Building Civic Open Data Capacity through Instructional Design, University of Pittsburgh

The School of Computing and Information (SCI) at the University of Pittsburgh, in partnership with the Western Pennsylvania Regional Data Center (WPRDC) at the University Center for Social and Urban Research, University Library System (ULS), and the Graduate School of Public and International Affairs (GSPIA), requests $223,853 to produce data literacy, management, and analytics instructional materials designed to: 1. foster MLIS students' capacity to engage in local civic data ecosystems in their careers; 2. build curation skills needed among civic data workers through curriculum for academic programs such as public policy, urban studies, and political studies; 3. address existing data information needs among academic and public librarians and civic sector employees through professional development workshops and resources. This 2.5-year piloting project has a national focus and addresses the IMLS goal of "Build Capacity" by focusing on ways that MLIS curriculum can ready librarians for work with civic data and by bringing these skills and understandings to students and professionals in the civic sector. The project type is Master's level in the Community Catalysts category.

Statement of Need: Open civic data provides a conduit for public participation in our communities, a lens into government decision-making, and a resource for innovation.[1] However, in order for the potential of open civic data to be realized, data producers in community organizations and government must have skills and knowledge that helps them manage data and prepare data for publication. Data users, on the other hand, must know that the data exists and have the data literacy skills needed to make use of it. In the 2017 IMLS forum on LIS education, Carole Palmer observed that civic agencies "are great at opening up the data, making it available on platforms, but not at making it usable to the public. And that is where our [library] expertise really comes in".[2] This project is premised on the valuable roles that librarians can play in supporting data producers and users and asserts that LIS programs can offer data literacy, management, and analytics preparation for MLIS students and for students in academic programs that prepare them for roles as civic data producers, curators, and intermediaries.

This project recognizes that there is a growing community of practice in public and academic libraries that is engaged with civic data ecosystems. While MLIS programs and library professional development efforts have directed much attention to research data services, less attention has been given toward how to build capacity for services and roles focused on open civic data through curriculum and instruction. Xiao et al. (2018) argue that there are emerging specialist data roles for working with open government data and argue that iSchools should respond accordingly with MLIS curriculum that prepares students for these roles.[3] MLIS programs can offer a curriculum that positions librarians as active and valuable players in their civic ecosystem and prepares MLIS students for positions outside of libraries that involve work with civic data.

In the civic sector, the literature on open civic data calls attention to the data curation challenges that civic sector employees are confronting.[4] There is a shared interest and opportunity to prepare students for roles in civic open data inside and outside LIS programs. With this in mind, this project will create materials for instructors within academic programs like public policy, urban studies, and political science. Both outputs -- the materials for MLIS students and for students in academic programs with a civic focus -- will be adapted so they can be used professional development opportunities for academic and public librarians and civic data workers. We will take a national approach and partner with groups like the Civic Analytics Network at Harvard for delivery and Drexel University's IMLS-supported LEADS-4-NDP project for dissemination of the materials.

Project Design: This project will be conducted in three phases: Phase 1: information needs assessment (6 months); Phase 2: instructional design (9 months); Phase 3. testing, iteration, and sharing (15 months). *Phase 1:* Information Needs Assessment (September 2020 to February 2021). We will use this phase to design the focus group and survey instrument, obtain IRB approval, and conduct a needs assessment study. This project builds on the IMLS-funded Civic Switchboard project, of which some of this project's team members

[1] See Yannis Charalabidis et al., *The World of Open Data: Concepts, Methods, Tools and Experiences* (Cham, Switzerland: Springer, 2018), 7-8.
[2] Ashley E. Sands et al., *Positioning Library and Information Science Graduate Programs for 21st Century Practice*, (Washington, D.C.: Institute of Museum and Library Services, 2017): 10.
[3] Fanghui Xiao, Liz Lyon, Ning Zou, and Robert M. Gradeck, "Emerging Roles for Optimising Re-Use of Open Government Data," *International Journal of Digital Curation* 13, no. 1 (2018): 370-371.
[4] See Charalabidis et al., *The World of Open Data* and Peter Conradi and Sunil Choenni, S. "On the Barriers for Local Government Releasing Open Data. *Government Information Quarterly*, 31(1), S10-S17.

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are a part, and the barriers for civic data work identified in the Civic Switchboard project. Through focus groups and surveys, the project team will build further understanding of barriers to open data work affecting public and academic librarians and individuals in community organizations and local government. We will engage the librarians and civic data workers who participated in the Civic Switchboard workshops and field awards, giving the needs assessment a national scope, and use professional channels such as RDAP, PLA, ACRL, and the National Neighborhood Indicators Partnership (NNIP) to connect with potential participants.

Phase 2: Initial instructional design (March 2021-December 2021). While we will take an iterative approach to design in this project, we will use this phase to analyze the focus group and survey data and identify data-related barriers and pain points facing librarians and civic data sector employees. We will develop learning objectives that map to these areas of need and design instructional materials, in the form of modular lessons, activities, and syllabi, that can be customized for targeted groups: MLIS students, students in civic sector-focused programs such as public policy, librarians in the field, and civic sector employees in the field.

Phase 3: Piloting, testing, revising, and sharing instructional materials (January 2022 to March 2023). We will pilot the instructional materials via courses or modules offered to students enrolled in the University of Pittsburgh's MLIS program and Graduate School of Public and International Affairs. Professional training opportunities will be delivered in partnership with national groups like the Civic Analytics Network at Harvard. We will assess, revise, and share the materials at conferences such as ALISE and NNIP and identify dissemination strategies, including via Drexel University's IMLS-supported LEADS-4-NDP project.

Building on Previous Work: This work builds on the Open Data Literacy (RE-40-16-0015-16) project, which provides University of Washington students meaningful field experiences with open data and the Civic Switchboard (LG-70-17-0146-17) project, which builds existing librarians' capacity to develop civic data partnerships through workshops, field awards, and a guide. The Civic Switchboard project is developing a typology of roles for public and academic libraries in their civic data ecosystem, which will inform the design of curriculum that prepares students for these roles.[5] This project will also look to the Data Science in Libraries (RE-43-16-0149-16) project and the project teams' recommendations on technical skills and roles needed to effectively leverage data work in libraries. We will engage with the recently IMLS-funded University of Michigan (RE-17-19-0036-19) project "Training Future Librarians for Civic Engagement and City Collaboration" that focuses on public librarians and civic engagement.

Project Impact: Open data portals and initiatives continue to grow in number and there is a community of practice around open civic data that is simultaneously growing in public and academic libraries. New professionals, however, who are entering the library field are not being sufficiently equipped to join this community of practice. IMLS can support the creation of data management, analytics, and literacy instructional materials that are sharply focused on preparation for civic data roles. The audiences include MLIS students; LIS, public policy and other domain-based educators; students preparing for civic sector careers; and existing professionals in libraries, community organizations, and government that are engaged with civic open data.

Diversity Plan: As intermediaries to open civic data, academic and public librarians have the ability to design outreach, education, and means of access that empower marginalized communities to use open data and find benefits from doing so. This project is committed to building a corpus of instructional materials that focuses on equipping librarians and civic sector open data workers with a mindset and set of skills that help to ensure open civic data is useful to all. We will deliver professional development data sessions to community organizations that are committed to creating equitable, healthy, and economically stable neighborhoods.

Budget Summary: We request **$223,853** total to fund this project. The funds for this project will support direct costs of: 2.5 years of half-time funding for a doctoral student to assist with data collection, curricular design, and testing (**$37,287**); project team funding (**$64,425**); fringe benefits (**$38,556**); reimbursement for focus group participants (**$1,000**); travel and conference costs for project team for testing and sharing (**$7,500**); supplies for data collection, workshops, and instruction (**$1,000**). Indirect institutional costs are set at 56.5% (**$74.085).**

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[5] Civic Switchboard, "Library Roles" [in development] https://civic-switchboard.gitbook.io/guide/activating/typology-of-library-roles