

# WILEY

## Publication Ethics 2.0 – GenAI in scholarly publishing

8<sup>th</sup> International Symposium on Phospholipids in Pharmaceutical Research, September 10<sup>th</sup>, 2024

**Chris Mayer, Editor-in-Chief, Advanced Therapeutics  
Editor Advanced Science**





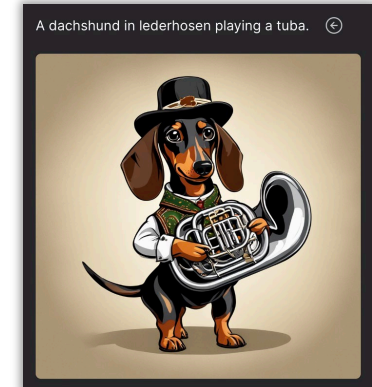
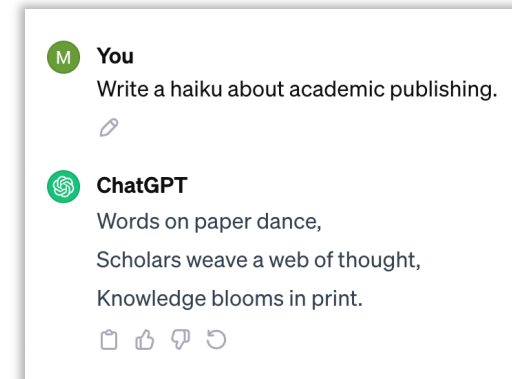
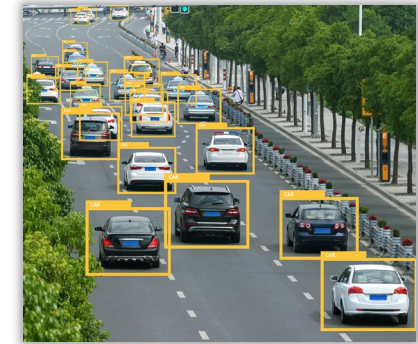
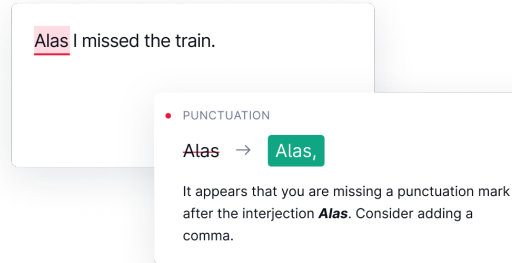
# What is Generative AI?

**Artificial Intelligence** is a broad term that describes a piece of technology that can perform tasks that mimic human intelligence. AI uses existing data to create systems capable of making predictions about future events.

- Image recognition
- Language understanding
- Classification

**Generative AI (GenAI)** is a specialized branch of artificial intelligence that uses large language models (LLMs) like GPT-4 to create *novel content* based on patterns learned from existing data (training material) and usually requires a *prompt*.

- Text generation
- Image generation



# AI is a tool, and intention is key

"Any new invention has practical use, accidental harm, and then premeditated harm.

So like, an axe, you can cut wood with it to build a fire and warm yourself. You can also drop it and cut your foot off, or you can murder someone with it.

But when the axe first arrived, people said 'This is great, what a great tool,' and then it takes a while for people to then run the other scenarios.

I'm sure that AI was looked at as, 'Wow, what a cool thing, and it's a learning computer,' and now they're just starting to realize the accidental part of it, and then the malevolent part of it."



Source: [Conan O'Brien Needs a Friend](#)  
Photo: [Gage Skidmore](#)

# GenAI in Scholarly Publishing

What are some potential impacts to the process and practice of scholarly communication?

Generative AI has the potential to revolutionize the scholarly publishing process, making it more efficient, effective, and accessible for both researchers and publishing professionals.

The technology can potentially enhance every stage, from initial idea generation to long-term archiving.



# GenAI in Scholarly Publishing

## For Researchers

### Idea Generation

GenAI can suggest novel research ideas or hypotheses by analyzing existing literature and identifying gaps or emerging trends.

### Research Design

GenAI can assist in designing experiments or models, offering suggestions for methodologies based on similar studies.

### Data Collection and Analysis

GenAI can help with data collection by automating the gathering of large datasets, or in analysis by suggesting statistical techniques or identifying patterns.

### Writing Papers

AI-driven writing assistants can help in drafting the paper, ensuring clarity and adherence to academic standards.

### Formatting and Compliance

AI can assist in formatting the paper as per specific journal guidelines, saving time and effort.

### Discoverability

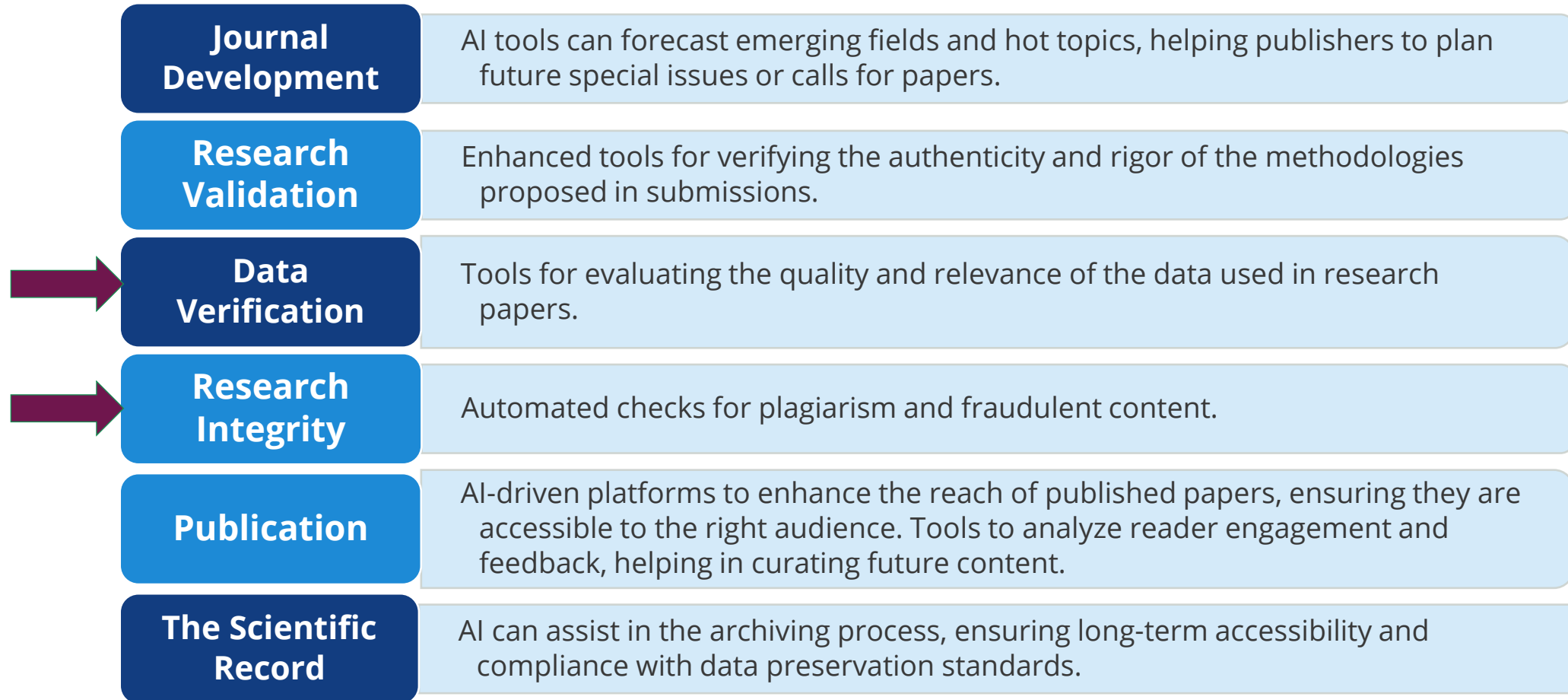
Tools to optimize the discoverability of their work, such as keyword optimization and abstract generation.

### Post-publication Analysis

- AI can provide insights into the impact of your work, track citations, and suggest potential collaborators.

# GenAI in Scholarly Publishing

## For Publishers





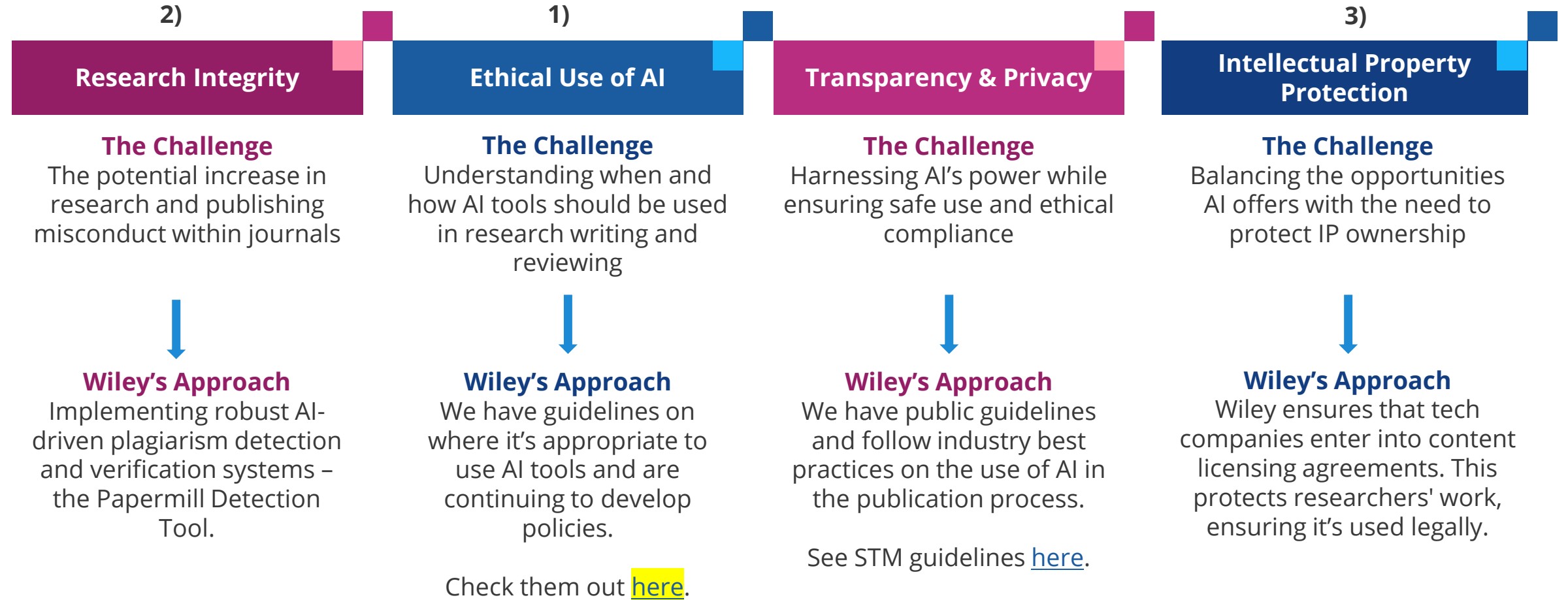
# WILEY

**AI  
@ Wiley**



# First, We Listen...

Understanding the challenges is the first step in getting to strong solutions. Through continued dialogue, we've found that these are some of the top areas of uncertainty.





# First, We Listen...

Understanding the challenges is the first step in getting to strong solutions. Through continued dialogue, we've found that these are some of the top areas of uncertainty.

1)

## Ethical Use of AI

### The Challenge

Understanding when and how AI tools should be used in research writing and reviewing



### Wiley's Approach

We have guidelines on where it's appropriate to use AI tools and are continuing to develop policies.

Check them out [here](#).

# Two categories of commonly used AI tools

## AI tools for IMAGE generation

- DALL-E / DALL-E 2 (OpenAI)
- Midjourney
- Stable Diffusion
- Craiyon AI
- Bing Image Creator (Powered by DALL-E; Microsoft)
- Canva AI
- Dream by WOMBO

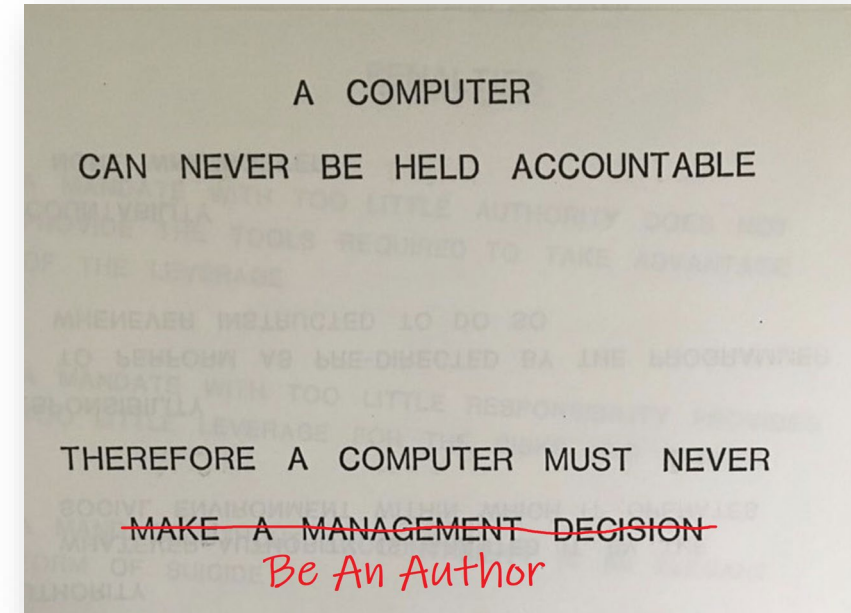
**NOT ALLOWED** to be used for the generation of cover pictures and table-of-contents images in scientific journals published by Wiley due to copyright concerns – ((current position))

## AI tools for TEXT generation

- GPT/GPT-2/GPT-3 & ChatGPT
- General writing and marketing apps (WordVice, Quillbot, Word AI, Canva Magic Write, Byword, Automated Insights, etc.)
- Research-specific apps: Consensus, Scite.ai, Research Rabbit, ChatPDF, Elicit
- ...
- **NEXT slides**

# Factual & Ethical concerns – (Gen)AI & authorship

- Wiley's **Authorship** Policy and AI:
  - Artificial Intelligence Generated Content (AIGC) tools—such as ChatGPT—**cannot be considered capable of initiating an original piece of research** without direction by human authors. They **also cannot be accountable** for a published work or for research design, nor do they have legal standing or the ability to hold or assign copyright. Therefore—in accordance with [COPE's position statement on AI tools](#)—these tools *cannot fulfill the role of, nor be listed as, an author of an article*.
  - **If an author has used AIGC tools to develop any portion of a manuscript, its use must be described, transparently** and in detail, in the Methods or Acknowledgements section. **The author is fully responsible for the accuracy of any information provided by the tool** and for correctly referencing any supporting work on which that information depends.
  - The final decision about **whether use of an AIGC tool is appropriate** or permissible in the circumstances of a submitted manuscript or a published article lies with the **journal's editor** or other party responsible for the publication's editorial policy.



For the most up-to-date information on our policies visit:

<https://authorservices.wiley.com/ethics-guidelines/index.html#5>



# Tip: If you use GenAI....don't leave prompts in!

## ARTICLE INFO

### Keywords:

Lithium metal battery  
Lithium dendrites  
CuMOF-ANFs separator

## ABSTRACT

Lithium metal, due to its advantages of high theoretical capacity, low density potential, is used as a negative electrode material for batteries and brings great benefits to energy storage systems. However, the production of lithium metal dendrites during the cycle is a major problem of lithium metal batteries due to its poor safety, so lithium dendrites have been the biggest problem of lithium metal batteries. The larger specific surface area and more pore structure of Cu-based metal-organic framework (CuMOF-ANFs) composite separator can help to inhibit the formation of lithium dendrites. The discharge capacity retention rate of the Li-Cu battery using the CuMOF-ANFs composite separator is 85.2%, the discharge capacity retention rate of the Li-Li battery using the CuMOF-ANFs composite separator is 95.2%. Li-Li batteries can continue to maintain low hysteresis for 2000 h at the 0.1C rate, which shows that CuMOF-ANFs composite membrane can inhibit the generation of lithium dendrites and improve the cycle stability and cycle life of the battery. The three-dimensional (3D) porous structure of the separator provides a new perspective for the practical application of lithium metal batteries.

## 1. Introduction

Certainly, here is a possible introduction for your topic: Lithium-metal batteries are promising candidates for high-energy-density rechargeable batteries due to their low electrode potentials and high theoretical capacities [1,2]. However, during the cycle, dendrites

chemical stability of the separator is equal to that of the electrolyte, the separator remains intact and does not dissolve in the electrolyte. The presence of the electrolyte or other battery components in the separator helps to prevent the formation of lithium dendrites and further promote dendrite growth. Research on different materials and designs for separator is ongoing.

[https://www.reddit.com/r/ChatGPT/comments/1be5q4c/obvious\\_chatgpt\\_prompt\\_reply\\_in\\_published\\_paper/?rdt=37643](https://www.reddit.com/r/ChatGPT/comments/1be5q4c/obvious_chatgpt_prompt_reply_in_published_paper/?rdt=37643)

- *ChatGPT*

PROMPT: Can you write me a two-paragraph introduction about HDAC inhibitors, and include at least one reference per sentence and claim made? Please include references/citations as numbered superscripts and all references as a numbered list at the end corresponding to the citations. Also use only references from medicinal chemistry and pharmaceutical chemistry journals, dated 2017-2022.

## ChatGPT

**Reads ok at first pass. But gets redundant, and just spews back general statements and keywords from input text.**

Histone deacetylase inhibitors (HDACis) are a promising class of compounds that have gained considerable attention in recent years as potential therapeutic agents for various diseases. HDACs are a group of enzymes that regulate the acetylation status of histone and non-histone proteins, thereby modulating gene expression and various cellular processes<sup>1</sup>. HDACis work by inhibiting the activity of HDACs, leading to an increase in acetylation and altering the expression of genes involved in cell proliferation, differentiation, and apoptosis<sup>2</sup>. Several HDACis have been approved by the FDA for the treatment of different cancers, such as lymphoma and multiple myeloma, and others are currently being investigated in clinical trials for the treatment of various diseases<sup>3</sup>.

Research in medicinal chemistry and pharmaceutical chemistry has led to the development of novel HDACis with improved pharmacokinetic and pharmacodynamic profiles, increased selectivity for specific HDAC isoforms, and reduced toxicity<sup>4</sup>. Several studies have shown that these newly developed HDACis have potent anti-cancer, anti-inflammatory, and neuroprotective effects<sup>5</sup>. Additionally, these compounds have shown promise as potential therapies for various diseases, including neurodegenerative disorders, and inflammatory diseases<sup>6</sup>. While HDACis hold great promise as a therapeutic approach, further research is needed to fully understand their mechanisms of action and potential clinical applications.

### References:

1. Halder R, Hennion M, Vigneron A, et al. HDACs and HDAC Inhibitors in Cancer Development and Therapy. *ChemMedChem*. 2019;14(9):829-846. doi: 10.1002/cmdc.201900056.
2. Verdin E, Ott M. 50 years of protein acetylation: from gene regulation to epigenetics, metabolism and beyond. *Nat Rev Mol Cell Biol*. 2015;16(4):258-264. doi: 10.1038/nrm3931.
3. Molife LR, Attard G, Fong PC, Karavasilis V, Reid AH, Patterson S, et al. Phase II clinical and pharmacodynamic study of the oral histone deacetylase inhibitor MS-275 in refractory and metastatic solid tumors. *J Clin Oncol*. 2008;26(15):2542-2549. doi: 10.1200/JCO.2007.14.5375.
4. Bradner JE, West N, Grachan ML, et al. Chemical phylogenetics of histone deacetylases. *Nat Chem Biol*. 2010;6(3):238-243. doi: 10.1038/nchembio.307.
5. Oh SR, Park JH, Cho YY, et al. HDAC inhibitors as potential therapeutics for rheumatoid arthritis. *Epigenomics*. 2017;9(2):215-225. doi: 10.2217/epi-2016-0117.
6. Kim D, Frank CL, Dobbin MM, et al. Dereglulation of HDAC1 by p25/Cdk5 in neurotoxicity. *Neuron*. 2008;60(5):803-817. doi: 10.1016/j.neuron.2008.10.015.

**References 1 & 5 are made up! They look legit, but do NOT exist!**



# Ethical concerns – (Gen)AI & authorship

- Wiley's **Authorship** Policy and GenAI - in brief:

## Can:



- Be used by authors while they write their manuscript, but this must be transparently and carefully disclosed in the manuscript

## Should:



- Be cited, if used in any way, including the sections where those tools were used, and the content generated (citations should appear in the methodology or acknowledgements section, as appropriate)
- Always be checked for accuracy

## Cannot:



- Be listed as authors, as they cannot be held accountable
- Be trusted to deliver accurate and reliable content
- Replace human input and labor
- **Content generated by AI alone cannot be copyrighted (applies to all forms of media/content/images!!!!)**

- Wiley's AI & **Peer-review** Policy:

GenAI tools should be **used only on a limited basis in connection with peer review**. A GenAI tool can **be used by an editor or peer reviewer to improve the quality of the written feedback** in a peer review report. This use must be transparently declared upon submission of the peer review report to the manuscript's handling editor. Independent of this limited use case, **editors or peer reviewers should not upload manuscripts (or any parts of manuscripts including figures and tables) into GenAI tools or services**.

GenAI tools may use input data for training or other purposes, which could violate the **confidentiality of the peer review process**, privacy of authors and reviewers, and the **copyright of the manuscript under review**.

Moreover, the peer review process is a human endeavor and responsibility and accountability for submitting a peer review report, in line with a journal's editorial policies and peer review model, sits with those individuals who have accepted an invitation from a journal to undertake the peer review of a submitted manuscript. **This process should not be delegated to a GenAI tool.**

# First, We Listen...

Understanding the challenges is the first step in getting to strong solutions. Through continued dialogue, we've found that these are some of the top areas of uncertainty.

2)

## Research Integrity

### The Challenge

The potential increase in research and publishing misconduct within journals



### Wiley's Approach

Implementing robust AI-driven plagiarism detection and verification systems – the Papermill Detection Tool.



# The expanding role of publishers in ethical misconduct



# WILEY Upholding Research Integrity in the Age of AI

In this whitepaper, Wiley explores the dual role of AI in innovating scientific research and streamlining the scholarly publishing process, while addressing the critical challenge of maintaining research integrity. We discuss:

- Overcoming obstacles such as verifying the identity of authors, reviewers, and editors and combating fraudulent submissions.
- Our multi-dimensional approach combining ethical AI use, industry collaboration, multi-signal detection, and cutting-edge technology to preserve the credibility of scientific publishing.
- **Piloting a new AI-powered Papermill Detection service** within Research Exchange, and a preview of future directions for enhancing research integrity.

WILEY



# AI-Powered Papermill Detection Service (Pilot)

## Challenge

In the age of AI, there are numerous obstacles to upholding Research Integrity. In the age of AI, publishers and their partners face new and numerous challenges to research integrity. These include fraudulent submissions, the use of AI tools to generate fabricated data or images, deceptive peer review practices, and the rise of papermills.

## Objective

Launch a papermill detection service that can help safeguard research integrity by identifying potentially compromised research content.

## Methodology

- ✓ Beta testing – within Wiley (completed)
- ✓ Pilot tool – available via Research Exchange for customers and partners, including the *IEEE* and *Sage* pilot (happening now)

## Next Steps

Launch service to market (via Research Exchange) as early as next year.

## The Solution

A new service that incorporates distinct tools (listed below) to help better identify potentially compromised research content. These tools include:

- ✓ **Papermill Similarity Detection:** Checks for known papermill hallmarks and compares new content against existing papermill content.
- ✓ **Problematic Phrase Recognition:** Flags unusual alternatives to established terms.
- ✓ **Unusual Publication Behavior Detection:** Identifies irregular publishing patterns by authors.
- ✓ **Researcher Identify Verification:** Helps detect potential bad actors.
- ✓ **Gen-AI Generated Content Detection:** Identifies potential misuse of generative AI.
- ✓ **Journal Scope Checker:** Analyzes an article's relevance to a journal.

## What is a Papermill?

An individual, a group of individuals or an organization that aim to manipulate the publication process to achieve the publication of articles for the purposes of financial gain. Can be 100s+ of submitted papers



# First, We Listen...

Understanding the challenges is the first step in getting to strong solutions. Through continued dialogue, we've found that these are some of the top areas of uncertainty.

3)

## Intellectual Property Protection

### The Challenge

Balancing the opportunities AI offers with the need to protect IP ownership



### Wiley's Approach

Wiley ensures that tech companies enter into content licensing agreements. This protects researchers' work, ensuring it's used legally.

# Intellectual property protection / copyright issues in GenAI tools

## Human as creator

Only work by human beings is protected under copyright law.  
NO protection of purely AI generated art.

## But...what about 'the art of prompting'

Generated by AI tool:  
Artist said he used at least 624 text prompts and input revisions to get Midjourney to create the image, which he then manipulated with Adobe Photoshop, and enlarged with the Gigapixel AI too..... **"Art" of prompting?**



## Protection of artist 'style'?

Prompt: create " an astronaut riding a horse, by Picasso".

Generated by Stable Diffusion

**An artist's overall style is generally not subject to copyright protection**



# Intellectual property protection / copyright issues in GenAI tools

## AI output: copyright infringement?

General criterion: **Recognizability**  
Original material: AI output?

Midjourney prompt:

dune movie screencap, 2021, dune movie trailer --ar 16:9  
--v 6.0



Actual promo photo of Dune: Part One



problematic

<https://spectrum.ieee.org/midjourney-copyright>

# Intellectual property protection / copyright issues in GenAI tools

NY Times sued OpenAI in December 2023 for plagiarism **OPEN**

## Output from GPT-4:

exempted it from regulations, subsidized its operations and promoted its practices, records and interviews showed.

Their actions turned one of the best-known symbols of New York — its yellow cabs — into a financial trap for thousands of immigrant drivers. More than 950 have filed for bankruptcy, according to a Times analysis of court records, and many more struggle to stay afloat.

“Nobody wanted to upset the industry,” said David Klahr, who from 2007 to 2016 held several management posts at the Taxi and Limousine Commission, the city agency that oversees medallions. “Nobody wanted to kill the golden goose.”

New York City in particular failed the taxi industry, The Times found. Two former mayors, Rudolph W. Giuliani and Michael R. Bloomberg, placed political allies inside the Taxi and Limousine Commission and directed it to sell medallions to help them balance budgets and fund key initiatives.

During that period, much like in the mortgage lending crisis, a group of industry leaders enriched themselves by artificially inflating medallion prices. They encouraged medallion buyers to borrow as much as possible and ensnared them in interest-only loans and other one-sided deals that often required borrowers to pay hefty fees, forfeit their legal rights and give up most of their monthly incomes.

When the market collapsed, the government largely abandoned the drivers who bore the brunt of the crisis. Officials did not bail out borrowers or persuade banks to soften loan

## Actual text from NYTimes:

exempted it from regulations, subsidized its operations and promoted its practices, records and interviews showed.

Their actions turned one of the best-known symbols of New York — its signature yellow cabs — into a financial trap for thousands of immigrant drivers. More than 950 have filed for bankruptcy, according to a Times analysis of court records, and many more struggle to stay afloat.

“Nobody wanted to upset the industry,” said David Klahr, who from 2007 to 2016 held several management posts at the Taxi and Limousine Commission, the city agency that oversees cabs. “Nobody wanted to kill the golden goose.”

New York City in particular failed the taxi industry, The Times found. Two former mayors, Rudolph W. Giuliani and Michael R. Bloomberg, placed political allies inside the Taxi and Limousine Commission and directed it to sell medallions to help them balance budgets and fund priorities. Mayor Bill de Blasio continued the policies.

Under Mr. Bloomberg and Mr. de Blasio, the city made more than \$855 million by selling taxi medallions and collecting taxes on private sales, according to the city.

But during that period, much like in the mortgage lending crisis, a group of industry leaders enriched themselves by artificially inflating medallion prices. They encouraged medallion buyers to borrow as much as possible and ensnared them in interest-only loans and other one-sided deals that often required them to pay hefty fees, forfeit their legal rights and give up most of their monthly incomes.

These are the parts that  
have **not** been plagiarized  
**problematic**

<https://spectrum.ieee.org/midjourney-copyright>



## ■ AI tools for image generation

**NOT ALLOWED** to be used for the generation of cover pictures and table-of-contents images in scientific journals published by Wiley due to **copyright concerns**

## Wiley's position on AI licensing and uploading content for AI training?

Wiley **does not permit ingestion of Wiley-published content into LLMs** or for use with other AI tools or technologies **without a direct licensing agreement** with the LLM or AI provider. Accordingly, providers of LLMs and other AI tools or technologies *must* enter **an agreement with Wiley** when gaining access to copyrighted works as training materials.

This applies to authors and reviewers and editors....

# Harnessing the Power of AI

## The Opportunities We Currently See

### Workflow Integration

*AI has immense potential to enhance our capabilities that help our partners in key areas.*

- Streamline publishing workflows
- Improve the accuracy and efficiency of our operations
- Provide deeper insights for decision-making

### Publishing Processes

*We are actively testing ways in which AI can help facilitate publishing processes and help reduce obstacles.*

- Streamline editorial workflows
- Enhance peer review processes
- Optimize content production

### Supporting Researchers

*AI can minimize mundane tasks so researchers can focus on what matters most - discovery.*

- Support research (predictive trends, automated literature reviews)
- Detect plagiarism and papermills
- Personalize experiences, such as journal and keyword suggestions or funding opportunities

### Influencing the Industry

*Combining human insight with machine power has already shifted our world. We aim to be a leading voice in our industry.*

- Provide trusted content for training AI language models
- Advance research integrity and peer review
- Deliver innovative content formats and research communications

The background is a dark, textured space filled with vibrant purple and blue light effects. Several concentric, glowing hexagonal outlines are visible, creating a sense of depth and perspective. A central, semi-transparent purple rectangle serves as a backdrop for the text. The overall aesthetic is futuristic and digital.

**Thank you!**