



LAURA BUSH 21st CENTURY LIBRARIAN PROGRAM

Sample Application RE-259543-OLS-26
Project Category: Forum

University of North Texas College of Information

Amount awarded by IMLS: \$181,779
Amount of cost share: \$0

University of North Texas, Department of Information Science, College of Information, will create a cohort-based forum that will strengthen academic librarians' capacity to conduct research on Artificial Intelligence (AI) literacy, responsible AI use, and AI workforce development. Librarians will participate in a six-month mentoring program combining virtual mentorship meetings and monthly tutorials, culminating in an in-person symposium at the University of North Texas campus. Participants will work with experienced researchers to develop, execute, and disseminate original research projects. Expected outcomes include peer-reviewed publications, grant proposals, and AI research applications strengthening AI literacy and workforce readiness. Research themes of the project include AI Literacy and Responsible AI Use; AI Roles for Libraries and Librarians Cybersecurity Principles for AI; AI in Digital Scholarship; and Preparing Future Professionals for the AI Workforce.

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.

Forum: SALAMANDER: Strengthening Academic Librarians' AI Methods And Networks for Digital Ethics Research

Project Description

Introduction

The University of North Texas is requesting \$181,779 for the IMLS Forum Proposal, *Strengthening Academic Librarians' AI Methods And Networks for Digital Ethics Research* (SALAMANDER), submitted to the Laura Bush 21st Century Librarian program. This project proposes the creation of a two-year, cohort-based professional development and research forum with the purpose of strengthening academic librarians' capacity to engage in research relating to artificial intelligence (AI) ethics, AI literacy, responsible AI use in higher education, and AI workforce development, in alignment with LB21 Program Goal 2, Objective 2.1 and national AI education and research initiatives. Hosted by the University of North Texas, the program will combine an intensive, in-person symposium with virtual mentorship meetings to develop a national network of librarian-researchers who are engaged in action and evidence-based AI research. During each year of the program, 30 academic librarians will be selected to participate in a structured six-month mentoring program, which will culminate in a two-day, face-to-face symposium in Denton, Texas. Participants will work with established researchers to develop, execute, and publish original research projects. Outcomes for the project will include competitive research proposals, peer-reviewed publications, and practical applications of AI research that strengthen AI literacy instruction, machine learning practices, and workforce readiness for future professionals.

Project Justification

Since the nation's founding, U.S. leaders have emphasized the central role of knowledge, education, and access to information in supporting our democratic institutions and economic prosperity. As the United States approaches its 250th anniversary, the SALAMANDER project builds upon this tradition by preparing librarians to guide communities through the emerging opportunities and challenges of artificial intelligence. Research and publications consistently show that academic librarians play a key role in teaching information literacy, supporting scholarly research, and equipping the future workforce with skills for lifelong success (Leavitt, 2011; Mullins & Boyd-Byrnes, 2024). As artificial intelligence increasingly becomes embedded in higher education and society, librarians require advanced training to be able to appropriately engage with AI tools and policy frameworks, such as Executive Order 14365, *America's AI Action Plan*, and the U.S. Department of Labor's *AI Literacy Framework*, which emphasize responsible adoption of AI, development of a skilled workforce, and support for ethical AI research and innovation.

Artificial intelligence represents the newest frontier in America's tradition of empowering its citizens through access to information and expanding opportunity for innovation and economic participation. A renewed investment in ethical reasoning, information literacy, and professional expertise are necessary to ensure that the next generation of professionals are prepared to contribute meaningfully to the AI economy (Kong et al., 2023). Academic librarians play a vital role in literacy training and research support on university campuses (Lo, 2024), yet few structured opportunities exist for them to receive sustained mentorship in conducting rigorous and publishable AI research. Many are expected to support AI-related initiatives without access to advanced training, research networks, or expert guidance (Cox, 2023; Lund, 2025), and the 2025 Clarivate Pulse of the Library survey found that two-thirds (67%) of

librarians are either not actively exploring AI or are only in the early stages of exploration (Clarivate, 2026). Preparing librarians to serve as campus leaders in AI research and development therefore requires targeted efforts to expand their research capacity, including mentorship in research design, collaboration networks, and opportunities to produce publishable scholarship.

The SALAMANDER project addresses this gap by connecting librarians with experienced researchers in information science, data science, learning technologies, computer science, and industry to develop skills that will ultimately help inform evidence-based practice and public discourse on AI. This project aligns with existing federal priorities emphasizing AI education, workforce development, and ambitious national leadership on emerging technologies, as well as the IMLS's (2026) interest in innovative professional development and training for library professionals and creative use of AI in supporting access to cutting-edge research through libraries.

In its essence, the SALAMANDER project is designed to expand the research capacity of academic librarians in the rapidly evolving area of artificial intelligence. While librarians frequently support AI initiatives through instruction, policy development, and technology implementation, relatively few opportunities exist for them to develop the methodological skills, collaborative networks, and scholarly mentorship necessary to conduct rigorous AI research (Clarivate, 2026). By pairing participants with experienced researchers, guiding them through the development of research projects, and supporting the dissemination of their findings, this forum will enable librarians to move from consumers of AI knowledge to active contributors to the national research conversation surrounding responsible and ethical AI.

The design of the SALAMANDER forum is informed by research on communities of practice, which emphasizes that new forms of professional expertise are forged through close and sustained mentorship, collaborative inquiry, and shared problem-solving among practitioners (Haas, 2025; Mierzecka, 2025). Instead of relying on one-off workshops and short-term training events, this project establishes a national network of librarian-researchers to participate in guided AI research and peer collaboration. By supporting long-term learning, professional leadership development, and shared standards of practice, the forum creates conditions for sustained impact and meaningful change. This design is elaborated in the figure below, which demonstrates both the community building and practice improvements and research products potential of the SALAMANDER forum.

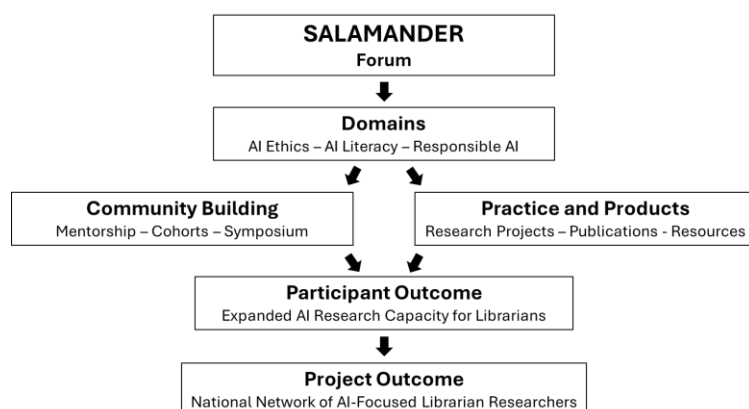


Figure: SALAMANDER Forum Design Based on Communities of Practice

Through strategic and sustained investment in professional development, mentorship, and collaborative inquiry, the SALAMANDER project will expand the nation's capacity for research on artificial intelligence within academic libraries. By equipping librarians with the skills and networks necessary to conduct and disseminate AI research, the project will strengthen the broader knowledge ecosystem that supports responsible technological innovation. By advancing AI literacy, machine learning applications in learning and science, and constructive dialogue about AI technologies, the project will contribute to America's economic competitiveness and civic resilience. It embraces the prospect of new roles for academic librarians in artificial intelligence, as positive agents for the responsible adoption and dissemination of this technology on university campuses. It affirms the role of academic libraries as pillars of our democratic society, while preparing them to embrace that mission within an emerging age of artificial intelligence.

Project Work Plan

The SALAMANDER forum is designed to create a carefully structured and immersive professional development experience for academic librarians that combines direct mentorship, peer collaboration, and hands-on research training over a period of six months, culminating in the in-person symposium in Denton, Texas. The design was selected with the belief that building sustainable interest and expertise in topics such as AI literacy and AI-driven research requires extended engagement rather than one-off events. Through pairing the participants with experienced research mentors and facilitating peer collaboration, the SALAMANDER forum will help build a community of practice to support long-term AI research, literacy instruction, and institutional leadership.

Forum Design

This project is designed as a cohort-based model that will include a virtual kick-off event, monthly meetings with a research mentor, monthly virtual tutorials on AI research, and a two-day in-person symposium. The following activities will be completed during each cycle:

1. Cohort Recruitment (September – December 2026; September – December 2027)

The annual cohort process will begin in the Fall, when applications are accepted for participants in the forum. Participants will be recruited through professional library associations and networks including the Association for College and Research Libraries' AI Literacy Discussion Group, the American Library Association's Library Research Round Table, the American Theological Libraries Association's Public Services Interest Group, and the Association for Information Science and Technology's Special Interest Group for Artificial Intelligence. We will emphasize recruitment of librarians from across various university types, geographic regions, and professional backgrounds. Applications will be encouraged from library professionals working in rural and under-resourced academic libraries, private, religious and military universities, and community and technical colleges, in addition to public research institutions. All participants will be librarians actively employed at U.S.-based college and universities. Applications will be accepted from October to early-December each year.

Applications will be reviewed using merit-based criteria, including experience in the library profession, demonstrated interest in AI research, potential for research leadership, prior research and publication experience, and the capacity to disseminate knowledge from the forum within their institution. The application will consist of a CV, a letter of recommendation from a supervisor, and a statement of no

more than 500 words explaining why they are interested in participating in the Symposium, their relevant experience, and their goals for participation in the program. Applications will be scored by the project PIs using a shared scoring rubric.

2. SALAMANDER Forum Kick-Off (January 2027; January 2028)

Following the selection of cohort members in December, a virtual kickoff event will be held in January. This event will be hosted via Zoom. During the two-hour event, cohort members will receive an orientation to the program and their responsibilities as participants, engage with a keynote speaker on the importance of AI research for advancing national economic competitiveness and innovation, and meet their mentors for the program (each of the Co-PIs and senior personnel). They will also be introduced to the Forum's Discord server, which will be a place to share announcements, discuss topics related to AI research, communicate with mentors, and participate in community building both during and after participation in the forum.

3. Monthly Mentorship Meetings and Tutorials (February – May 2027; February – May 2028)

From February to May, each participant will have a monthly meeting with their mentor via Zoom. During this meeting they will discuss aspects of AI research design and execution, such as developing research questions, creating a study design, engaging in data collection and analysis, and producing manuscripts and presentations. The mentors will share insights from their experiences engaging in high-impact AI ethics and literacy research. They will also share guidance on how to publish in prominent journals, increase the visibility and impact of their work, and seek funding to support their research activities. A monthly tutorial session will also be offered, led live by one of the PIs via Zoom. The tutorial will also be recorded for those who are unable to attend live.

4. In-Person SALAMANDER Symposium (June 2027; June 2028)

In June, a two-day in-person SALAMANDER symposium will be held on the campus of the University of North Texas in Denton, Texas. This symposium will feature keynote speakers from academia and industry to speak about AI research and its impact, hands-on tutorials of machine learning tools and techniques for academic research, and time for networking and presentation of participants' ongoing projects. Activities will include discussion of how librarians can connect their research to *America's AI Action Plan* and other national AI initiatives. An outline of the Symposium schedule is provided in a following section.



Figure: Draft Forum Logo

5. Post-Symposium Reflection (July 2027; July 2028)

After the symposium, the participants will again meet with their research mentor in July to reflect on the experience and discuss plans for continuing their research projects. These follow-up meetings will support sustained engagement and encourage continued collaboration beyond the formal program period, in alignment with the formation of our AI research community of practice.

Research Themes for Forum Participants

Participants in the SALAMANDER forum will be assigned one area of research focus for their work, aligning with the expertise of the program mentors, based on their stated interests. Each of these research areas aligns with one or more pillar of the U.S. *AI Action Plan*. The following research areas will be offered:

Research Theme	Mentor	Connection to U.S. AI Action Plan	Description
AI Literacy and Responsible AI Use	Dr. Kim, Dr. Lund, Dr. Yu	Pillar I: Empower American Workers in the Age of AI	Developing the knowledge and skills necessary to understand, evaluate, and effectively and ethically use AI technologies across academic and professional contexts.
AI Roles for Libraries and Librarians	Dr. Lund	Pillar I: Enable AI Adoption	Investigating how library and information professionals can support institutional adoption of artificial intelligence in their work, and new roles for academic librarians in the AI landscape.
Cybersecurity Principles for AI	Dr. Hossain	Pillar II: Bolster Critical Infrastructure Cybersecurity	Addressing issues associated with secure design, risk management, and cyber resilience for AI and data technologies.
AI in Digital Scholarship	Dr. Kim, Dr. Lund	Pillar I: Invest in AI-Enabled Science	Examining how artificial intelligence tools impact data analysis, knowledge discovery, and scholarly productivity.
Preparing Future Professionals for the AI Workforce	Dr. Yu	Pillar I: Empower American Workers in the Age of AI	Investigating educational and training models that equip students with the technical, ethical, and problem-solving skills that they need for success in an AI-driven economy.

With four key personnel for the SALAMANDER project and 30 participants in each cohort, a mentor-mentee ratio of 7:1 is anticipated, with the PI (Lund) taking nine mentees and the remaining personnel taking seven mentees. Mentees can either meet one-on-one with their mentors or in small groups for mentees that share similar interests, forming collaborative teams. Mentors will work with mentees to

arrange the scheduling and content of the meetings in order to suit everyone's availability and mentorship needs.

SALAMANDER Symposium

The SALAMANDER Symposium will be set up as a two-day event. All participants will arrive during the morning of the first day at the DFW airport. Transportation options (ride sharing, rental options) will be provided from the airport to the host hotel (booked through the University of North Texas) and the symposium activities (occurring on the UNT campus).

Symposium day one will commence at 3PM and include the following activities:

- Welcome from the project PIs and a keynote speaker on AI research for economic growth and competitiveness in the United States (1.5 hours).
- Speaker on responsible AI research and practice (1 hour).
- Dinner and networking opportunities (1.5 hours).

The first day will conclude at 7PM. The second day will begin at 8:30AM and include:

- Light networking breakfast (0.5 hours).
- Tutorial sessions – rotating sessions on machine learning tools and AI research topics (30 minutes each X 2 sessions = 1 hour).
- Break – Flexible Time = 20 minutes.
- Speaker – AI research (1 hour).
- Lunch and networking opportunities (1.5 hours).
- Meetings with research mentors in-person (1 hour).
- Research presentations from forum participants in small groups of 4-5 (1 hour).
- Break – Flexible Time = 20 minutes.
- Forum announcements, future guidance for participants (0.5 hours).
- Closing keynote speaker (1 – 1.5 hours).

The symposium will conclude by 5PM, allowing participants time to return to the airport for their return flights.

Presenters for the in-person symposium will be selected to represent a variety of research opportunities within artificial intelligence, including AI literacy instruction, ethical AI design, machine learning in scholarship, cybersecurity, and workforce preparation. These presenters will contribute both subject-matter expertise and practical perspectives on research implementation and dissemination. Examples of presenters who would participate in the symposium include the following:

- Dr. Kirk Phillips, retired U.S. Air Force, expert in the diffusion of innovation, generational dynamics, and artificial intelligence in educational institutions.
- Amanda Wheatley, librarian at McGill University, expert in AI integration and use in academic libraries.
- Dr. Neil Messer, Professor of Theological Bioethics at Baylor University, Co-convener of the AI and Data Ethics Research Group at Baylor University.

- Dr. Pretom Roy Ovi, Assistant Professor of Data Science at the University of North Texas, to lead tutorial sessions on AI tools for data science research.

Each symposium would also include a speaker to discuss developments in AI research and policy at the Texas state and U.S. Federal levels.

Project Personnel

This project will be administered by an experienced team of junior and senior research faculty affiliated with the University of North Texas's Departments of Data Science, Information Science, and Learning Technologies. These faculty members have worked on many significant projects related to science collaboration and data literacy. These personnel include:

- **Brady D. Lund, Ph.D. (PI)** is the 2026 Presidential Early Career Professor and an assistant professor of information science at the University of North Texas. He earned his master's and doctoral degree in information management from Emporia State University in Emporia, Kansas. His dissertation research examined the digital experiences and well-being of rural older adults experiencing social disconnect during pandemics. Dr. Lund has published over 100 academic papers, amassing over 8000 citations, on topics related to AI and technology ethics and literacy, and has authored several books including *Artificial Intelligence for Libraries* (Bloomsbury, 2026). He is an active leader in the Association for Information Science and Technology and has served as the editor-in-chief of the journal *Information Services and Use* since Spring 2026.
- **Ji Hyun Yu, Ph.D. (Co-PI)** is an Assistant Professor of Learning Technologies at UNT, is exceptionally well positioned to lead SALAMANDER's cohorts in AI literacy and workforce preparation. Her research advances instructional models for AI-enhanced learning environments, focusing on AI co-regulation, affect-aware emotional AI tutors using Sparse-Fusion Inference (SFI), and developing AI agents for school libraries. With more than 38 peer-reviewed publications and extensive experience mentoring doctoral students, Dr. Yu brings the methodological rigor and scholarly expertise needed to support academic librarians in critically evaluating AI technologies and producing high-impact research.
- **KSM Tozammel Hossain, Ph.D. (Co-PI)** is an Assistant Professor in the Department of Data Science at the University of North Texas. He holds a Ph.D. in Computer Science from Virginia Tech, completed postdoctoral training at USC's Information Sciences Institute, and served as Assistant Research Professor at the University of Missouri. His research applies machine learning and data science to health informatics, bioinformatics, social media, and cybersecurity. His work has been funded by DHS, USDA-NIFA, NSF, IARPA, DARPA, and UNT, and has appeared in venues including AAI, EMNLP, ACM SIGKDD, IEEE ICDM, AI Magazine, and IEEE/ACM TCBB. His research has received coverage in Marktechpost, The Conversation, ACM TechNews, and Health & Medicine Week.
- **Jeonghyun (Annie) Kim, Ph.D. (Senior Personnel)** is a professor of information science at the University of North Texas, where she has coordinated the Digital Curation and Data Management Graduate Academic Certificate Program since 2015. She has led multiple IMLS-funded projects, including "Students' data literacy needs in community colleges: Perceptions of librarians, faculty, and students" (RE-252374-OLS-22) and Building community college library capacity for

supporting students' data literacy needs" (RE-256673-OLS-24). She has served as editor-in-chief of The Electronic Library since 2020.

The advisory board for this project will consist of four members whose work is demonstrative of the fusion of artificial intelligence and data ethics with librarianship that is central to the SALAMANDER Forum (letters of commitment are included with the proposal):

- Ken Varnum, Senior Program Manager and Discovery Strategist, University of Michigan
- Brett M. Porter, Assistant Professor and Web Services Librarian, Sam Houston State University
- Lingzi Hong, Associate Professor of Data Science, University of North Texas
- Jeehyun Davis, University Librarian, American University

Ehsan Mohammadi will serve as the external evaluator for the project, providing oversight to ensure the project meets its objectives, in coordination with the PI and the advisory board. Ehsan Mohammadi, Ph.D., is an Associate Professor in the School of Information Science at the University of South Carolina and leads the Hi Da Research Lab. His work applies data science and human-centered AI to topics including health informatics, social media analytics, and responsible AI.

The *University of North Texas* (UNT) is the host institution for the SALAMANDER forum. UNT is a tier-one research university located in Denton, Texas and one of the nation's largest universities in terms of student enrollment, serving the Dallas-Fort Worth metro area. President Harrison Keller's emphasis on expanding civil discourse and AI advancement on the university's campus aligns strongly with the objectives and values of the IMLS.

Project Evaluation

A four-pronged structure of assessment will be used for this program. This mixed-methods approach is designed to measure participant learning, research productivity, mentoring effectiveness, and overall program quality. Together, they are designed to document project outcomes and ensure the continuous improvement of the SALAMANDER forum. An external evaluator, Dr. Ehsan Mohammadi, will oversee the evaluation process to ensure methodological rigor and objectivity. The evaluator will work with the project team to refine instruments, review data collection procedures, and independently assess whether the project is achieving its intended outcomes.

1. Pre-/post- assessments from forum participants: Participants will complete an approximately 20-item assessment before the first forum meeting in January and after the in-person Symposium meeting in June. This assessment will measure: Confidence in conducting AI-related research, Awareness of major topics, methods, and ethical considerations in AI scholarship, Expectations for and satisfaction with the Forum experience. Pre-/post- results will be analyzed using t-tests and chi-square tests to show change in knowledge, confidence, and perceived value across the course of the Forum. We expect to show statistically significant growth in reported confidence, awareness, and abilities with AI ethics/literacy research from the beginning to the end of the symposium.
2. Research and professional outputs from participants: Participants will be asked to share information about all collaborations, publications, presentations, and workplace initiatives resulting from participation in the Forum. Both quantitative indicators (number of outputs) and qualitative indicators (e.g., venues, partnerships formed, scope of initiatives) will be documented

to assess the Forum’s contribution to advancing research and practice. Data will be collected via 6-month and 12-month follow-up surveys.

3. **Mentor assessment of mentees and self-reflections:** Mentors will document their experiences working with mentees throughout the program, including observations of participant growth, challenges encountered, and successful mentoring practices. Mentees will also provide reflective feedback. These qualitative data will be analyzed using content analysis to identify themes related to mentoring effectiveness and participant development.
4. **Advisory board comments:** Members of the project advisory board will provide feedback throughout the project during scheduled meetings and consultations. The PI will document these recommendations and use them to guide ongoing adjustments to program structure, content, and support mechanisms.

Findings from all four evaluation approaches will be synthesized in collaboration with the external evaluator to assess overall project success, improve future iterations of the Forum, and guide the development of dissemination materials.

Project Results

This project is anticipated to advance several current federal priorities relating to American excellence in artificial intelligence research, innovation, and workforce development. At the participant level, participants in the SALAMANDER Forum will be prepared to become institutional leaders in responsible AI development and use through sustained research collaborations and curricular developments. Participants will be expected to engage in original and rigorous research relating to national AI priorities, producing research proposals, manuscripts, and evidence-based educational materials relating to AI literacy and ethical AI development. The following table shows the target research outputs for the forum:

Research Output	Target Number	Description
Research Publications	15+ manuscripts submitted within one year of forum completion.	Within one year of the completion of each SALAMANDER Forum, we aim to have at least 15 manuscripts submitted for peer-reviewed publication among the 30 cohort members.
Grant Funding Proposals	5+ external funding proposals submitted within one year of forum completion.	Within one year of the completion of each SALAMANDER Forum, we aim to have at least 5 external grant submissions among the 30 cohort members to funders like the IMLS, NSF, and foundation funders.
AI Course Development, Research Guides, Other Research Products	5+ other research products submitted within one year of forum completion.	Within one year of the completion of each SALAMANDER Forum, we aim to have at least 5 other research products – which may take the form of new AI-themed research courses, research/LibGuides, or other creative works – from among the 30 cohort members.

To support dissemination of research generated through the SALAMANDER Forum, the project team will organize a special issue of *Information Services and Use* focused on artificial intelligence research in libraries. The project's PI serves as editor-in-chief of the journal and has experience in coordinating peer-reviewed special issues that bring together emerging research topics in information science. Forum participants will be invited to submit manuscripts related to their projects, which will be assigned to guest editors and undergo the journal's standard peer-review process alongside submissions from the broader scholarly community. This opportunity will provide participants with experience in navigating the scholarly publication process while helping to disseminate findings to practitioners and researchers. Participants will also be encouraged to pursue a range of additional publication venues appropriate to their work.

At the program level, we anticipate supporting two national cohorts for a total of 60 participants, representing a broad coalition of professionals from across the United States who are passionate about extending the nation's AI research capabilities through innovation and collaboration. Deliverables from this project will include a replicable mentorship and training model, a set of open-access resources to guide AI research mentorship, and a sustainable national digital network of AI-focused librarian researchers. These outcomes will ultimately strengthen the national knowledge infrastructure by preparing librarians as research leaders and civic educators in emerging technologies, serving as catalysts whose efforts may positively influence their universities' academic cultures. In order to ensure that the outcomes of this forum are implementable by the largest possible population, project outcomes and deliverables will be shared through a project website, and a peer-reviewed journal publication describing the forum and the assessment outcomes, in addition to the open-access resources described previously.

Following the initial grant period, SALAMANDER will continue as a national network that supports alumni mentoring, speaker series for AI ethics research, institutional research partnerships, and sustained research collaborations. The project leaders will pursue sustained funding and partnerships to continue the project and expand its national impact in collaboration with the University of North Texas and the solicitation of donor support. The mentorship framework used in this project will also serve as a template for future professional development programs in emerging technologies throughout the PIs' future work and as a replicable toolkit for libraries nationwide.

In the spirit of America's long tradition of investing in public knowledge institutions, this project will help to ensure that our nation's libraries remain, as Benjamin Franklin envisioned, "a common benefit to mankind," in the age of artificial intelligence. As the United States boldly enters a new era defined by artificial intelligence, the professionals who guide communities through that transition will increasingly be librarians. The SALAMANDER forum ensures that America's libraries can fulfill their founding promise in the age of artificial intelligence and that the United States remains the global leader in shaping how this technology is understood, adopted, and governed.

SALAMANDER Forum Project Activities – Year 1

[illegible]

SALAMANDER Forum Project Activities – Year 2

[illegible]