Final Performance Report
RE-252335-OLS-22
University of California, Los Angeles(University of California, Los Angeles, Library)

Refer to the detailed IMLS performance reporting instructions for additional guidance (opens in a new window). If you have questions concerning final performance reporting requirements, you may address them to the Program Officer associated with your award in eGMS Reach.

Please note that IMLS may publish performance reports and attachments online or otherwise share them and the information they contain with awardees, potential awardees, and the general public to further the mission of the agency and the development of museum and library services.

Date Submitted
12/16/2025

Federal Agency to Which Report is Submitted
Institute of Museum and Library Services

Grant Program
Laura Bush 21st Century Librarian Program

Federal Award or Other Identifying Number Assigned by Federal Agency
RE-252335-OLS-22

Project Title
Lessons for Librarians in Open Science Principles and Methods

Project Director
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Recipient Organization
10889 Wilshire Blvd Ste 700
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Award Period of Performance Start Date
08/01/2022

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Award Period of Performance End Date
07/31/2025

Agency-Level Goal/Objective
Goal: Goal 1: Champion Lifelong Learning
Objective: Objective 1.2: Support the training and professional development of the museum and library workforce

Performance Measures

Timeliness: The extent to which each task/activity is completed within the proposed timeframe
Effectiveness: The extent to which activities contribute to achieving the intended results
Quality: How well the activities meet the requirements and expectations of the target group
Efficiency: How well resources are used while generating maximum value for the target group

Certification: By submitting this report I certify to the best of my knowledge and belief that this information is correct and complete for performance of activities for the purposes set forth in the award documents. I am aware that any false, fictitious, or fraudulent information, or the omission of any material fact, may subject me to criminal, civil, or administrative penalties for fraud, false statements, false claims or otherwise (U.S. Code Title 18, Section 1001 and Title 31, Sections 3729-3730 and 3801-3812).

Your name will be added to the IMLS Final Performance Report Form as the Authorized Certifying Official when you submit this report.

Name of Authorized Certifying Official
Eleanor Forbes

Report Submitted By
Tim Dennis, Project Director

Signature
This report was signed electronically via eGMS Reach by Tim Dennis on 12/16/2025

Award Description
The UCLA Library will develop, implement, and refine a reusable curriculum to teach library and information professionals the skills to participate in a research lifecycle that enables open science. The "Lessons for Librarians in Open Science Principles and Methods" project will use a peer review method to solicit and fund modular lesson creation to train library and archives staff in open science methods and digital processes. The project will include creating a review committee of researchers, librarians, and open science professionals; developing and issuing a call for lesson proposals; the selection of lessons; and holding two virtual summer schools to support selected lesson designers in curricular and modular lesson development. The resulting 14 open source and modular lessons will support continued skill development for librarians so they can provide instruction to researchers and collaborate on science projects.

Keywords, Activities, and Changes

Recipient Identifying or Account Number *(optional)*
Enter an account number or any other identifying number that you may have assigned to the award. This number is for your use only and is not required by IMLS.

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Keywords *(required)*

Choose from one to eight keywords that best characterize your project. IMLS may use these keywords as search terms in its compilations describing the agency's grant making and/or provide them as tools to help applicants, other awardees, and the general public understand more about what IMLS supports.

Community Engagement

Data Science / Computational Analysis

Digital Preservation / Curation

Diversity, Equity, Inclusion, and Accessibility

Institutional Capacity Building

Literacy: Digital

Literacy: Information

Museum /Archives / Library Staff Professional Development / Training

Open Educational Resources

Scholarly Communications

Services for College Students

Shared Infrastructures / Open-Source Software

Activities *(required)*

*Provide a summary of your project activities. In the first cell, enter a brief description of the first activity proposed in your approved application (1000 character limit). In the second, choose **Completed, Partially completed**, or **Not undertaken** to describe the completion status as of the end of your award's period of performance. In the third, provide an explanation if you selected **Partially completed** or **Not undertaken** (2000-character limit). Because this is the final report for your project, be sure to include all activities for the entire project, and not simply those completed since your most recent interim report.*

Activity Proposed in Your Approved Application	Completion Status	Explanation If Partially Completed or Not Undertaken
Project Setup (Aug 2022 - Mar 2023): Assemble project team, build project website, issue Round 1 Call for Proposals, establish infrastructure and workflows	Completed	eam finalized Oct 2022. Website launched Jan 2023. CFP closed Jan 31, 2023. Created review rubric, submission templates, established project infrastructure (Trello, Slack, SurveyMonkey, Google Drive). All deliverables completed on schedule.

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Activity Proposed in Your Approved Application	Completion Status	Explanation If Partially Completed or Not Undertaken
Round 1 Proposal Selection (Feb - Apr 2023): Review and select lesson proposals through committee process	Completed	Received 32 proposals by Jan 31, 2023 deadline. Review Committee met Mar-Apr 2023. Made final selections Apr 15, 2023 (8 lessons initially selected). One Round 1 lesson later withdrawn and replaced with Round 2 selection, resulting in 14 total funded lessons as approved in Year 1 reporting.
Round 1 Virtual Summer Seminar (Aug - Oct 2023): Provide author training in curriculum design and lesson development best practices	Completed	12-week seminar ran Aug 9 - Oct 25, 2023. Adapted Carpentries Collaborative Lesson Development Training model with customized content for library contexts. Hired and trained 3 student assistants to provide GitHub technical support. Modified structure based on timeline needs while maintaining pedagogical focus.
Round 2 Proposal Selection (Nov 2023 - May 2024): Issue second Call for Proposals, review submissions, and select additional lesson proposals	Completed	CFP opened Nov 2023, closed Feb 29, 2024. Received 20 proposals. Committee reviewed and finalized 8 selections between Mar 15 - May 1, 2024. Updated rubric to include diversity metrics based on Year 1 learnings and community feedback.
Round 2 Virtual Summer Seminar (Jul - Aug 2024): Conduct second cohort training session for newly selected authors	Completed	Streamlined to 5 sessions (2 hours each) across 4 weeks (Jul 10 - Aug 8, 2024). Based on Round 1 feedback, removed mandatory Workbench use, introduced Google Doc format option, reduced tool training to prioritize lesson development writing time. Authors reported improved focus on content creation.

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Activity Proposed in Your Approved Application	Completion Status	Explanation If Partially Completed or Not Undertaken
Lesson Development & Support (Aug 2023 - Apr 2025): Provide ongoing technical and pedagogical support to authors during lesson creation	Completed	Created active GitHub repositories for all 14 funded proposals (15 total repositories including one author-created variant) between Aug 2023 - Apr 2025. Provided direct team support throughout development. 8 lessons reached alpha stage, 1 variant reached beta stage by project end. One lesson (Building Open Science Community of Practice) delayed due to author medical leave but complete draft reviewed Apr 2025.
Lesson Piloting (2023 - 2025): Support authors in piloting lessons with target audiences to gather feedback and refine content	Completed	Several lessons piloted during Year 1. May-Jul 2025 alpha pilots completed successfully across multiple institutions. Open Qualitative Research beta piloted at IASSIST 2025 conference in Bristol. Piloting continues beyond grant period with LC-CAC coordination and community recruitment via project blog post.
Library Carpentry Curriculum Advisory Committee Integration (Jan 2024 - ongoing): Collaborate with LC-CAC to integrate lessons into official curriculum	Completed	Collaboration began Jan 2024. 5 lessons successfully moved to Library Carpentry GitHub organization. 1 lesson (DMP101) formally added to LC curriculum Jun 2024. 3 additional author teams scheduled to meet with LC-CAC in 2025 for integration discussions. LC-CAC committed to ongoing support for piloting, testing, and long-term stewardship beyond grant period.

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Activity Proposed in Your Approved Application	Completion Status	Explanation If Partially Completed or Not Undertaken
Tools & Infrastructure Development (2023-2025): Create supporting resources, templates, and automation tools for lesson authors	Completed	Developed IMLS Tools GitHub repository with scripts, templates, and automation tools to streamline lesson development workflows. Created IMLS Documentation Hub static site featuring writing checklists, templates, Workbench guidance, and development workflows. All materials archived at https://github.com/ucla-imls-open-sci/.github for future community reuse.
Final Reporting & Documentation (Apr 2025): Prepare comprehensive final project report documenting activities, outcomes, and lessons learned	Completed	Final report compiled documenting all project activities, outcomes, challenges, lessons learned, and next steps for community sustainability. Report submitted December 2025.

Changes *(conditionally required)*

Certain changes in your project may require prior approval from IMLS. Consult the [General Terms and Conditions for IMLS Discretionary Grant and Cooperative Agreement Awards](#) for your award, as well as [2 C.F.R. part 200 (Uniform Guidance)](#), for details. If there were any such changes for which you did not seek IMLS approval during the period of performance for your award, list them here. In the first column, select the type of change. In the second, select the date it became effective. In the third, explain the reason for the change. If you selected "Other Change" in the first cell, be sure to use the third to include a description of the change you made. Please note that listing such actions here does not constitute IMLS approval.

Project Results, Attachments, Lessons Learned, and Next Steps

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Project Results *(required)*
In the space below, provide brief information on the following:
(a) Describe the results or accomplishments you achieved in your project. Compare them to what you proposed in your approved application and any subsequently approved revision. Include major findings, developments, or conclusions (both positive and negative), and key outcomes or other achievements.

(b) If you did not meet established goals, provide the reasons.

(c) Please also include any additional pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs.

(d) If your project generated products (e.g., research findings, publications, exhibitions, educational aids or curricula, toolkits, databases, conference papers, presentations, software, models), describe them and provide URLs where appropriate.
(e) Finally, describe how the results of your project have been disseminated to communities of interest.

RESULTS & ACCOMPLISHMENTS

The project achieved its primary goal of developing open science curriculum resources for librarians. All 14 funded lesson proposals resulted in deliverables, producing 15 public repositories (one author created a variant using alternative open-source tools). Eight lessons reached alpha stage (fully scoped and piloted), one variant reached beta stage, and six remain in pre-alpha development. This represents 100% completion of funded proposals.

Two lessons have been or are being formally adopted into Library Carpentry curriculum: [Data Management (and Sharing) Plans for Librarians 101](#) (adopted June 2024) and [Open Qualitative Research](#) (beta piloted at IASSIST 2025, formal adoption in progress). Five additional lessons have been moved into the Library Carpentry GitHub organization and are in the adoption pipeline.

The project successfully executed two proposal rounds, trained 27 authors across 14 lesson teams, and established ongoing collaboration with the Library Carpentry Curriculum Advisory Committee (LC-CAC) for sustained lesson stewardship beyond the grant period.

ADAPTATIONS & CHALLENGES

Year-over-year improvements were made based on Round 1 feedback. Round 2 seminar was condensed from 12 weeks to 5 sessions over 4 weeks, made Carpentries Workbench use optional, and prioritized writing time over technical training. One Round 1 lesson was withdrawn early and replaced with a Round 2 selection (approved in Year 1 reporting), maintaining the target of 14 lessons.

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One lesson (Building an Open Science Community of Practice) was delayed due to author medical leave, a complete draft was reviewed April 2025 and is entering pilot planning.

BUDGET

UCLA campus payment system transitions delayed honoraria processing, particularly for UC-affiliated librarians. Administrative workarounds using alternative compliant payment mechanisms were implemented. All grant funds were successfully disbursed with no budget modifications or cost overruns.

PRODUCTS GENERATED

15 Lesson Repositories

- Data Management (and Sharing) Plans for Librarians 101
- Open Qualitative Research (Tagette)
- Open Qualitative Research with QualCoder (variant)
- Authoring Open Science
- Containers and Virtual Machines
- ORCID for Librarians
- Data Dashboards Using R
- Open Science Team Agreements
- Collaborative Science
- NASA Science Explorer
- Reproducible Research Workflows
- Multilingual Search Systems
- Building Open Science Community of Practice
- Cloud Workflows
- Open Science Hardware

Supporting Infrastructure

- IMLS Tools Repository
- Documentation Hub
- Project Website
- All materials archive

Policy Contributions

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- [Library Carpentry formal lesson adoption policy](#)

DISSEMINATION

- Carpentries blog post on DMP101 adoption (June 2024): [library-carpentry-dmp-lesson-approved](#)
- IASSIST 2024 conference presentation (Halifax): https://doi.org/10.5281/zenodo.11402645
- IASSIST 2025 "train the trainer" workshop using Open Qualitative Research lesson (Bristol, UK)
- 15 public GitHub repositories accessible to global library community
- Planned 2026 blog post recruiting community instructors for beta pilots

The Library Carpentry Curriculum Advisory Committee committed to ongoing lesson piloting, testing, and community stewardship, ensuring sustained impact beyond the grant period.

Attachments *(conditionally required)*
This report cannot accept attachments; however, you are welcome to upload any attachments as PDF, Word, Excel, or image files up to 100MB each in size through the Messages tab in Reach. If you do not have any attachments to submit, please go to the next question.
If you are submitting attachments, please list and briefly describe them here. Identify any information you believe may be privacy-protected, proprietary, or otherwise confidential on the attachment itself and in the description below.

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Attachment File Name	Brief Description
	No attachments uploaded. All project documentation, templates, and supporting materials are openly archived and permanently accessible at: https://github.com/ucla-imls-open-sci This repository includes: • 15 lesson repositories (14 funded proposals + 1 author-created variant) • IMLS Tools Repository with development scripts and templates • Documentation Hub with evaluation criteria, rubrics, and author guidance • Virtual Summer Seminar training materials • Lesson design templates and checklists • Carpentries Workbench onboarding guide • Project team, author, and reviewer rosters All materials are licensed CC-BY 4.0 for reuse and will remain accessible beyond the grant period. No proprietary or confidential information included.

Lessons Learned *(required)*
Describe observations, insights, and new understandings acquired during your project, focusing on information that could be of use to others doing similar work. Describe any problems, delays, or adverse conditions that were a barrier to success in your project, and describe the action you took to address them. Similarly, describe any favorable developments during your project that helped you meet time schedules and objectives sooner, at less cost, or produce more or different beneficial results than originally planned.

Year-to-Year Improvements

Round 1 Challenges

Authors reported limited solo writing time due to heavy emphasis on Workbench technical training and pedagogy instruction. While valuable, the 12-week format was intensive.

Round 2 Adaptations

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- Condensed seminar to 5 sessions over 4 weeks
- Made Workbench use optional and introduced a Google Docs template
- Prioritized writing time over tool training
- Maintained pedagogical focus while reducing technical overhead

Better balance between structured guidance and author autonomy for lesson development.

Technical Infrastructure

- GitHub experience varied widely among authors, about half were already comfortable
- Peer support capacity emerged naturally from experienced authors
- Google Docs template sometimes caused confusion without sufficient context
- GitHub Actions build failures created friction for new authors
- Once authors had partial lessons in Workbench, confidence and understanding increased significantly

Scoping & Timeline Management

- Lesson timelines varied more than expected
- Stronger scoping guidance during the proposal phase would be beneficial
- Shorter, more modular lessons were easier to complete and adopt
- Earlier expectation-setting around deliverables and lesson length is recommended

Structural Challenges

- UCLA campus payment system transitions delayed honoraria, particularly for UC-affiliated librarians
- Required administrative workarounds and communication adjustments
- Medical leave by one author delayed one lesson, though the draft is now complete and entering pilot planning

Diversity & Inclusion Enhancements

- Updated Round 2 rubric to explicitly evaluate diversity of authors, institutions, and intended audiences
- Improved recognition and elevation of proposals contributing to broader representation

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Next Steps *(required)*
Describe your plans to sustain the benefit of this project beyond this award's end date and/or to continue work in this area.

Library Carpentry Curriculum Advisory Committee (LC-CAC)

- LC-CAC, chaired by the Project Director, committed to supporting lesson piloting and adoption beyond the grant period
- Will recruit instructors to test alpha-stage lessons
- Will advise authors on improvements needed for full curriculum adoption
- Several lessons are already in the adoption pipeline, with additional engagement planned for 2026
- LC-CAC will publish a blog post in early 2026 to recruit community instructors for lesson piloting. This establishes a formal pathway for community-driven lesson testing and adoption and marks a shift from project-led in-house piloting to Carpentries-framework community engagement. Community-sustained piloting supports lesson evolution in response to practitioner needs rather than static project outputs.

Infrastructure Maintenance

- IMLS Tools repository and Documentation Hub will remain openly available
- Updates planned as new authoring and onboarding needs arise
- Virtual Summer Seminar materials will be reusable for future cohorts

Institutional Integration

- UC Carpentries is exploring integration of lessons or lesson components into instruction and consulting programs
- Potential adaptation for future grant-funded projects building on the open science training framework

Continued Author Support

- Several project authors remain active Carpentries contributors
- Interest in sustaining and expanding lessons beyond the original scope

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- Ongoing mentoring and onboarding support expected through the Carpentries community

Future Seminar Adaptations

- More modular version with lighter facilitation and self-paced components is possible
- Improved balance between guided instruction and solo writing time
- Stronger upfront scoping guidance is recommended

Performance Measurement

Reporting performance measures is required for all awards made by IMLS after November 12, 2020. The grant program through which your award was made identified two, three, or four measures for this purpose. Refer to your Official Award Notification located in the Documents tab of eGMS Reach to confirm which performance measures apply to your award.

For each applicable performance measure, rate your performance as an IMLS awardee during your project. When determining your rating, refer to your Official Award Notification and/or the Performance Measurement Plan you submitted with your application, in which you identified what data you would collect from what source, the method you would use to collect it, and according to what schedule. If a measure was not specified in the grant program through which your award was made, select Not Applicable.

Effectiveness: Our project's activities contributed to achieving our intended results.

5: Always

Efficiency: We used resources (e.g., funds, expertise, time) well and minimized our costs while generating maximum value for our target group(s).

5: Always

Quality: The activities we carried out met the requirements and expectations of our target group(s).

4: Usually

Timeliness: We completed each task/activity within the projected timeframe.

4: Usually

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Performance Measures Explanation *(required)*
Provide a brief explanation for your ratings.

EFFECTIVENESS: Always
 Project activities consistently contributed to achieving intended results. All
 14 funded lesson proposals resulted in deliverables (15 total repositories),
 reprsenting 100% completion. Two lessons achieved or are achieving formal
 Library Carpentry curriculum adoption. Five additional lessons moved to LC
 organization. Project exceeded original scope by creating formal lesson adoption
 policy tat institutionalizes community-driven development model. LC-CAC
 partnership ensures sustained impact beyond grant period.

EFFICIENCY: Always
Resources consistently used well throughout project. All grant funds disbursed
successfully with no budget modifications or cost overruns despite UCLA payment
system challenges. Project team demonstrated responsive resource allocation by
implementing Year 2 seminar improvements based on Year 1 feedback (condensed
format, prioritized writing time). Leveraged existing Carpentries infrastructure
and community partnerships to maximize value while minimizing redundant costs.

QUALITY: Usually
Activities generally met or exceeded target group expectations. Two lessons
undergoing formal peer review for curriculum adoption. Open Qualitative Research
lesson selected for international conference workshop, validating quality.
LC-CAC endorsement demonstrates professional recognition. Round 1 authors
reported wanting more solo writing time in seminar format; this feedback was
incorporated into Round 2 redesign, improving quality responsiveness.

TIMELINESS: Usually
Most project milestones completed within projected timeframes (proposal rounds,
seminars, lesson development phases, LC-CAC coordination). One lesson delayed
due to author medical leave (complete draft reviewed April 2025). Final report
submission later than initially projected due to institutional coordination
requirements, though all substantive deliverables completed by grant end date.

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Burden Estimate and Request for Public Comments: The public reporting burden for this collection of information is estimated at an average of 14 hours per response. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. We welcome your suggestions for improving the form and making it as easy to use as possible. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to grantsadmin@imls.gov. Please note that awardees are not required to respond to a collection of information unless it displays a currently valid U.S. Office of Management and Budget (OMB) control number.

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