

Uses of Generative AI in Research Administration: Practical Applications from the Field¹

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ABSTRACT

Research administrators are squeezed between Principal Investigators under pressure to increase external funding, who expect more administrative support (Schiller and LeMire, 2023) and university budgets which are contracting through reductions in student enrollment. Generative artificial intelligence offers one possible solution, but its adoption is still in the early stage. As of 2025, across all industries, 62% percent of organizations using AI stated they were at the experimental or piloting stage and of the one-third that reported scaling AI integration, nearly all were doing so for only one or two business functions (Singla et al., 2025).

We examined use of generative AI in three, contrasting institution; an R1 university, a primarily undergraduate institution and a tribal college. At all three institutions, the choice of models used in research administration, (Gemini Pro 3.1 and Microsoft Copilot GPT 5.1/5.2) was determined by available institution licenses. Across the three institutions, exploration of uses of generative artificial intelligence (AI) can be summarized into four broad categories. Effective examples fit into four categories: “AI-assisted programming” to automate processes, “Digital intern” automation of clerical tasks, “AI Tutor” for staff training and “Human in the loop required uses”, which begin with AI but require significant human review. AI hallucinations, “instances where an AI system produces outputs that sound plausible but are factually wrong, irrelevant, or entirely fabricated” (China, 2026) remain a critical barrier to greater AI use. LLMs confidently produce false, misleading, or fabricated information — especially when training data on a topic is sparse. Shojaee et al. (2025) found LLMs achieve ~100% accuracy on *low-complexity* problems, similar to our “AI interns”, drop to **20%** on medium-complexity, and **near zero** on high-complexity tasks. Beyond factual inaccuracies, generative AI poses major data privacy risks by storing user inputs that can inadvertently leak sensitive information in future responses. Local, open-source LLMs, which are installed on the device eliminate privacy concerns and run at zero cost. Adoption of local LLMs within research administration is in the early stage but likely to increase exponentially in the future.

Generative AI in Research Administration: Definitions, Examples and Caveats

1. **AI-ASSISTED CODING** Consistent with AI for Research Administration’s (2026) injunction to define the task, an essential first step in AI-assisted to break research administration needs into small blocks. Other best practices include specific prompts, a detailed knowledge of the task requirements, and a basic understanding of the language. Note that while significant expertise may be required for the initial coding, once created and tested, the code can be used by anyone.
 - a. **Example:** The VBA macro, **GeneratePIEffortCertifications**, is designed to automate the creation of individual "Effort Certification" reports for Principal Investigators (PIs). It pulls data from a master list, connects it to project information, checks for the availability of required data, and generates a formatted, print-ready tab for every PI.
 - b. **Caveat:** This is distinct from “vibe-coding”, which is creating code via AI-prompting and trial and error, without understanding the underlying code (Fawzy, Tahir & Blincoe, 2025). NOTHING IS OBVIOUS TO A COMPUTER. You may think, “Of course I want all the files in the subfolders. “ Be specific about the structure of your data. Type of item, whether it is a file, folder or shortcut, can make a difference. AI-assisted coding saved

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significant time because it was applied by research administrators with sufficient knowledge of the data, task requirements, and programming language to quickly identify misnamed variables or replace outdated functions. “Gemini can get you 85% of the way there but the rest is up to you.”

2. **DIGITAL INTERN** — Automation of Clerical Tasks Using prompts to automate routine tasks that would previously have been assigned to an intern.
 - a. **Examples:** *Reference formatting:* "Format these references in APA style and sort in alphabetical order." — 100% success rate with a single prompt. *Statistical/financial output formatting:* Paste output from SAS or R into Excel, then prompt Copilot to update a Word table — far faster than manual formatting. *Data conversion:* "Convert these data into the following format: [specify columns]."
 - b. **Caveat:** Simple, well-defined tasks with abundant training examples work reliably with a single prompt. AI more closely resembles an intern with surface-level knowledge than a PhD-level expert (Mostafapour et al., 2024).
3. **AI TUTOR** - Gemini Notebook (formerly NotebookLM) and Copilot Notebook are source-grounded AI-powered research assistants. Sources can be documents, videos, or links provided by the user.
 - a. **Examples:** Internal documentation for a grant that can answer questions on performance to objectives, evaluation tasks, and other evaluation-related issues. Used by a project coordinator to determine average maintenance cost for specific high-cost piece of scientific equipment. Created instructional videos for staff training on research administration.
 - b. **Caveat:** Organizational accounts limit sharing notebooks with external users. Gemini Notebook and Copilot Notebook are only as effective as the sources provided — *garbage in, garbage out*. Human review of all AI-generated training content is mandatory.
4. **Human in the loop required:** These are tasks for which AI produces an unacceptable level of error without substantial review, but, with such review, can save time and improve results.
 - a. **Example:** A proposal final draft with confidential information removed was uploaded to Gemini PRO, including a link to the request for proposal and a prompt to suggest any additional topic. Over 80% of recommendations were unusable, as already in the proposal, not relevant or incorrect. Although a human is required to evaluate results, given the very short time required, this use is recommended for the few usable suggestions, e.g., “Include a discussion of assessment of test reliability and validity.”
 - b. **Caveat:** When faculty or staff upload proposals to non-secure AI applications, such as free versions of ChatGPT or Gemini, these data are used for training and proprietary information, such as staff salaries or preliminary research results, may be made publicly available.

Key Take-aways

The most effective use of AI included three characteristics:

1. **Human validation:** For deep research results, included in the prompt “link to sources” and a researcher verified that those sources exist and support the statement. For code, ran the code and validate the results.
2. **Use by experts:** Experienced staff benefit more by using AI because they can identify and correct hallucinations that less experienced staff miss.
3. **Application to simpler tasks:** This can mean clerical tasks or more complex tasks broken into smaller steps.
4. **Learn from and save your successful prompts.**



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