

# A MULTIDISCIPLINARY APPROACH TO SYSTEMATIC REVIEWS

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## INTRODUCTION

In the fall of 2019, a task force was created at the University of Nevada Las Vegas (UNLV) University Libraries in response to the perceived increase in demand for systematic review support at the university. This task force, composed of liaison librarians from different academic disciplines, was charged with conducting an environmental scan of systematic review support and needs for the university. In this paper, we discuss current trends in systematic reviews and systematic review support in academic libraries, lessons learned from this task force, and suggestions for other libraries considering offering systematic review support at their institutions.

## SYSTEMATIC REVIEWS AND THE SCHOLARLY LANDSCAPE

Librarians and information professionals have been defined as integral members of systematic review projects since the 1990s when Smith and Stullenbarger<sup>1</sup> and Schell and Rathe<sup>2</sup> mapped out medical librarian roles within the research synthesis process. Smith and Stullenbarger outlined how the “integrative research review” process used in the social sciences and described by Cooper<sup>3</sup> could benefit from a researcher-librarian team approach to ensure good quality reviews. Schell and Rathe took it a step further and described a six-step outline of the meta-analysis process, whereby the medical librarian was found to play a critical role within three of the six steps: Inclusion/Exclusion Criteria, Collection of Data/Bibliography, and Summary of Findings.<sup>4</sup>

Jump forward to the mid-2000s during which Holst and Funk disseminated their findings from a survey of medical librarians on the use and value of expert searching at their institutions and noted that librarians found overwhelming value in conducting (95.3%) and consulting (92.9%) on searches.<sup>5</sup> Gowan and Sampson would later use the survey findings to appeal for the need to have health sciences and medical librarians as “expert searchers” on systematic review teams, defining their role as “...work[ing] closely with the review team through an iterative process and have the skills to develop, conduct, and revise a search strategy as well as determine which sources of information will be searched and how.”<sup>6</sup> McKibbon would continue the trend of exploring librarian roles broadening their importance beyond health sciences librarianship.<sup>7</sup> In outlining the im-

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portant roles librarians have within the review synthesis process and evaluating the value of librarians as expert searchers, a steady work of advocacy in systematic review support began to take shape.

Nearly two decades later, the need for librarians as expert searchers on systematic review teams continues to rise in recognition and popularity. The Cochrane Handbook and the Institute of Medicine Institute of Medicine (IOM) of the National Academy of Science's Standards for Systematic Reviews codified librarians as expert searchers,<sup>8</sup> and systematic review support had expanded beyond the health sciences and into the realm of social sciences, education, public administration, STEM and other disciplines.<sup>9,10</sup> For researchers in the social sciences in particular, systematic reviews were appealing due to their ability to inform both policy and practice.<sup>11</sup> Nowadays, librarians and information professionals are involved in nearly each step of the evidence synthesis process by providing support in defining research questions, guidance on pursuing various review types and methodologies, defining inclusion/exclusion criteria, assisting with citation management, guidance on review protocols, providing instruction and education of systematic review approaches and even peer-reviewing search methodologies<sup>12</sup> in order to ensure better quality and better reproducibility of results.

In essence, librarians and information professionals involved in systematic reviews, either as practitioners, instructors, or both, support the research enterprise of their institutions. For librarians and information professionals supporting systematic reviews, those involved as part of the systematic review team often require co-authorship, which has shown to reduce bias that can negatively influence outcomes.<sup>13</sup> In addition, some libraries have managed to create systematic review support as a funding source paid through institutional buy-back or as an expenditure in research grants.<sup>14</sup> Libraries have produced LibGuides that list educational resources, calendars to set up consultation meetings or list systematic review workshops, checklists, documentation templates, and outlines of service offerings to faculty and students. Librarians and information professionals understand that in supporting systematic reviews, they play a critical role in publications that inform policy, protocols, practice guidelines, and patient care.

## SERVICE MODELS

Currently, there is no one standard by which academic libraries are required to set up a systematic review service. In fact, even the name used to describe this support is up for debate. Some institutions are particular in naming this support as a "systematic review service"<sup>15</sup> while others use "scientific literature review resources and services"<sup>16</sup> or "evidence synthesis service"<sup>17</sup> to encompass other review services in addition to systematic reviews. Though these approaches vary in terminology, they do provide a delineated library offering beyond conducting traditional literature searches by librarians and information professionals.

What these services do have in common is that these are often packaged around the "service model" concept that aligns best to their library users, librarian capacity and expertise and available library resources and tools. Service models often outline how involved librarians as expert searchers can be within the systematic review enterprise. These services are provided on a spectrum of involvement where on one end the service may be limited to providing consultation services and instructional support all the way to being in a fully embedded capacity where the librarian fulfills the role of expert searcher on systematic review teams. Levels of involvement may depend on who is requesting support, i.e., faculty or student, the extent of training the librarian has on expert searching, and the amount of labor and resources the library has to carry out support. In our cursory review of institutions, we noted that some libraries supported faculty and students differently.<sup>18</sup> A faculty member was more likely to have a librarian as a member of the systematic review team, while a student would receive guidance. We noted an example of this from Rutgers University Libraries where students were advised of the process, and faculty were offered more-in depth librarian support.<sup>19</sup> McGill University provides guidelines on librarian involvement within the systematic review service, offering consultation services to undergraduate and graduate students and more comprehensive support for academic faculty.<sup>20,21</sup> Some institutions outlined their services more explicitly as "tiers" of support offering services similar to the aforementioned institutions, but in addition to user type, would also determine the level of involvement that might result in co-authorship<sup>22</sup> or even fees. One library in particular, Temple University's Ginsburg Health Sciences Library, packaged their service model as a toolkit freely available to be replicated by other institutions.<sup>23</sup> We will revisit this service model spectrum later in this paper.

## THE UNLV UNIVERSITY LIBRARIES SYSTEMATIC REVIEW TASK FORCE

UNLV, a large research institution in southern Nevada achieved two major milestones in recent years. The university attained the research very high or R1 Carnegie Classification in 2018 and also launched a new medical school. The first class of medical school students began coursework in fall 2017.

The UNLV Libraries Systematic Review Task Force was established in September 2019 and concluded its work one year later. This team consisted of seven tenure-track academic librarians representing a wide variety of professional backgrounds and subject expertise. Located on two campuses, several faculty librarians had offices in Lied Library, the main library, while others were several miles away at the Health Sciences Library on the medical campus. Soon after coming together as a team, the task force decided to adopt a co-chair leadership model with one co-chair from each campus.

The task force charge included:

- evaluating systematic review support liaison librarians are currently providing for their respective constituencies;
- conducting an assessment of the needs of the faculty and students in various schools and/or colleges at the university;
- establishing a robust proposal regarding formalized services to address the growing number of requests for support of large-scale evidence synthesis projects, including systematic reviews, scoping reviews, and meta-analyses reviews; and
- recommending next steps for the University Libraries.

In addition to task force meetings and asynchronous communication, the co-chairs met regularly outside the larger group to create agendas, prepare presentations and reports for the Library Leadership Team, and keep the task force team on track by setting goals and action items aligned with the project timeline. In September 2020, the co-chairs presented the task force's recommendations to the Library Leadership Team, completing the group's charge.

As part of the work of the task force, the group distributed a survey to UNLV faculty in late spring 2020 in order to determine the needs of faculty and students across the university. The task force hoped to gather faculty perceptions about evidence synthesis services at UNLV via a 16-question Qualtrics survey. The survey results (N=151) indicated an increased demand for systematic reviews beyond health sciences departments. 45 out of 151 respondents anticipate conducting a systematic review or meta-analysis in the future, and an additional 5 respondents said "maybe." Those who said "yes" came from 29 departments and units across campus. Results also indicate that a range of activity is taking place, including incorporating systematic reviews into classroom assignments, supervising students on projects, and engaging in their own projects. Some faculty conveyed a need for education and support around systematic reviews and related methodologies; they also expressed interest in support from the libraries in key areas such as training on systematic review methodologies, access to resources and software, assistance with searching, and collaboration with librarians on projects.

## A MULTIDISCIPLINARY APPROACH

The data collected from the survey results confirmed the task force's belief that systematic reviews were happening all over campus across a wide variety of departments, schools, and colleges. By taking a multidisciplinary approach, we used our subject area expertise to work together to provide a clearer understanding of this type of research and what that might look like at our institution. Through this collaboration, we were able to present our library leadership our recommendations for developing services and support to meet the needs of the campus to the wider university in a unique way.

This was helpful when we engaged with our University library colleagues as well. Because library leadership was made up of academic and administrative faculty from a wide variety of professional backgrounds, there was a learning curve for them regarding their understanding of systematic reviews. The task force spent some time providing background information to library leadership defining systematic reviews and the roles other

academic research libraries played at peer institutions supporting various disciplines in this capacity. This was crucial in obtaining buy-in from leadership regarding the importance of building organizational capacity for potential systematic review services or support.

Working with a multidisciplinary team also gave us the opportunity to recognize and appreciate each of our individual experiences with systematic reviews, particularly when it came to health sciences versus social sciences research and how it is conducted in its respective disciplines. For example, health sciences tend to adhere to strict protocols when conducting systematic reviews, where in social sciences that is not necessarily true and can depend on the type of project, team, or publication that is being considered. There also can be differences in expectations among disciplines in what support and services might look like, if there is a cost associated with it, or how involved the librarian should be in the research process. Each team member's familiarity with their constituents provided perspective to the rest of the task force and was key to informing how we approached our charge.

There are numerous benefits to taking a multidisciplinary approach to the question of what systematic review support might look like at an institution. First, it is important to identify multidisciplinary priorities for establishing dedicated systematic review support services so that you can effectively accommodate researchers from a broad range of disciplines, including of course the health sciences but also other disciplines. In our survey of faculty and staff at our institution, for example, one respondent who expressed interest in conducting a systematic review came from our Student Affairs unit and another came from our Criminal Justice department.

Moreover, it is important to align this work with the specific needs and context of your institution. We are librarians at a large, minority-serving institution that in the past several years attained R1 status and launched a medical school. Our medical school and health sciences library are on a separate campus from our main library, so it was especially important for us to include members from libraries on both campuses and to make explicit plans for communication across campuses. Building organizational capacity around systematic reviews at another institution will necessarily look different from ours. In our experience, a multidisciplinary task force is a useful structure for identifying these priorities.

## FORMING A TASK FORCE

### *Charge and Timeline*

As with any task force, it is important to articulate a clear charge and end date. Our charge, as noted above, consisted of four main components. As a group, we decided on a timeline for each of these tasks.

### *Membership*

One of the first decisions will be who to include in a task force. The first consideration will be potential participants' job roles. Librarians who are likely to be contacted by researchers regarding systematic reviews are obvious choices, including representatives from disciplines in areas newer to systematic review methodologies such as education or engineering. Another consideration is whether to include supervisors or to select people of similar rank within the organization. Most important will be to have representation from a variety of disciplines, from participants who are committed to participating fully in the work of the task force.

### *Outputs*

You will also want, early in the work of the task force, to identify which outputs are expected of the task force and when. This may include a written report and/or presentation to library leadership or other stakeholders or published works or presentations at professional conferences. Your task force, or the people writing the charge, will also want to consider whether they would like to collect empirical data. In our case, we decided early on that we wanted to collect data from our faculty and we wanted the option to share that data in the form of publications, so we submitted a proposal to our institutional review board (IRB) about our project as early in our team timeline as possible. If you collect data for program improvement without publishing the results, an IRB proposal may not be necessary.

## Communication

Especially important among colleagues from different professional backgrounds is this final point: the need to establish clear expectations around communication. Asynchronous and synchronous communication, including regular meetings and shared documentation, will help task force members stay on track. In our case, we use Google at our campus, so we created a Google Team Drive that was accessible to all task force members for our meeting notes, agendas, and other documents and reports. Early discussions of anticipated outputs combined with clearly defined deadlines allowed task force members to plan accordingly. Discussions in the group also surfaced different priorities and values, which necessitated openness and a willingness to consider different points of view. We did not, as a task force of individuals representing diverse groups on campus, immediately or sometimes ever fully agree on all the recommendations we presented in our final report, so it was essential that we establish early on in our process the importance of documenting the various needs of our campus community.

## FORMALIZING A SYSTEMATIC REVIEW SERVICE

Finally, we will share information from what we learned in terms of formalizing a systematic review service. An institution may benefit from a formalized systematic review service, policy, and/or guidelines, depending on whether the implementation of a service is necessary or feasible. Potential costs to the organization will likely influence this decision, and will be influenced by which service model a specific library follows.

Potential costs are an important consideration. In particular, likely costs include staff, staff development, and software. Increasing support for systematic reviews will require time from existing employees and/or a dedicated systematic review librarian or support staff. Large evidence synthesis projects require subject expertise; therefore, labor associated with each project cannot easily be shared among library employees or even liaisons. Liaisons associated with disciplines that make use of large-scale evidence synthesis methodologies may be forced to either decline facilitated services or reduce time spent on other core duties. Professional development and training will be especially important as you consider how to prepare faculty and staff to support researchers in different disciplines. Members of our task force have participated in free online courses such as the Introduction to Systematic Reviews and Meta-Analysis on Coursera,<sup>24</sup> as well as paid professional development including webinars from the Medical Library Association and a dedicated multi-day training facilitated by a paid outside consultant. We found that participating in training together was very useful in team building within our task force, in addition to developing practical skills and expertise. Another cost that should be considered is software used in conjunction with systematic review projects, especially bibliographic management software such as End-Note as well as systematic review-specific software such as Covidence or DistillerSR.<sup>25</sup>

As noted previously, there are also several options for service models. In our final report to UNLV Libraries leadership, we presented three possible models for systematic review support at our institution. Each of these models would require a different level of human and financial investment in the service. These models ranged from a model that emphasizes education of users to a library-facilitated service model. In the first model, the library would remain focused on providing base-level education around systematic reviews and evidence syntheses and would prioritize teaching researchers how to conduct reviews on their own. This could include one-shot workshops and an emphasis on asynchronous learning tools such as LibGuides and suggested reading lists. The second proposed model would balance education and research needs, with more proactive education as well as limited consultations by librarians on systematic review projects. The third proposed model would shift away from a strong emphasis on education toward expanding services to researchers. Liaison librarians would support projects as consultants and collaborators. This model would likely benefit from articulating predefined tiers of service so that researchers can better understand the options available in terms of services provided by the Library. A tier-based service could potentially recuperate some costs by charging a fee for higher levels of service.

Discussions of costs and potential service models drew on our need for effective communication among our multidisciplinary team. There were disagreements among our task force members regarding which of the models would be most suited for researchers in our assigned disciplines. Questions included to what extent we

should support community requests from outside the university. This led also to a discussion of who would be included among UNLV users, for example, among the complex range of health care affiliates associated with the health sciences campus. We also discussed how grant-funded projects, more likely among large-scale evidence synthesis projects, would allow for a buyout of librarian time and how this might affect staffing needs. There was also a significant difference in opinion regarding whether charging a fee for services would align with the culture of various disciplines and how this would impact the relationships our tenure-track and tenured liaison librarians have nurtured with disciplinary faculty. We were unable to come to a consensus around the viability and advisability of charging fees, based on our knowledge of the practices common in our disciplines.

## CONCLUSION

For our own task force and the future of systematic review support at our institution, we have presented our recommendations to library leadership. We highlighted the need to develop infrastructure support for systematic reviews, including increased staff dedicated to supporting systematic reviews and professional development related to systematic review methodology and tools, and we recommended the establishment of a community of practice and data collection procedures to capture current levels of support for systematic reviews at UNLV. However, this task force concluded its work in the context of a hiring freeze and uncertain budgets in the wake of the COVID-19 pandemic. Although there was interest in expanding services to researchers, adopting a formalized service model for our libraries would require additional staffing and resources beyond what we have dedicated to systematic reviews to this point. We therefore recommended that we revisit this topic in one to two years. Nonetheless, we feel strongly that our team has laid the groundwork for future growth in formal support for systematic reviews within our organization. Learning from each other on this multidisciplinary team has helped us to better understand the opportunities provided by systematic reviews as a growing methodology, and to be more strategic as we continue to meet the needs of our colleagues and patrons.

## NOTES

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