Lessons for Librarians in Open Science Principles and Methods

Overview: The University of California, Los Angeles (UCLA) Library seeks funding from the Laura Bush 21st Century Librarian Program for an Implementation Project supporting the Program's Goal 3, Objective 3.4. Specifically, this project would use a peer review method to solicit and fund modular lesson creation for use in training librarians to support researchers in open science methods and digital processes. The UCLA Library seeks $249,046 in funding and offers $45,533 in cost-share to establish and coordinate a lesson development process for 14 open science lessons for librarians. This process would include 1) creating a review committee of researchers, librarians, and data science professionals, 2) developing and issuing a call for lesson proposals, 3) selection of lessons, and 4) two virtual summer schools to support selected lesson designers in curricular and modular lesson development life cycle. The resulting 14 open source and modular lessons would support continued skills development for librarians in open science so that they can effectively provide instruction to new researchers as well as serve as effective collaborators with faculty and researchers in science projects using open science practices. Scholarly and research practices change rapidly, and library and information professionals are key members in the research activities at universities and research institutes. Librarians who can advocate for and support open science will enable effective research to reach a wider community. This project will develop, implement, and refine a reusable curriculum to ensure library and information professionals have the skills to participate in a research lifecycle that enables open science.

Project Justification: Open science is a new practice recognized as a critical approach to improving and sustaining scientific inquiry and research. In fact, the National Academies of Sciences, Engineering, and Medicine (NASEM) formed a Roundtable on Aligning Incentives for Open Science in 2019.[1] Librarians and information professionals serve as important actors within the research data life cycle and are essential to ensuring the practice of open science is promoted, and supported. However, librarian training in open science is routinely absent from formal library school curriculum and repeatable and verified lessons do not exist. This project will work with experts in information, data, and open science to develop modular curricula that can be repeatedly used to teach open science to librarians in workshops throughout the country. This program will complement the lessons developed and offered through the Library Carpentry lesson program of The Carpentries organization. It will employ a collaborative lesson development model that engenders a community of contributors to actively engage and improve on the lessons over time.[2]

Project Work Plan: Our work will begin with establishing a review committee of 9 members to develop our program objectives, our scope of lessons, our call for proposals, and to serve as a review board to select lesson proposals. The following individuals have already volunteered to serve on the review committee should this project receive funding: Chris Erdmann (Assistant Director, Data Stewardship, American Geophysical Union), Caroline Coward (Group Supervisor, Library, Jet Propulsion Lab, National Aeronautics and Space Administration), Matt Mayernik (Project Scientist and Research Data Services Specialist, National Center for Atmospheric Research Library), and Jane Greenberg (Alice B. Kroeger Professor of Information Science, Drexel University). The Coordinator will develop a call for proposals based on guidance from the review committee and the director and a competitive proposal process will be run each year. The review committee will select lesson proposals to fund, and the coordinator will develop a curriculum development virtual summer school to support the cohort of lesson developers. The Project Director and coordinator will coordinate

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[1] For information about the NASEM Roundtable, see: https://www.nationalacademies.org/our-work/roundtable-on-aligning-incentives-for-open-science

[2] For a model of collaborative lesson development, see: https://doi.org/10.1371/journal.pcbi.1005963

lesson development to enable inclusion within The Carpentries lesson development process as well as enable beta-teaching workshops to test lessons with potential learners. Our workplan will be as follows:

1. Project initiation (Project team established, recruit members and establish program committee, develop and publish call for lesson modules) (August - October 2022)
2. Round 1 - Module proposals received and selected for Round 1 (November - March 2023)
3. Round 1 - Virtual Summer Institute planning (April - June 2023)
4. Round 1 - Virtual Summer Institute (July 2023)
5. Round 1 - Lesson Development and Instruction piloting (August 2023 - March 2024)
6. Round 2 - Module proposals received and selected for Round 1 (November 2023 - March 2024)
7. Round 2 - Virtual Summer Institute planning (April - May 2024)
8. Round 2 - Virtual Summer Institute (June 2024)
9. Round 2 - Lesson Development and Instruction piloting (July 2024)

Diversity Plan: Attention to diversity of backgrounds will be threaded throughout the roles involved in the project from module creators to program committee members and collaborators. A key component of our funding request is that lesson developers will be compensated for their contributions, which assists us in being able to recruit a broader range of lesson developers who might be graduate students, postdoctoral researchers, or early career faculty. The development of inclusive mechanisms for participating in the project and the curriculum (e.g. code of conduct) will be at the core of the project. In addition, criteria for the module material will include diversity, equity, and inclusion components. Both UCLA and AGU have a strong commitment to diversity and inclusion, and we will leverage and involve the people and resources from the organizations in this project.

Project Results: This project will result in 14 open science for librarians lessons published online. We will seek to have these lessons approved as part of the Library Carpentry curriculum using their curriculum development process. overseen by The Carpentries or as a lesson group using the same technologies that support reuse and ongoing maintenance and development. These lessons will be developed and supported through 2 virtual summer institutes and pilot training sessions will be used to test the lessons with librarian learners.

Budget Summary: We seek $249,046 in funding from IMLS and will offer $45,533 in cost-share; total project budget: $294,579. Of the total budget, 46% comprises staff time at UCLA to lead the project and coordinate all activities. Personnel costs include Composite Benefit Rates (CBR) and are and have been proposed to DHHS.[3] Of the personnel costs, $45,533 will be cost-share provided by UCLA. Lesson module proposals will be awarded $5,000 each, totaling $70,000 over both years for the 14 lessons. Compensating researchers and/or librarians for their work in developing these lessons ensures higher quality contributions and will attract a broader range of participants. Additionally, we will form a review committee of nine practitioners to direct the lesson proposals process, and committee service will be recognized with an honorarium of $500 per year. The funding for committee service and lesson development represents 27% of our proposed budget. The remainder of the budget is the indirect costs at the Negotiated Indirect Cost of 38% MTDC (Modified Total Direct Costs); UCLA will provide the cost-share for the indirect associated with cost-shared personnel costs. The project will be directed by Tim Dennis, Director of the Data Science Center at the UCLA Library (10% time), coordination of all activities will be undertaken by a Data System Analyst in the Data Science Center (25% time), and supported by a graduate student employee in the Data Science Center (47.5% time).

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[3] See documentation about the CBR here: https://www.finance.ucla.edu/composite-benefit-rate-assessment.