM Responsibility Addressed in the Survey

Respondents were asked about the following characteristics of the institutions where they were employed: full-time equivalent (FTE) student enrollment, type of institution, and size of the annual materials budget devoted to ER. Specification of institution name, to allow for identification of multiple responses from the same institution, was optional. Respondents were

also asked about their position: job title, department, supervisory status, and number of personnel (librarian or paraprofessional staff) supervised; the job title was used as a proxy to identify whether the respondent was an ERL.

The main portion of the survey consisted of questions about responsibility for various broad areas of ERM-related work -- for convenience, referred to as "tasks" throughout the survey and in this article, -- and about their level of workload in a variety of non-ERM areas. Table 1 presents the list of ERM tasks covered in the survey, which was developed mainly with reference to the well-known ER lifecycle concept (Pesch, 2009), the author's own experience, and consultation with colleagues who also work in this area. In the process of reviewing the survey responses, the tasks covered in the survey were organized into four broad categories according to the types of work involved: **collection development**-related tasks, including budget planning, coordination of trials, selecting, and assessment of ER; **technical** tasks, including system and platform configuration for discovery and access, troubleshooting ER access problems, and coverage or MARC record loads of ER metadata; **data management** tasks including ERMS record management, holdings record management, journal package management, and usage statistics management; and **complex communications** tasks including license negotiation, price negotiation, and consortial liaison. For each of the individual tasks, respondents were asked if it was included in their responsibilities, and if so, if the responsibility was shared with other librarians, with paraprofessional staff, or with personnel in other departments. In cases where responsibility was shared with other librarians, respondents were asked whether they had the same job title, to indicate where there might be teams of librarians in similar positions dividing work among themselves.

Respondents were also asked to describe their non-ERM workload using the following categories: majority of workload, significant component of workload, minor component of workload, or not a part of workload. The survey asked about the following areas of non-ERM work typically carried on by professionals in academic libraries:

- Administration
- Assessment/user experience
- Cataloging/metadata creation
- Circulation/ILL
- Collection development/management
- Institutional Repository management/scholarly communications
- Library instruction
- Print acquisition
- Print serials management
- Reference
- Systems
- Web services (library web site)

Finally, respondents were given the option to provide comments about the rationale for the assignment of ERM responsibilities at their institution, and to elaborate on their feelings regarding the way these responsibilities were assigned.

The research proposal and survey instrument were granted an exemption from review by the Institutional Review Board at the author's institution in the summer of 2016. On August 31,

2016, a link to the online survey was distributed with an explanatory cover letter to a number of professional email listservs frequented by academic librarians working in ERM: LITA-ERM, ACQNET, SERIALST, and ERIL-L. After a reminder sent to the same listservs on September 20, the survey closed September 23, 2016. By the end of the survey period, 382 respondents had opened the survey link, and 186 respondents completed the survey. Out of this group, there were 136 full responses from professional librarians working in ERM at four-year institutions in the US. No effort was made to determine whether this would constitute a representative sample of academic librarians working in ERM. However, the level of response was comparable to that reported for similar studies in the past (for example, Erb & Erb, 2015), and was considered to provide a sufficiently robust data set for the exploratory analyses undertaken below. Where appropriate, the chi-square test for goodness of fit was applied to results (using Excel's CHISQ.TEST function) to produce *p* values indicating whether observed differences could be considered potentially significant, rather than the result of chance. In these analyses, the significance threshold was set at .05.

Results and Analysis

Demographic Profile: Institutions

Of the 136 respondents, exactly half ($n=68$) specified the name of the institution where they worked, allowing identification of dual responses from four institutions. The following analyses of institutional characteristics have been adjusted to remove the duplicates, giving a total of 132 institutions described; other analyses in this paper were not affected by any duplication. A

slight majority of responses were from librarians working at doctorate-granting institutions (n=74, 56%); the remainder were split mainly between baccalaureate (n=23, 17%) and master's (n=30, 23%) institutions. There was one response each from librarians at law and medical schools, and three respondents did not specify an institution type. The reported full-time equivalent (FTE) student body of respondent's institutions ranged from 500 to 90,000, with a median FTE of 9,235. To enable some basic analysis of survey data based on institution size, responses were grouped into three roughly comparable categories: smaller schools with an FTE count of 5000 or less (n=49, 37% of the total), medium-sized schools with an FTE count from 5001-15,000 (n=42, 32%), and large schools with an FTE count greater than 15,000 (n=41, 31%). Regarding annual budget allocated for electronic resources, a significant number of respondents either did not provide a numerical figure, reported the total materials budget, or gave the figure only as a percentage; for this reason, the results reported here represent only about 90% of the total responses. ER materials budgets (in US dollars) ranged from \$75,000 to \$14,000,000, with an average (mean) of \$3,293,675 and a median of \$1,200,000. Again, responses were grouped into four roughly equal ranges for analytical purposes: \$400,000 or less (n=29, 22% of the total), \$400,001 - \$1,000,000 (n=30, 23%), \$1,000,001 - \$5,000,000 (n=34, 25%), and \$5,000,001 - \$14,000,000 (n=29, 22%).

Demographic Profile: Respondents

Respondents were provided with a free-text field to enter their position titles, and a predictably wide variety of responses was recorded. These were coded according to categories developed

based on the content of the responses: the categories most frequently represented in respondents' titles were Electronic Resources (n=67, 49%), Continuing Resources/Serials (n=33, 24%), Department/Unit Head (n=27, 20%), Acquisitions (n=24, 18%), and Collections/Collection Development (n=22, 16%). The most frequently reported title was "Electronic Resources Librarian" or a variant, alone or in some combination with other designations (for example, "ER and Serials Librarian"), which was given in 55 responses (40%); respondents in this group were treated as "ERLs" in analyzing the survey responses.

Respondents also reported a wide range of names for departments in which they worked; these responses were coded in a similar way to the job titles, with department names that combined categories being assigned multiple codes as appropriate. The greatest percentage of respondents (n=50, 37%) reported working in departments with names related to technical services, followed by those involving collections management or an equivalent (n=28, 21%), and acquisitions (n=23, 17%). A relatively small number of respondents reported working in departments whose names referred specifically to electronic or digital resources in some way (n=10, 7%).

In the survey questions about supervisory duties, respondents were asked whether they supervised librarians or paraprofessional staff, and if so, how many of each personnel type; the survey did not ask specifically about supervision related to ERM activities. Almost three-quarters of respondents (n=99, 73%) reported supervising other personnel: over half (n=71, 52%) reported supervising paraprofessional staff only, an additional 20% (n=27) reported supervising both librarians and staff, and one respondent supervised only librarians. Just over a quarter of respondents (n=37, 27%) reported having no supervisory duties.

ERM Responsibilities

To develop a profile of the types of work most commonly involved in ERM, respondents were asked to indicate whether or not they were responsible for a variety of task areas typically associated with the management of ER. The interpretation of the responses advanced here relies on a definition of "responsibility" as involving actual performance of the tasks involved; however, it should be noted that, considering the substantial number of responses from librarians in management and supervisory positions, there is a possibility that "responsibility" may have been interpreted by some to include "supervision of personnel who perform the work".

The survey included questions about the 14 areas of responsibility listed previously. A great majority (85%, n=115) of respondents considered themselves to be responsible for eight or more of the listed tasks; the average (mean) number of reported responsibilities per respondent was 10 and the median was 10.5. When responses are grouped according to the four task categories developed for analysis (collection development, complex communications, data management, and technical), 78% (n=106) reported being responsible for tasks falling into all four categories; 18% (n=25) had responsibilities in three categories, and the remainder (4%, n=5) reported having responsibilities in just two categories. A probable explanation is that respondents with more wide-ranging ERM responsibilities were simply more likely to be subscribers to the listservs on which the survey was announced, and to be interested in participating in the research; people responsible for a very small number of such tasks would be less likely to have encountered, and responded to, the survey invitation.

Breaking down figures for reported ERM workload by position type, the average number of responsibilities reported by ERLs and those with related position titles (a total of 55 respondents) was 11, while the average number of responsibilities for other positions (the remaining 81 respondents) was 10. With respect to the broader categories of ERM responsibility, 87% of ERLs (n=48) reported having responsibilities in all four categories, as compared to 72% of others (n=58), the remainder mainly reporting responsibilities in three task categories. Application of the CHISQ.TEST function in Excel to response data comparing rates of participation of ERLs versus non-ERLs in all four categories of work returns a *p*-value of .031 (with one degree of freedom), which would suggest that the observed difference is not the result of chance, but rather could be significant in indicating that ERLs are slightly more likely to be responsible for a broader variety of ERM tasks than other librarians who are involved in this type of work.

Table 2 shows the number and percentage of respondents who reported being responsible for each of the ERM areas included in the survey, listed in descending order of frequency. Troubleshooting ER issues was the most widespread reported responsibility (n=123, 90%), but most others were also fairly common, with nearly 70% or more of respondents reporting responsibility for each task with the sole exception of coverage or MARC record loads, which was reported as a responsibility by only 35% of respondents. The relatively low number of respondents reporting responsibility for record loads is unsurprising, since this task may not always be required at every institution, depending on the systems being used; also, because it requires a specialized skill set distinct from that involved in ERM, it could easily be assigned to

systems or technical services personnel who do not have much involvement with other aspects of the ER lifecycle.

Area of responsibility	Number of respondents responsible	% of total respondents (n=136)
Troubleshooting	123	90
Holdings Records	113	83
Licensing	108	79
Selecting	108	79
Journal Packages	106	78
ERMS Records	104	76
ER Assessment	104	76
Usage Statistics	101	74
Trials	98	72
Consortial Liaison	97	71
Price Negotiation	96	70
Configuration	93	68
Budget Planning	92	68
Coverage Loads	47	35

Table 2. Respondents Responsible for ERM Tasks

To investigate whether ERM tasks were more likely to be the responsibility of Electronic Resources Librarians (ERLs) than others, the responses were broken out to show responsibilities of ERLs (or related positions) versus those with other titles, highlighting certain tasks as being slightly more frequently taken on by this specialized role. Table 3 shows the percentage of each group that reported responsibility for the areas of ERM covered in the survey, in descending order of difference in rate of responsibility between the ERL group and non-ERL respondents. Areas where ERLs show a rate of responsibility more than 10 percent greater than others who work with ER include usage statistics management (28% greater), platform and system configuration for discovery and access (23%), ERMS records management (18%), holdings

records management (16%), troubleshooting (13%), and journal package management (12%). This includes all of the tasks in the Data Management category, and two of three tasks in the Technical category. Conversely, the rate of responsibility for non-ERLs was more than 10 percent greater than that of ERLs in the collection development-related areas of budget planning (15%) and ER selection (14%). Application of the CHISQ.TEST function in Excel to calculate the *p*-values shown in Table 3 indicates that these differences, with the exception of those between rates of responsibility for budget planning, can be considered significant; the differences in rates of responsibility for other areas were not large enough to be significant.

Area of responsibility	% of ERLs (n=55)	% of non-ERLs (n=81)	p-value (one degree of freedom)
Usage statistics	91	63	<.001
Configuration	82	59	0.005
ERMS records	87	69	0.014
Holdings records	93	77	0.013
Troubleshooting	98	85	0.011
Journal packages	85	73	0.082
ER assessment	82	73	0.226
Trials	76	69	0.357
Licensing	82	78	0.567
Price negotiation	73	69	0.652
Consortial liaison	69	73	0.635
Coverage loads	31	37	0.461
Selecting	71	85	0.043
Budget planning	58	74	0.052

Table 3. Rates of Responsibility for ERM Tasks – ERLs versus Others

Sharing of ERM Responsibilities

Respondents who reported being responsible for ERM tasks were asked whether they shared these responsibilities, and if so, whether they were shared with other librarians and paraprofessional staff, and with personnel in other departments. If a task was reported as shared with a librarian, respondents were asked if that librarian had the same job title as the respondent. It should be noted that the definition of "sharing" was left open, and so could potentially include any division of work within the designated area, as well as supervisory relationships. Table 4 shows the percentage of respondents claiming responsibility for each task who also stated that they shared this responsibility, in descending order, along with the percentage who reported sharing in the specific ways addressed in the survey.

Area of responsibility	Share responsibility	Share responsibility with librarian(s)	Share responsibility with para-professional staff	Share responsibility with different department(s)	Share responsibility with librarian having same title
Selecting	94	94	11	59	4
Troubleshooting	80	63	56	50	0
Configuration	77	48	46	54	1
Coverage loads	77	51	47	32	2
Budget planning	76	73	17	40	2
Trials	72	63	29	39	1
Holdings records	70	45	57	25	2
Assessment	66	63	16	37	0
ERMS records	65	41	51	19	0
Licensing	61	41	9	38	0
Usage statistics	55	25	44	16	0
Consortial liaison	53	48	9	27	0
Price negotiation	49	47	4	28	0
Journal packages	46	22	43	9	0

Table 4. Sharing of ERM Responsibilities (% of Responsible Respondents)

Survey responses showed a relatively high rate of sharing of responsibility overall: the least frequently shared task, journal package management, was still shared by close to half of the respondents who reported being responsible for this area. Only four areas of responsibility covered in the survey were reported as shared by less than 60% of responsible respondents, while seven areas of responsibility were reported as shared by more than about 70% of those responsible. Comparison of reported rates of sharing of each area of responsibility by ERLs with those of others (Table 5) shows that differences were not extreme; application of the chi-square test indicated that none were significant, suggesting that the ERL specialization does not

typically involve a greater concentration of ERM responsibilities in a single role than other position types involved in ERM work.

Area of responsibility	% of responsible ERLs sharing	% of responsible non-ERLs sharing	p-value (one degree of freedom)
Coverage loads	88	70	0.156
Budget planning	84	72	0.173
Price negotiation	55	45	0.317
Licensing	67	57	0.422
Consortial liaison	58	49	0.4
Trials	76	70	0.473
Selecting	95	93	0.317
Journal packages	47	46	0.915
ER assessment	67	66	0.952
Configuration	76	79	0.677
Holdings records	67	73	0.495
Troubleshooting	76	83	0.361
ERMS records	60	70	0.324
Usage statistics	48	63	0.136

Table 5. Sharing of ERM Responsibilities – ERLs versus Others

The reported differences in rates of sharing of ERM responsibilities with other librarians, with paraprofessional staff, and with departments other than the respondents', are summarized at the level of broad task categories in Figure 1. Data relating to sharing of responsibilities with librarians having the same title are not included, because the reported rate of sharing of this type was so low as to be negligible. This chart again highlights the relatively high level of sharing of responsibilities overall, but also indicates a few striking differences between different categories with respect to participants. Data management and technical tasks were much more frequently reported to be shared with paraprofessionals (by 69% and 62% of responsible respondents, respectively) than were the collection development and complex communications tasks (34% and 15% of responsible respondents, respectively). Contrastingly, other librarians

were much more frequently reported as sharing responsibility for collection development (95%) and complex communications (60%) tasks than were paraprofessionals. Inter-departmental sharing of responsibilities in most categories was reported at moderate rates (50% to 70% of responsible respondents), with the notable exception of data management: a relatively low 30% of the respondents responsible for one or more of these tasks reported sharing this responsibility with personnel in another department.

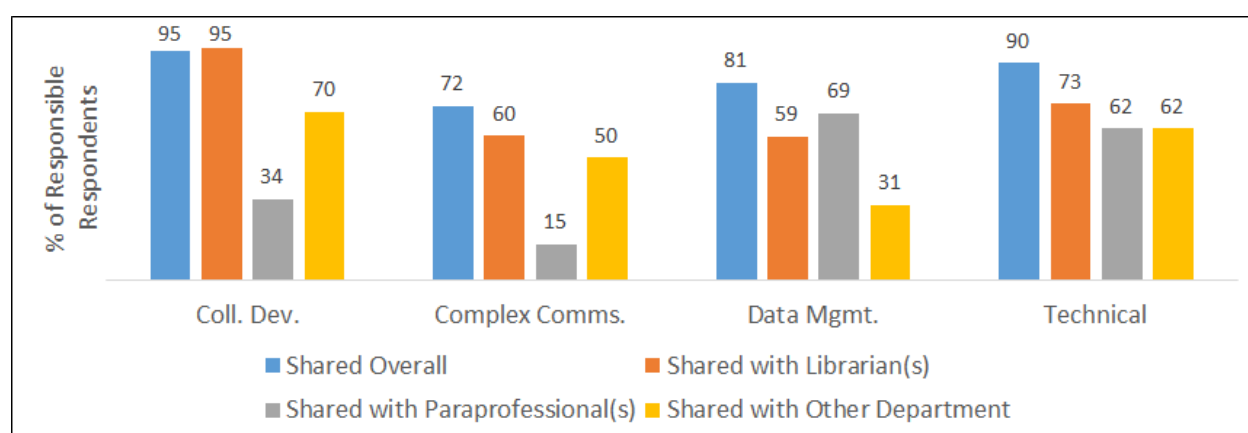


Figure 1. Sharing of responsibility for ERM task categories

Some significant differences in rates of sharing are also noticeable when the survey results are analyzed in terms of ER materials budget, which could be taken as a proxy for the magnitude of ERM work facing personnel at a given institution (though not necessarily for the ability to marshal human resources to address this workload). Figure 2 shows the rates of sharing for the various categories of task, broken out according to the ER materials budget figures reported by respondents for their institutions; it should be recalled that around 10% of total survey responses did not supply an ER budget figure, and so are not represented in this analysis. While rates of sharing of collection development and technical tasks were reported to be relatively

high across all the categories, sharing of complex communications and data management responsibilities was reported much less frequently by respondents from schools with smaller budgets than by those working at more “wealthy” institutions. The frequency of sharing of responsibility in these latter two categories of work tends in general to increase with the size of the ER budget; application of the CHISQ.TEST function in Excel to the underlying data for each of these task categories returns p -values of $<.001$, with three degrees of freedom, indicating that these differences are not simply the result of sampling error.

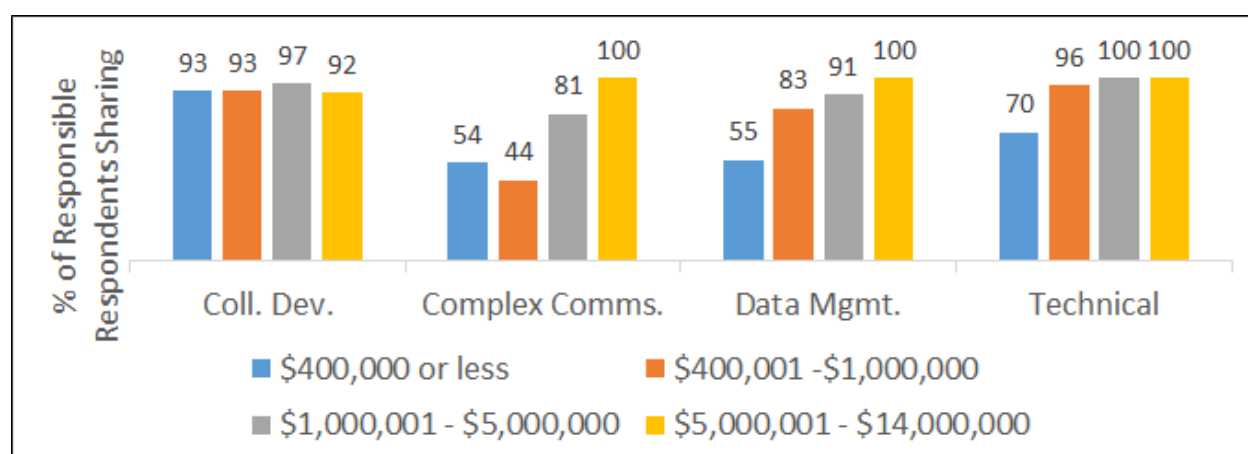


Figure 2. Overall sharing of responsibility for ERM tasks, by annual materials budget for ER

Other Workload of Librarians Working with ER

To address the third research question regarding what other kinds of library work are performed by librarians who are responsible for ERM tasks, respondents were asked to assess their level of workload in a variety of areas typical of academic libraries, according to four categories: majority of workload, significant component of workload, minor component of workload, or not a part of workload. The number of responses in each category are shown in

Table 6. Only a small number of respondents reported that the **majority** of their workload was in the other areas covered in the survey questionnaire; these mentioned mainly administration (8% of total responses) and collection development (7%), while most of the other areas were represented by one to five responses. The predominant areas where respondents had **significant** responsibility outside ERM were collection development (40%), administration (29%), print serials management (29%), and print acquisition (27%); at least 10% of respondents indicated significant workload in each of the other areas, except for Institutional Repository/Scholarly Communications and Circulation/ILL, where very few reported having such responsibilities. Responses regarding areas constituting a **minor** portion of respondents' workload show a slight spike for assessment (51%), which may reflect respondents' involvement with ER usage reporting as part of larger assessment initiatives. Print acquisition and print serials work both figure as minor workload components for 41% of respondents, while administration, metadata, collection development, reference, and systems work represent minor workload for between 30% and 37%. Interestingly, a large percentage of respondents reported having either minor or no workload in the areas of web services (88%), metadata (88%), instruction (85%), reference (85%), and systems (83%) -- all areas that featured prominently in early scholarship aimed at defining the field of ER librarianship, particularly in analyses of job postings (for example, Albitz, 2002; Croneis & Henderson, 2002; Fisher, 2003; Heimer, 2002).

Area of responsibility	No workload	Minor component	Significant component	Majority of workload
Administration	42	43	40	11
Assessment	44	70	22	0
Circulation/ILL	110	23	2	1
Collection development	25	47	55	9
Instruction	80	36	18	2
Institutional repository/scholarly communications	100	31	5	0
Metadata	72	47	14	3
Print acquisition	42	56	36	2
Print serials	39	56	39	2
Reference	65	50	21	0
Systems	72	41	18	5
Web services	84	35	16	1

Table 6. Respondents' Non-ERM Workload

Application of the chi-square test to a comparison of the reports of majority and significant non-ERM workload provided by ERLs and related positions with those of others in the respondent pool (Table 7) shows statistically significant differences in just a few areas: administration, where 16% of ERLs reported significant or majority component of workload compared to 52% of non-ERL respondents, a group which included a substantial number of job titles indicating administrative functions ($p < .001$); print acquisition, which 35% of ERLs reported as a significant or majority workload component versus 56% of other respondents ($p = .001$); and collection development, reported as a significant or majority workload component by 13% of ERLs and 38% of other respondents ($p = 0.014$). Reported rates of responsibility for other non-ERM areas covered in the survey were similar, or were low enough in both respondent groups to make the observed differences between them statistically insignificant.

Area of responsibility	% of ERLs	% of non-ERLs	p-value (one degree of freedom)
Administration	16	52	<.001
Assessment	22	12	0.141
Circulation/ILL	0	4	0.149
Collection development	35	56	0.016
Instruction	16	14	0.653
Institutional repository/scholarly communications	4	4	0.984
Metadata	7	16	0.129
Print acquisition	13	38	0.001
Print serials	29	31	0.825
Reference	15	16	0.812
Systems	13	20	0.283
Web services	7	16	0.129

Table 7. Respondents' Significant and Majority Non-ERM Workload - ERLs versus Others

Comments

The survey included two optional questions allowing respondents to explain the rationale behind assignment of ERM responsibilities at their institution, and to elaborate on their feelings about how the responsibilities were allocated. These questions elicited a surprisingly high response rate: 109 respondents (80% of complete responses) supplied an answer regarding the rationale for distribution of responsibilities, though because of ambiguous phrasing of the question, 13 responses focused on responsibility for the *ERM system* being used, and 106 also provided their assessment of how work at the institution was apportioned. Responses varied widely in their emphases and levels of detail, and no attempt was made to correlate them with the structured data collected in the first part of the survey. However, a few recurring themes

were identifiable that are broadly pertinent to the research questions regarding the assignment of ERM duties within academic libraries, and these are summarized below.

To provide some very general evaluative context for consideration of survey results pertaining to the extent and nature of the workload on ERLs and others responsible for ERM, responses to these two questions were grouped, where possible, according to whether they described an arrangement where various responsibilities for ERM were *centralized* in an individual or unit, or *dispersed* among various personnel or units; for each group, responses were studied to extract commonly noted *positive* or *negative* aspects of the different approaches. Some sort of centralization of responsibilities was described by 55 respondents (40% of the total). The positive aspects of such arrangements highlighted in their comments included the advantages of having a single person with a grasp of the "whole picture" of ERM, the consistency of approach this permits, and, when a multi-person unit is involved, the improved communication made possible by proximity. The negative aspects described for such centralization included overdependence on a single person because of lack of cross-trained backup personnel, reduced opportunities to delegate responsibility to staff, especially where some of the more routine tasks involved in ERM are concerned, and the excessive workload on a single person responsible for managing the entirety of a library's electronic collections. On the other hand, 39 respondents (29% of the total) described arrangements where responsibilities were dispersed in some way within the library organization, either in terms of shared responsibility for the same task, or division of various ERM responsibilities among dispersed personnel or units. Recurring themes in the comments provided by these respondents focused on the positive aspects of having multiple personnel share an ERM workload that would

otherwise be too much for one person to handle, and the advantage of having cross-trained backup for ERM tasks. Negative aspects noted for arrangements involving dispersed responsibilities included haphazard organization of work, duplication of effort, overly complex workflows, and potential confusion regarding responsibilities and contact points for communications. These could be viewed not so much as inherent drawbacks of a dispersal of responsibilities, but as pitfalls that might be avoided with proper planning.

With respect to the sharing of ERM responsibilities, other recurring evaluative themes in respondents' comments included an urgent need for more paraprofessional staff to work on ERM; multiple respondents also mentioned that they considered their organizations to be overly print-focused, and some expressed a desire for staff be retrained to shift their work from print to electronic materials. Some refrained from commenting in much detail because ERM responsibilities were being reorganized at their institution, indicating that some academic libraries are still working out an approach to handling ERM; on the other hand, multiple respondents described their responsibility for ER as having grown gradually out of a previous involvement with serials management, without much planning being involved. Unsurprisingly, responses describing a planned approach to the distribution of ERM responsibilities were typically accompanied by a positive evaluation of the arrangement. Some others, however, described a situation where they had, as individuals, haphazardly accumulated an increasingly difficult ERM workload over time to the point where it became problematic; one respondent in this situation went so far as to make the comparison to "a frog in boiling water".

Conclusions

The results of the survey discussed above indicate that librarians who work with ER in academic libraries tend to be responsible for a similarly elevated number of tasks related to the ER lifecycle, whether or not they are designated specifically as ERLs; however, ERLs are somewhat more likely than others to be responsible for a wider variety of task types relating to the management of ER. While the survey did not directly address the importance of the coordinating function that is highlighted in much of the literature on the nature of ER librarianship, the relatively high levels of sharing of responsibility for most ERM work indicate that librarians involved with ER are frequently working with others to accomplish these tasks. Some types of work are shared more often than others, however. Technical tasks and collection development-related responsibilities tend to be distributed more frequently than other types of work: complex communications tasks involving licensing, price negotiation for ER products, and liaison with library consortia are shared less often, as are responsibilities related to management of records and data about ER. The data management tasks are more likely to be the responsibility of ERLs than of other librarians working with ER; they are more routine and clerical in nature than the complex communications work involved in negotiating license terms and pricing, and when they are shared, it is typically with paraprofessional staff rather than with other librarians.

Sharing of complex communications and data management responsibilities is, in general, more frequent at institutions that have a larger e-resources materials budget. This could plausibly be associated with the availability of more personnel to take on this work, though the research did not directly address the question of staffing levels. These categories comprise the

specialized tasks that tend to be least frequently shared overall, suggesting that the “richer” libraries have been able to marshal additional personnel to lighten the increased load on their ER specialist librarians in these areas. As the data management tasks in particular were mentioned in numerous comments as eating up the time of librarians and diverting them from more complex work, the results of this survey could be taken to indicate that the nature of the ER librarianship is changing, where resources permit, to shift responsibility for some of the more standardized specialized work associated with this domain from professionals to properly (re-)trained paraprofessional staff. Still, respondents’ comments indicate that relatively ad hoc arrangements for distribution of responsibilities for ERM functions still hold sway in many institutions, which can affect the ability of these organizations to effectively accomplish the ongoing work involved in the management of their ever-expanding ER collections.

Acknowledgements

The author wishes to thank Sandra Barstow and Lori Terrill of University of Wyoming Libraries for their invaluable feedback on this project.

Appendix A: Survey Instrument

PART I

Please answer yes or no to the following questions:

1. Do you work in a library at a four-year degree-granting academic institution in the United States?

2. Does your position require a Master's degree in Library Science or equivalent?

3. Are you responsible for one or more of the following with respect to electronic information resources at your library?

- Budget planning
- Coordinating trials
- Selecting resources for acquisition
- Negotiating license terms
- Negotiating pricing
- Liaison with consortial organizations for acquisition
- Configuring electronic resource platforms, and local systems such as link resolvers and proxy servers
- Maintaining records of holdings in a knowledge base, A-Z list, and/or other systems.
- Troubleshooting access issues
- Tracking the contents of journal packages
- Collecting and managing usage statistics

- Assessment

PART II

Describe the size and type of institution at which you work:

1. Student FTE enrollment
2. Institution type: Doctoral / Master's / Baccalaureate / other (describe)
3. Approximate size of the current annual materials budget devoted to electronic resources at your library, in US dollars:
4. [OPTIONAL] What is the name of the institution at which you work?

NOTE: this information will be used only to indicate to the investigator when there is more than one response from a given institution. To protect responder anonymity, institution names will be replaced by a coded indicator after the initial data collection, and the original answer will be discarded.

PART III

Please describe your position:

1. What is your job title? (if possible, please provide your descriptive title, not just your rank)
2. In what department do you work?
3. Do you supervise the work of librarians?
 - a. If the answer to the above is Yes, how many?
4. Do you supervise the work of paraprofessional staff

- a. If the answer to the above is Yes, how many?

Part IV

1. Do your responsibilities include the following? Answer Yes or No for each area of responsibility. If a task is your responsibility, please indicate if you share it with others.

If you indicate that a task is shared, you will be presented with four additional questions: Do you share responsibility with one or more librarians? If you share responsibility with one or more librarians, do they have the same job title as you? Do you share responsibility with one or more paraprofessional staff? Do you share responsibility with personnel in different departments?

- Budget planning for e-resources acquisition
- Communicating with librarians and e-resource vendors to plan, set up and evaluate electronic resource trials
- Participating in the decision-making process for selecting electronic resources
- Reviewing and negotiating license terms for electronic resources
- Negotiating pricing for electronic resources
- Serving as liaison with consortial organizations for purposes of e-resource acquisition
- Configuring electronic resource platforms, and local systems such as link resolvers and proxy servers, to enable discovery of and access to licensed electronic resources
- Maintaining records of administrative and license information of electronic resources in an ERMS

- Maintaining records of electronic resources holdings in a knowledge base, A-Z list, and/or other systems.
- Performing coverage/MARC record loads for electronic resources
- Troubleshooting e-resource access problems
- Tracking the contents of e-journal packages over time; reconciling vendor title lists with core subscriptions
- Coordinating the collection and management of e-resource usage statistics
- Assessing electronic resources through analysis of usage statistics, expenditures, user feedback, etc.

2. What other general types of tasks are you responsible for? Please check the appropriate box to indicate the approximate portion of your workload represented by each: Not a part of workload, Minor component of workload, Significant component of workload, Majority of workload.

- Administration
- Assessment / user experience
- Cataloging / metadata creation
- Circulation/ILL
- Collection development / management
- Digitization
- Institutional Repository Management
- Instruction

- Print acquisitions
- Print serials management
- Reference
- Systems
- Web services (library web site)

3. Briefly describe the rationale for assignment of ERM responsibilities in your organization.

4. How do you feel about the way ERM responsibilities are assigned in your organization?

Appendix B: Cover Letter

Dear colleagues,

You are invited to participate in a research project conducted by David Macaulay, Collection Development Librarian at University of Wyoming Libraries. This study will survey academic librarians in the United States who self-identify as being responsible for tasks related to the management of electronic information resources at their institution. The survey is intended to gather information about the distribution of Electronic Resources Management (ERM) responsibilities among librarians at academic institutions in the US, in order to enable a better understanding of the evolution of professional roles in this area, and potentially to help academic libraries optimize the organization of ERM work.

Should you choose to participate, you will be asked about your job title, about sharing of various ERM responsibilities with other librarians or paraprofessional staff, and about your responsibility for other types of work within your library. The survey should take approximately 15-20 minutes to complete.

The survey will be open until September 23, 2016, at 5 p.m. Mountain Daylight Time.

Respondents are asked to take the survey only once; please feel free to forward this email on to others who might wish to participate.

Completing this survey should involve minimal risk. While participating in a study of this sort carries the risk of a loss of confidentiality, the investigator is endeavoring to minimize risk by not collecting IP addresses or other personally identifiable information. Data about institutional affiliation is collected to permit identification of multiple responses from a single institution;

because the association of this information with a specified job title could potentially be used to identify the respondent, affiliation data will be replaced with coded indicators after initial collection, and then discarded.

You will not directly benefit from participation in this study. However, your participation may help the investigator identify trends in library staffing with respect to the management of electronic information resources. Analysis of the resulting data is intended to be shared through publication, so your participation may also help members of the profession improve their understanding of current patterns in library staffing, and thereby support enhancements in this area.

The results of this study may be published in professional journals, and used for educational purposes or for professional presentations. Individual respondents will not be identified. Your participation in this project is anonymous. The survey will not be collecting any personally identifying information, however, the second section requests institutional information which could be used to identify a respondent. The question about institutional affiliation is optional; affiliation data will be replaced with coded indicators to be used for deduplication when data collection is complete. Once coding has been performed, the original affiliation values will be removed from the data. They will not be exported, saved, shared with any other researcher, or published.

Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and you may discontinue participation at any

time. There is no compensation for participating in this survey. This survey is intended to be taken by persons 18 years of age or older.

Any questions about this research project can be addressed to David Macaulay at _____ or dmacaula@uwyo.edu. If you have questions about your rights as a research subject, please contact the University of Wyoming IRB Administrator at _____.

By clicking the following link to proceed to the survey, you indicate that you are 18 years of age or older, and that you consent to participate in the research.

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