

GRANT WRITING WITH AI

State Libraries and AI
Technologies (SLAAIT)

slaait.circl.community

Updated October 2024

Guide to Grant Writing with AI

Background

This introductory guide was developed as part of the State Libraries and AI Technologies (SLAAIT) working group of state library agencies exploring concepts and applications of AI both for library staff and patrons. Users of this guide are assumed to be familiar with the concept of Generative AI (GenAI), which refers to deep-learning models that can generate high-quality text, images, and other content based on the data upon which they were trained. This guide is intended as a practical introduction to using GenAI tools to support preparing grant applications. It assumes individual, small-scale use of the tools, and does not address API calls or processing-intensive approaches.

There are many GenAI tools available, both free and paid. This guide includes examples from [ChatGPT](#) (paid version, currently 4o), [Copilot](#) (enterprise version bundled with Microsoft Office 365, and [Claude](#) (free version) to help illustrate the variation. Features and results vary between the tools; however, these tools are sufficient for the writing tasks common to a grant application.

Examples

Examples in this document are based on a hypothetical grant proposal for a needs assessment for Artificial Intelligence (AI) training to augment digital literacy programs for library staff and patrons at small and rural nonprofit and public libraries throughout a state. The [National Leadership Grants for Libraries](#) FY2025 Notice of Funding Opportunities is referenced as a sample application.

Writing with AI: General Guidelines

Select the right tool for the job.

Just as you would not use a hammer for every home repair, neither would you use ChatGPT or any AI tool at all for every purpose. Explore and experiment, and then apply that understanding to future tasks. As you will see in the example below, tools return very different results from the same prompts.

Plan and prepare, then prompt.

The more relevant detail you collect and provide to the AI, the better-quality draft you can prompt it to produce. Gather materials from which you might pull text or use as a reference. Clarify your objective in using the AI tool for the writing process. Think through the logical steps which will translate to your interaction with the AI. This interaction is called prompting.

Critically evaluate outputs.

AI can “hallucinate,” producing incorrect or misleading outputs. Hallucinations may result from insufficient or biased training data, incorrect assumptions in the algorithm, inherent limitations of large language models, or poorly constructed prompting. You can avoid or reduce hallucination through varying prompt strategies and use of well-trained models, but always review the outputs and check facts for accuracy. Consider the AI output as a draft which still requires editing and finalization.

Step 1: Plan

Gather Materials

Below are examples of inputs you may want to provide while preparing your grant application.

- Grant inputs: Grant description, application form/criteria, grantee description/mission, examples of successful grant applications.
- Library inputs: Website “about” information for library/agency, service area/community demographics.
- Project inputs: Project description (bullets or narrative), background information, prior work

- Project details: Personnel, biographies, known deliverables or work phases, budget.
- Other data: Dependent on your grant application, this might include other statistics or demographic detail.



Tips:

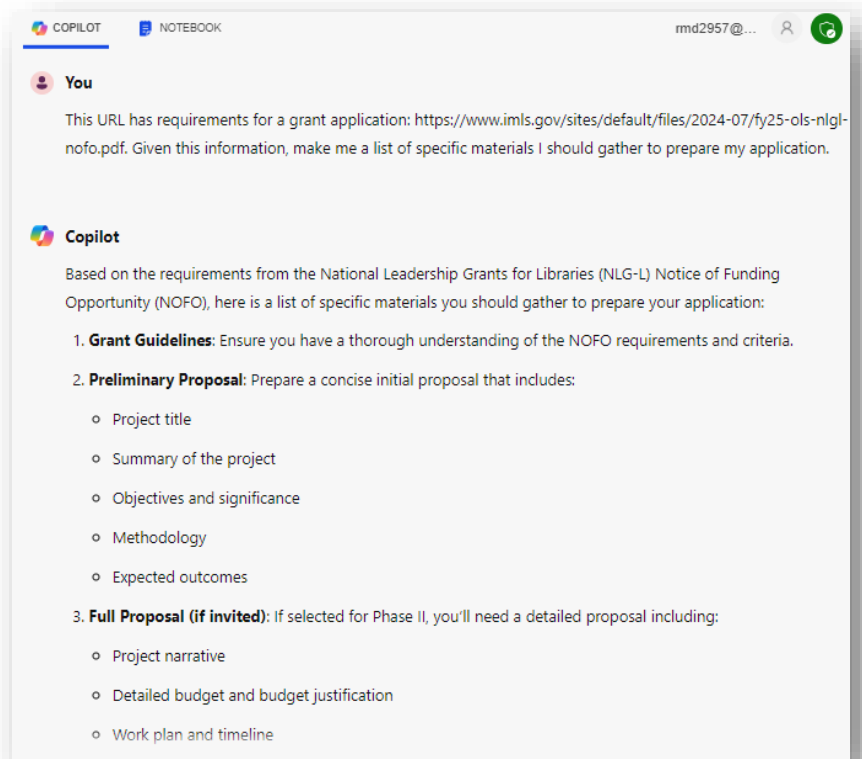
- Download relevant PDFs and/or copy and paste your source material text from webpages or PDFs into a document so it is all in one place. Some AI tools allow you to upload files. Others require pasting text with prompts. Note the URL or source of your materials in case you need to cite it later.
- Bullet points are sufficient, or you can input already written prose or some combination of these. The AI will do the work of compiling key points into a draft narrative. However, you must supply data and details. The AI's job is consolidation and synthesis, not research.

Not sure what materials you need? Ask the AI!

Example: Planning Prompt Tool: Copilot

This tool could not accept files over a certain size, so the URL was provided.

The AI returns a list of materials specific to the grant opportunity, drawn from the URL provided.



Example: Planning Prompt Tool: ChatGPT

The same request was made to a different tool. In this case, a URL could not be used, but the PDF could be uploaded.

Can you provide more detail on the requirements for each set of materials in this numbered list?

Here's a breakdown of each required material for the FY 2025 National Leadership Grants for Libraries (NLG-L) application:

- SAM.gov and Grants.gov Registrations:** Ensure your organization's registrations are current and active. You'll need a UEI number from SAM.gov to complete Grants.gov registration.
- SF-424S Form:** This is a standard application form for federal assistance. It collects basic organizational and project information.
- IMLS Library – Discretionary Program Information Form:** Another form in Grants.gov that gathers details about your project, including financial information.
- Preliminary Proposal Narrative:** A two-page document divided into sections:
 - Introduction:** Briefly summarize the project, lead organization, funding amount, and expected results.
 - Project Justification:** Explain the need, challenge, or problem your project addresses. Demonstrate how it builds on or adapts existing models, practices, or standards.
 - Project Work Plan:** Detail the project activities, timeline, and personnel responsible for each task. Explain how progress will be tracked.
 - Diversity Plan (optional):** Discuss how your project addresses diversity, equity, and inclusion (DEI).
 - Project Results:** Outline the outcomes and how they will address the problem identified. Ensure results are adaptable and shareable.
 - Budget Summary:** Provide a breakdown of costs by category (e.g., salaries, travel, supplies).
- Budget Summary:** Outline how both IMLS and cost-share funds (if required)

ChatGPT 4o



This attached file has requirements for a grant application. Given this information, make me a list of specific materials I should gather to prepare my application.



To prepare your grant application for the FY 2025 National Leadership Grants for Libraries (NLG-L), here is a list of materials you should gather:

1. SAM.gov and Grants.gov registrations (ensure these are active).
2. SF-424S Form (Application for Federal Assistance).

IMLS Library – Discretionary Program Information Form.
 Preliminary Proposal Narrative (2 pages, including project justification, work plan, results, and optional diversity plan).
 Budget Summary with breakdown.
 Assumptions for Key Staff and Consultants.
 Supporting Documents (letters of support, data plans, etc.).
 All documents meet the specified formats, limits, and deadlines (https://www.imls-nlg-l-nofa).



Tip:
 Notice the lack of detail above compared to the first example. Additional prompting (as seen on the left) can elicit more detail.

Step 2: Write

The process of interacting with the AI tool will be the same regardless of topic: load the reference content, prompt, iterate, and polish. Consider working through the detailed sections of your grant application first, feed that information back into the AI, and prompt for an introduction or summary.

Example: Project Justification Prompt

Tools: ChatGPT and Copilot

Bullet points outlining the argument for funding were provided to two different tools. Notice that the prompt (right) refers to the grant application information already provided when developing a plan. Outputs are below.

Project Justification:

Rural libraries, which make up nearly 40% of America's public libraries and serve over 30 million Americans, play a crucial role in providing essential services such as broadband access, workforce training, and early learning opportunities. Despite these contributions, rural libraries face a significant gap in specialized technology training compared to their urban counterparts, largely due to a lack of trained staff and resources. This gap is particularly evident in emerging fields like artificial intelligence (AI), where rural communities are falling behind in developing critical skills needed for the modern job market.

In Texas, more than 350 small and rural libraries serve nearly 3 million residents. These libraries receive minimal state funding, operate without full-time staff, and lack librarians. These conditions make it even more difficult for rural libraries to provide technological training. A needs assessment focused on AI training in rural Texas to identify specific gaps, resources, and opportunities to equip residents with skills which can enhance their competitiveness in the workforce and contribute to community building.

This project will address the disparity in AI training between rural and urban areas. The unique role rural libraries play in bridging the digital divide and fostering community development. The requested \$75,000 will fund a comprehensive needs assessment to evaluate potential partnerships, and resource gaps in rural libraries, ultimately inform targeted AI training programs that will benefit underserved communities across the state.

Copilot

Project Justification

Rural libraries play a pivotal role in the United States, with nearly 40% of America's public libraries serving 30 million Americans. These libraries provide essential services such as broadband access, workforce training, reliable information, and early learning opportunities. They are crucial in fostering technological literacy by offering training in internet skills, productivity, and digital literacy.

However, there is a significant gap in specialized technology training between rural and urban areas. This disparity is primarily due to the lack of trained staff and resources in rural areas. Rural libraries often go to community capacity building, the work of rural and small libraries often goes unmet.

In Texas, over 350 small and rural libraries serve nearly 3 million people. Most of these libraries receive little to no state funding, are nonprofit, and about 40% lack full-time staff. Most operate without a librarian, further exacerbating the challenges they face in providing advanced services to their communities.

The provision of AI training in rural libraries holds significant potential for workforce development. As rural residents increasingly integrate AI technologies, individuals with AI proficiency are in high demand. By equipping rural residents with AI skills, libraries can enhance their job market competitiveness and prepare a workforce that is prepared for contemporary job opportunities.

Given these factors, we are requesting \$75,000 to conduct a comprehensive needs assessment. This assessment will identify the specific technological training needs of rural libraries in Texas and develop a strategic plan to address these gaps. The funding will enable us to gather data, engage with stakeholders, and create a roadmap for implementing AI and other specialized technology training programs in rural libraries.

By investing in this needs assessment, we aim to empower rural libraries to better serve their communities, bridge the digital divide, and enhance the technological literacy and job readiness of rural residents.

Sources:

- IMLS, Rural Libraries in America: An Infographic Overview
- Texas State Library and Archives Commission, Public Libraries Action Network

Prompt: I am submitting a grant proposal for the National Leadership Grant as noted above. I am asking for \$75,000 to conduct a needs assessment. Using the following bullets, write a project justification for a grant proposal.

General information about rural libraries

- Nearly 40% of America's public libraries are rural, serving 30 million Americans.
- Libraries offer broadband access, workforce training, reliable information, and early learning opportunities.
- Rural libraries are crucial in providing technological literacy and bridging the digital divide, providing training in internet skills, software and other needs
- However, there is a gap in specialized technology training compared to urban libraries, due to factors like lack of trained staff and resources.
- The contributions of rural and small libraries to community capacity building are often overlooked.
- AI training in rural libraries can equip residents with in-demand AI skills, enhancing their job market competitiveness

Sources:

<https://www.ims.gov/publications/rural-libraries-america-infographic-overview>

Information about Texas libraries

In Texas, over 350 small and rural libraries serve nearly 3 million people.

Many rural libraries receive little to no state funding, are nonprofit, and about 40% lack full-time staff. Most operate without a librarian.

Step 3: Analyze

AI tools can also be used to directly analyze data, or to suggest analysis that may strengthen your application. Some AI tools can generate charts and code.

Example: Data Analysis and Synthesis Prompt

Tool: Claude

In this example, the project justification bullets were copied into the AI tool. A csv file of broadband access by county in Texas was also uploaded into the tool. Lengthy analysis was returned.

Prompt: The attached data table shows broadband access by county in Texas. Analyze the table and suggest findings that might be included in my project justification for my grant application.

Certainly, I'd be happy to analyze the data table and suggest findings that could strengthen your project justification for the IMLS National Leadership Grant application. Let's examine the broadband access data for Texas counties and draw some key insights.



Analysis of Broadband Access in Texas Counties
Click to open document

Analysis of Broadband Access in Texas Counties

Key Findings

1. **Statewide Average:** Texas as a whole has 88% broadband access, matching the national average.
2. **Urban-Rural Divide:** There's a clear disparity between urban and rural counties:
 - Urban counties like Rockwall (97%), Collin (96%), and Denton (95%) have high access rates.
 - Rural counties like Edwards (58%), Culberson (59%), and Kenedy (53%) have significantly lower access rates.
3. **Low Access Areas:**
 - 10 counties have broadband access rates below 70%.
 - The lowest access rate is in Kenedy County at 53%.
4. **High Access Areas:**
 - 25 counties have access rates of 91% or higher.
 - King County leads with 100% access.
5. **Border Counties:** Many counties along the Texas-Mexico border have low access rates:
 - Starr (67%), Zapata (65%), Maverick (74%), Val Verde (71%)
6. **East Texas:** Several counties in East Texas show lower access rates:
 - San Augustine (77%), Shelby (78%), Sabine (85%)
7. **West Texas:** Some counties in West Texas also struggle with access.

are some key points you might consider including in your

at disparity in broadband access between urban and rural
underscores the crucial role that rural libraries can play in
ss and digital literacy training.

ties with low broadband access rates (below 70-80%), libraries
only source of high-speed internet for many residents. This
ons for introducing AI training and advanced digital skills.

c patterns of low access, such as along the Texas-Mexico

Implications for Rural Libraries

1. The data underscores the critical role rural libraries can play in bridging the digital divide, especially in counties with low broadband access.
2. Libraries in counties with access rates below 80% could be prime targets for enhanced digital literacy programs and AI training initiatives.
3. The disparity in access rates highlights the need for targeted interventions in specific regions, such as border counties and parts of East and West Texas.
4. The data supports the argument that rural libraries are essential for providing technological access and training in areas where home broadband access is limited.
5. The varying access rates across the state emphasize the need for a nuanced, county-by-county approach to addressing digital literacy and AI training needs.

Example: Charting Prompt

Tool: Claude

Prompt: Can you provide a graph based on the provided file of broadband access by county?

A follow-up prompt produced a graph, an explanation of the graph and a set of observations from the graph.

Certainly! I'd be happy to create a graph based on the broadband access data for Texas counties. Given the large number of counties, I'll create a bar chart showing the distribution of broadband access percentages across Texas counties. This will give you a visual representation of the data without overcrowding the chart with individual county names.

</>

Texas Counties Broadband Access Distribution
Click to open component

I've created a bar chart showing the distribution of broadband access percentages across Texas counties. Here's an explanation of the graph:

1. The x-axis represents ranges of broadband access percentages, divided into increments from 50% to 100%.
2. The y-axis shows the number of counties falling within each range.
3. Each bar represents the count of counties within a specific broadband access percentage range.

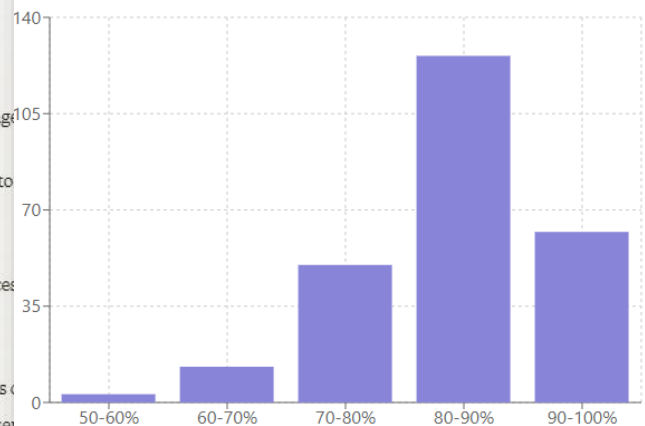
Key observations from the graph:

1. The majority of counties fall in the 80-90% range, with 126 counties in this category.
2. There's a significant number of counties (62) in the 90-100% range, representing areas with very high broadband access.
3. The 70-80% range is also well-represented, with 50 counties.
4. There are fewer counties in the lower ranges, but there are still 13 counties in the 60-70% range and 3 counties in the 50-60% range.

This visualization helps to illustrate:

1. The overall distribution of broadband access across Texas counties.
2. The concentration of counties in the higher access ranges (80-100%).
3. The existence of a significant number of counties with lower access rates, particularly in the 50-70% range.

Distribution of Broadband Access in Texas Counties



Data source: HDPulse_data_export.csv (2018-2022)

Step 4: Roadmap

Example: Budgeting Prompt

Tools: ChatGPT and Claude

These prompts include budgeting from scratch or checking your thinking. The same approach can be used to develop a project timeline.

Prompt for a budget outline to use as a starting point (right). (ChatGPT)

Prompt: Suggest a budget outline for the proposed project.

Here's a sample budget outline for your project to conduct a needs assessment for rural libraries, with a total request of \$75,000:

1. Personnel (\$35,000)
 - Project Manager (25% FTE): \$20,000
 - Research Analyst (20% FTE): \$10,000
 - Administrative Support: \$5,000
2. Travel (\$5,000)
 - Site visits to rural libraries for data collection: \$5,000
3. Supplies and Materials (\$2,000)
 - Printing, surveys, and materials for assessment: \$2,000
4. Consultants (\$15,000)
 - External evaluator or technology consultant: \$15,000
5. Data Collection and Analysis Software (\$8,000)
 - Survey and data analysis software licensing: \$8,000
6. Indirect Costs (\$10,000)
 - Administrative and overhead costs (if applicable).

Prompt: I have identified the following expense categories for the project: the majority of costs are personnel costs, including the project lead and manager, consultative time from a subject matter expert for AI curriculum, an instructional designer, and research/data support. Administrative and general support will be supplied by graduate student workers.

Suggest a breakdown of the \$75,000 being requested and identify potential gaps that I need to account for either in terms of personnel or budget.

Prompt for a budget breakdown based on known needs (below). An assessment of potential gaps is also requested.

Thank you for providing that information about your project's expense categories. Let's break down the \$75,000 budget and identify any potential gaps. Here's a suggested breakdown based on the information you've provided:

Proposed Budget Breakdown

1. Personnel Costs (70% of total budget): \$52,500
 - Project Lead/Manager (40%): \$21,000
 - AI Curriculum Subject Matter Expert (15%): \$11,250
 - Instructional Designer (10%): \$7,500
 - Research/Data Support (15%): \$11,250
 - Graduate Student Workers (10%): \$1,500
 2. Travel and Site Visits (10%): \$7,500
 - For conducting on-site needs assessments at rural libraries
 3. Technology and Materials (8%): \$6,000
 - Software licenses, survey tools, data analysis software
 4. Professional Development and Training (5%): \$3,750
 - Now, let's discuss potential gaps and considerations:
 5. Miscellaneous (2%): \$1,500
 - 1. Duration: The budget doesn't specify the project duration. Ensure that the personnel costs align with the expected project timeline.
 - 2. Overhead costs: Consider whether your institution requires a portion of the grant for overhead or indirect costs. If so, you may need to adjust the direct costs downward.
 - 3. Equipment: The budget doesn't include any significant equipment purchases. If you need specialized hardware for AI training or data collection, you might need to
- Total: \$75,000




Tip: Prompt for an explanation of the response, such as “how did you come up with these categories or breakdown?” You will often gain insight to help you further develop your material.

Step 5: Review

It is critical to review all material for accuracy. The availability of up-to-date factual information is limited for many AI models; for example, as of this writing the training dataset for ChatGPT 4o (paid version) is from November 2021. AI tools are excellent at synthesizing and generating; however, this same functionality is also the Achilles heel of the tools, enabling incorrect information to be generated with all appearance of confidence and reliability.

Always

- Review all material for accuracy.
- Check and cite sources.
- Edit and refine all written material.
- Have someone else review your grant application materials prior to submission.

 **Tip:** Tell the AI tool when it is wrong. You may still receive incorrect responses, but you may receive reworded narrative or an alternate perspective that you can use to develop your writing.

Step 6: Amplify

This guide presents several methods for using generative AI tools to support grant application development. As you become proficient with prompting, you'll find opportunities to apply these tools not only to grant writing but to various other tasks. In this final example, Claude has been prompted for ideas for how librarians might use AI.

Example: Idea Generation Tool: Claude

Prompt: Generate a list of how librarians can use AI for grant writing, administrative work, planning or program brainstorming.

Grant Writing

- Generate initial drafts of project descriptions
- Brainstorm potential project outcomes and impacts
- Refine language for clarity and persuasiveness
- Suggest relevant statistics and data points to include

Administrative Work

- Automate responses to common email inquiries
- Draft meeting agendas and minutes
- Create templates for routine reports
- Summarize long documents or policy manuals

Planning Purposes

- Analyze community demographics for strategic planning
- Generate SWOT (Strengths, Weaknesses, Opportunities, Threats)
- Forecast potential budget scenarios
- Suggest performance metrics for new initiatives

Program Ideas

- Generate themed reading list suggestions
- Brainstorm creative workshop concepts
- Develop outlines for educational series
- Suggest potential community partners for programs

Program Ideas

- Generate themed reading list suggestions
- Brainstorm creative workshop concepts
- Develop outlines for educational series
- Suggest potential community partners for programs

Collection Development

- Analyze circulation data to identify collection gaps
- Generate book recommendations based on patron preferences
- Summarize book reviews for acquisition decisions
- Draft collection development policies

Patron Services

- Create customized reading recommendations
- Develop chatbots for basic reference questions
- Generate FAQ lists for library services
- Draft patron guides for using library resources

Marketing and Outreach

- Generate social media content ideas
- Draft press releases for library events
- Create engaging newsletter content
- Suggest targeted outreach strategies for underserved populations