

South Dakota School of Mines and Technology
Guidelines for Generative Artificial Intelligence (GAI) in Research
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This document serves to provide guidance on the use of GAI in writing text or generating images related to research activities, and applies to all South Dakota Mines students, staff, and faculty conducting such research. Because GAI is evolving rapidly, as are regulations for its use, this document will be subject to ongoing revision. This version is, in part, in response to the National Science Foundation's (NSF) news [article](#) from December 14, 2023 on the use of GAI in merit review.

These guidelines refer to the explicit use of GAI in research activities. That said, researchers also should be aware that GAI is increasingly embedded in commonly used research tools such as [Web of Science](#), so that it is not always apparent when GAI is being used.

Definition of Terms

Generative Artificial Intelligence (GAI): technologies which automate the generation of original content or novel information through machine learning models based on natural language input ([Microsoft Build](#)) including a wide range of media and data types such as text, audio, video, code, and images.

When GAI tools may be appropriate:

When using GAI tools, one should be aware that uploading or producing original content will likely expose that work to the public domain including any confidential, restricted, protected, propriety, or personally identifiable information. The content provided to a GAI tool is also often stored by the GAI owner in further data modeling and use. If you are comfortable possibly “donating” your data, have reviewed the terms and conditions of the GAI tool, and have appropriately disclosed these risks, then use of these tools may be appropriate for the following:

- Brainstorming ideas
- Building outlines
- Summarizing existing content
- Gathering annotated bibliographies
- Drafting and revising portions of documents
- Improving accessibility
- Drafting ancillary documents for proposals

In short, GAI may be an effective tool, given that the author consistently evaluates the content produced, verifies media and data, and edits the results. At no time should GAI be used without an author's careful evaluation, or to produce a manuscript, proposal, or other intellectual property (IP) in its entirety.

Also note that some journals and agency guidelines require authors to indicate if and how GAI was used in producing a manuscript or proposal. Therefore, it is a best practice to document GAI use by

storing the original version, tracking changes in drafts, saving multiple drafts, incorporating reflective writing to track the evolution of ideas, and otherwise showing evidence of human involvement in producing any IP.

Some entities may prohibit use of GAI in submitted material. Authors are responsible for knowing and following policies when submitting GAI-assisted materials to others.

When GAI tools are not to be used:

- If you are a reviewer of a proposal/manuscript, or any instance where you could be adding someone else's IP to the public domain, GAI should not be used.
- If you plan on submitting text produced by GAI without reviewing and revising it.
- If you are working with information that is proprietary, is subject to a non-disclosure agreement (NDA), international traffic in arms regulation (ITAR), or some level of classified access, or that is otherwise restricted in some way.
- If you are thinking of commercializing your IP.

Other Caveats:

Authors are responsible for all IP that they produce. Responsible conduct, therefore, requires that a content produced by GAI be reviewed, verified, and modified by the author(s) of a document. Further, the research activities of South Dakota Mines students, faculty, and staff are still subject to prohibitions on research misconduct including inadvertent misconduct caused by careless or improper use of GAI.

Ensure that your GAI-based activities are compliant with relevant South Dakota Board of Regents (SDBOR) policies.

Relevant policies include:

- South Dakota Board of Regents 4.8.1 ([Employee Academic Misconduct](#))
- South Dakota Board of Regents 4.9.1 ([Intellectual Property](#))
- South Dakota Board of Regents 2.9.2 ([Student Academic Misconduct](#))
- South Dakota Board of Regents 3.4.1 ([Student Code of Conduct](#))
- South Dakota Mines Policy IV-11 ([Code of Ethics](#))

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