



NATIONAL LEADERSHIP GRANTS FOR LIBRARIES

Sample Application LG-260354-OLS-26
Project Category: Applied Research

Michigan State University

Amount awarded by IMLS:	\$455,066
Amount of cost share:	\$0

Michigan State University and partners will codesign a web-based, interactive Artificial Intelligence (AI) literacy toolkit for librarians, helping them recognize and leverage their strengths when creating AI literacy programs. Using an asset-based framework and participatory design methods, it will support youth librarians by developing an asset taxonomy that highlights their cultural and community expertise. The toolkit will equip librarians to launch, grow, and sustain AI literacy initiatives, with secondary benefits for the children and young adults who gain critical skills through these programs. Ultimately, the project will deliver a scalable, opensource, asset-based model that strengthens the broader public library workforce and can be adopted by public librarians nationwide.

Attached are the following components excerpted from the original application.

- Narrative
- Schedule of completion

When preparing an application for the next deadline, be sure to follow the instructions in the most recent Notice of Funding Opportunity for the grant program to which you are applying.

Asset-Based AI Toolkit: Leveraging Librarian Cultural Wealth for AI Literacy

1 Introduction

As Artificial Intelligence (AI) becomes woven into daily life, AI literacy—the understanding of its mechanics and societal implications—has emerged as a fundamental pillar of informed citizenship, a status recently underscored by [U.S. Executive Orders](#). Leveraging their history in informal STEM learning, public libraries offer the infrastructure needed to bring this literacy to the community, making them an ideal setting for providing AI education to youth nationwide.

To support this mission, our research team developed an IMLS-funded AI literacy program designed specifically for public libraries ([LG-250059-OLS-21](#), and [a link to the project website](#)). However, we found that existing educational materials alone were insufficient for librarians to independently sustain these programs. Our findings suggest that **librarians’ cultural assets**—such as their deep knowledge of patrons, existing programs, and community partnerships—are just as vital as technical AI knowledge, yet these strengths remain largely underexplored.

This project will co-design a web-based interactive **AI literacy toolkit for librarians**, enabling them to recognize and leverage their assets for AI literacy programs. Built on an asset-based framework [Yosso, 2005] and participatory design methods [Lee et al., 2017a], our main research question is: “*What assets do librarians have, and how can an AI toolkit mobilize these assets to support AI literacy programs?*” For this project, Michigan State University, the University of Minnesota, and the University of Illinois at Urbana-Champaign, in partnership with Skokie Public Library (IL), Highland Public Library (MI), Cleveland Public Library (OH), Boston Public Library (MA), Springdale Public Library (AR), and San Diego Public Library (CA), request \$463,463 for a three-year national leadership applied research grant. This open-source platform will benefit public librarians nationwide.

2 Project justification

2.1 National needs

This project develops an asset-based AI literacy toolkit to: 1) enhance public AI literacy, 2) promote active roles for librarians in AI programs, and 3) value and mobilize librarians’ assets for AI literacy.

2.1.1 Need 1: The Need for AI Literacy Due to the Emergence of AI in Society

AI has become integral to daily life, from generative conversation systems to government algorithms that evaluate social protection applicants. Given this increasing influence, AI literacy is now a human rights concern rather than a purely technical challenge; it requires the public to understand basic AI mechanisms and relevant societal issues through critical thinking [Cao et al., 2025]. Global and national institutions, including UNESCO and the [White House](#), have recognized this by providing resources on AI’s potential societal impacts.

Libraries have also recognized the need for AI literacy, considering their leading role in public technology literacy education ([LG-80-15-0041-15](#)). Consequently, IMLS has funded diverse AI initiatives—from archival search tools ([LG-256703-OLS-24](#)) to literacy programs for the civil rights movement ([LG-254889-OLS-23](#)). Our previous IMLS-funded work on youth AI literacy ([LG-250059-OLS-21](#)) was one such effort. This demand is further evidenced by the registration of over 50 librarians seeking collaboration opportunities with our research team during our presentation at the YALSA symposium. This interest demonstrates librarians’ awareness of the pressing need for **AI literacy education** for their youth patrons and their proactive willingness to serve them. Building on these ongoing efforts, we will focus on supporting public librarians in addressing these needs.

2.1.2 Need 2: The Need for a More Active Role of Public Librarians in AI Literacy Programs

To meet the growing demand for AI literacy, public libraries have hosted diverse programs, according to a recent IMLS-funded survey (LG-254889-OLS-23) [Huang et al., 2024b, Huang et al., 2024a]. Common formats include open lectures or podcasts to raise general awareness, followed by hands-on workshops often designed for youth. For example, the Boston Public Library’s “AI Decoded” workshop teaches teens AI history and mechanics through interactive sessions where participants engage with generative AI systems and envision future applications.

Although public libraries have conducted over 100 AI-related activities, most rely on external partners like universities for technical expertise [Huang et al., 2024b, Huang et al., 2024a]. While these collaborations provide immediate value, such dependence often results in short-term programs. Science literacy programs in public libraries have faced similar sustainability challenges when librarians were not actively involved, as noted in [STEMLibraries.org](#) (LG-80-15-0041-15). To create more sustainable AI literacy programs, librarians’ active involvement in developing, initiating, and implementing AI literacy programs is critical, aligning with their identities and strengths. To address this need, this project adopts a **participatory design approach** where public librarians participate in every stage of the research process. For example, we will not only solicit ideas from librarians but also invite them to review our interpretations to ensure equitable collaborative roles.

2.1.3 Need 3: The Need for Valuing and Mobilizing the Assets of Public Librarians

To design, deploy, and maintain AI literacy programs in public libraries, technological knowledge of AI is essential. However, this alone does not guarantee the long-term success of the program. Given the importance of AI literacy for young adults, a number of AI literacy materials have been developed and are available. For example, the Responsible AI for Social Empowerment and Education (RAISE) initiative at MIT offers a variety of open-source AI literacy materials, ranging from AI curricula for middle school students to hands-on activity materials that teach basic AI concepts, such as training. Code.org also provides various AI literacy curricula, including short educational videos and interactive online games. Moreover, some materials have been developed through partnerships with public libraries (e.g., We Are AI, LG-250059-OLS-21). However, these materials are not always used sustainably in actual library settings.

Our previous work similarly reveals that access to materials alone is insufficient for librarians to lead AI programs. This stems from two primary barriers: a perceived lack of technological expertise due to AI’s documented complexity, and a mismatch between rigid curricula and the fluid, drop-in nature of public library attendance. These challenges can be mitigated by an asset-based framework [Yosso, 2005] that empowers librarians to leverage their existing “cultural wealth.” Unlike external experts, librarians possess a deep, localized understanding of patron needs and community resources. This project will **mobilize these librarian assets and bridge them with AI literacy** to create sustainable, context-aware programming.

2.2 Target group and beneficiaries

This project directly supports youth librarians by developing an asset taxonomy that codifies their cultural wealth and community expertise. A specialized toolkit will also enable librarians to launch, develop, and sustain AI literacy programs. The secondary beneficiaries are the children and young adults who will gain critical skills through these programs. Ultimately, the project provides a scalable, asset-based framework that benefits the broader public library workforce.

2.3 Alignment of IMLS category

The goal of this proposal aligns with the NLG-L program objective 1.1, ‘serve the learning needs of the public through libraries and archives,’ particularly through informal STEM or other types

Librarians' Expertise	Network of People	Experience with Current & Past Programs	Resources for Program Development
1) Professional background 2) Personal research interests 3) Prior AI exposure 4) Specific AI interests	1) Youth patrons & their parents 2) Local community partners 3) State government officials (e.g., those involved in librarian AI education program) 4) Connections to AI experts (e.g., researchers)	1) AI-related programs 2) STEM programs 3) Other youth programs	1) Facility assets (e.g., makerspace) 2) Hardware/kits (e.g., Arduino) 3) Financial resources (e.g., local funding opportunities) 4) Organizational capacity (e.g., administrative support)

Table 1: A Preliminary Taxonomy of Librarian Assets

of participatory learning. We specifically aim to empower public librarians to serve the needs of youth patrons regarding their AI literacy enhancement.

3 Project Work Plan

3.1 Theoretical Framework: Asset-Based Approach for Sustainable AI Programs

This project is developed based on asset-based frameworks [Yosso, 2005, Cao et al., 2025], which aim to mobilize the existing assets of research participant communities to address their issues, rather than generating new solutions developed solely through the academic knowledge of researchers. With this framework, researchers and community members maintain collaborative relationships: community members are partners with unique capabilities based on their experiences with their own community, while researchers act as facilitators who identify the assets of the community and explore ways to utilize them. This approach is particularly helpful when the strengths of research participant communities are undervalued, despite their importance. This framework emerged due to the drawbacks of deficit-based approaches, which focus on what is missing and aim to fill in the gaps. Deficit-based approaches tend to position research participants as passive actors as they are considered to lack capabilities.

Asset-based frameworks are known for their strength in creating *sustainable solutions*, as solutions are developed based on the community's existing knowledge, resources, and capabilities. Since one of the main issues regarding AI literacy programs in public libraries is a lack of sustainability [Huang et al., 2024a], this framework is promising for an AI literacy toolkit development for librarians. Recent reviews of AI programs in public libraries revealed that, despite the relatively large number of public libraries with experience in AI-related programs (more than 100), they are mostly one-time events [Huang et al., 2024b]. Those programs are carried out through external collaborators, like universities, and end once the collaboration is over. Moreover, due to the emphasis on the technological novelty of AI, these programs miss the opportunity to leverage the existing capabilities of public librarians, who have long been leading various programs with unique knowledge of their own communities.

In this project, we expand the definition of assets to include various forms of capital, drawing on Yosso's concept of community cultural wealth [Yosso, 2005]. Yosso emphasizes that assets supporting students' learning go beyond monetary capital, including sociocultural assets like social capital (connections with community members) and familial capital (strong family and community bonds), which are crucial for educational success.

We aim to identify the unique assets of the librarian community through ethnographic observation and co-design processes, some of which were briefly highlighted in our previous project and preliminary work (see Table 1). For example, a youth librarian at the Cleveland Public Library acknowledges that her youth patrons tend to join her program more when the AI literacy program is presented with less of a technical focus, due to their perceived lack of competency with complex technologies. Her lived experience is an important asset that should be considered in AI literacy program design. The Highland Public Library (MI) has access to the Library of Michigan,

which provides access to AI-related training programs for public librarians. The materials provided through this governmental support can lay the groundwork for creating an AI program at the library. Additionally, each library's social connections to community members, such as artists, and its access to various facilities, such as a makerspace, are also important types of assets.

The research team successfully used this framework in their previous AI literacy program development for public libraries, funded by IMLS, which received an award from the ASIS&T conference workshop [Lee et al., 2022] and resulted in a publication at a top research venue [Cao et al., 2025]. The Project Director (PD) Lee also has expertise in this framework, having received grants from both IMLS and the National Science Foundation (NSF), and published multiple research papers utilizing the framework [Shin et al., 2021, Lee and Choi, 2021, Lee et al., 2023a].

3.2 Research Team

3.2.1 Investigators

Project Director (PD) Lee is an expert on asset-based approaches that she has revealed to be an sustainable and effective way of addressing communities' issues [Shin et al., 2021, Lee and Choi, 2021, Lee et al., 2023a]. She has already applied this methodology in developing a library-based AI literacy program for teens [Cao et al., 2025]. She also has more than 10 years of experience of co-design [Lee et al., 2017b, Lee et al., 2017a, Lee et al., 2023a, Lee et al., 2023b] which this project uses to develop a web-based interactive toolkit. She is also the PD for the IMLS-funded AI Literacy for Youth project ([LG-250059-OLS-21](#)).

Co-PD Akgün is a K-12 science and STEM education expert who collaborates with in- and pre-service teachers to develop culturally-sensitive teaching practices and teacher identities. She has worked on various research projects focused on science teaching, assessment, and curriculum design in K-12 STEM education [Capraro et al., 2024, Akgun and Greenhow, 2022]. As a Co-PD, she will contribute her expertise in designing and refining AI literacy modules and teaching guides for librarians, as well as in creating tools for qualitative data generation and analysis.

Consultant Choi is an expert in AI for music and poetry within the field of library science. She has led two IMLS-funded projects on AI and libraries ([LG-250059-OLS-21](#), [RE-252382-OLS-22](#)). With a background in teaching AI literacy to library science students and youth patrons, she will provide the PD and Co-PD with subject matter expertise. Her role includes curating supplementary resources and providing iterative feedback on the development of the interactive toolkit.

3.2.2 Librarians

Four public librarians will join the team as *primary* partners to participate in the entire project: Rachael Bild (Teen Services Librarian) and Laurel Dooley (Teen Services Manager) from Skokie Public Library (IL); Dawn Dittmar (Teen/Adult Services Librarian) from Highland Township Public Library (MI); and Beverly Austin (Youth Librarian) from Cleveland Public Library (OH). Additionally, three librarians have expressed interest in testing the toolkit during the final evaluation phase as *secondary* partners (RQ3): Jen Johnson (Young Adult Librarian) from Springdale Public Library (AR), Bri Skywall (Teen Technology Coordinator) from Boston Public Library (MA), and Uyen Tran (Manager of Rancho Peñasquitos Branch Library Branch) from San Diego Public Library (CA). We will recruit an additional three to seven librarians for this evaluation through our existing network of 50 contacts, as well as participants from the YALSA webinar in Year 2.

3.2.3 YALSA

We are currently in communication with Alena Rivers, Executive Director of ALSC and Interim Executive Director of YALSA, regarding a webinar series in Years 2 and 3. Due to recent organizational changes within these associations, coordination is ongoing; however, they have expressed interest in the project. Should a direct partnership through these channels not be feasible, we will

work closely with our partner librarians and Advisory Board to identify alternative high-impact dissemination platforms to ensure the toolkit reaches its target audience.

3.2.4 Advisory board (AB)

Jane Stimpson (Massachusetts Library System) with expertise of training public librarians on AI will join the team to provide feedback on our toolkit for librarians. Moreover, leading library science scholar with experiences with successful experience with IMLS grants will join the team, including Dr. Jason Yip, University of Washington with expertise on co-design ([LG-96-18-0041](#)), Dr. Kyungwon Koh, University of Illinois at Urbana-Champaign (UIUC), with expertise on Makerspace for youth ([LG-246251-OLS-20](#), [LG-81-16-0151](#), [RE-07-14-0048-14](#)), and Dr. Kate McDowell, UIUC, with expertise on a web-based interactive toolkit ([RE-256709-OLS-24](#)). They also have expertise that aligns with our methodology (Yip), target population (Koh), and the final deliverable, such as a web-based interactive toolkit (McDowell). The AB will meet annually to provide feedback on the project's effectiveness, as outlined in the performance measurement plan.

3.3 Research plan

This project explores mobilizing public librarians' existing assets for AI literacy by bridging their unique professional strengths with emerging technological knowledge. This process involves: first, identifying their core assets (RQ1); second, bridging these assets to specific AI knowledge (RQ2); and finally, translating this asset-based model into an interactive online toolkit and evaluating its effectiveness (RQ3). While focused on young adults and AI, this asset-based model is designed for long-term sustainability; a librarian's community expertise remains as vital as technical skill, regardless of how quickly technology evolves. Bridging this experience with new domains provides a scalable literacy model for both current AI and future innovations. To ensure ethical standards, we will secure IRB approvals from each investigator's institution; given our previous work in this area, we anticipate a streamlined approval process.

3.3.1 RQ1: What assets do public librarians have? (Year 1)

State of Art & Challenges: While librarians possess valuable assets, such as experiential knowledge of their patrons and local community connections, these assets have been overlooked in discussions about AI literacy education in libraries. Previous studies emphasize librarians' lack of AI knowledge or access to resources, but librarians have successfully led STEM and other programs, demonstrating expertise in their communities. For instance, the Skokie Public Library hosted an AI-related event where parents discussed concerns about children's use of AI. These experiences, though limited, are crucial for developing sustainable AI literacy programs. Recognizing the importance of cultural assets in community-based research helps create more relevant and sustainable interventions by positioning participants as active collaborators with the strengths needed to address their challenges [Mathie and Cunningham, 2003, Yosso, 2005].

Proposed Approach: Rather than focusing on what is missing in public libraries, we will focus on what public librarians already possess. As a first step, we will identify a list of librarians' unique assets through ethnographic observation and interviews.

Preliminary Work: The research team has extensive experience with asset-based research. In our previous IMLS project, we successfully developed [AI literacy materials](#) for young adults using this approach [Cao et al., 2025]. Additionally, we created automation technology literacy materials for production worker unions, funded by the NSF [Lee et al., 2025]. The PD's work on technology design for informal caregivers of cancer patients, which received a best paper award at a top HCI venue, was also based on an asset-based framework [Shin et al., 2021].

Study Procedure:

Task 1.1 Ethnographic Observation: In Year 1, the research team will focus on identifying librari-

ans’ assets following an asset-based approach [Yosso, 2005] rather than emphasizing their missing AI knowledge. PD Lee and Co-PD Akgun will conduct ethnographic observation by shadowing partner librarians to understand their approaches to preparing program materials, facilitating discussions, and interacting with patrons during visits. We will also conduct interviews to gather more detailed information about their assets, based on our observations and the list of assets presented in Fig 1 (e.g., what is your background or what would be the main characteristics of your young adult patrons?). We will also collect documents or artifacts that demonstrate librarians’ assets (e.g., pictures of maker kits). We will visit each primary partner library for two weeks.

Task 1.2: Co-Design Workshop Preparation: Based on our previous work and literature reviews, we assume that the elements listed in Table 1 are potential assets that we may discover. This list will be updated after our ethnographic observation and reviewed by librarians to ensure our interpretation of their assets is accurate. Consultant Choi will join the discussion of Year 1 findings to suggest new AI platforms relevant to librarians’ assets.

Deliverables: 1) Updated librarian asset taxonomy: a synthesized list of professional and community assets derived from the Task 1.1; 2) Curated AI platform registry: a selection of potential AI platforms specifically mapped to the identified librarian assets; and 3) Co-design materials: a resource combining curated assets and AI platforms to drive activity development in RQ2.

3.3.2 RQ2: How to co-design an asset-based AI toolkit with librarians to bridge the gap between their practical expertise and new AI knowledge? (Year 2)

State of Art & Challenges: While resources like the CCUNESCO Algorithm Literacy Project exist [Lee et al., 2021], many public libraries still play a passive role in AI education, often limited to one-off events [Huang et al., 2024b]. Our project faced a similar challenge: although our website offered comprehensive, librarian-vetted guides, partner libraries ceased the program after the project concluded. This lack of sustainability, despite high interest, highlights a disconnect between librarians’ lived experiences/practices and the specialized AI knowledge introduced by researchers.

Proposed Approach: To prioritize librarians’ lived experiences, we will invite participants to first identify their cultural assets and align them with the appropriate AI literacy modules. Each module comprises 1) AI literacy activities and 2) AI knowledge required for activities. Through this co-design process, we will map these assets to specific AI modules. To facilitate this mapping, we will utilize a card-based format [Lee and Riek, 2023]—a well-established co-design approach—to represent three elements: librarian assets (blue cards), AI literacy activities (green cards), and AI knowledge (yellow cards), as shown in Fig. 1.

Preliminary Work: The research team possesses extensive expertise in co-design methodologies. Specifically, the PD Lee has over 10 years of experience co-designing robotic and AI technologies with non-technical stakeholders, ensuring they can incorporate their cultural assets into the complex system design [Lee et al., 2017b, Lee et al., 2017a, Lee et al., 2023b].

Study Procedure: We will conduct two co-design workshops with partner librarians. The first session will focus on mapping *individual* assets to specific AI literacy modules, centering each librarian’s unique lived experiences. The second session will shift to a *meta-level*, refining a generalizable model that reflects the broader, overarching relationships between librarian assets and AI literacy modules. Between these sessions, the research team will analyze the results from the first workshop to inform the development of the second.

Task 2.1 Mapping Individual Assets to AI Literacy Modules: This co-design workshop will be conducted in-person at each library. Our partner librarians, along with potential community partners chosen by the librarians (e.g., local artists), will be invited to the workshop. The workshop consists of three steps, focusing on 1) assets, 2) AI literacy activities, and 3) AI knowledge.

Step 1) Identify librarian assets (20mins): We will present the librarian assets identified in

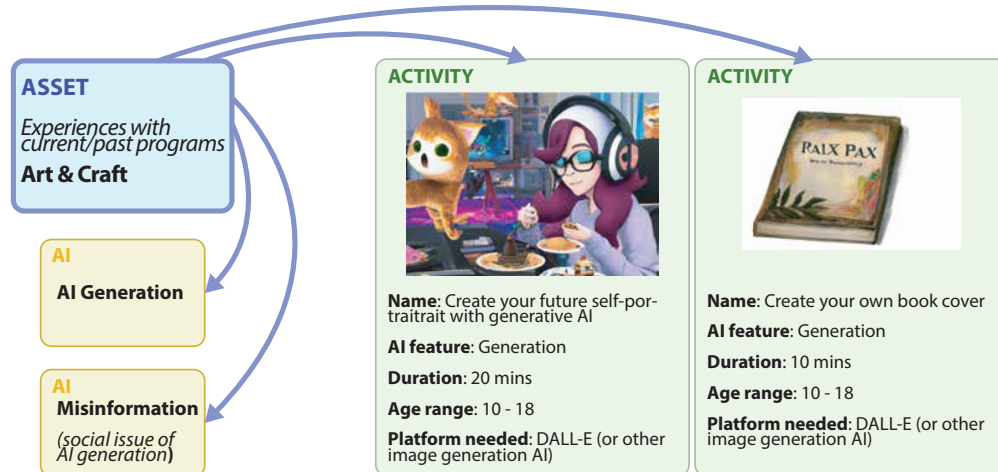


Fig. 1: Asset, Activity, and AI Knowledge Cards: The asset related to art and craft programs is connected to two activities (e.g., the future self-portrait activity) and two types of AI knowledge (e.g., generation).

the ethnographic study (RQ1) and invite librarians and community partners to suggest additional ones. These discussions will prioritize existing strengths over AI technical knowledge to ensure participants remain grounded in their cultural assets. The session will conclude by recording all identified assets on blue asset cards (Fig. 1).

Step 2) Explore AI literacy activities (40 mins): We will explore AI literacy activities that align with the librarians' identified assets. We will first present an initial set of activities derived from our previous work (LG-250059-OLS-21). Then, as needed, we will work with librarians and their community partners to either refine existing activities or co-develop new ones. The session will result in the creation of green activity cards, as illustrated in Fig. 1.

Step 3) Collaborative Review of AI Knowledge: In this step, we will map the existing AI knowledge components from our previous work (LG-250059-OLS-21) to the activities from Step 2. As needed, we will develop new components or refine existing materials. The session will result in the creation of yellow knowledge cards, as in Fig. 1.

Task 2.1 Deliverables: 1) Asset-AI activity-AI knowledge mapping: a documented analysis of the relationship between librarian assets and literacy modules, providing a foundation for Task 2.2.; 2) Co-designed list of AI literacy activities and knowledge: a set of new or refined AI literacy modules tailored to librarian assets.

Task 2.2. Developing a Generalizable Meta-Model for Assets and AI Literacy Modules: This task focuses on developing a generalizable meta-model based on mapping results from individual libraries. We will also enrich the details of AI literacy activities and identify the background knowledge required to facilitate them. Task 2.2 will be done only with the research team (PDs, graduate students, and Consultant Choi).

First, the PDs will analyze the mapping data collected from each library to develop a generalizable meta-model illustrating how librarian assets relate to AI literacy activities and the necessary technical knowledge. This model will serve as the foundation for an online toolkit: librarians will select their available assets, and the toolkit will provide potential AI literacy activities and related knowledge requirements. The final version of the model will be hosted on a collaborative platform, such as Miro, to gather librarian feedback in Task 2.3. The model will take the form of a map connecting three types of cards: blue cards (assets), green cards (AI activities), and yellow cards (AI knowledge) as in Fig 1. Building on Task 2.1, the librarians' familiarity with the materials will ensure meaningful feedback during the evaluation of the meta-level model.

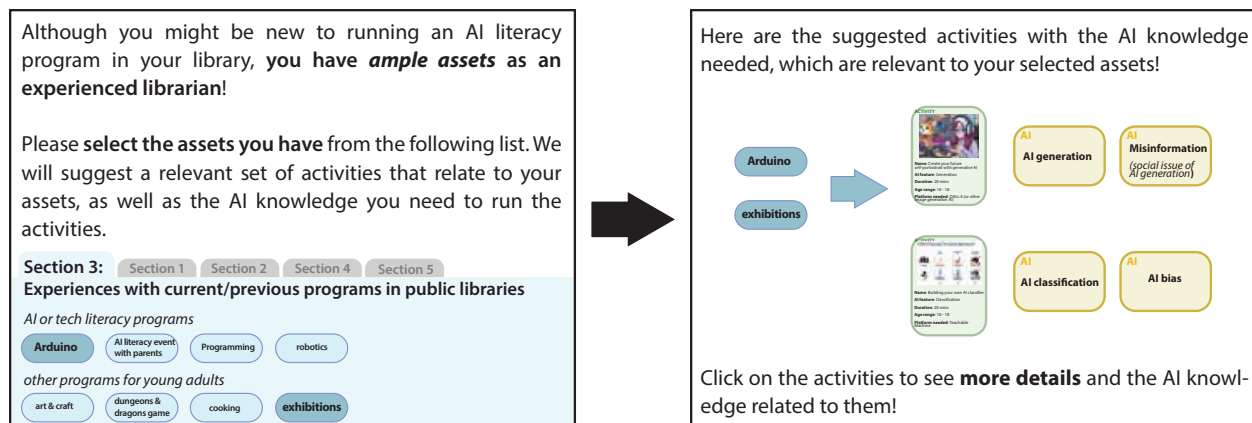


Fig. 2: Sketch of the Proposed Web-Based Toolkit

Second, the PDs and Consultant will enrich the AI literacy activities and AI knowledge components. For each activity, the PDs will specify the procedure, duration, target age range, platform requirements, and provide links to example results. The AI knowledge components will be expanded to include technical definitions, related activities, and links to resources for additional learning.

Task 2.2 Deliverable: 1) a meta-model formatted as an online collaborative whiteboard, illustrating the relationships between librarian assets, AI literacy activities, and foundational AI knowledge; 2) enhanced AI literacy activities and AI knowledge descriptions.

Task 2.3. Refining a Meta-Model with Librarians: During a 1.5-hour Zoom session, we will present the meta-model developed in Task 2.2 to all partner librarians to gather and integrate their perspectives for further refinement. Developed as an online collaborative whiteboard, this model illustrates the mapping of librarian assets to AI literacy activities and AI knowledge.

1) Introduction (5 mins): We will explain the overall structure of the model, including the types of librarian assets identified, how those assets lead to potential AI activities, and the core AI knowledge required for implementation.

2) Meta-model review (40 mins): Librarians will work in pairs for 30 minutes to review the meta-model's structure. They will evaluate whether the listed assets well represent their actual assets discussed in Task 2.1 and if the relationships between specific assets and suggested AI literacy activities and AI knowledge are logical. Each group will focus on the specific assets they identified during Task 2.1. For the final 10 minutes, each group will share their findings, concerns, and suggestions, followed by a cohort-wide discussion to improve the overall model.

3) AI Module review (40 mins): Groups will reconvene for 30 minutes to review the enriched AI activity and knowledge materials associated with their chosen assets. For the remaining 10 minutes, groups will provide specific feedback on these instructional materials and guides.

4) Conclusion (5 mins): We will debrief the workshop and discuss RQ3 next steps.

Task 2.3 Deliverable: 1) A finalized meta-model serving as the design architecture for the proposed online toolkit: Within the toolkit, the physical asset cards (blue) will be transformed into interactive checkboxes, enabling librarians to select and detail their specific strengths. The system will then generate recommended activities and AI knowledge based on the defined connections to activity cards (green) and AI knowledge cards (yellow). Website development will be led by PD Lee and her graduate student, with support from the co-PD and Consultant. The resulting online toolkit system and its design process will be presented at a YALSA webinar and/or symposium to recruit an additional three to seven librarians for the RQ3 evaluation, contingent upon availability.

3.3.3 RQ3: How does the proposed web-based interactive toolkit mobilize librarians' unique assets to help them implement their own sustainable AI literacy programs?

State of Art & Challenges: IMLS consistently funds various toolkits to help librarians launch new programs and services (e.g., [LG-80-15-0041-15](#), [RE-256709-OLS-24](#)). These provide modular materials that librarians can adapt for local contexts, serving as a unique medium for navigating complex technological topics. A notable example is the [Data Storytelling Toolkit for Libraries \(DSTL\)](#), developed by Advisory Board member McDowell; this interactive platform delivers customized resources based on user inputs and audience demographics. However, despite the complexity of AI and the emerging need for AI literacy, a toolkit-driven approach to this topic remains understudied. This project explores an interactive toolkit for AI literacy that specifically leverages librarians' professional assets.

Proposed Approach: Our interactive web-based toolkit will help librarians identify AI literacy modules that align with their unique assets. By first selecting their assets, librarians will receive tailored literacy activities and AI knowledge to implement them. This system is designed to lower the barriers librarians face when launching their own AI literacy programs. To ensure its effectiveness, we will conduct a diary study to capture the librarian experience with the toolkit (Task 3.1) and iteratively refine the platform through a co-design workshop based on their feedback (Task 3.2). Year 3 activities will involve both primary and secondary school librarians (10+ in total).

Preliminary Work: The PD Lee has developed a web-based, interactive information visualization tool that helps users easily grasp a vast amount of biomedical literature data [Lee et al., 2011]. Consultant Choi, previously worked as a web programmer at a search engine company, bringing expertise in web development. This experience will help the research team develop, test, and maintain the interactive system.

Study Procedure:

Task 3.1. Diary Study: To explore how our interactive toolkit mobilizes the assets of librarians in initiating and maintaining AI literacy programs, we will conduct a month-long diary study. Librarians will document their experiences using a physical diary to record which assets they select and which activities they find interesting or attempt to implement. Participants will also be asked to reflect on their overall use of the toolkit, the specific programs they implemented, and how their assets were utilized while running those programs. To ensure participants are comfortable with the system, we will conduct 30-minute one-on-one online orientation meetings to explain the toolkit's key features and the diary study requirements. We will also provide a comprehensive manual and emergency contact information for technical support.

In addition to our primary partners, we will engage a secondary group of three to eight librarians. Three librarians have already expressed interest, and the remainder will be recruited from an interest list generated during our past YALSA presentation. If the YALSA webinar proceeds as planned, we will also utilize that channel for recruitment. Our success in reaching all current partner librarians through the YALSA event demonstrates that these are highly effective recruitment channels. All participating librarians will be asked to test the system for one month, run at least one AI literacy session during that time, and record their experiences in their diaries. During this phase, we will conduct site visits to our primary partner libraries to observe the toolkit in use and interview their patrons for their experiences. Secondary partners will be interviewed via online meetings. Following the month-long trial, we will collect the diaries and conduct 45-minute interviews to understand how our asset-based toolkit supported the initiation and implementation of their AI literacy programs.

Task 3.2. Re-design workshop: After the diary study, we will run an online design workshop, and all librarians will be invited. Librarians will work as a group of 3 or 4 to refine our toolkit and activity materials based on their experiences. Based on the feedback, the research team will refine the toolkit (e.g., update the structure of the toolkit to focus more on the most commonly used

assets and provide additional AI knowledge for certain activities).

Deliverables: 1) A refined interactive toolkit including AI activity modules and facilitator guides; and 2) 10–15 case studies, incorporating feedback from librarians and patrons, to illustrate how the platform can be useful for AI literacy programs in public libraries.

4 Project Results

4.1 Project deliverables

New Knowledge on Librarians' Assets: This project will develop a taxonomy of librarians' professional assets, supported by case studies that provide deep contextual insights. These findings offer a foundation for future asset-based research within Library and Information Science (LIS). Although asset-based approaches are currently understudied, their potential to generate sustainable solutions makes our findings invaluable—not only for AI literacy but for any LIS research utilizing this framework.

Interactive Asset-Based AI Literacy Toolkit: A web-based interactive toolkit will be developed to help librarians navigate and choose AI literacy activities and AI knowledge based on their existing assets. For each activity, a facilitator guide will be available. Our asset-centered approach ensures that librarians don't just learn about AI—they see how their existing professional strengths are foundational to it. This design could build confidence by bridging the gap between established library expertise and emerging AI literacy.

a. Co-Design Process of the Toolkit: Beyond the toolkit itself, our co-design methodology will yield case studies on collaborative development, highlighting the role of librarians as essential design partners.

b. Key Design Elements of the AI Literacy Toolkit: The diary-based evaluation study will reveal the key design elements of the AI literacy toolkit, which could benefit other researchers exploring toolkits related to AI literacy or other interactive toolkits for librarians.

c. Design Research Materials: The design research materials used in this study, such as activity cards and a diary for final evaluation, will be made available to other researchers. These materials will be disseminated as part of academic papers and through our AI literacy website.

AI Literacy Training Opportunity for Partner Librarians: We will provide 10–15 librarians with AI literacy training, modular materials, and personalized consulting to ensure activities align with their local programs and resources.

AI Literacy Opportunities for Youth Patrons: By implementing AI evaluation programs, libraries will provide roughly 100 youth patrons (6–10 per location) with access to literacy activities that may continue long after the research period ends.

Materials for Broader Practitioners: Through our collaboration with YALSA, we will host two webinars and blog posts. These materials will be made available on YALSA's website, where many youth librarians seek resources.

Research Articles: We will write multiple articles on the assets of public librarians, the co-design process of developing an interactive toolkit, and case studies that provide situated knowledge of the AI literacy program development and deployment process. We will publish these papers in *Public Library Quarterly*, *iConference*, *ASIS&T*, and other library and information science venues.

4.2 Dissemination plan:

All toolkit resources, publications, YALSA seminar materials, and related content will be available on [AI literacy website](#), developed in a previous IMLS project. Research articles will be shared through information and library science venues, while seminars will be distributed via YALSA. We will also work with our AB and partner librarians to identify additional outlets for reaching a broader librarian audience.

YEAR 1 | RQ1: What assets do public librarians have?

	Fall 2026				Spring 2027				Summer 2027			
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Task 1.1 Ethnographic observation (onsite)												
Schedule library visits Project Director(PD), Co-PD, librarians												
Secure an IRB approval Project Director(PD), Co-PD												
Ethnographic observation in an MI library for 2 weeks Project Director(PD), Co-PD, MI librarians												
Ethnographic observation in an IL library for 2 weeks Project Director(PD), Co-PD, IL librarians												
Ethnographic observation in an OH library for 2 weeks Project Director(PD), Co-PDs, OH librarians												
Discuss brief findings about assets with librarians Project Director(PD), Co-PD, Consultant, librarians												
Task 1.2 Prepare co-design workshops												
Analyze in-depth observation data PD, Co-PD, graduate students												
Generate types of assets that can be used for RQ 2 PD, Co-PD, graduate students												
Share asset findings with librarians for feedback PD, Co-PD, graduate students, librarians												
Discuss findings with the advisory board (AB) PD, Co-PD, Consultant, graduate students, AB												

YEAR 2 | RQ2: How to co-design an asset-based AI toolkit with librarians to bridge the gap between their practical expertise and new AI knowledge?

	Fall 2027				Spring 2028				Summer 2028			
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Task 2.1: Co-design ideal AI activities (on-site)												
Schedule an on-site workshop. PD, Co-PD, librarians, community partners												
Co-design ideal AI activities in an MI library Project Director(PD), Co-PDs, MI librarians, MI community partners												
Co-design ideal AI activities in an IL library Project Director(PD), Co-PDs, IL librarians, IL community partners												
Co-design ideal AI activities in an OH library Project Director(PD), Co-PDs, OH librarians, OH community partners												
Refine AI activities & facilitator guides w. needed AI knowledge Project Director(PD), Co-PD, Consultant, and graduate students												
Task 2.2. Generate Asset, Activity, and AI knowledge cards												
Analyze co-design data and prepare a workshop materials PD, Co-PD, Consultant, graduate students												
Task 2.3. Co-design an interactive toolkit website (online)												
Co-desgin an interactive toolkit website PD, Co-PD, Consultant, graduate students												
Develop the toolkit based on the co-design workshop PD, Co-PD, graduate students												
Share findings at a YALSA symposium/webinar and recruit additional library partners. PD, Co-PD, YALSA												
Obtain feedback about the website from AB PD, Co-PD, graduate students, AB												

YEAR 3 | RQ3: How does the proposed web-based interactive toolkit mobilize librarians' unique assets to help them implement their own sustainable AI literacy programs?

	Fall 2028				Spring 2029				Summer 2029			
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Task 3.1. Diary study												
Prepare the diary study material (e.g., diary format) PD, Co-PD, graduate students												
One-on-one meeting to explain the toolkit and the diary PD, Co-PD, graduate students, librarians												
Use the toolkit and run at least one AI session Primary and Secondary Librarians												
Visit primary partner libraries to observe the use of the toolkit PD, Co-PD, Primary Librarians (MI, IL, OH)												
One-on-one meetings with secondary librarians to gather feedback on the toolkit PD, Co-PD, Secondary Librarians (CA, AR, MA, +)												
Task 3.2. Re-design workshop (online)												
Analyze the collected data and prepare re-design workshop. PD, Co-PD, Consultant, graduate students												
Revise a toolkit and a research website based on findings PD, Co-PD, graduate students												
Collect feedback on final research outcomes from AB PD, Co-PD, graduate students, AB												
Publish papers to disseminate findings PD, Co-PD, graduate students, YALSA												