

University of Southern California Libraries – Norris Medical Library

West Coast Systematic Review Retreat for Researchers Pilot Project

University of Southern California's Norris Medical Library is seeking IMLS support under the Community Anchors category for a Sparks project to develop, present, and evaluate a 4-day workshop that will train 15 Southern California biomedical researchers and clinicians to conduct thorough and efficient systematic reviews in order to improve patient health outcomes. After testing the workshop curriculum and evaluating the learning outcomes for our initial group of 15 participants, we will refine the curriculum for our workshop and finalize plans for a regional Western U.S. or national systematic review workshop that will share library-based expertise in systematic review with biomedical researchers and clinicians on a larger scale. Our project team includes COPIs Robert Johnson and Lynn Kysh, Clinical and Research Librarians at USC Norris Medical Library; Rikke Ogawa, Team Leader for Research, Instruction, and Collection Services at UCLA's Louise M. Darling Biomedical Library; and Melissa Rethlefsen, Deputy Director of the Spencer S. Eccles Health Sciences Library at the University of Utah. We respectfully request \$18,931 in support.

National Need: Systematic reviews yield high-quality evidence that counters the recent, exponential growth of medical literature, minimizes bias, supports evidence-based practice, and impacts patient outcomes. Systematic reviews change clinical behavior by summarizing the glut of available evidence into clearly defined statements of fact. Although standards have been established by the Cochrane Collaboration, Institutes of Medicine, PRISMA, and the Joanna Briggs Institute, the methodology continues to be misunderstood and misapplied by many biomedical researchers, academic journals publishing systematic reviews of dubious quality, and clinicians whose patient care decisions are informed results from systematic reviews. Librarians are uniquely situated to provide authoritative instruction in systematic reviews due to their positions in academic communities, expertise in database searching, and commitment to the accurate dissemination of information.

Our pilot workshop, evaluation activities, and planning efforts to develop a regional or national systematic review workshop will build a core community of biomedical researchers, clinicians, and librarians to assist and advise others on proper methodologies. Our project supports two of three IMLS agency-level goals: "IMLS places the learner at the center and supports engaging experiences in libraries and museums that prepare people to be full participants in their local communities and our global society" and "IMLS promotes museums and libraries as strong community anchors that enhance civic engagement, cultural opportunities, and economic vitality." As we expand the systematic review workshop to reach more researchers and clinicians in future phases of our project—and other libraries replicate or adapt our workshop curricula—we will positively impact patient health outcomes across the United States while helping U.S. libraries and librarians share expertise that can make substantial contributions to the health and wellbeing of their local communities.

Current research has established that properly conducted systematic reviews can direct medical care and thereby positively impact health outcomes.¹ Recent literature indicates systematic reviews including librarians as co-authors "are correlated with significantly higher quality reported search strategies."^{2,3} Recent evidence also describes systematic reviews with unsound methodologies that fail to provide a complete synthesis of literature as poor, inefficient uses of research resources.⁴ Current evidence points toward a clear need for librarians to train researchers in the intricacies of how to conduct appropriate and effective searches.^{2,5}

Several workshops train librarians to conduct systematic reviews as part of teams, but none offer training to biomedical researchers, and none are offered in the western U.S. Our workshop will therefore fill important gaps by providing direct training in systematic reviews for biomedical researchers and clinicians in the West—building a community of interest that includes both librarians and researchers. The workshop will emphasize principles (described in the Cochrane Handbook) of asking answerable questions, conducting appropriate literature searches, and assembling a team that includes librarians. Current literature projects that systematic review will continue evolving rapidly into a more diverse and complex practice, requiring even more dedication to transparency and diligent documentation.⁵ Both formal training in systematic review methodology (protocols, grey literature searching, etc.) and librarian involvement in systematic review searches are strongly associated

with the use of recommended search methods and improved quality in reviews.² Our workshop will spur methodologically sound systematic reviews and, in turn, help to improve clinicians' patient care decisions.

Work Plan: We will complete curriculum development in May 2017 drawing on materials from previous presentations by the Co-PIs and project team and recruit 15 participants via snowball sampling. The participants will complete pre-workshop exercises. After finalizing logistics in May, we will present the workshop in June. The workshop is structured as follows: Day 1 – Systematic Review Overview & Protocol Development; Day 2 – Research Question & Search Strategy; Day 3 – Managing Citations & Screening Independently; Day 4 – Data & Meta-Analysis. After gathering initial input from participants and instructors, we will survey participants at 3-, 6-, and 9-month intervals for input on the workshop's deliverables and to address knowledge gaps. We will continue literature surveillance for 2 years to monitor attendees' publications. As the 15 participants publish systematic reviews, our team will assess the clinical questions, methodologies, and search strategies and compare them with established best practices. Our initial and ongoing evaluation activities will inform a) revised workshop curricula and b) plans for a larger-scale, regional or national systematic review workshop. Beginning in July, the project team will begin developing a revised curriculum and a plan for expanding the workshop. We will share our results through publications, presentations, and other avenues—engaging, for example, members of the Medical Library Association and Association of American Medical Colleges.

Projected Performance Goals and Outcomes: Our primary goal is to develop and present a pilot 4-day workshop for biomedical researchers and clinicians that will improve their knowledge of and competency with systematic reviews. Attendees will receive instruction as well as hands-on consultations on their projects and suggestions for seeking assistance at their home institutions. We will survey participants via immediate and longitudinal instruments assessing their confidence in assessing, utilizing, and conducting systematic reviews and conduct surveillance of attendees in the literature for 2 years to assess the workshop's long-term impact. We will develop a revised curriculum informed by the results of our pilot workshop and evaluation efforts and planning activities by the project team. We will also develop a plan for developing a self-sustaining regional or national systematic review workshop that includes added resources for statistical analysis. Our findings and the revised curriculum will be shared through academic avenues such as the Medical Library Association and the Association of American Medical Colleges to encourage more and similar workshops around the country.

Budget: We respectfully request \$18,931 in IMLS funds: \$2,902 in salaries (Johnson 2%; Kysh 2%); \$963 in benefits (33.2% federal benefits rate); \$1,250 compensation for a biostatistician instructor; \$5,750 materials and supplies for the workshop (15 copies of EndNote citation management software for participants @\$250/ea.; meals during workshop sessions, \$1,500; \$500 for thumb drives, folders, and miscellaneous supplies); \$4,160 in travel costs (\$3,200 for travel to workshop by instructors based outside Southern California; \$960 in parking expenses for 15 participants); and \$3,906 in indirect costs at USC's federally negotiated indirect cost rate of 26% for off-campus instruction activities (Dept. Health and Human Services, July 21, 2016).

1. Higgins JPT, Green S, Cochrane Collaboration. *Cochrane handbook for systematic reviews of interventions*. 5.1.0 [updated March 2011] ed. Chichester, West Sussex ; Hoboken NJ: Wiley-Blackwell; 2011.
2. Koffel JB. Use of recommended search strategies in systematic reviews and the impact of librarian involvement: a cross-sectional survey of recent authors. *PLoS One*. 2015;10(5):e0125931.
3. Rethlefsen ML, Farrell AM, Osterhaus Trzasko LC, Brigham TJ. Librarian co-authors correlated with higher quality reported search strategies in general internal medicine systematic reviews. *J Clin Epidemiol*. 2015;68(6):617-626.
4. Crequit P, Trinquart L, Yavchitz A, Ravaud P. Wasted research when systematic reviews fail to provide a complete and up-to-date evidence synthesis: the example of lung cancer. *BMC Med*. 2016;14:8.
5. Lefebvre C, Glanville J, Wieland LS, Coles B, Weightman AL. Methodological developments in searching for studies for systematic reviews: past, present and future? *Syst Rev*. 2013;2:78.