

Pathways to Librarianship

The Syracuse University School of Information Studies (iSchool) and New York Library Association (NYLA) request \$331,768 from the Institute of Museum and Library Services Laura Bush 21st Century Librarian Program and will costshare \$103,144 for a collaborative applied design-based research project. Using New York State as a case study, we will build a foundational understanding of barriers that people of minoritized identities (e.g., BIPOC, LGBTQIA+, people with disabilities, etc.) face in the library profession in order to develop and pilot meaningful products for change across state and local systems that affect library and information science professionals by investigating the following research questions:

- RQ1. What are people's current experiences of pathways into and within the library profession in New York?
- RQ2. What are the challenges or barriers people face along their pathways to and within the library profession in New York?
- RQ3. How, if at all, do those challenges vary among library types and settings?
- RQ4. How can we reduce or eliminate these barriers so as to increase diversity and representation in New York's library workforce?

In addition to identification of existing barriers, findings from these RQs include the design of prototype initiatives and activities that reduce equity gaps and address issues of diversity, equity, and inclusion in the recruitment, development, and retention of faculty, library, and archives leaders from diverse and underrepresented backgrounds. This aligns with IMLS' Goal #1 to recruit, train, develop and retain a diverse workforce of library professionals, and specifically supports Objective 1.2 as it works in collaboration with various organizations to explore promising practices and potential solutions.

Project Justification

In 1978, Jane Robbins Carter wrote, "In the United States, almost everyone knows that a librarian is a middle-aged, white woman" (p. 295). She went on to succinctly summarize why such a lack of diversity in librarianship is problematic, and then to outline steps for remedying this issue: "Library schools should be charged with the responsibility of changing the racial and ethnic mix of their student bodies to be more representative of the population which their graduates serve. What this profession needs is commitment to the recruitment of minorities. Until we have this commitment, back up by money, we only play the game of institutional racism" (p. 296). Over the intervening years since 1978, many scholars and practitioners across the LIS field have iterated and implemented the suggested *recruitment* steps laid out by Robbins Carter, including: minority recruitment; financial aid/scholarships for minoritized students to complete graduate study in LIS; affirmative action (or "reverse discrimination," as Robbins Carter phrases it (p. 310)) in LIS admissions; and curricular changes in LIS programs "to equip [LIS] students with the skills in [intercultural] communication which they will find necessary as members of a service-based profession" (Robbins Carter, p. 311). Focus has also expanded to include consideration of *retention* measures for minoritized students in LIS. Many retention measures mirror recruitment strategies, with a particular focus on financial support for minoritized students. Additionally, retention measures may include "support by faculty/staff, students, and ethnic associations" (Kim & Sin, 2008, p. 169) and flexible class schedules to lower the barrier to access for students "who need to work in order to support their studies or for those who are already working" (Kim & Sin, p. 170).

Furthermore, scholars have pointed out the problem of defining "diversity" in the context of attempts to address the intractable problem of librarianship's lack thereof. In a comprehensive literature review of diversity, equity, inclusion, and accessibility (DEIA) efforts in LIS, Poole et al. (2021) canvassed many scholars who have called

for a more “capacious” use of the concept of “diversity” in LIS “in terms of both visible (age, race/ethnicity, gender, ableness, socioeconomic class) and invisible components (language, literacy, educational background, sexual orientation, culture, birthplace, and religious, moral, and political values or beliefs)” (p. 261). Espinal et al. (2021) advocate the use of the term “dewhiten” in place of “diversify,” writing: “*Diversity* as a term has been diluted over time within the LIS profession to serve as a buzzword, or more dangerously, a performative placeholder for actual transformative change. To advocate for an expansion of Black, Indigenous, Latinx, Asian American, and Pacific Islander librarian-credentialed professional presence in historically white spaces, we need a shared vocabulary to engage with the discourse” (pp. 225–226). Poole et al. ultimately conclude: “The Gordian knot of definition aside, efforts must hinge on equity and inclusion, not just diversity” (p. 262).

While the demographics of librarianship have undoubtedly shifted since the 1970s, “a bedeviling paradox” (Poole et al., p. 258) persists: “The profession’s inveterate ideal of and concomitant commitment to serving diverse communities and users equally [has] failed to translate into diversity, equity, and inclusion in LIS education or in the profession overall” (p. 258–259). This lack of diversity is reflected in recent data. The Department for Professional Employees (2021) found that in 2020 “just over 83 percent of librarians identified as white” and that as of 2018 “31.5 percent of the library workforce” was over age 55, versus only 19.6 percent of the total United States workforce (p. 3). The Association for Library and Information Science Education (ALISE) reports slightly better numbers, with 64.2% of ALA-accredited degrees awarded to whites in 2021, yet still only 7.9% to Hispanic/Latinos of any race, 4.6% to Black/African-American students, and 3.5% to Asians. New LIS student enrollment in 2021 mimics this pattern, indicating little change toward progress (Bajjaly & Drulia 2021).

In January 2021, NYLA convened a task force with the aim of addressing the well-known lack of diversity in the library profession, with a specific emphasis on the issues and challenges faced in New York State. After several town hall meetings with practitioners across the state, literature reviews and task force discussions, we noted that while many initiatives focusing on DEIA have been proffered, a gap in work that concretely addresses systemic inequities exists. Borrowing from principles of mechanism design and reverse game theory (see Maskin 2008 for an example), our project begins with the belief that a diverse and inclusive profession is the most desired good and works to simultaneously remove systemic barriers to education, employment, and retention, and design new incentives through innovative policy creation. Although IMLS has a long history of supporting DEIA projects, a review of previous grants in this category reveals a focus on mechanisms for education about DEIA, rather than systematic institutional or governance change. For example, the Association of Research Libraries (2020) outlined steps for the creation of “an extensible, implementable curriculum and a set of success metrics for a DEI institute [...] for the academic and research library community” (p. 1). Additionally, many projects have focused on recruitment of diverse students to LIS programs, when other challenges, such as retention and advancement, exist. Other projects still seem to be in exploratory phases, such as creating frameworks, competency guidelines, or metrics. The Black Caucus of the American Library Association (BCALA) proposed a national forum to crowdsource ideas for the creation of “downloadable, ready-to-use program-independent videos, brochures, posters and graphics to attract Black/African American MLIS students” (2020, p. 5) and a BCALA-sponsored group for Black MLIS students, the iBlackCaucus. Hampton University (2020) put forth a professional development plan to train library administrators in “developing, implementing and assessing an equity, diversity and inclusion (EDI) initiative which will address the recruitment, retention and inclusion of POC [people of color] within their libraries” (p. 1). As these examples illustrate, most initiatives focus on individual people or organizations rather than the systemic contexts the NYLA task force identified across state and local systems that affect the hiring and education of library and information science professionals (e.g., state and local civil service, the New York State Education Department, library and information science graduate education programs, etc.). This includes governance structures that affect academic, public, and school libraries, in addition to library and

information science education. While the previous projects should be lauded, it is time to move forward with actionable changes that extend beyond strategies of recruitment and retention to focus on systemic issues creating barriers to diversity.

Using New York State as a case study, our collaborative applied research project will build a foundational understanding of barriers that people of minoritized identities (e.g., BIPOC, LGBTQIA+, people with disabilities, etc.) face in the library profession in order to develop and pilot meaningful products for change across state and local systems that affect library and information science professionals. The following research questions guide our work:

- RQ1. What are people’s current experiences of pathways into and within the library profession in New York?
- RQ2. What are the challenges or barriers people face along their pathways to and within the library profession in New York?
- RQ3. How, if at all, do those challenges vary among library types and settings?
- RQ4. How can we reduce or eliminate these barriers so as to increase diversity and representation in New York’s library workforce?

Project Work Plan

This applied research project draws on the research methodology of design, a theoretical and epistemological worldview rooted in the generation of knowledge via problem solving, and accordant processes of activities and methods that reflect and support that worldview (Clarke 2020). As a framework rooted in applied fields of practice (e.g. architecture, fashion design, graphic design, software, etc.), design is a highly appropriate approach to applied research, and unlike other more traditional social science approaches, design seeks to directly address problems, rather than merely generate research findings.

In this project, our research process follows the design thinking model, an iterative process that cycles through phases of empathetic discovery, problem definition, idea generation, product creation, and reflective evaluation (see Figure 1). Our proposed project plan corresponds to the phases of the design thinking cycles as follows:

Empathetic discovery and problem definition (year 1):

This first phase draws on research methods in design to elicit empathetic understanding of people’s current experiences of pathways in the library profession with a specific focus on identifying and defining the complex and wicked problems preventing entry, retention, and advancement in the library profession. This phase harnesses methods of contextual inquiry (Beyer & Holtzblatt, 1998) commonly used in design, such as individual interviews, and visual elicitation methods.

Specifically, we propose to use journey maps--graphical and textual representations from an individual’s perspective of the overall story about an experience over time (Grocki 2014; Kalbach 2016). During a personal

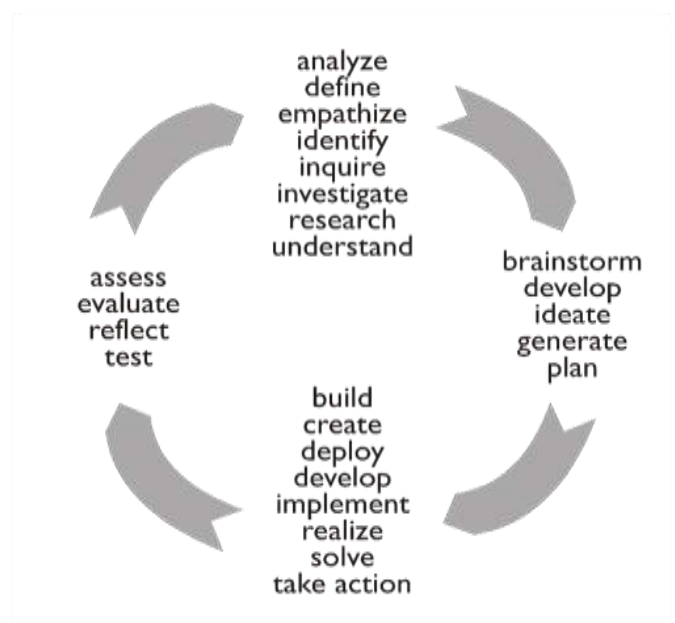


Figure 1. A basic representation of the design thinking process, including the various terminology used in different sources (Clarke 2020).

interview session, participants will be asked to draw, annotate, and describe a map of their personal pathway through libraries, including how they first became interested, through various work and educational experiences, and also their goals and thoughts for the future describing a prospective ideal situation (Bitner et al. 2008; Grocki 2014). Such visual elicitation methods offer numerous benefits relevant to the context of this project. Liamputtong (2006) finds these types of methods to be appropriate ways of engaging with vulnerable populations, especially situations in which emotional topics might arise. Eliciting creative visual data can bestow “voice and independence” to participants (Rich and Ginsberg 1999 p. 373), helping to center the participant’s point of view (Eschler 2017) and change the researcher-participant relationship to a more reflective and collaborative experience (Prosser and Loxley 2008). Drawing also can increase meaning by adding an additional level of expression beyond the verbal (Guillemin 2004) and help participants better articulate their ideas, integrate more information, and clarify ambiguity (Snyder 2014). Although the study will be limited to English-language participants for logistical purposes of scope management, drawing can also help reduce language barriers for those who may not be as comfortable conversing in English, as well as other potential challenges with verbal communication.

Purposeful, stratified sampling will allow us to gather data from participants in all career stages and professional levels, library types, and geographic regions across New York state. We will prioritize and purposefully recruit participants who identify with minoritized populations, such as BIPOC, LGBTQIA+, people with disabilities, and more to ensure their voices are heard. However, we will not limit recruitment to these populations as there may be additional identity-based or other unknown or unanticipated barriers worth identifying. The recruitment process will include a preliminary screening survey to collect information about a potential participant’s identity, such as age, role, geographic area, and identification with minoritized groups. Participants will be selected based on information provided in the screening interviews to ensure diverse representation as much as possible. Information from the prescreening survey will also reveal any possible gaps in recruitment strata that need to be addressed. In addition to NYLA’s resources and membership network, we have preliminary arrangements to partner with organizations such as the Chief Officer of State Library Agencies (COSLA), the Empire State Library Network (ESLN) and its 9 NYS regional library councils, and ethnic affiliate groups such as the NYLA’s Ethnic Services Roundtable and the New York Black Librarians Caucus for recruitment assistance.

Selected participants will engage in an interview and mapping session of approximately 1.5 hours. The session will include some introductory questions about their experiences working in libraries, but the bulk of the session will comprise the journey mapping process. Participants will be supplied with large posterboard and markers and asked to illustrate their own personal journey through librarianship. In addition to overarching questions to prompt the illustrations (e.g. “what is the shape of your path to librarianship?”; “who/what helped/hindered you along your path?”; “what is on the horizon of your path?”), participants will be also be asked probing questions throughout, using the metaphors of paths to reveal deeper information about barriers faced (e.g. “was your path bumpy or smooth here?”; “who cleared the path for you?”). The interview will conclude by having the participant debrief the artifact through questions such as “what kind of story do you think this map tells?” and “what feelings does it bring up when you look at it?” In addition to the map illustrations, audio recordings of the interview sessions will also be collected to capture participants’ thoughts and answers to these questions.



Figure 2. Map illustrating the coverage areas of the 9 NYS regional library councils (from NYSED.gov)

Because of the hands-on nature of the journey mapping process, interview sessions will ideally take place in person. However, if circumstances (such as COVID-19 protocols) warrant, the sessions can be adapted for online interactions. We aim to recruit a minimum of 90 interview participants: 10 people from each of New York state's 9 regional library councils (see Figure 2). NYS created the regional councils in 1966 to expand the availability of the resources of academic, medical, law, business and special libraries to more New Yorkers and to enable libraries of all types to buy services and share resources cooperatively in order to strengthen programs and services. Each regional library

council provides resources and support to libraries and cultural institutions in their geographic coverage area as well as facilitating networking and resource sharing statewide through collaboration.

Qualitative data analysis will be performed on both the audio recording and the illustrations themselves to surface major trends and themes regarding challenges and barriers. Visual artifacts and interview transcripts will be analyzed in tandem to give a more nuanced understanding of participants' experiences (Eschler 2017). In addition to traditional qualitative coding techniques (Saldaña 2016), several types of visual analysis will be used, such as visual content analysis that examines the nature of the images included in the drawings (Krippendorf 2012) and compositional interpretation addressing how those images were organized (Rose 2007). Visual artifacts will also be analyzed according to the ways and means of the experiences conveyed (e.g. level of detail in the drawing, chronological vs. conceptual organization, literal vs. metaphorical communication, etc.) (Eschler 2017). If warranted, we may also draw on network analysis to better understand who or what helped/hindered which groups of people.

To support the large amount of qualitative data collection and analysis needed for this project from a wide geographic area, we propose a unique "train-the-trainer" model in which an experienced researcher trains a set of research assistants to conduct interviews, solicit journey maps, and analyze the resulting data. The team of research assistants will be comprised of 2 representatives from each of the 9 regional library councils geographic coverage area. Several members of the 2021 NYLA task force have already indicated interest in participating as research assistants, and additional research assistants will be solicited via outreach through NYLA and affiliate organizations. If coverage in a specific region is lacking, we may reach out to specific individuals to inquire if they are interested and able to assist. In the event that more than 2 people from a given region are interested, the PI and co-PI will select from among the interested parties by assessing criteria such as prior research experience as well as availability and ability to commit to the project. Research assistants will undergo multiple web-based training sessions throughout Phase 1. Training will cover topics including but not limited to privacy, participant consent and comfort, administering interviews; supporting the journey mapping process; and analysis of the textual and visual data resulting from the interview sessions. Research assistants will also undergo CITI web-based training for research ethics, either via their own institutions (if available) or via Syracuse University (if not available at their own institution). After training, each of these trained assistants will collect data from at least 5 local participants, enabling us to reach a large number of people, many of whom may be in rural or otherwise challenging areas. Each research assistant will also analyze at least 10 interviews, ensuring that we have at least

two people reading and interpreting data from each interview. All research procedures, including training of research assistants, will be guided by feedback from the advisory board and approved by the SU IRB, which has already agreed to serve as the IRB of record for this project.

Outcomes from year 1 include a robust understanding of people's current experiences of pathways into and within the library profession in New York (RQ1); the challenges and barriers people face along their pathways to and within the library profession in New York (RQ2); and how, if at all, those challenges vary among library types and settings (RQ3). Additionally, year 1 will result in concrete problem statements based on these research findings that will springboard the work for year 2.

Idea generation & product creation (year 2): Using the problem statements articulated in year 1, the project team will undertake participatory design activities to generate possible solutions to the identified barriers and challenges. Drawing on NYLA's resources as well as the relationships and connections with our additional partners, we will recruit participants to engage in day-long participatory design workshops intended to generate ideas for possible implementable solutions. Participants for these workshops will be identified based on stakeholder groups and categories that surfaced in year 1. Some potential stakeholder groups/categories might include representatives from organizations like civil service agencies, the NYS board of education, MLIS programs, or large library systems. Although we anticipate these may be some of the relevant groups, we do not want to preemptively eliminate potential participants, and so our ultimate selections will be guided by that data from year 1.

Specific individuals representing these identified categories will be invited to one of 5 workshops across the state, allowing for diverse mingling among previously siloed regions. The co-PIs will develop and lead these highly interactive workshops, which will be based on the *futures workshop* model (Jungk & Mullet 1987). This model has been used in fields like urban planning, software engineering, and human-computer interaction to address complex and multifaceted problems that require involvement from many diverse stakeholders. Futures workshops typically consist of four phases:

1. Preparation: the rules and agenda for the workshop are introduced and agreed upon by participants. In our project, we will provide a brief overview of the practices and purposes of futures workshops. Participants will work collaboratively to establish culturally competent "ground rules" for the session that align with design principles (e.g. providing constructive feedback rather than criticism).
2. Critique: the problem(s) under consideration are presented and investigated critically and thoroughly. Brainstorming activities are used to ask and answer questions about the problem and better understand and articulate the framing. In this part of the workshop, we will share the problem statement that emerged from year 1. Depending on the number of problem statements, participants may divide into groups to discuss and ask questions.
3. Visioning: participants work out a vision of the future. Working with their assigned problem statement, groups will articulate a vision for the future in which the problem no longer exists. Each group will be asked to draft a scenario describing the state of their problem in 2050 and what occurred between now and then that led to their vision.
4. Implementation: the ideas proposed in the visioning phase are assessed with regard to practical application, and first steps to achieving the vision are discussed. Each group will share their scenario with the entire group, and large group discussion will generate suggestions for activities and resources that can be used to advance the vision. At the conclusion of the workshop, participants will be asked to come to a consensus on which of the many visions proposed is the most desired and actionable and should be moved forward.

Based on the outcomes of these workshops and feedback from the advisory board, a minimum of 3 potential solutions will be selected for piloting in year 3. Criteria for selection will be based on (but not limited to) factors such as potential for feasibility, access to resources, representation of library types, and potential for greater impact.

Outcomes from year 2 include a preliminary understanding of possible ways to reduce or eliminate barriers to diverse participation in New York's library workforce (RQ4) and three concretely actionable ways this can potentially be achieved.

Deployment & reflective assessment (year 3): The final phase of the project sees the development and deployment of the three identified pilot projects in the field. Because these projects will emerge from findings in years 1 and 2, details for each specific project will vary and we cannot provide examples of what these pilots might look like. As Henry Ford is apocryphally credited with saying, "If I had asked people what they wanted, they would have said faster horses." A major contribution of the Pathways project is to use design thinking and methods to generate new, innovative, potentially never-before-thought-of solutions to systematic problems in librarianship. However, regardless of the nature of these projects, they will all include mechanisms for ongoing feedback from various stakeholder groups, including library workers, employers, state agencies, and others. Specific data and mechanisms for feedback will be developed appropriate to each of the pilot projects, although for each project we will look at criteria related to the project's overall goals. This includes data such as reach (for how many people in NYS will the pilot eliminate or reduce barriers); range (for which specific underrepresented groups of people will barriers be eliminated or reduced); affordability (what resources would be needed to implement this idea beyond a pilot and from where will resources be sourced); and sustainability (how will be the pilot scale and how will that scale be assured to continue in the future). We will also use design-based methods of evaluation such as rationale (the reasons and justification for the design and how they align with the design goals), critique (evaluative insight, where designers with large, well-developed repertoires are able to discern complex and subtle qualities and characteristics of a design and make fine-grained discriminations that others may not be able to express), and reflection (reviewing the work with serious thought and consideration) to assess the pilot projects (Clarke 2018a, 2018b). The value of these pilot projects is the proof-of-concept each one provides, and even if ultimately a pilot is not scalable or otherwise feasible to implement, it still contributes to the research investigation by providing data about where and how it faltered. During this phase, the project team will also develop frameworks and models for each pilot program to help ensure broader applications in other states and settings. We will also continue to disseminate findings through venues such as webinars, toolkits, and other resources so that other states can leverage this work.

Outcomes from year 3 include completion of 3 pilot projects and accordant assessment data, leading to a robust understanding of possible ways to reduce or eliminate barriers to diverse participation in New York's library workforce, with accompanying data reflecting implementation (RQ4). Additional outcomes include distribution and dissemination of project materials in a variety of forms relevant to various audiences. A communication guide will be developed to give practitioners language to persuade decision-makers in each of the specified domains of practice.

Resources: Planning, implementing, and managing this applied research project will require coordinated resources. **Dr. Rachel Ivy Clarke**, Assistant Professor, Syracuse University School of Information Studies, will serve as the principal investigator for the research project, overseeing all research activities, including personally conducting training sessions for the distributed team of research assistants, collecting and warehousing the data; serving as primary contact for IRB; and developing participatory design sessions and activities. Dr. Clarke's award-winning research focuses on the role of design in American librarianship, leaving her well-versed in both

design methods and fundamentals of librarianship. She has led multiple research projects utilizing various qualitative methods and has regularly taught graduate-level courses in research methods since 2017, making her well-qualified for this role. **Tim Furgal**, founder/chair of the 2021 NYLA Alternative Pathways to Librarianship Task Force, will serve as co-PI and function as logistical project manager through the three-year term, including serving as liaison to partner organizations, the advisory board, and event venues. Mr. Furgal's well-established network of connections through NYLA and other NYS organizations make him the best person to continue to build and support these relationships throughout the project. Clarke and Furgal will be assisted by a **Syracuse University Ph.D student** who will perform supporting tasks such as data entry, email communications with research assistants and participants; developing and managing digital tools, platforms, and content; coordinating meeting logistics; and acting as notetaker and documentarian during meetings. An **artist** will be hired to assist with the creation of the digital gallery as well as visual communication materials regarding the dissemination of findings. The team of **research assistants** will be composed of NYLA members and friends with current or past experience working in libraries across NYS. The **advisory board** will be composed of representatives from the various stakeholder groups relevant to the project and will meet together with the PI and co-PI on a quarterly basis.

To eliminate barriers to participation in the research project, funding for travel, lodging, local transportation, food, and participant compensation is needed. Financial support for these items, as well as salaries for Clarke, Furgal and the graduate student assistant, including benefits and indirect costs, and stipends for the research assistants and advisory board, comprise the budget request for the project. Additional project activities may be supported by graduate student assistants through alternative funding streams.

Diversity Plan

Diversity and equity are the goals of Pathways to Librarianship. The project is founded on the premise that diversity in librarianship must be treated as a critical and urgent focus. Justice and equity are central to our praxis and scholarship. The makeup of the advisory board and research team will represent a diversity of expertise, personal identities, professional domains, and variety of service areas (rural, urban, etc.) Working with our partner organizations to develop an own-voice constituency will help to ensure the character and integrity of our research and subsequent policy advocacy.

Through prescreening surveys and the ability to interact with a large number of participants, we will be able to ensure that a diversity of perspectives and experiences are included in the project. Using research methods from design that help center the participants means that they define challenges and opportunities that drive the project forward. We also acknowledge and understand the difficulties that arise when marginalized people are asked to relive trauma for the sake of research and implementation. Sensitive discussion about identity and potential trauma of career barriers requires careful, empathetic support to navigate. We have selected research methods designed to support emotional and challenging situations, and these considerations will be emphasized in training for research assistants. We also plan to provide training for PIs and be in frequent contact with our advisory board regarding how to manage these challenges in the most compassionate, humane way.

The field of librarianship has already demonstrated a commitment to diversity, equity and inclusion. But demonstrating commitment is no longer enough. It's time to move toward actionable change, and the design-based nature of the Pathways to Librarianship ensures outcomes that will include concrete, implementable pilot programs and frameworks that contribute to the recruitment, development, and retention of a diverse workforce of library professionals.

Project Results

The ultimate goal of the Pathways to Librarianship project is to identify and understand the barriers and challenges faced along people's pathways to and within the library profession in New York and propose possible solutions to address those barriers. This project advances knowledge by using design methods and approaches to solicit people's experiences and synthesize those findings into actionable problem statements. It then also seeks to address those problems by using design methods and approaches to implement and assess a minimum of 3 pilot programs or frameworks that can potentially lead to the development of a diverse library workforce.

Research findings will of course be disseminated in traditional research venues (e.g. journals and conferences) but a key aspect of this work is the ability for it to be used as a model across the nation. Thus we will also endeavor to communicate findings to library practitioners and larger related organizations via more accessible means. For example, the findings from year 1 will be compiled into a synthesized graphic map and other associated images of the pathways to librarianship in New York State based on the research findings, which will be shared widely as a digital gallery on the project website as well as at in-person events. Professionally-oriented venues such as workshops, webinars, toolkits, and other formats will help ensure that practitioner stakeholders learn about findings and have access to the frameworks and models for the pilot programs, with advice and resources to adapt them in local contexts. A communication guide will also be developed to give practitioners language to persuade decision-makers in each of the specified domains of practice. Collaboration with NYLA and ESLN affords many opportunities to share our findings, including the NYLA annual conference, and the various webinar series offered via the regional library councils. Sharing via the regional library councils is especially key to closing the loop between the participants who contributed to the research and the potential solutions in action. We also anticipate sharing outcomes nationally through venues such as the ALA annual conference and any event opportunities through the association's Office for Diversity, Literacy and Outreach Services, especially given their commitment to continuing education and trainings.

Although Pathways to Librarianship is an ambitious project, we acknowledge that it is just a first step toward dismantling systemic barriers to diversity in librarianship. We anticipate that the benefits of this project beyond the conclusion of the grant-funded period will continue through the use of research findings for other new projects, and the adoption of proposed frameworks and communication tools in practice. Additionally, given the iterative nature of design-based approaches, we anticipate that the pilot projects prototyped in this work will continue to evolve improve in various implementations.

Deployment & reflective assessment (year 3):

	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Advisory board meetings			X			X			X			X
Develop pilot prototypes	X	X	X									
Deploy pilot prototypes				X	X	X	X					
Assess pilot prototypes					X	X	X	X	X			
Develop frameworks and models for broader application							X	X	X	X		
Final report and findings dissemination ¹											X	X

¹ Note that dissemination activities will occur throughout the project; however this item represents final wrap-up and dissemination of findings for the project overall.

Pathways to Librarianship: Digital Products Plan

The Pathways to Librarianship project will create a variety of digital materials, including a project website, an online image gallery, multiple research datasets, and digital content communicating findings. Brainstorming pilot projects may also result in digital content. The dynamic project website will promote the project, offer a mechanism for recruiting and communicating with project participants, and disseminate outcomes and materials from the project (e.g., papers, recorded webinars, etc.). Hosted resource documents will likely be in PDF, Word, JPG or other standard document formats applicable to the type of resource. The website will also feature a digital gallery featuring the journey map drawings created by participants, as well as original artwork created for the project based on these visual data. All documents will adhere to quality standards relevant to the document's format.

The bulk of the publicly accessible digital project content will be made available on the project website. The website will be accessible to anyone with standard computing hardware and software and access to the internet via standard web browsers. Some digital content, such as training materials for research assistants, protected research data, etc. may have limited access and only be available to specific audiences contingent on role. During the funded project period, this digital data will be stored on secure Syracuse University servers in a structured format appropriate to the data type. Syracuse University provides secure storage for these types of data to each faculty member. Permission levels will be set to ensure appropriate access permissions for various project contributors based on role. At the close of the project, de-identified versions of these data will be submitted to Surface, the Syracuse University digital repository in accord with common practices after the completion of the final project outcomes and deliverables.

All digital products created for this project that can be shared publicly will be made available on the project website and/or Surface, the Syracuse University digital repository. Whenever feasible, content will be available for use and sharing using a non-restrictive license that provides credit to the project. To make this clear to users, a statement will appear on applicable resources that reads "This work is licensed under a Creative Commons Attribution 4.0 International License." This license provides users with the permission to share and adapt content as long as attribution is provided. For materials where this license is not applicable, specific rights statements (e.g. copyright notices) will be clearly posted and communicated. Works involving privacy concerns or that lack permissions to be shared (e.g. PII, participants drawings without release permissions) will not be shared.

Digital web content will be hosted on web server space offered and supported by the Syracuse University School of Information Studies. The site will be managed by the PI, co-PI and graduate assistant. Syracuse University School of Information Studies has successfully maintained a number of grant project websites for more than ten years. All sites continue to be monitored and updated on a regular basis. Additional digital content may be hosted on other secure Syracuse University platforms, such as shared network drives or learning management systems. The School of Information Studies has a proven track record with past IMLS and other grants of sustaining the staffing and funding to continue projects for years following the end of grant. Surface, the Syracuse University repository, is housed and maintained by the Syracuse University Libraries, who have a long-standing commitment to preserving the works collected in the repository and ensuring their accessibility. Any digital data that cannot be adequately de-identified or cannot be publicly accessible for other reasons will be destroyed after a period of 5 years following the conclusion of the project.

Pathways to Librarianship: Data Management Plan

Pathways to Librarianship will gather and produce a variety of data including but not limited to quantitative and qualitative questionnaire responses, audio recordings and textual transcriptions of interviews, visual data (e.g. journey map drawings, photographs), meeting minutes and notes. This data will be elicited from research participants in years 1 and 2 as well as potential stakeholders in year 3. A variety of methods will be used to collect this data including individual interviews, interactive group workshop activities, and online interactions. Please see the Narrative for a full outline of research methods, procedures and timelines for data collection.

Digital data will be stored during the funded project period on secure Syracuse University servers in a structured format appropriate to the data type. Syracuse University provides secure storage for these types of data to each faculty member. Permission levels will be set to ensure appropriate access permissions for various project contributors based on role. Permissions and storage will be overseen by the PI, with assistance from the co-PI and graduate assistant, who will be responsible for organizing, securing, and assigning access permissions. Physical data (e.g. drawings) will be collected from research assistants by the PI, who will be responsible for digitizing these materials, adding them to the digital dataset, and storing them during the project period. All digital data will include the application of metadata appropriate to the data type to assist with organization as well as prepare the data for long-term archiving at the end of the project. Metadata will capture information such as type, format, date, time, responsible person(s), storage location, and context of data collection. We expect all digital data to be accessible with basic hardware and software tools (e.g. basic computing hardware, word processing, spreadsheet, database, and image viewing software, and internet access). We do not anticipate any specialized hardware or software needs to access the data from this project.

Some sensitive information will be collected as part of the project work. Because many of the data types collected for this project involve identifiable data about living individuals, we must make special provisions for protecting the rights of these research participants as we plan for data management. All data collection will be reviewed and approved by the Syracuse University IRB to ensure it meets with federal and university standards for collection of PII and other sensitive information. During the project period, data will be shared only among project collaborators and sharing will be managed based on project role. Prior to submission for long term archiving, the data will be deidentified in a manner approved by Syracuse University's IRB to protect the identities of respondents to our study. The consent forms used to enroll participants in this study will include options for release permissions so that identifiable data can be publicly viewed. Although some data will be shared during the project period, after the completion of the final project outcomes and deliverables the deidentified project datasets with accompanying metadata will be submitted to Surface, the Syracuse University digital repository in accord with common practices. Once these data sets have been submitted for archiving, the repository will have primary responsibility for long term data curation and access control. Any data that cannot be adequately deidentified per IRB guidelines (e.g. raw audio recordings) and any physical data (e.g. drawings) will be destroyed after a period of 5 years following the conclusion of the project.

This data management plan will be reviewed yearly, or more frequently if events warrant.

Organizational Profile

Officially chartered in 1870 as a private, coeducational institution of higher education, Syracuse University aspires to be a pre-eminent and inclusive student-focused research university, preparing engaged citizens, scholars, and leaders for participation in a changing global society. Syracuse's thirteen schools and colleges share a common mission to support student success by:

- Encouraging global study, experiential learning, interdisciplinary scholarship, creativity, and entrepreneurial endeavors
- Balancing professional studies with an intensive liberal arts education
- Fostering a richly diverse and inclusive community of learning and opportunity
- Promoting a culture of innovation and discovery
- Supporting faculty, staff, and student collaboration in creative activity and research that address emerging opportunities and societal needs
- Maintaining pride in our location and history as a place of access, engagement, innovation, and impact

The 680-acre campus is home to more than 20,000 full- and part-time undergraduate and graduate students from all 50 states and 90 countries.

The School of Information Studies (the iSchool) is an international leader in library and information science. The School not only enjoys an established national ranking, but also boasts a tremendous demand for its education, its research, and the skills of its graduates from eight degree programs. The School of Information Studies, established in 1896 and renamed as the first Information School in 1974, has a long tradition of leading innovation and change. The IST distance education program began in 1993. In 2004, the School of Information Studies along with the Graduate School of Library and Information Science at the University of Illinois founded the Web-based Information Science Education (WISE) consortium, which now includes 13 university members and 18 library association partners.

Our ideals and values are the foundation of our success.

Our vision: *Exploring the intersection of technology and humanity.*

We work, learn and live in a digital information age. It drives our economy, our politics, and our education systems. The future will be shaped by those who understand and innovate in this environment. Who advocate for the underserved, design for the end user, and solve for the unsolvable. They're diverse, imaginative, and driven to make change. They're iSchoolers.

The iSchool's research spans diverse interests in information and technology, and their impact on organizations and society. We pursue independent and collaborative work in a range of fields with colleagues across campus and around the world. The iSchool's faculty and its student body are actively involved in research and creative activities through several research centers that are part of the school. These centers are:

- Center for Computational and Data Sciences
- Center for Digital Literacy
- Center for Emerging Network Technologies
- Center for the Future of Work, Information and Technology
- Smart Grid Research Center

The iSchool is home to approximately 730 undergraduate students and 650 graduate students.

Organizational Placement: The School of Information Studies is a unit of Academic Affairs, which is under the leadership of Dean Raj Dewan. Academic Affairs is one of the University's five administrative offices. The Syracuse University Office of Sponsored Programs (OSP) is responsible for assuring that submitted proposals conform to University policies and sponsor guidelines, and if funded, that projects are compliant with sponsor requirements.