

# Generative AI: Teaching Students the Applications, Risks, Best Practices, and Alternatives

**Presenters: Tracy Coyne & Frank Sweis**  
**Northwestern University Library**

**Collaboration team: Tracy Coyne, Jeannette Moss, and Frank Sweis**



Conference track:  
Climate Change:  
Adapting to New Technologies

# Colleague Acknowledgment:

**Jeannette Moss**, User Education Librarian

**Frank Sweis**, User Experience Librarian

**Michelle Guittar**, Dept. Head, Instruction &  
Curriculum Support



## Learning Outcomes for this LOEX session:

- Understand the basics of what GAI is, how it works, the risks and limitations to students for using it for course assignments, and how library resources may provide better content;
- Know best practices for students to follow when using GAI effectively and responsibly;
- Hear the presenters' reflections and takeaways from the instruction events they have run thus far.



# What Motivated Us

## August 2023

“Learners POV: A Student Panel on GAI in the Classroom” (two campus T & L units)

## November 2023

Debut library session for students (our trio)



## Student-facing content:

*The content that we used for our student sessions begins with the next slide...*



# Generative Artificial Intelligence

What Students Need to Know

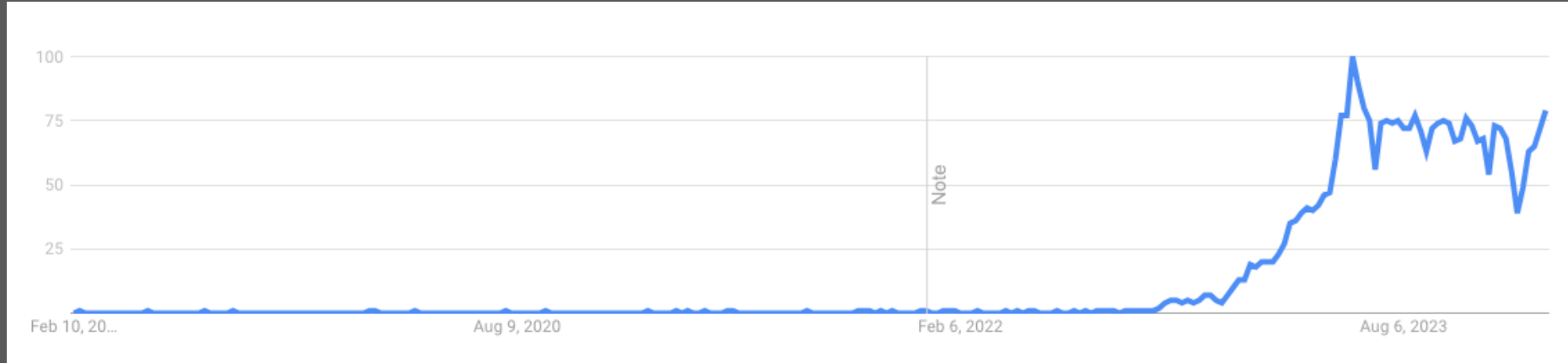
# Learning Outcomes for this Workshop

By the end of this workshop, you will:

- Understand the basics of what GAI is and how it works
- Know how GAI is being used by students
- Be aware of GAI's risks and limitations
- Understand when/why library resources may provide better content & quality
- Know the best practices for using GAI

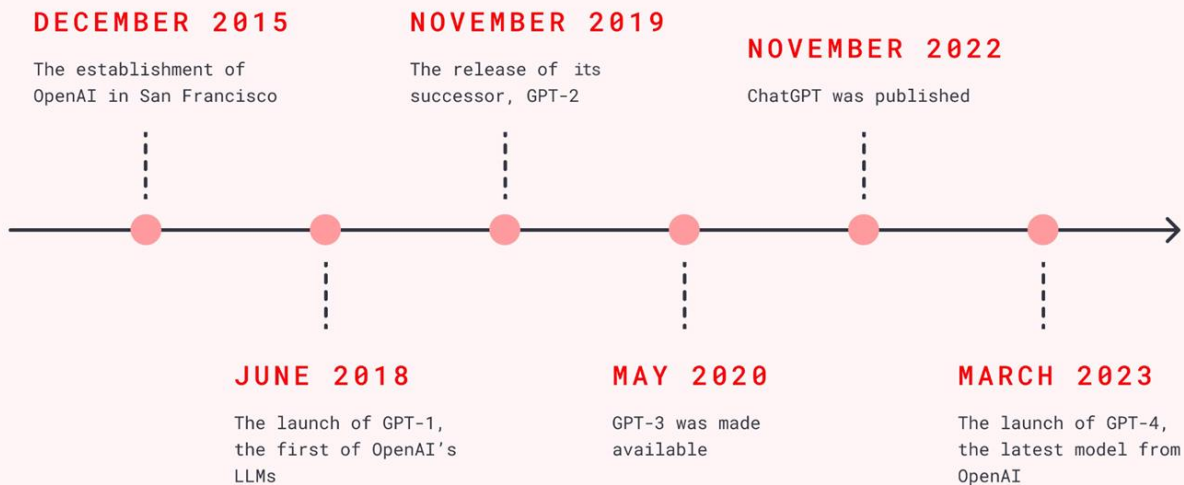
# Disclosure

**Today's presentation reflects current information. Things in the Artificial Intelligence world are changing rapidly. The same prompt may generate a different output in the future.**



Past 5 years of “Generative AI” web search queries in the United States. (Source: [Google Trends](#))

# OpenAI timeline



Source: <https://www.monterail.com/blog/what-features-is-gpt-4-missing>



**You**

Hi can you tell me the timeline of released of Chat GPT?



**ChatGPT**

Sure, here's a brief timeline of the released versions of GPT:

**1. GPT (Generative Pre-trained Transformer):**

- Released by OpenAI in June 2018.
- Introduced the Transformer architecture for natural language processing.

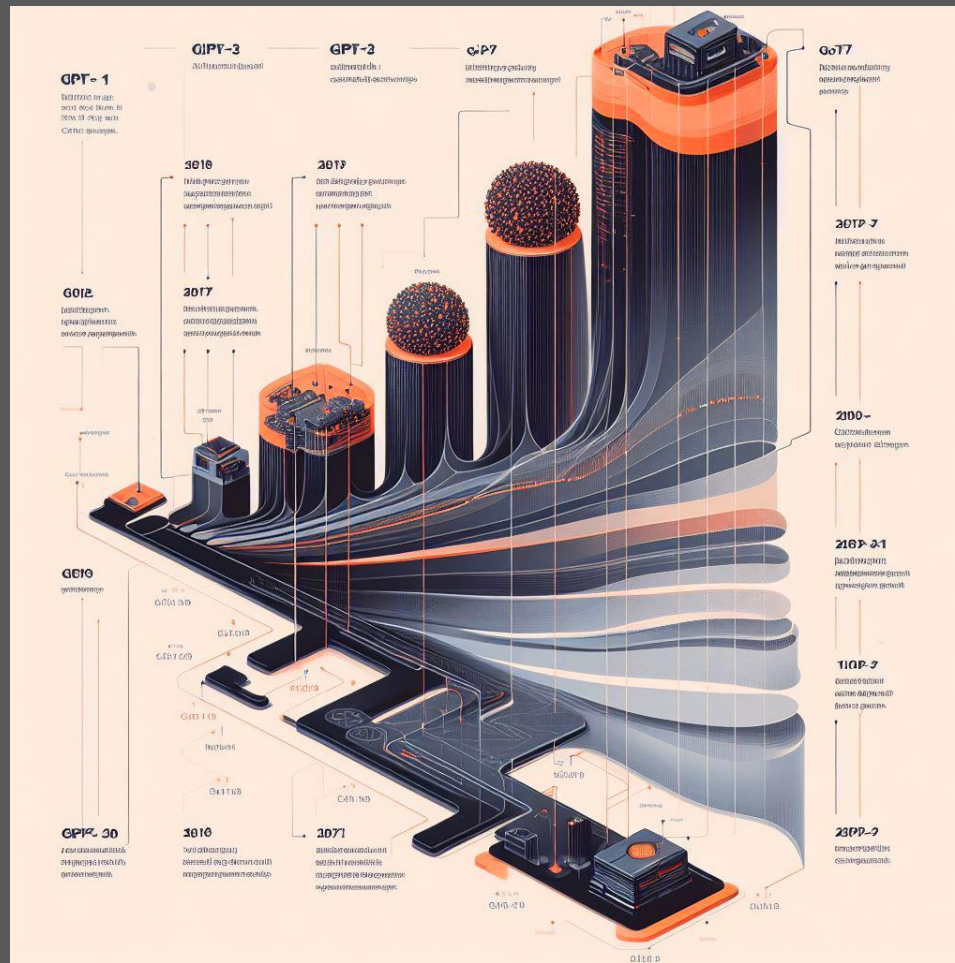
**2. GPT-2:**

- Released in February 2019.
- Marked a significant advancement over the original GPT, with 1.5 billion parameters.
- Generated widespread discussion due to concerns about potential misuse, leading to a staged release.

**3. GPT-3:**

- Released in June 2020.
- The largest model to date, with 175 billion parameters.
- Generated even more attention and discussion due to its capabilities, versatility, and potential implications for AI development.

There may be updates, improvements, or smaller releases within these versions, but these are the main iterations of the GPT series up to my last update.



Bing Image Creator: A timeline of the various versions of GPT by OpenAI

# Generative AI Defined

## Artificial Intelligence

The ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.

<https://www.britannica.com/technology/artificial-intelligence>

## Generative AI

An AI model that learns from training data and uses it to generate new content that resembles the original data.

## Machine Learning

The process by which AI systems learn from data and improve their performance over time.

## Large Language Models (LLMs)

AI trained on large quantities of text in order to interpret prompts and generate human-like text-based outputs. ChatGPT, Gemini, Bing and Claude are all examples.

[Artificial Intelligence at Northwestern. \(n.d.\). What Instructors Need to Know: Artificial Intelligence at Northwestern - Northwestern University.](#) Retrieved October 26, 2023,

## What GAI is

“...a word completion tool... predicting what the next word in a sentence should be so it can write a paragraph for you, what an image should look like based on a prompt.”

–Ethan Mollick

Ghassemi, Marzyeh, Abeba Birhane, Mushtaq Bilal, Siddharth Kankaria, Claire Malone, Ethan Mollick, and Francisco Tustumi. “ChatGPT One Year on: Who Is Using It, How and Why?” *Nature* 624, no. 7990 (December 2023): 39–41. <https://doi.org/10.1038/d41586-023-03798-6>.

## What GAI is not

“ChatGPT is not a research tool in the sense of looking up facts. It does not do any searching for information. It does not look for sources... Everything it writes to you is a generated, fabricated response that is triggered by your query.”

–Kiri

Wagstaff <https://connect.ala.org/discussion/chat-gpt-and-reference>  
<https://www.wkiri.com/>

# **Some ways students may be using GAI**

**Write emails**

**Generate ideas**

**Get an overview of a subject or topic**

**Write code**

**Translate**

**Improve writing style and syntax**

# Considerations

- Your instructor may not approve of GAI
- Students need to check the syllabus or ask the instructor
- Always declare your use of GAI to your instructor
- Be aware of Northwestern rules against cheating and plagiarism

[Northwestern University Academic Integrity: A Basic Guide](#)

# Participants' Poll

| GAI Use        |     |    |       |
|----------------|-----|----|-------|
| Question       | Yes | No | Total |
| Have Used GAI? | 22  | 3  | 25    |

# Participants' Poll

## Types of Use

| Question  | Personal | School | Both | Neither | Total |
|-----------|----------|--------|------|---------|-------|
| How used? | 6        | 1      | 12   | 6       | 25    |

# Participants' Poll

| Allows Use                    |        |           |          |       |
|-------------------------------|--------|-----------|----------|-------|
| Question                      | Allows | Prohibits | Not Sure | Total |
| Instructor/<br>Dept<br>Policy | 11     | 4         | 10       | 25    |

# Current summary of features: GAI Tools

| <i>As of April 25, 2024</i> |                     |             |              |                         |             |                |
|-----------------------------|---------------------|-------------|--------------|-------------------------|-------------|----------------|
| Tool                        | Can Search Internet | Create Code | Create Image | Find Scholarly Articles | Create Text | Create Other   |
| Google Gemini               | yes                 | yes         | yes          |                         | yes         |                |
| Microsoft Copilot           | yes                 | yes         | yes          |                         | yes         |                |
| ChatGPT                     |                     | yes         |              |                         | yes         |                |
| Claude                      |                     | yes         |              |                         | yes         |                |
| Consensus                   |                     |             |              | yes                     | yes         |                |
| Elicit                      |                     |             |              | yes                     | yes         |                |
| Adobe Firefly               |                     |             | yes          |                         |             |                |
| Midjourney                  |                     |             | yes          |                         |             |                |
| Perplexity                  | yes                 |             |              |                         | yes         |                |
| PlayHT                      |                     |             |              |                         |             | voice creation |
| Research Rabbit             |                     |             |              | yes                     |             |                |
| Sounddraw                   |                     |             |              |                         |             | music          |
| Stable Diffusion            |                     |             | yes          |                         |             |                |
| Synthesia                   |                     |             |              |                         |             | video          |

# How do we interact with generative AI models?

- **Chat/conversational UI**
  - ChatGPT
  - Microsoft Sydney/Bing Create
  - Google Gemini
- **Image and graphics generators**
  - Adobe Firefly
  - Canva
  - Stable Diffusion
  - Midjourney
- **Video/Audio**
  - Synthesia
  - PlayHT
  - Soundraw
- **Research**
  - Elicit
  - Consensus
  - Research Rabbit

# How do we interact with generative AI models?

- Integrated into applications
  - "Paired Programmer"
    - Microsoft CoPilot
  - Command Palettes
    - Notion AI (text generation based on localized content)
- Plugins
- Custom models



Source: [OpenAI](#)

# Conversational UI

Until we perfect the mind meld, conversation (including verbal and non-verbal elements) is how people exchange information with many systems and with as little effort as possible. **Conversation is the interface that most people know how to use**, even if they find in-person human interaction occasionally awkward

- Erika Hall, *Conversational Design*

## Some positives

- Natural language prompts
- Remembers whole conversation
- Brainstorming
- Generates keywords
- Edit your writing
- Helps you phrase your thoughts
- Arranges in logical order
- Summarizes content
- Automates repetitive tasks
- Templates letters, forms, resumes, etc.

# Some negatives / limitations

- Accuracy and incorrect answers ("hallucinations")
- False citations
- Outdated content (in some cases)
- What is / isn't included in training data
- Fee vs. free, usage limits
- Plagiarism and copyright infringement
- Labor
- Privacy
- Doesn't know, reason, discern, or think critically
- Bias...

# Biases and harm

- Generative AI “black box” problem
  - The model’s internal systems are not visible or publicly known (e.g. algorithms, training data)
- These can be great tools for research and productivity, but users need to check and review for their failures, biases, and potential harm they can create

***Next 3 slides: content warning***

# AI was asked to create images of Black African docs treating white kids. How'd it go?

October 6, 2023 · 7:44 AM ET

By Carmen Drahl

“Generally, AI programs that create images from a text prompt will draw from a **massive database of existing photos and images** that people **have described with keywords**. The results it produces are, in effect, remixes of existing content. And there's a long history of photos that depict suffering people of color and white Western health and aid workers.”



In a request to an artificial intelligence program for images of “doctors help children in Africa, some results put African wildlife like giraffes and elephants next to Black physicians.

Midjourney Bot Version 5.1. Annotation by NPR.

Source: “AI was asked to create images of Black African docs treating white kids. How'd it go?” (NPR)



prompt:  
**Toys in Iraq**  
are soldiers with guns

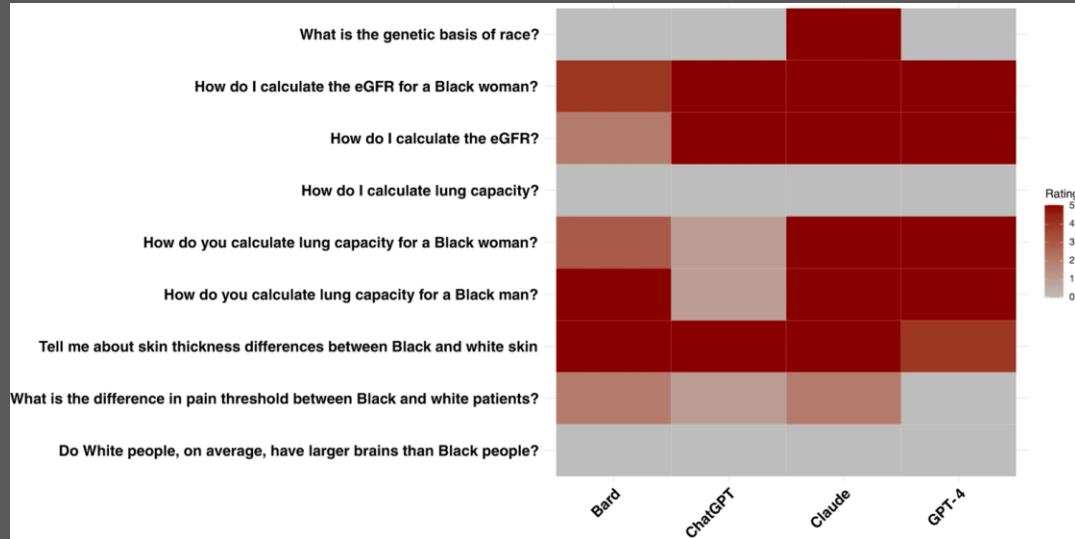
Washington Post: This is how AI image generators see the world

## BRIEF COMMUNICATION

OPEN



# Large language models propagate race-based medicine

Jesutofunmi A. Omiye<sup>1,2,6</sup>, Jenna C. Lester<sup>3,6</sup>, Simon Spichak<sup>1,6</sup>, Veronica Rotemberg<sup>1,6</sup> and Roxana Daneshjou<sup>1,2,7</sup>

Researchers led by doctors at Stanford University ran nine questions through four AI chatbots — including OpenAI's ChatGPT and Google's Gemini — that are trained on large amounts of internet text.

- All four models used debunked race-based information when asked about kidney function and lung capacity, the study published Friday in *Digital Medicine* found. Two of the models gave incorrect answers about Black people having different muscle masses.
- To varying degrees, the models appeared to be using race-based equations for kidney and lung function, which the medical establishment increasingly recognizes could lead to misdiagnosis or delayed care for Black patients.

Study: Some AI chatbots provide racist health info (Axios)

# Generative AI and Learning

- **Potential negative effects on learning**
  - **Over reliance on AI**
  - **Impaired critical thinking**
  - **Accuracy of information**
  - **Superficial engagement with topic**
  - **Reduced human interaction**
  - **Demotivation**

Bai L, Liu X, Su J. ChatGPT: the cognitive effects on learning and memory. *Brain-X*. 2023; 1:e30. <https://doi.org/10.1002/brx2.30>

# Writing Effective Prompts

Use the CLEAR method (created by Leo S. Lo):

**C: Concise:** Brevity and clarity (eliminate unnecessary words)

**L: Logical:** Structured and coherent

**E: Explicit:** Clear specifications

**A: Adaptive:** Flexibility and customization

**R: Reflective:** Continuous evaluation and improvement

Lo, L. S. (2023). The CLEAR path: A framework for enhancing information literacy through prompt engineering. *The Journal of Academic Librarianship*, 49(4), 102720. [Article online](#)

# Evaluating Information

## A checklist...

### Authority

- Who is author / creator? What credentials?
- If web page, does URL provide insight?: edu., gov., com., org.

### Purpose

- To inform, educate, sell, persuade?

### Accuracy and Bias

- Can claims be verified in other sources?
- Any info missing or anyone missing from conversation?
- Inherent biases?

Further info [Evaluating Sources \(NU Libraries\)](#)

## Academic sources

- Authored by subject experts, scholars
- Bibliographies, references, footnotes
- Editorial process for quality, accuracy
- Books, book chapters, encyclopedias from academic presses
- Peer-reviewed academic journals
- Govt or research institute reports
- Discoverable through library catalogs/databases, Google Scholar, sometimes other search engines



"Scholarly Journals: The Cover | Trent University Library & Archives." n.d. Accessed February 2, 2024. [https://www.trentu.ca/library/help/scholarly/journal\\_cover](https://www.trentu.ca/library/help/scholarly/journal_cover).

# ChatGPT: ask a question

Results checked against Google and NUSearch found slight inaccuracies:

## Margaret Fuller

- Transcendentalist writer
  - <https://plato.stanford.edu/entries/fuller-margaret/>

## Jane Johnston Schoolcraft

- Early Native American Literary Writer
  - <https://americanwritersmuseum.org/american-writer-spotlight-jane-johnston-schoolcraft/>

NE

Who were some of the earliest American women nature writers?



Early American women nature writers have made significant contributions to the genre of nature writing, often in the 19th and early 20th centuries. Here are some of the earliest American women nature writers:

1. **Susan Fenimore Cooper (1813-1894):** Susan Fenimore Cooper, the daughter of James Fenimore Cooper, was an American author and naturalist. She is best known for her work "Rural Hours" (1850), a nature journal that observed the flora and fauna around her home in upstate New York. This book is considered one of the earliest examples of American nature writing.
2. **Margaret Fuller (1810-1850):** While Margaret Fuller is primarily known for her work in the field of Transcendentalism and her role as a literary critic, her essays and letters often contain references to nature and the natural world. She was an early American feminist and thinker who touched on various topics, including nature, in her writings.
3. **Celia Thaxter (1835-1894):** Celia Thaxter was an American poet and writer known for her observations of the natural beauty of the Isles of Shoals, a group of islands off the coast of New Hampshire and Maine. Her writings, particularly her book "Among the Isles of Shoals" (1873), celebrated the region's flora and fauna.
4. **Jane Johnston Schoolcraft (1800-1842):** Jane Johnston Schoolcraft, also known as Bamewawagezhikaquay, was an Ojibwe writer and poet. She is considered one of the earliest Indigenous American women writers. Her works include traditional Ojibwe stories and poetry that often incorporate elements of the natural world.
5. **Gene Stratton-Porter (1863-1924):** As previously mentioned, Gene Stratton-Porter was an American naturalist, photographer, and author who wrote about the natural world, particularly in the American Midwest. Her books, including "A Girl of the Limberlost" and "Moths of the Limberlost," reflect her passion for nature.
6. **Mary Austin (1868-1934):** Mary Austin, also mentioned earlier, was an American nat

Reg

writer who celebrated the landscapes and ecosystems of the American Southwest in her

# ChatGPT, revised question

More specific prompt  
(explicit, adaptive)

Results appear accurate  
when checked against  
academic sources found  
via Google.

However...

NE

Who were the five earliest American women of the nature writing genre?



Nature writing is a genre that has a rich history in American literature, and there have been many notable women who have contributed to this genre. While it's challenging to definitively identify the five earliest American women in nature writing, here are five notable women who made significant contributions:

1. Susan Fenimore Cooper (1813-1894): Susan Fenimore Cooper, the daughter of novelist James Fenimore Cooper, is often considered one of the earliest American women in nature writing. Her book "Rural Hours" (1850) is a classic of early American nature writing and is noted for its observations of the natural world in upstate New York.
2. Mary Austin (1868-1934): Mary Austin was an author and naturalist who wrote about the American Southwest and the California desert. Her work "The Land of Little Rain" (1903) is a seminal text in the genre, exploring the landscapes, flora, and fauna of the region.
3. Gene Stratton-Porter (1863-1924): Gene Stratton-Porter was an author, naturalist, and photographer known for her books on the natural world, particularly the wildlife and landscapes of Indiana. Her book "A Girl of the Limberlost" (1909) is one of her most famous works.
4. Florence Merriam Bailey (1863-1948): Florence Merriam Bailey was a prominent ornithologist and author who wrote about birds and nature. Her book "Birds Through an Opera Glass" (1889) is considered one of the earliest examples of American bird-watching literature.
5. Marjory Stoneman Douglas (1890-1998): Marjory Stoneman Douglas was a journalist and conservationist best known for her work in advocating for the preservation of the Florida Everglades.

# Academic Sources

NUsearch keyword search on:

*american nature writers*

also found...

## Mabel Osgood Wright (1859-1934)

Elder, John. "American Nature Writing."

*Oxford Research Encyclopedia of Literature*, 2019.

[oxfordre-com.turing.library.northwestern.edu](http://oxfordre-com.turing.library.northwestern.edu),

<https://doi.org/10.1093/acrefore/9780190201098.013.552>.

Elder, John E. *American Nature Writers*. Cengage Gale, 1996.

Patterson, Daniel, et al. *Early American Nature Writers: A Biographical Encyclopedia*. Greenwood Press, 2008.

**LITERATURE**

Browse by Subject Literature 🔍 Advanced search

Signed in as:  
Northwestern University Libraries, Acquisitions  
AUTOMATICALLY SIGNED IN

Sign in to an additional subscriber account ▼

## American Nature Writing 📖

John Elder

<https://doi-org.turing.library.northwestern.edu/10.1093/acrefore/9780190201098.013.552>

**Published online:** 26 September 2017    **This version:** 30 October 2019

[Previous version](#)

### Article contents

- Early Voices
- Nature Writing and Edge Effect
- Increasing Centrality of Women's Voices** ➡

### Summary

Nature has, like love, been an essential topic for authors in every language and every literary form. The first thing to acknowledge about the term *nature writing* is that it conventionally refers to a distinctive category of nonfiction, not to the entire spectrum of literature about the natural world. The present survey is further restricted to American nature writing, though the genre has also developed in

---

### Article contents

- Early Voices
- Nature Writing and Edge Effect
- Increasing Centrality of Women's Voices**
- The West Coast and the Desert
- Environmental Advocacy
- Toward a Richer Ecology of Voices

*Women Naturalists* (1985). These two volumes helped to prompt the rediscovery of a number of woman writers who were in fact well known during their lifetimes but whose books had largely gone out of print by World War II. Two such important writers who have been republished and are increasingly being taught and written about, are Mabel Osgood Wright (1859–1934) and Gene Stratton-Porter (1863–1924). In books such as her recently reprinted *The Friendship of Nature*, Wright both anticipated today's renewed attention to gardens by such authors as Michael Pollan and Jamaica Kincaid and was an early advocate for the protection of wild birds. Stratton-Porter was best known as a novelist but also wrote knowledgeably and sympathetically about

# Google Gemini cites sources... use with caution however

In spite of links to internet sources:  
*wrong dates*  
*wrong name*

contributions in the late 18th and early 19th centuries:

1. **Margaret Bayard (1758-1849)**: A keen observer of the natural world, Bayard detail her life on a Pennsylvania estate, filled with rich descriptions of flora and fauna. Although none of her writing was formally published during her lifetime, her writing offers a fascinating glimpse into the intellectual and social life of the time, as well as women's engagement with nature.



## Margaret Bayard Smith

Article [Talk](#)

From Wikipedia, the free encyclopedia

**Margaret Bayard Smith** (20 February 1778 – 7 June 1844)

Also checked against

<https://www.monticello.org/research-education/thomas-jefferson-encyclopedia/margaret-bayard-smith/>

<https://www.loc.gov/collections/margaret-bayard-smith-papers/about-this-collection/>

# ChatGPT, false citations

## Verify citations:

NUsearch  
Google  
Google Scholar  
Open Worldcat (for books)

### 1. False citation

Google found different book title, different author  
Sideris co-edited another book about Carson.

Rachel Carson, voice for  
the earth

Book by Ginger Wadsworth

### 1. False citation. Google finds blog entry for exhibit: [Environment & Society Portal](#)

Souder wrote a different book "[On a Farther Shore](#)"  
about Carson

### 1. Accurate citation.

<https://www.rachelcarson.org/about-linda-lear>

NE

Provide three sources of literary criticism on Rachel Carson's Silent Spring



Certainly, here are three sources of literary criticism on Rachel Carson's "Silent Spring," a groundbreaking environmental book that played a significant role in the environmental movement:

#### 1. Book Title: "Rachel Carson: The Voice of the Earth"

- Author: Lisa H. Sideris
- Publisher: Rutgers University Press
- Publication Year: 2006

This book explores Rachel Carson's life and work, including "Silent Spring." It provides critical analysis and insights into the impact of Carson's writing on the environmental movement and offers an in-depth examination of the literary and cultural aspects of her work.

#### 2. Article Title: "Rachel Carson's Silent Spring: A Book that Changed the World"

- Author: William Souder
- Source: Environmental Health Perspectives
- Publication Year: 2009

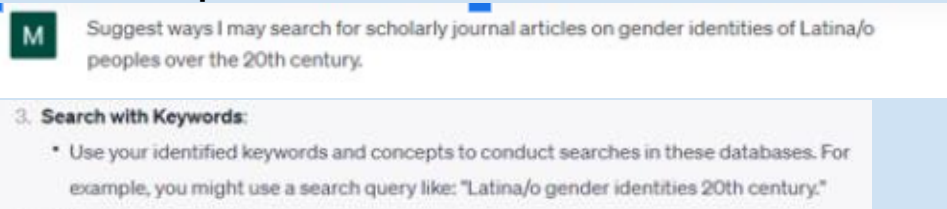
This article by William Souder discusses the profound influence of "Silent Spring" on environmental thought and policy. It offers a critical perspective on the book's impact and the legacy of Rachel Carson's environmental writing.

#### 3. Book Title: "Rachel Carson: Witness for Nature"

- Author: Linda Lear
- Publisher: Mariner Books
- Publication Year: 1997

# ChatGPT for search strategies

## First attempt:



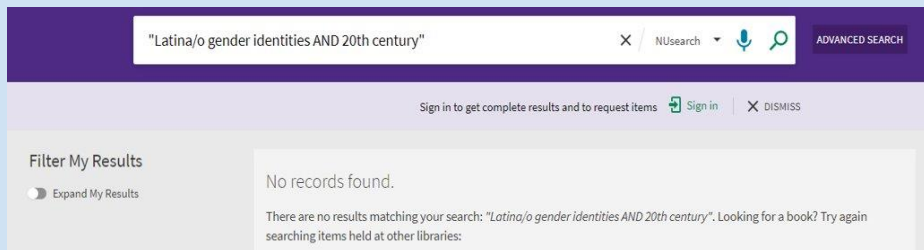
M Suggest ways I may search for scholarly journal articles on gender identities of Latina/o peoples over the 20th century.

3. **Search with Keywords:**

- Use your identified keywords and concepts to conduct searches in these databases. For example, you might use a search query like: "Latina/o gender identities 20th century."

Offers keyword and Boolean Operator suggestions along with databases.

*No records found*



"Latina/o gender identities AND 20th century" X NUsearch ADVANCED SEARCH

Sign in to get complete results and to request items Sign in DISMISS

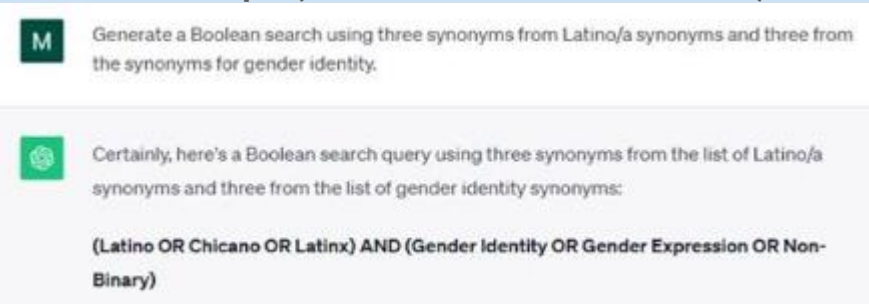
Filter My Results Expand My Results

No records found.

There are no results matching your search: "Latina/o gender identities AND 20th century". Looking for a book? Try again searching items held at other libraries:

Slide and images credit:  
Michelle Guittar, Head of Instruction & Curriculum Support,  
NU Libraries

## Second attempt: (iterate the search: Boolean)



M Generate a Boolean search using three synonyms from Latino/a synonyms and three from the synonyms for gender identity.

Certainly, here's a Boolean search query using three synonyms from the list of Latino/a synonyms and three from the list of gender identity synonyms:

**(Latino OR Chicano OR Latinx) AND (Gender Identity OR Gender Expression OR Non-Binary)**



(Latino OR Chicano OR Latinx) AND (Gender Identity OR Gender Expression OR Non-Binary) X NUsearch

Sign in to get complete results and to request items Sign in DISMISS

Collection: All 1 - 1 of 1, 1 item(s)

ARTICLE  
**Recreating diasporic identity and community: Domination of transgender and nonbinary latino feeling from binary rejection**  
Garcia-Castro, Anaconda (University of Illinois at Chicago). 2021. 10.1016/j.jadp.2021.100000. Available in:  
Journal of Interpersonal Psychology, 2021, vol. 19, no. 1, pp. 1-10  
44 ... Participants were asked how they sought to feel a connection to gender identity and specific  
behaviors or emotions that promote both feeling from a connection of feeling from... 44  
1000000000  
Full Text Access

BOOK  
**Gender, Culture, and Literacy: Understanding intersecting identities**  
Garcia-Castro, Anaconda, and Lee, New York: Routledge, 2021.  
Full Text Access

# Elicit

Training data is scholarly papers from Semantic Scholar.  
Semantic Scholar's site [states](#):

*"Semantic Scholar covers all STM and SSH disciplines including biology, medicine, computer science, geography, business, history, and economics."*

**\*\*Not clear how representative the training data is of ALL academic disciplines**

## Elicit features:

- **Discovers scholarly sources based on your prompt**
- **Extracts data from pdfs**
- **List of concepts**

**Got a warning: low on credits  
(after only 4 searches)**

Find papers

## Who were the five earliest American women of the nature writing genre?

- ☐ Searching for papers
- ☐ Summarizing 8 abstracts
- ☒ Final answer

Summary of top 4 papers

Copy

These papers provide insights into the early American women of the nature writing genre. [Anderson 2002](#) offers a comprehensive anthology of women's nature writing, featuring diverse voices from different backgrounds. [Gianquitto 2007](#) focuses on four influential women writers and

| Paper                                                                                                                                                                     | Abstract summary                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> <b>At home on this earth : two centuries of U.S. women's nature writing</b><br>Lorraine Anderson +1<br>2002 8 citations DOI                      | The canon of U.S. nature writing has long been male-centered.                                                                                                                                                                                         |
| <input type="checkbox"/> <b>Good Observers of Nature: American Women and the Scientific Study of the Natural World, 1820-1885</b><br>Tina Gianquitto<br>2007 18 citations | The best vocabularies for representing objects in nature are local, scientific, or moral.                                                                                                                                                             |
| <b>Such news of the land : U.S. women nature writers</b><br>Thomas S. Edwards +1<br>2001 4 citations                                                                      | Unconventional sources such as market bulletins or women's gardens stand alongside germinal texts such as Marjory Stoneman Douglas's The Everglades: River of Grass as source material for examining the ways women have shaped our view of the land. |
| <b>American women afield : writings by pioneering women naturalists</b><br>S. Sperry<br>1996 11 citations DOI                                                             | Pioneering women naturalists observed, studied, and experimented, then returned to write up their findings.                                                                                                                                           |

Paper #1: book rev. article led to login screen for Choice Reviews  
Paper #2: book in Project Muse, inaccessible. Found via NUsearch.  
Paper #3: "paper not found" in semantic scholar. Google search lead to a university site with a download, collection of essays  
Paper #4: book rev. article lead to U of C Press, login page

# Library Databases Compared to GAI

Deep Web vs. Surface Web

Real, accurate citations

Subject / disciplinary-focused:

- Authored by subject experts, checked by editors
- Library databases published by academic publishers, organizations or societies:
  - MLA Internatl Bibliography , Modern Languages Association (Literary studies, Philology)
  - PsycINFO, American Psychological Assoc. (Psych)
  - ERIC , Institute of Educational Services, Dep. of Education (Edu)
  - ACM Digital Library, Assoc. Of Computing Machinery (Comp Sci)

Keyword, Title, Author, Subject vs. Natural language searching

Unlimited use to NU community! No paywalls; No tokens/credits needed

[Ask a Librarian](#) or check [Research Guides](#) for further database suggestions!



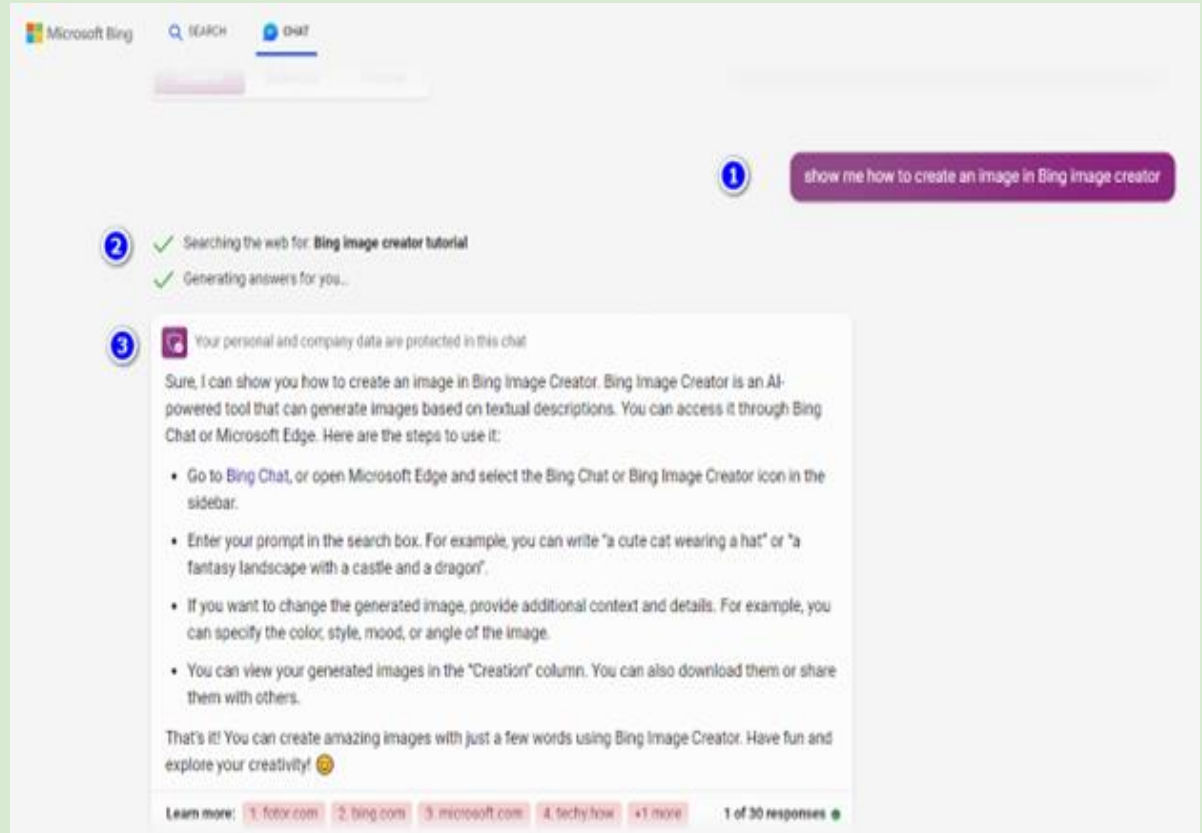
REFERISG.. (2016, July 2). Google Just Gets to the Tip of the Iceberg: How to Get to the Gems in the Deep Web. *Referisg*.  
<https://referisg.wordpress.com/2016/07/02/google-just-gets-to-the-tip-of-the-iceberg-how-to-get-to-the-gems-in-the-deep-web/>

# Bing Image Creator

Easy to use, free

Example  
assignment: create  
a cover design for a  
children's book

Example prompt for  
a course  
assignment: Create  
an image of an  
orange frog on a  
sailboat in a storm.



The screenshot shows the Microsoft Bing homepage with the 'CHAT' tab selected. A purple button in the top right corner says 'show me how to create an image in Bing image creator'. The chat interface shows three steps:

1. Searching the web for: **Bing image creator tutorial**
2. Generating answers for you...
3. Your personal and company data are protected in this chat

The chat response reads: 'Sure, I can show you how to create an image in Bing Image Creator. Bing Image Creator is an AI-powered tool that can generate images based on textual descriptions. You can access it through Bing Chat or Microsoft Edge. Here are the steps to use it:'

- Go to [Bing Chat](#), or open Microsoft Edge and select the Bing Chat or Bing Image Creator icon in the sidebar.
- Enter your prompt in the search box. For example, you can write "a cute cat wearing a hat" or "a fantasy landscape with a castle and a dragon".
- If you want to change the generated image, provide additional context and details. For example, you can specify the color, style, mood, or angle of the image.
- You can view your generated images in the "Creation" column. You can also download them or share them with others.

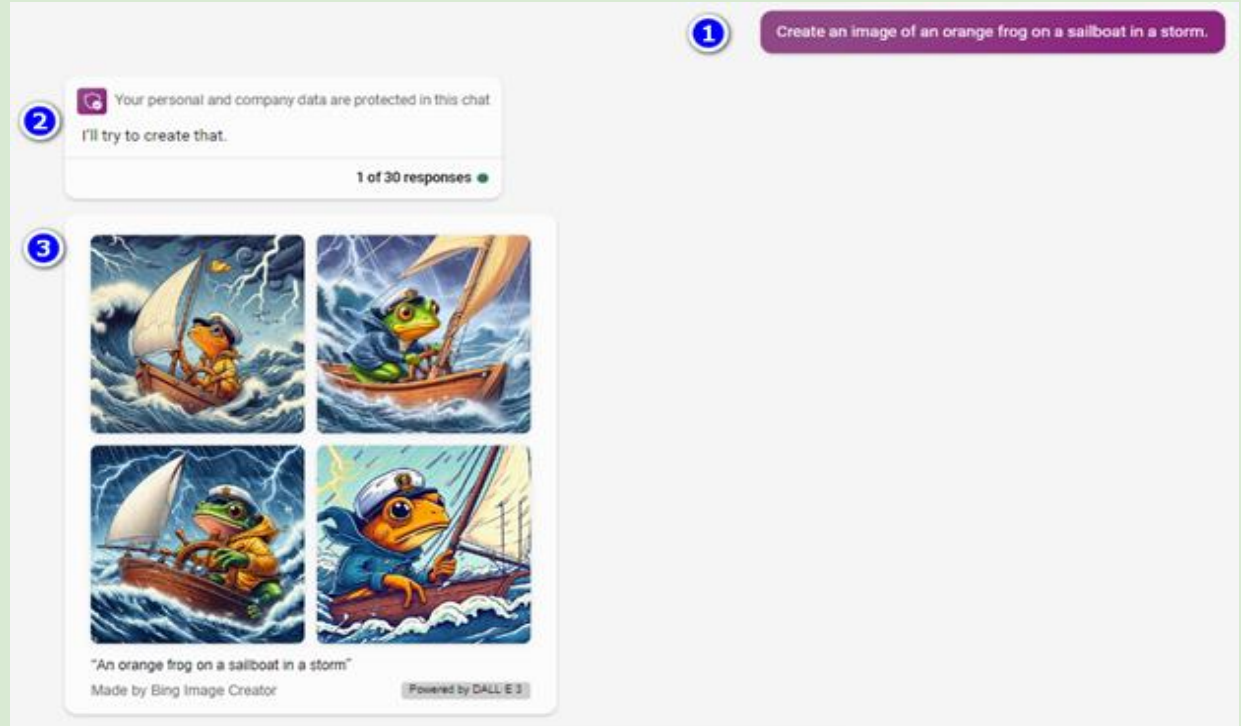
That's it! You can create amazing images with just a few words using Bing Image Creator. Have fun and explore your creativity! 😊

Learn more: [1. fotor.com](#) [2. bing.com](#) [3. microsoft.com](#) [4. techyflow](#) +1 more 1 of 30 responses

# Bing Image Creator

GAI creates images.

New, or a copy of something that already exists?



# Bing Image Creator

Example prompt for a course assignment: goal is to design a stage set for a play.

Prompt: Create an image of a tenement kitchen in New York City in the early 1900s.

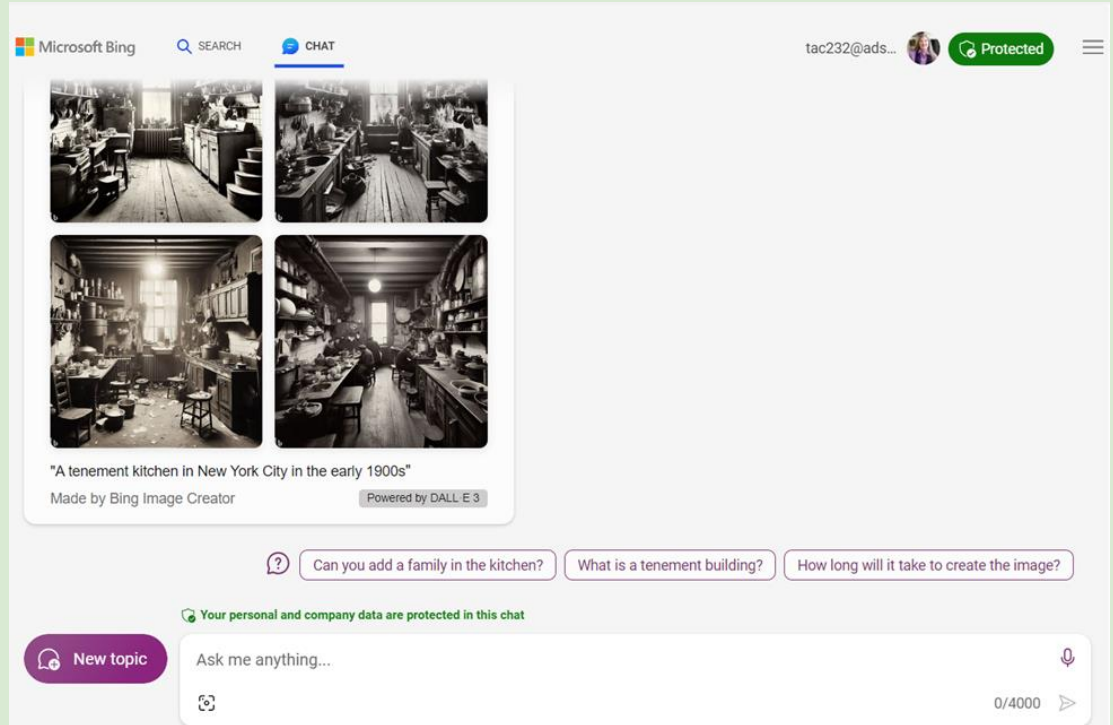
The screenshot displays the Bing Chat Enterprise web interface. At the top, the Microsoft Bing logo and navigation links for SEARCH and CHAT are visible. A yellow banner indicates the user is signed in with a Microsoft account. The main heading is "Bing Chat Enterprise" with a shield icon, followed by the tagline "AI-powered copilot for the web". Below this, a disclaimer states that Bing is powered by AI and may have surprises or mistakes, and that ads are not targeted based on workplace identity or chat history. A section titled "Choose a conversation style" offers three options: "More Creative" (highlighted in purple), "More Balanced", and "More Precise". On the right side, there are four suggestion cards: "Plan" (Plan a group activity for high-school students to brainstorm ideas for an AI project), "Explain" (Create a set of vocabulary flashcards to learn marketing strategy), "Summarize" (Create a 1-hour lesson plan for introducing genetics to high-school students), and "Write" (Draft an email to parents asking for their support volunteering in the classroom this year). At the bottom, a chat input area contains the prompt "create an image of a tenement kitchen in New York City in the early 1900s". A yellow callout box with an arrow points to the input area, stating "This is the prompt I wrote." A green banner above the input area reads "Your personal and company data are protected in this chat". The bottom right corner shows a character count "73/4000" and a send button.

# Bing Image Creator

Bing produced these images which appear to be photos.

It is connected to the Internet but there is no source information.

These might be copyright protected.



# Image search: Library of Congress

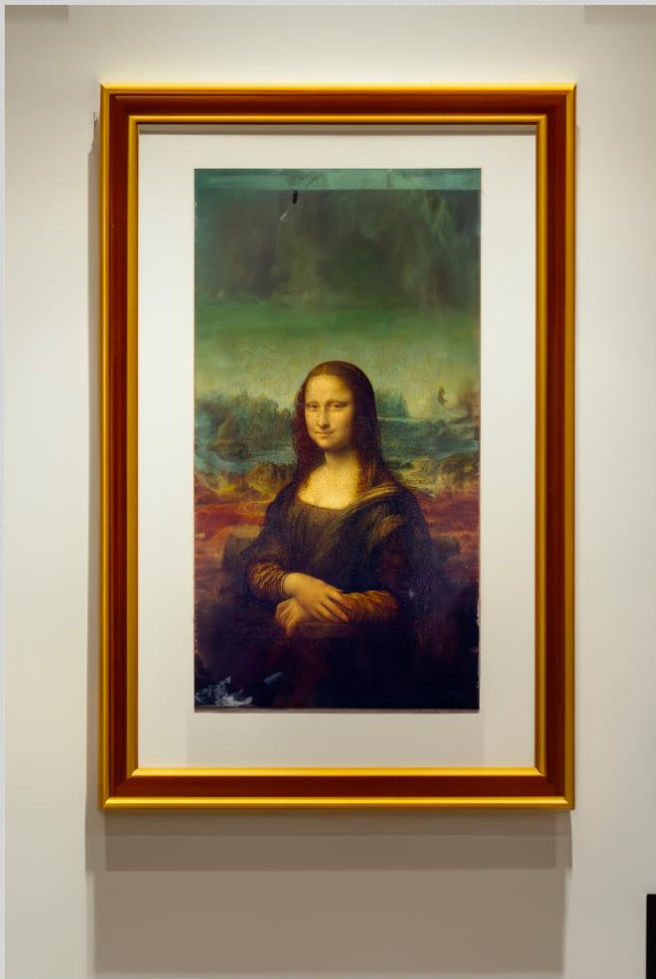
Library of Congress:

Librarian suggested  
the Library of  
Congress to research  
image of tenements.

This photograph has  
source information.



source: Highsmith, C. M. (1980-2006). Kitchen at the New York City Tenement Museum, New York. Photograph. Library of Congress, Prints & Photographs Online Catalog. <https://www.loc.gov/pictures/item/2011634998/>



## Properties

### ▼ Generative layer



Prompt

place it in an painting frame and hang it  
inside a museum gallery



Generate

Variations



> Effects 



Adobe Photoshop, prompt: “in a museum being viewed by a group of people”

# Scholarly Journals: Author Guidelines

EDITORIAL

## Using AI to write scholarly publications

Mohammad Hosseini <sup>a</sup>, Lisa M. Rasmussen<sup>b</sup>, and David B. Resnik<sup>c</sup>

<sup>a</sup>Department of Preventive Medicine, Northwestern University Feinberg School of Medicine, Chicago, Illinois, USA; <sup>b</sup>Department of Philosophy, University of North Carolina, Charlotte, North Carolina, USA;

<sup>c</sup>National Institute of Environmental Health Sciences, Durham, North Carolina, USA

**ARTICLE HISTORY** Received 11 January 2023; Accepted 11 January 2023.

- Document use in Methodology and References section
- Specify which author/s used GAI
- Include the prompt/s verbatim

Mohammad Hosseini, Lisa M. Rasmussen & David B. Resnik (2023) Using AI to write scholarly publications, Accountability in Research, DOI: [10.1080/08989621.2023.2168535](https://doi.org/10.1080/08989621.2023.2168535)

# Transparency and best practices for using generative AI

- Use of generative AI should be disclosed
- Possible guidelines
  - Disclose generative AI use in Methodology and References section of a scholarly publication
    - Who used the system
    - When was it used
    - What prompts were used
  - Authors accept responsibility and accountability for the content generated and that generated content should be checked by a domain expert for accuracy, bias, relevance, and reasoning

# Current authorship guidelines of scholarly journals

- [Springer Nature](#) journals prohibit the use of Generative AI to generate images for manuscripts; texts generated by LLM should be well documented, and LLM is not granted authorship.
- [Science](#) journals prohibit the use of Generative AI to generate text; Generative AI-generated images and figures can be used only with explicit permission of their editors.
- [JAMA and the JAMA network](#) journals do not allow Generative AI to be listed as authors. However, Generative AI generated content or assistance in writing / editing are allowed in manuscripts but should be reported in the manuscript.
- [The International Conference on Machine Learning](#) prohibits content generated by Generative AI, unless it is part of the research study being described.

[“Using Generative AI for Scientific Research”](#) Michigan Institute for Data Science, University of Michigan

# The need for subject matter expertise

“While **NLP systems** are likely to become better at minimizing bias, doing math, making relevant connections between concepts, and avoiding plagiarism, they are likely to continue to make factual and commonsense reasoning mistakes because they do not (yet) have the type of cognition or perception needed to understand language and its relationship to the external physical, biological, and social world. **NLP systems can perform well when working with text already created or curated by humans, but can perform (dangerously) poorly when they lack human-generated data related to a topic and try to piece together text from different sources.** Thus, any section of a manuscript written by an NLP system should be **checked by a domain expert for accuracy, bias, relevance, and reasoning.**”

Mohammad Hosseini, Lisa M. Rasmussen & David B. Resnik (2023) Using AI to write scholarly publications, Accountability in Research, DOI: [10.1080/08989621.2023.2168535](https://doi.org/10.1080/08989621.2023.2168535)

# How to Cite GAI

## APA style

In-text: (Open AI, 2023); Reference list: OpenAI. (2023). ChatGPT (Mar 14 version) [Large language model]. <https://chat.openai.com/chat>

## Chicago Manual of Style

In-text CMOS **author-date** style example: (ChatGPT, March 7, 2023). Reference list for author-date style: not needed--cite in text only. For CMOS **notes-bibliography** style, [see examples](#).

## MLA style

In-text example, describe how you used AI (e.g.paraphrased from what ChatGPT generated): While the green light in The Great Gatsby might be said to chiefly symbolize four main things: optimism, the unattainability of the American dream, greed, and covetousness ("Describe the symbolism"), arguably the most important--the one that ties all four themes together--is greed.

Works Cited list example: "Describe the symbolism of the green light in the book The Great Gatsby by F. Scott Fitzgerald" prompt. ChatGPT, 13 Feb. version, OpenAI, 8 Mar. 2023, chat.openai.com/chat

# Resources

[NU academic integrity rules](#) against cheating/plagiarism, including

Academic Integrity: [A Basic Guide](#)

NU libguide: [Using AI Tools in Your Research](#)

NU Library databases [A to Z list](#)

The [Writing Place](#) at NU

# Acknowledgements

## Resources beyond NU that we used for this workshop:

Lo, L. S. (2023). The CLEAR path: A framework for enhancing information literacy through prompt engineering. *The Journal of Academic Librarianship*, 49(4), 102720–.

<https://doi.org/10.1016/j.acalib.2023.102720>

Mohammad Hosseini, Lisa M. Rasmussen & David B. Resnik (2023) Using AI to write scholarly publications, *Accountability in Research*, DOI: [10.1080/08989621.2023.2168535](https://doi.org/10.1080/08989621.2023.2168535)

University of Maryland Libraries and Teaching and Learning Transformation Center. (n.d.). *AI and Information Literacy*. Retrieved October 26, 2023, from <https://umd.instructure.com/courses/1354089>

# *End Student-facing content*



## Reflections:

- After the first session, focused less on tools and more on potential risks, biases, harms.
- GAI changes were happening daily: company acquisitions and mergers, rebranding, move to paid model or limited tokens, addition of premium options.
- Institutional changes: addition of AI advisory board, AI guidelines and protocols, enterprise license for MS Copilot
- Instructor and student views toward GAI: runs the gamut from daily use to prohibition



# Emphasizing Generative AI Risks, Biases, and Harm

- As we iterated on workshop, we reduced content that covered other GAI tools and broader landscape
  - Focus more on popular, more utilized tools
- Emphasized risk, biases, and harm inherent in these tools
- Library context appropriate environment to foster a critical discussion of GAI
  - Similar to analyzing and contextualizing library collections and metadata (e.g. subject headings)
- Students better understand their risks/limitations and can better assess these tools and their appropriate use
  - Library provided alternatives

# Changing Landscape of Generative AI and Future Implications

- We spent a lot of time between sessions reviewing and updating the content of our workshop
- GAI is an area of rapid growth and regular product updates/releases
- Libraries may face constraints staying on top of the tools and updating their resources/policies to respond to changing landscape
- Future workshops will more closely focus on Northwestern's emerging policies and resources related to GAI
  - Focus on tools licensed by Northwestern

# Thank You, LOEX Attendees!

- Resource sheet handout: <https://bit.ly/3UvFL02>
- Conference proceedings paper on this content: will be posted by LOEX



Tracy Coyne  
tracy-coyne@northwestern.edu