



LAURA BUSH 21st CENTURY LIBRARIAN PROGRAM

Sample Application RE-259877-OLS-26
Project Category: Applied Research

University of North Texas, College of Information

Amount awarded by IMLS:	\$368,408
Amount of cost share:	\$0

The University of North Texas, College of Information will strengthen the capacity of public librarians to navigate complex, emotionally sensitive, and technology-mediated service interactions, enhance workforce preparedness, and contribute to the overall quality and resilience of public library services nationwide through research and innovation. The project will produce an on-demand Artificial Intelligence (AI)-powered training platform that enables librarians to practice diverse service scenarios in a safe, structured environment; evaluated and transferable training modules; and a national set of best-practice guidelines for ethical AI use in professional development. By reframing generative AI as a tool for experiential learning rather than automation, the study will better prepare librarians to support diverse community needs, strengthen professional resilience, and promote sustainable, high-quality public library services. The project is founded on organized librarian lifelong training around core skill domains: interpersonal skills, digital literacy support, traditional library knowledge, and management and advocacy.

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.

1 Introduction

The University of North Texas (UNT) College of Information, in partnership with the Amigos Library Services, requests \$382,268 for a three-year workforce development project titled “ALiT: AI Platform for Librarian Lifelong Training.” This project directly supports the Laura Bush 21st Century Librarian Program (LB21) **Goal 2 (Train and retain current library and archives professionals, faculty, and staff) & Objective 2.1 (Develop or enhance professional development and training programs to enable the library and archival workforce to meet the needs of their communities)** by creating an innovative framework for the training and professional development of the library workforce. By leveraging generative AI to simulate complex service encounters, ALiT provides a scalable solution to enhance the skills, confidence, and resilience of public librarians. Rather than replacing professional judgment, ALiT positions generative AI as a simulation and reflection tool that supports knowledge sharing, experiential learning, ethical decision-making, and reflective practice. ALiT is designed as an on-demand, flexible training environment, enabling public librarians to practice professional service skills anytime and anywhere, without constraints of schedule, location, or the availability of trainers or patrons. The project team also built a prototype to demonstrate the feasibility of using generative AI to simulate library service interactions and provide structured feedback to support professional training. Overall, ALiT is guided by the following research questions (RQs): **RQ1:** How can generative AI simulate realistic public library service interactions that support professional training and reflective practice? **RQ2:** How does scenario-based simulation training affect librarians’ confidence, communication skills, and preparedness for complex service encounters? **RQ3:** How can knowledge and experiences from different libraries and librarians be integrated into the AI system to facilitate inter-institutional and inter-generational knowledge sharing? **RQ4:** What best practices support the ethical, human-centered use of generative AI for librarian training and workforce development?

2 Project Justification

2.1 Statement of Need

Public libraries are one of the most trusted and widely used public institutions in the United States. According to the most recent IMLS Public Libraries Survey (FY2023)¹, affirms that libraries remain central to community life. Approximately 9,000 public library systems comprising over 17,000 individual libraries, branches, and bookmobiles, recorded over 800 million visits, offered 4.6 million programs attended by 93 million people, and served more than 155 million registered users—nearly half of all Americans live within a public library service area. Services span digital literacy, workforce development, life-long learning, health information, and civic engagement. Yet such complex human service roles require advanced communication skills, trauma-informed awareness, ethical judgment, and resilience—competencies undersupported through traditional, episodic professional development.

Despite this demand, structured, practice-based professional training that enables librarians to rehearse realistic service challenges remains limited. Most librarians cultivate these skills through live, on-the-job experience, where uncertainty can heighten stress and lead to inconsistent patron outcomes. This is particularly acute for early-career librarians, paraprofessionals transitioning to public-facing roles, and in rural and small library settings with limited local training capacity. Workforce trends underscore the urgency of addressing this gap. According to the U.S. Bureau of Labor Statistics, employment of librarians and library media specialists was approximately 133,760 in 2023, with about 13,500 annual job openings projected through 2034 — most driven by worker replacement rather than growth². This dynamic reflects both ongoing turnover and an aging workforce. A significant cohort of librarians is approaching retirement age, the profession risks losing years — if not decades — of tacit professional knowledge if we do not systematically capture their institutional knowledge.

Compounding this challenge is the uneven distribution of training resources across libraries. Librarians in small or rural communities often have limited access to the specialized professional development available in larger urban systems. Such inequities constrain inter-institutional learning and weaken the nation’s collective capacity to respond consistently to

¹ <https://www.imls.gov/research-evaluation/surveys/public-libraries-survey-pls>

² <https://www.bls.gov/ooh/education-training-and-library/librarians.htm>

community needs. The rapid adoption of generative AI technologies in library contexts, often framed as automation solutions with limited focus on human capacity building, adds complexity rather than reducing disparities. This framing overlooks a more critical opportunity: to leverage AI not to replace librarians, but to enhance their professional judgment and practical skill development through simulation, reflection, and mentoring mechanisms.

ALiT responds to this urgent, national workforce challenge by establishing a scalable generative AI-enabled simulation platform designed to strengthen librarian preparedness. ALiT will provide a safe, structured, and low-risk environment for practicing realistic patron scenarios, receiving formative feedback, and engaging in guided reflection before real-world encounters. The platform will also serve as a repository for capturing and modeling tacit expertise from seasoned professionals — preserving de-escalation strategies, ethical reasoning practices, and culturally responsive communication approaches that would otherwise be lost with retirement. By enabling inter-institutional scenarios and resource sharing, ALiT promotes equitable access to high-quality professional development across libraries of diverse sizes and geographies. This shared knowledge network will foster national workforce resilience, enhance service quality, reduce professional stress, and improve the consistency of patron experiences regardless of local context.

This project directly advances the **LB21 Program’s Goal 2 & Objective 2.1**: Develop or enhance professional development and training programs to enable the library and archival workforce to meet the needs of their communities. **ALiT** addresses a structural workforce infrastructure need, creating a sustainable, technology-enhanced model for continuous professional learning aligned with the evolving demands on public librarians. In this era of rapid technological change and workforce transitions, the need for scalable, practice-based training is both urgent and national in scope.

2.2 Related Work and Research Gaps

2.2.1 Lack of Alignment Between Expanding Professional Roles and Structured Preparation

Public libraries now serve as community anchors for digital inclusion, workforce and small-business support, technology access, and public problem-solving, going far beyond traditional circulation and reference services. Public Library Association (PLA) and IMLS both document libraries’ expanding roles in helping patrons build digital skills, pursue jobs, access training, and engage community services. ALA’s core competences emphasize that librarians need ongoing professional development well beyond initial LIS preparation^{3,4,5}. Meanwhile, research on public librarianship and crisis-facing service work shows that contemporary practice increasingly requires strong interpersonal communication, de-escalation, ethical judgment, and adaptive instruction in complex real-world encounters (Williams & Saunders, 2020; PLA, 2022; Williams et al., 2024). However, much of the field’s continuing education infrastructure still centers on webinars, short courses, and other episodic offerings, which are valuable but limited for practicing nuanced, emotionally charged interactions.

2.2.2 Lack of Scalable, Practice-Based Infrastructure for Lifelong Professional Development

Current professional development opportunities in librarianship remain uneven in access and are often oriented toward information delivery rather than repeated, situated practice. PLA webinars⁶ and WebJunction courses⁷ provide important continuing education, but these formats do not by themselves offer immersive rehearsal of complex patron scenarios across diverse local contexts. Meanwhile, public library work depends heavily on tacit knowledge—such as de-escalation, culturally responsive communication, and situational decision-making—that is often transmitted informally through mentoring and workplace experience rather than systematically captured in reusable training systems (Inzer & Crawford, 2005; Hicks, 2011; Williams, 2019). Evidence from recent library mentoring and tacit-knowledge studies reinforces the importance of mentorship and colleague-based knowledge transfer, while sector reporting also points to leadership transition and workforce change as risks to institutional memory (Burnette, 2017; Kiwelu et al., 2020; Booker, 2024).

³ <https://www.ala.org/pla/initiatives/workforce>

⁴ <https://www.imls.gov/publications/public-libraries-role-workforce-and-small-business-development-look-across-ten-public>

⁵ <https://www.ala.org/educationcareers/careers/corecomp/corecompetences>

⁶ <https://www.ala.org/pla/education/onlinelearning/webinars>

⁷ <https://learn.webjunction.org>

These patterns suggest a clear gap: public librarians need a scalable training infrastructure that combines realistic practice, guided reflection, and cross-library knowledge sharing rather than relying primarily on one-time sessions or local informal mentoring.

2.2.3 Untapped Potential of AI-Enabled Simulation for Librarian Workforce Development

Simulation-based learning is well established across professional education because it allows safe, repeatable practice in complex, high-stakes situations, and recent work continues to show its value for building judgment, confidence, and adaptive performance (Sellberg & Lindwall, 2026). In library contexts, emerging VR-based studies already suggest that simulated environments can improve empathy, confidence, and crisis-communication skills for LIS learners, indicating that practice-based simulation is a strong fit for librarian training (Williams et al., 2023; Williams et al., 2024). At the same time, newer GenAI research in teacher education and adult learning shows that AI-enhanced simulations can generate dynamic scenarios, adaptive interactions, and formative feedback, while human-centered AI scholarship stresses the need for transparency, trust, safety, and learner agency in such systems (Lim et al., 2025; Mikeska et al., 2025; Kim et al., 2025; Alfredo et al., 2024; Aperstein et al., 2025). To our knowledge, the current landscape points to adjacent models—webinars for library PD, simulation work in VR, and GenAI simulations in other professional domains (Meyer et al., 2024; Borge et al., 2024; Lim et al., 2025; Aperstein et al., 2025)—rather than a mature, scalable GenAI simulation platform specifically designed for public librarian lifelong training. This gap creates a timely and significant opportunity for ALiT to serve as an innovative, scalable, and human-centered model for the future of librarian workforce development.

2.3 Preliminary Work

The project team has already established an initial technical and strong conceptual foundation for the proposed ALiT platform through the development of a working pilot prototype (deployed on a local server), as shown in Figure 1.

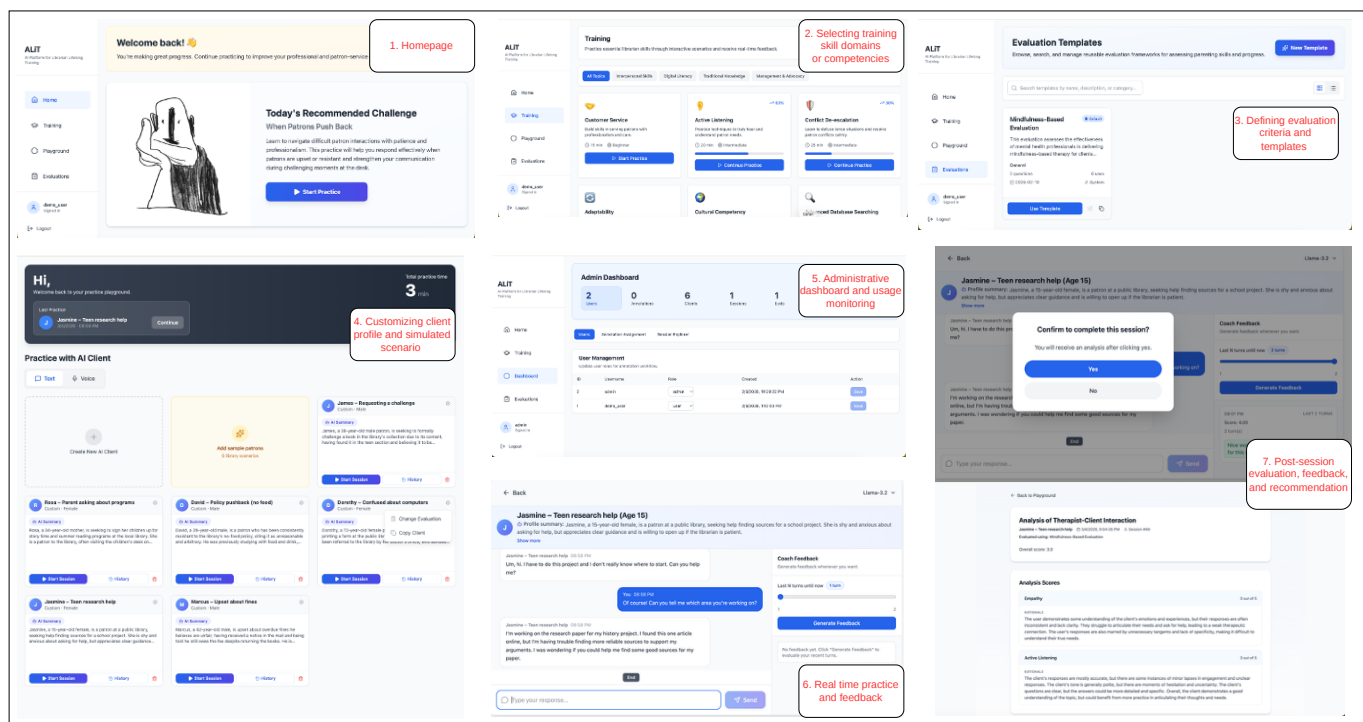


Figure 1. Demonstration of ALiT Pilot Prototype

It includes a structured training environment with topic-based modules and predefined patron-service scenarios that allow users to practice communication and service strategies while tracking progress over time. It also features an interactive simulation playground where librarians can define virtual client profiles and engage in real-time conversations with AI-generated patrons whose responses adapt dynamically to the exchange. To support reflective learning, the platform provides both in-session feedback and post-session evaluation reports based on selectable assessment templates. In addition, administrators can create customizable evaluation frameworks aligned with professional competencies and

use a dashboard to monitor participation, engagement, and system use. Together, these components validate the technical feasibility and instructional promise of ALiT, showing that the project is not starting from scratch but building from a functional prototype into a scalable, human-centered workforce development platform.

3 Work Plan

3.1 Project Team

PI [Dr. Haihua Chen](#) is Assistant Professor of Data Science and Director of the [Intelligent Data Engineering and Analytics Lab](#) at UNT. His research focuses on artificial intelligence, LLMs, information retrieval, question answering, and summarization, and he has published more than 60 peer-reviewed articles in leading venues such as EMNLP, WWW, ICDM, JCDL, ASIS&T, and IP&M. Dr. Chen will lead the project's AI platform design, simulation architecture, feedback analytics, and overall technical integration.

Co-PI [Dr. Katherine E. Klein](#) is Assistant Professor of Library Science at UNT. Her research focuses on public library staff, workplace technology, professional identity, routines, and autonomy. She also brings direct professional library experience as a librarian, library media specialist, and research and teaching librarian. Dr. Klein will lead efforts in competency mapping, scenario authenticity, practitioner-centered evaluation, and the study of how librarians experience AI-supported training in practice.

Co-PI [Dr. Junhua Ding](#) is Reinburg Endowed Professor and Department Chair of Data Science at UNT with more than two decades of experience spanning software engineering, data quality, and AI evaluation. With prior industry experience as a software engineer, along with active NSF-funded research, Dr. Ding brings the technical depth needed to ensure ALiT's platform robustness, data quality, model evaluation, and responsible system performance. He will lead efforts in system reliability, evaluation design, and AI quality assurance.

Advisory Board. An interdisciplinary advisory board of nationally recognized experts in artificial intelligence, information retrieval, library workforce development, public library leadership, and professional training will provide strategic guidance throughout the project. Confirmed members include [Dr. Chirag Shah](#) (Professor at University of Washington), an internationally recognized leader in information retrieval, human-AI interaction, and trustworthy AI, will guide the project's AI design, evaluation methodology, and responsible use of LLMs in information services; [Dr. Xiaozhong Liu](#) (Associate Professor at Worcester Polytechnic Institute), an expert in LLMs, agent-based AI systems, and large-scale production AI infrastructures, will guide on scalable AI system architecture, retrieval-augmented generation, and safe deployment of LLM-based systems. To ensure strong alignment with real-world public library practice, the advisory board includes [Eli Guinnee](#) (State Librarian of New Mexico), who oversees statewide library programs, digital resources, and broadband initiatives supporting public libraries and will advise on statewide workforce training needs and equitable access to professional development resources; [Christina Pryor](#) (Continuing Education Services Manager at Amigos Library Services) brings extensive experience designing and delivering continuing education programs for library professionals and will help shape the project's training curriculum and workforce development model; [Dr. Rachel D. Williams](#) (Assistant Professor at University of South Carolina), whose research focuses on public library services for patrons in crisis and immersive professional training environments, including virtual reality-based simulations for librarian education, provides valuable expertise for designing realistic service scenarios and evaluating training effectiveness; [Adele Chase](#) (Research and Readers' Advisory Librarian, Richland Library) brings direct frontline public library service experience, including technology instruction, reference support, and reader advisory services, ensuring that the training scenarios reflect authentic patron interactions and evolving community needs; [Peter Matera](#) (Director, Rocky River Public Library) brings public library leadership and practical expertise in patron services, staff development, and training. Two-page CVs and formal letters of commitment from the advisory board are included in the project materials.

The board will meet quarterly to review scenario development, platform implementation, evaluation results, and dissemination activities, ensuring that ALiT remains technically robust, ethically responsible, and closely aligned with the real training needs of the public library workforce. We will continue to expand project support and partnerships during Year 1 to strengthen practitioner engagement and ensure a broad, diverse base of libraries and expert collaborators for piloting and dissemination. This growing network of partners will reinforce both the feasibility of the project and its potential for national impact.

3.2 Training Focus and Instructional Rationale

For purposes of this project, ALiT organizes librarian lifelong training around four core skill domains: interpersonal skills, digital literacy support, traditional library knowledge, and management and advocacy (in Table 1). These domains were selected because they are central to contemporary public librarianship and because they are difficult to strengthen through passive workshops alone. Effective performance in these areas depends on contextual judgment, conversational skill, practice under uncertainty, and structured reflection after action. ALiT addresses this need by giving librarians repeated, low-risk opportunities to practice realistic service encounters, receive formative feedback, and reflect on their decision making before applying those skills in live public service settings.

Table 1 Target Skill Domains for ALiT Training.

Skill Domain	Representative Competencies	Why ALiT is Helpful	Evidence of Learning
Interpersonal Skills	Customer service, active listening, questioning, conflict de-escalation, adaptability, and cultural responsiveness	These skills are situational and interactional. They improve through repeated practice with emotionally complex and ambiguous encounters, followed by feedback and reflection.	Transcript-based rubric scores, self-efficacy ratings, participant reflections, and ratings of scenario realism.
Digital Literacy Support	Helping patrons use devices and online tools, evaluating information and misinformation, and explaining digital processes clearly	Patrons often need step-by-step support under time pressure. Simulation allows librarians to practice explanation, troubleshooting, and instructional pacing across different patron profiles.	Performance on digital-help scenarios, clarity-of-explanation ratings, participant confidence surveys, and session analytics.
Traditional Library Knowledge	Reference interviewing, search guidance, readers' advisory, catalog and collection knowledge, and collection-development reasoning	These skills require both domain knowledge and strong conversational sequencing. ALiT allows librarians to rehearse the full interaction process rather than only studying procedures abstractly.	Rubric scores on reference and advisory scenarios, post-session reflections, and expert review of sample transcripts.
Management and Advocacy	Community outreach, program planning, communicating policies, stakeholder communication, and explaining library value	These skills involve persuasive communication, judgment, and role adaptation across patrons, partners, and internal stakeholders. Scenario practice makes these less abstract and more actionable.	Scenario completion artifacts, communication ratings, participant reflections, and implementation intent reported in interviews.

ALiT is particularly well suited to these domains because it provides three instructional advantages that traditional professional development often lacks. It will (1) enable **repeatable practice**: librarians can work through difficult encounters multiple times without risk to real patrons; (2) support **adaptive variation**: the same skill can be practiced across different client personas, emotional tones, and service contexts; (3) support **formative reflection**: immediate in-session cues and post-session reports help participants connect action, consequence, and professional judgment.

3.3 Technical Implementation Framework

We will implement the full ALiT platform as a modular system with six integrated layers (demonstrated in Figure 2). This design extends the current pilot system into a scalable training infrastructure.

In practice, a typical ALiT session will proceed as follows: (1) the trainee selects a training module or custom scenario; (2) the orchestrator loads the appropriate virtual client and rubric; (3) the virtual client engine generates the patron interaction; (4) evaluator agents assess the trainee's responses during and after the conversation; (5) the aggregator produces formative feedback; and (6) the resulting transcript, ratings, and reflections are stored for dashboard reporting, research analysis, and iterative system improvement. This architecture allows ALiT to function both as a training platform and a research environment for studying simulation-based professional development.

3.4 Research Questions, Leads, and Methods

Based on the four interrelated research questions (RQs), the project will examine the design, effectiveness, knowledge-sharing capacity, and ethical implementation of a generative AI-enabled training platform for public librarians. Each question is supported by a clearly defined leadership structure and a corresponding set of methods that combine system development, practitioner engagement, and mixed-methods evaluation, as summarized in Table 2. The team will secure appropriate IRB approvals for all surveys and interview studies.

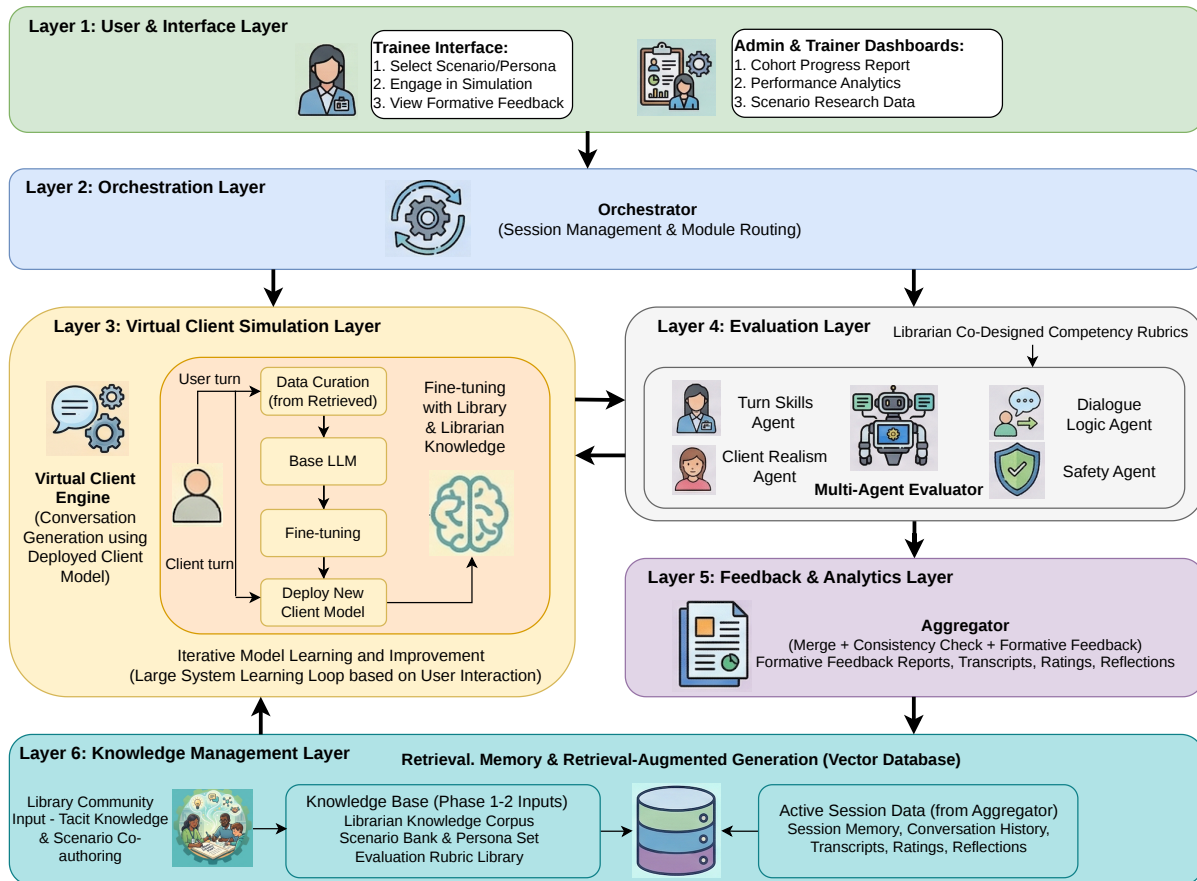


Figure 2. Six-Layer Technical Implementation Framework of the ALiT Platform.

Table 2 The Research Questions, Project Leads, and Methods.

Research Questions	Project Leads	Research Methods
(RQ1) How can generative AI simulate realistic public library service interactions that support professional training and reflective practice?	PI Dr. Chen, practitioner advisors from Amigos and partner libraries	Participatory scenario design, persona development, prompt engineering, retrieval design, platform testing, and realism/usability analysis.
(RQ2) How does scenario-based simulation training affect librarians' confidence, communication skills, and preparedness for complex service encounters?	Co-PI Dr. Klein, Amigos workforce development lead	Pre/post assessment, rubric-based transcript review, weekly reflections, surveys, interviews, and platform analytics.
(RQ3) How can knowledge and experiences from different libraries and librarians be integrated into the AI system to facilitate inter-institutional and inter-generational knowledge sharing?	PI Dr. Chen, Co-PI Dr. Ding, Amigos practitioner engagement lead	Critical-incident interviews, scenario elicitation, expert review, cross-site scenario sharing, and comparative analysis across library contexts.
(RQ4) What best practices support the ethical, human-centered use of generative AI for librarian training and workforce development?	PI Dr. Chen, Co-PIs Dr. Dr. Klein, Dr. Ding, project advisory group	Human-centered design review, safety and bias auditing, governance analysis, participant feedback analysis, and best-practice synthesis.

3.5 Phased Work Plan

We structure the work plan into six phases and around two practitioner working meetings. Each phase includes specific implementation tasks, evaluation procedures, and outputs.

3.5.1 Phase 1: Competency Framework, Governance, and System Specification (Sep 2026 – Jan 2027)

- Task 1.1: Define the competency framework and scenario taxonomy. (RQ1, RQ2, RQ3)
 - **Implementation:** The project team will work with practicing public librarians and Amigos partners to translate the four skill domains into a competency framework, scenario taxonomy, and scoring rubric structure. We will classify scenarios by service area, difficulty, communication demand, and ethical complexity.
 - **Evaluation:** The framework will be reviewed by practitioner advisors for clarity, coverage, and relevance to public library work.
 - **Output:** ALiT competency map, scenario taxonomy, and draft evaluation rubric set.
- Task 1.2: Establish governance, privacy, and ethical AI procedures. (RQ4)
 - **Implementation:** UNT and Amigos will finalize project governance, data management procedures, transparency language, escalation rules for problematic model outputs, and human review processes.
 - **Evaluation:** The team will conduct an internal policy review to confirm that all data, training, and feedback procedures align with human-centered and responsible AI principles.
 - **Output:** Project governance plan, privacy workflow, and responsible-AI implementation guide.
- Task 1.3: Finalize technical specifications and research instruments. (RQ1, RQ2, RQ4)
 - **Implementation:** The team will specify platform architecture, data schemas, dashboard requirements, survey instruments, transcript rubrics, and interview protocols.
 - **Evaluation:** Instruments will be pilot reviewed for face validity and feasibility.
 - **Output:** Technical specification document and evaluation instrument package.

3.5.2 Phase 2: Scenario Authoring and ALiT Version 1 Development (Dec 2026 – Aug 2027)

- Task 2.1: Capture tacit knowledge from experienced librarians. (RQ3)
 - **Implementation:** The team will conduct structured interviews and critical-incident elicitation with experienced public librarians to capture de-escalation techniques, reference-interview strategies, digital-help workflows, outreach communication approaches, and ethically difficult service encounters.
 - **Evaluation:** Scenarios derived from these interviews will be reviewed by contributing experts for authenticity and instructional value.
 - **Output:** Curated knowledge corpus and initial scenario bank.
- Task 2.2: Author scenarios, personas, and evaluation templates. (RQ1, RQ3)
 - **Implementation:** The team will translate collected incidents into structured scenario packets, virtual client personas, difficulty levels, reflective prompts, and rubric templates aligned to the four skill domains.
 - **Evaluation:** Expert review will assess realism, scope, and rubric clarity; weak scenarios will be revised before deployment.
 - **Output:** Scenario library, persona set, and reusable evaluation template library.
- Task 2.3: Build ALiT Version 1. (RQ1, RQ2)
 - **Implementation:** Building on the pilot, the team will implement the orchestrator, retrieval layer, virtual client engine, multi-agent evaluator, aggregator, and dashboard enhancements. The existing course interface and playground will be expanded to support multi-domain training, session analytics, and role-based evaluation.
 - **Evaluation:** Internal technical testing will assess reliability, latency, logging, and consistency of feedback.
 - **Output:** ALiT Version 1 with integrated training, simulation, feedback, and administration functions.
- Task 2.4: Conduct internal quality assurance and safety testing. (RQ4)
 - **Implementation:** The project team will run benchmark scenarios to identify hallucinations, persona drift, unsafe feedback, or inconsistent scoring across evaluator agents.

- **Evaluation:** Error analysis and expert audit will be used to revise prompts, rubrics, retrieval settings, and safety rules.
- **Output:** Q&A report and revised ALiT Version 1.1.

3.5.3 Phase 3: Practitioner Working Meeting I and Alpha Pilot (Sep 2027 – Mar 2028)

- Task 3.1: Recruit alpha participants and prepare pilot protocols. (RQ2, RQ3)
 - **Implementation:** Amigos will recruit a small, diverse set of practicing librarians and paraprofessionals to test the platform. The team will prepare orientation materials, pilot tasks, and data-collection procedures.
 - **Evaluation:** Recruitment success will be assessed by diversity of role, experience level, and library context represented in the alpha group.
 - **Output:** Alpha pilot cohort and pilot-ready training materials.
- Task 3.2: Conduct structured alpha testing. (RQ1, RQ2, RQ4)
 - **Implementation:** Participants will complete a defined set of scenarios spanning the four skill domains.
 - **Evaluation:** Data will include realism ratings, feedback usefulness ratings, transcript rubrics, and usability comments.
 - **Output:** Alpha pilot dataset and formative findings report.
- Task 3.3: Conduct open exploration during Working Meeting I. (RQ1, RQ3, RQ4)
 - **Implementation:** Participants will create custom virtual clients, explore alternative evaluation templates, and test the system in ways that mirror local practice.
 - **Evaluation:** The team will analyze transcripts, logs, and participant comments to identify unanticipated use cases and design gaps.
 - **Output:** Practitioner-informed design recommendations.
- Task 3.4: Re-tune system components after alpha testing. (RQ1, RQ2, RQ4)
 - **Implementation:** The team will revise prompts, scenario wording, evaluator thresholds, and feedback presentation based on pilot evidence.
 - **Evaluation:** Before-and-after comparison of benchmark scenarios will be used to confirm improvement.
 - **Output:** ALiT Version 2.

3.5.4 Phase 4: Beta Pilot, Re-tuning, and Curriculum Development (Jan 2028 – Aug 2028)

- Task 4.1: Conduct a broader beta pilot across partner contexts. (RQ2, RQ3)
 - **Implementation:** The team will recruit a broader group of public librarians through the Amigos network, including staff from different-sized systems and underserved geographic areas.
 - **Evaluation:** The beta pilot will assess whether ALiT is useful and usable across varied contexts rather than only in a narrow test case.
 - **Output:** Multi-site beta dataset.
- Task 4.2: Develop the ALiT training curriculum. (RQ2)
 - **Implementation:** Using beta evidence, the team will organize scenarios into a sequenced curriculum with training goals, orientation materials, reflection prompts, and facilitator guidance.
 - **Evaluation:** Advisors will review the curriculum for coherence, workload balance, and alignment with public library training needs.
 - **Output:** Draft 10-week ALiT curriculum and facilitator guide.
- Task 4.3: Improve knowledge-sharing and scenario reuse features. (RQ3)
 - **Implementation:** The team will refine authoring templates and retrieval functions so that scenarios contributed by one library can be reused, adapted, and interpreted by users in other library contexts.
 - **Evaluation:** Participants will assess whether scenarios from other institutions feel understandable, relevant, and transferable.
 - **Output:** Enhanced scenario-sharing workflow and revised retrieval layer.
- Task 4.4: Continue technical and ethical refinement. (RQ1, RQ4)

- **Implementation:** Refine evaluator prompts, safety logic, and dashboard reporting based on beta evidence.
- **Evaluation:** Repeated benchmark testing and expert review will assess whether refinements improve consistency, fairness, and training value.
- **Output:** ALiT release candidate and interim technical report.

3.5.5 Phase 5: Practitioner Working Meeting II and Final Platform Validation (Sep 2028 – Jan 2029)

- Task 5.1: Conduct Working Meeting II with returning and new participants. (RQ2, RQ4)
 - **Implementation:** Participants will test the release candidate platform and provide comparative feedback on realism, usability, and instructional value.
 - **Evaluation:** The project team will compare evidence from Working Meetings I and II to determine how much the platform improved.
 - **Output:** Validation report for the final platform version.
- Task 5.2: Finalize facilitator, admin, and reporting functions. (RQ2, RQ4)
 - **Implementation:** The team will finalize cohort-management tools, reporting dashboards, orientation materials, and support documentation needed for a larger training implementation.
 - **Evaluation:** Acceptance testing will confirm readiness for year-3 deployment.
 - **Output:** ALiT Version 2 admin handbook and facilitator handbook.
- Task 5.3: Finalize recruitment and implementation plan for the year-3 training cohort. (RQ2, RQ3)
 - **Implementation:** Amigos and partner libraries will identify 30 librarians to participate in the year-3 training program.
 - **Evaluation:** We will assess recruitment for representation across institution type, geography, and career stage.
 - **Output:** Confirmed cohort roster and training implementation plan.

3.5.6 Phase 6: 10-Week Training Cohort, Summative Evaluation, and Dissemination (Jan 2029 – Aug 2029)

- Task 6.1: Recruit and onboard 30 librarians from partner public libraries. (RQ2, RQ3)
 - **Implementation:** Thirty librarians from partner public libraries will be enrolled in a 10-week ALiT training program. Participants will complete onboarding, baseline surveys, and an initial simulation assessment.
 - **Evaluation:** Baseline measures will include self-efficacy, preparedness, and initial performance on scenario-based transcript rubrics.
 - **Output:** Fully enrolled cohort and baseline dataset.
- Task 6.2: Deliver the 10-week ALiT training program. (RQ2)
 - **Implementation:** Participants will complete a sequenced 10-week program combining guided modules, simulation practice, feedback review, and reflection.
 - **Evaluation:** Weekly completion, usage analytics, reflection entries, and selected transcript ratings will be used to monitor engagement and learning progression.
 - **Output:** Completed 10-week training cohort.
- Task 6.3: Conduct summative evaluation of learning and platform value. (RQ1, RQ2, RQ3, RQ4)
 - **Implementation:** The team will administer post-program surveys, final simulation assessments, interviews or focus groups, and comparative transcript analysis.
 - **Evaluation:** Summative analysis will assess changes in confidence, communication quality, scenario performance, cross-library knowledge sharing, and perceptions of ethical and human-centered AI use.
 - **Output:** Final evaluation report answering all four research questions.
- Task 6.4: Disseminate products and establish sustainability. (RQ1, RQ2, RQ3, RQ4)
 - **Implementation:** The team will prepare webinars, conference presentations, publications, a best-practices guide, and a post-grant stewardship plan.
 - **Evaluation:** Dissemination success will be assessed by participation, reuse requests, and partner feedback.
 - **Output:** Final ALiT platform package, dissemination products, and sustainability plan.

3.6 Sustainability

ALiT is designed for sustainability beyond the grant period through a combination of institutional commitment, partner-based dissemination, and reusable project outputs. UNT will maintain the core platform, scenario library, and research-based training materials as part of its ongoing work in library and information science education, while Amigos Library Services will support continued outreach, recruitment, and integration of ALiT into professional development offerings for public libraries. Because the platform is modular and built around reusable scenarios, evaluation templates, facilitator guides, and a validated 10-week training model, partner libraries will be able to continue using and adapting ALiT after the grant ends. The project's emphasis on scenario-sharing, train-the-trainer support, and ethical implementation guidance will further enable broader adoption, helping ALiT evolve from a funded project into a sustainable professional learning infrastructure for the public library workforce.

3.7 Computing Resources

PI Dr. Haihua Chen and Co-PI Dr. Junhua Ding has full administrative access to UNT Department of Data Science's high-performance GPU infrastructure, which provides substantial capacity for large-scale multimodal LLM development and evaluation required for the ORAL-AI project. The core resources include eight R760xa servers (each with 2× NVIDIA H100 GPUs), one XE9680 server with 8× NVIDIA H200 GPUs, and one R760XA server with 4x L40S GPU, enabling distributed training, fine-tuning, and large-scale inference for multimodal oral history collections. These systems are supported by approximately 70TB of high-speed SSD storage for active model development and 300TB of HDD storage for large oral digital datasets. These secured, institutionally supported resources are fully operational and sufficient to complete all computational components of the proposed project.

4 Project Results

The ALiT project will produce both significant research contributions and practical results that directly advance the goals of the LB21 Program. At the research level, it will generate new knowledge about how generative AI can be designed, implemented, and evaluated as a human-centered tool for lifelong professional learning in public librarianship. By integrating participatory scenario design, AI-driven simulation, transcript-based performance assessment, platform analytics, and qualitative user feedback, ALiT will create an evidence-based model for simulation-supported workforce development and offer methodological insights into how repeated, low-risk practice strengthens librarians' confidence, communication skills, ethical judgment, and preparedness.

Practically, the project will also show how AI-enabled simulation can strengthen training and professional development for the public library workforce at a national scale. Through collaboration with practicing librarians, partner libraries, and advisory experts, ALiT will identify when simulation-based learning is most effective, how tacit professional knowledge can be transformed into reusable scenarios, and what safeguards are needed for ethical, transparent, and human-centered AI use. Findings will be disseminated through publications, conference presentations, webinars, and practitioner-facing venues such as ALA, PLA, ASIS&T, iConference, and JCDL.

More importantly, the project will deliver durable workforce development infrastructure for the field, including the finalized ALiT platform, a scalable environment for practicing realistic patron-service interactions anytime and anywhere; a reusable scenario bank; evaluation templates and transcript-based rubrics aligned with key competencies; a validated 10-week training curriculum; facilitator and administrator guides; and a best-practices framework for ethical AI use in librarian professional development. ALiT will also support inter-institutional and inter-generational knowledge sharing by capturing experienced librarians' expertise and converting it into reusable training resources, helping preserve knowledge often lost through turnover and retirement while expanding access to high-quality continuing education for small, rural, and under-resourced libraries.

To maximize national impact, the project team will create a website and share findings, implementation guidance, and selected training resources through professional networks, library organizations, consortia communications, and listservs. Beyond its immediate deliverables, ALiT will provide a strong foundation for future research, partnerships, and funding on AI-supported lifelong learning and serve as a replicable model for strengthening the professional development infrastructure of the public library workforce nationwide.

Schedule of Completion

The proposed project will begin September 1, 2026, and conclude August 31, 2029

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