

Guidance for Appropriate Use of AI in Research
Office of the Vice Provost for Research
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What is AI, and what does it have to do with research?

The increased access to generative artificial intelligence (AI) tools such as ChatGPT has led to many questions about their place in academia, specifically with regard to academic research. The Office of the Vice Provost for Research has collected various resources and information to provide support and guidance to faculty and staff engaged in research and academic activities who wish to experiment with generative AI tools. Members of the Boston College community who choose to use these publicly available generative AI tools should understand the potential risks and limitations associated with them.

Generative artificial intelligence (AI) describes algorithms (such as ChatGPT) that can be used to create new content, including audio, code, images, text, simulations, and videos ([McKinsey & Company, 2023](#)). Scientists have been using these models to help summarize and write research papers, brainstorm ideas, and write code. Others have been testing out generative AI to help produce new protein structures, improve weather forecasts and suggest medical diagnoses ([Nature, 2023](#)).

What pitfalls should I be looking out for when using AI in research?

Privacy Issues

Information shared with generative AI tools using default settings is not private and could expose proprietary or sensitive information to unauthorized parties. Therefore, you should not process data that are sensitive, personal, or confidential with AI tools. You should not enter personally identifiable information into a generative AI tool for any purpose. For more information regarding data privacy, please refer to the [Boston College Data Security Policy](#).

Bias

Human biases and discrimination can make their way into generative AI tools. AI systems learn to make decisions based on the data that they are trained with, which might include bias. For example, [Amazon no longer uses an AI tool](#) used in hiring because it was biased against women's applications. New research is also demonstrating that GPT specific AI tools in healthcare may perpetuate racial and gender bias ([Zack et al., 2023](#)). If the training data that are fed into AI tools are biased, the trained models that the AI uses to create future output are likely to be biased as well.

Errors

All researchers should review AI content carefully before using it in their academic work. [AI-generated content can be inaccurate](#), misleading, or entirely fabricated (sometimes called "hallucinations"), and [may contain copyrighted material](#). Although generative AI providers have made efforts to filter out inappropriate content, generative AI may produce or respond to content that is offensive, inappropriate, or violates ethical standards.

How should I think about AI and questions around authorship? What are academic journals saying about AI?

AI tools cannot meet the requirements for authorship as they cannot take responsibility for the submitted work. As non-legal entities, they cannot assert the presence or absence of conflicts of interest nor manage copyright and license agreements ([COPE, 2023](#)).

According to [ICMJE](#) (International Committee of Medical Journal Editors) standards of submission, journals should require authors to disclose whether they used artificial intelligence (AI)-assisted technologies (such as Large Language Models [LLMs], chatbots, or image creators) in the production of submitted work. Authors who use such technology should describe, in both the cover letter and the submitted work, how they used it. Authors should be able to assert that there is no plagiarism in their paper, including in text and images produced by the AI. Humans must ensure there is appropriate attribution of all quoted material, including full citations.

Many journals have their own guidelines regarding the use of AI in submitted papers, so be sure to check the journal's website for guidance. For example, [Nature](#) specifically states that AI tools cannot be co-authors, and specifically prohibits the use of generative AI images. Some journals also forbid the use of AI in writing referee reports and/or prohibit inputting manuscript details into generative AI tools.

What should I consider when preparing an IRB application?

If you plan to use ChatGPT or any other type of cloud software, you will be required to go through the Get Tech process first at www.bc.edu/gettech. This process ensures that any new purchase (or free download) of cloud software meets the numerous security, technical, support, and legal requirements of the University. The IRB cannot approve your protocol unless you have already received approval through this process.

You should not use generative AI to code or transcribe confidential participant data unless you are specifically telling participants that you will do so. These data are collected and stored by the AI system, and can then reappear during subsequent use with another platform user. This means that the data are no longer confidential or anonymous. This is particularly important in the context of [GDPR](#), which requires that participants in the EU have the “right to be forgotten.” Once data have been fed into the AI system, there is no way to get it back. [Here is one example](#) demonstrating that cloud transcription is not private.

A researcher may want generative AI to be the subject of their research, and in many cases that can be approved. For example, a PI might want to randomly assign participants to two groups to analyze a short story, one created by AI and one created by the PI, to see if their perceptions vary. They may also run a behavioral intervention where participants are encouraged to enter certain data into generative AI tools. In general, this is acceptable as long as the PI is very clear in their consent form about what may happen to the participant's data, and that they cannot

guarantee confidentiality. The risk section of the consent form should be robust, and also make it clear that there are many risks we still don't know about when using generative AI.

Can I use AI when writing or reviewing grants?

[A June 2023 notice from NIH](#) specifically prohibits the use of generative AI tools in grant reviews. Specifically, "Materials pertaining to an application or proposal, and any other associated privileged information, cannot be disclosed, transmitted, or discussed with another individual through any means, except as authorized by the Designated Federal Officer (DFO) in charge of the review meeting, or other designated NIH official." This is important because grant applications often contain intellectual property that when shared to a generative AI tool could contribute to future AI output.

Similarly, [a December 2023 notice from NSF](#) states "Confidentiality requirements in Form 1230P describe reviewers' obligation to maintain the confidentiality of proposals, applicants for NSF awards, the review process, and reviewer identities. The obligation to maintain confidentiality of merit review related information extends to the use of generative AI tools. NSF reviewers are prohibited from uploading any content from proposals, review information and related records to non-approved generative AI tools. If reviewers take this action, NSF will consider it a violation of the agency's confidentiality pledge and other applicable laws, regulations and policies."

There are many free and paid AI grant writing tools available to researchers. At this point, using generative AI tools to assist in the grant writing process is not prohibited. For example, these tools might help to generate abstracts for proposals, edit drafts, or write specific sections of a proposal. In its December 2023 notice, NSF encourages researchers to indicate when and how AI was used to create their proposal. PIs should be mindful that sharing intellectual property with these tools carries risks. Input of confidential information into generative AI - even of a novel idea - would be considered a public disclosure for patent purposes or per a non-disclosure agreement, leading to loss of patent rights or breach of our legal obligations. All generative AI output should be checked for accuracy. You should never rely on AI to be right!

Questions?

Feel free to reach out to vpr@bc.edu with any questions regarding the use of AI in research, and we'll route your question to the appropriate staff member.

Please note: BC's [Information Technology Services](#) group, [BC Libraries](#), and the [Center for Teaching Excellence](#) have published their recommendations on their respective websites.