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**The modern  
guide to peer  
review**

# Purpose of this guide

Peer review is the foundation of scholarly publishing, ensuring that research meets rigorous standards of quality, credibility, and integrity. As the academic landscape evolves with technological advancements, and growing demands for transparency, the role of peer reviewers remains critical.

This guide serves as both an introduction for early-career researchers new to peer review and a refresher for experienced reviewers. It provides best practices, ethical considerations, and insights into emerging trends while reinforcing the importance of rigor, and integrity in scholarly publishing.

This guide is designed for:

- Early-career researchers looking to understand and engage in peer review.
- Experienced reviewers refining their skills and looking to stay updated on evolving practices.
- Editors, journal administrators, and scholarly stakeholders aiming to enhance the effectiveness and transparency of peer review.

## How to use this guide

Each section is structured for quick reference and revisits as needed:

### Understanding peer review

The purpose, process, and models of peer review.

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### How to review a manuscript

Best practices for providing fair and constructive evaluations.

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### How to become a reviewer

Pathways for researchers to establish themselves as reviewers.

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### Ethics and integrity in peer review

Guidelines on conflicts of interest, bias, and AI integration.

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### The evolving landscape of peer review

Innovations and future directions.

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We encourage you to revisit relevant sections as your reviewing experience grows.

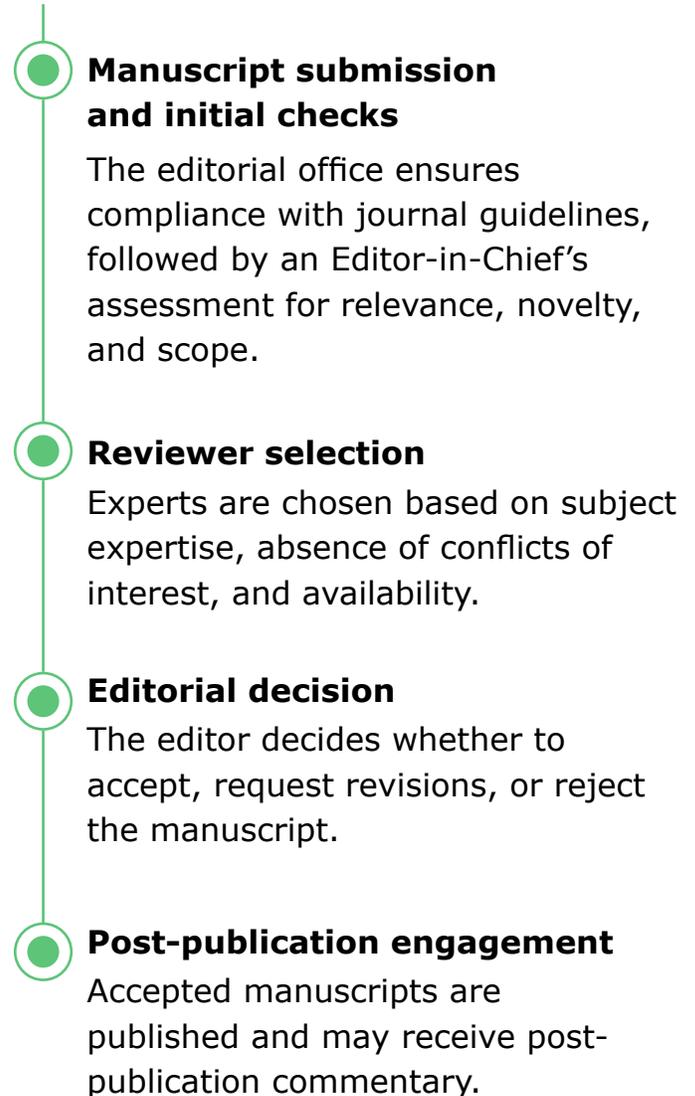
# Understanding peer review

Peer review is a process where subject-matter experts evaluate a scholarly manuscript before publication to ensure its validity, rigor, and contribution to the field. It serves to:

- **Validate research quality** through methodological scrutiny.
- **Enhance credibility** by filtering out flawed or misleading studies.
- **Provide constructive feedback** to refine arguments and analyses.
- **Safeguard integrity** by identifying ethical concerns.

## The peer review process

While the details of peer review vary across journals and disciplines, the process generally follows these key stages:



## Types of peer review models

Different journals adopt varying review models:

### ■ **Single anonymized**

Reviewers remain anonymous to authors.

### ■ **Double anonymized**

Both authors and reviewers remain anonymous to each other.

### ■ **Triple anonymized**

Authors, reviewers, and editors are all anonymous to each other.

### ■ **Open peer review**

Identities of authors and reviewers are disclosed to each other.

### ■ **Transparent peer review**

Reviews are published alongside the article.

### ■ **Collaborative review**

Reviewers work together or with authors on manuscript revisions.

### ■ **Post-publication review**

Manuscripts remain open for community-driven feedback after publication.

Each model has strengths and weaknesses, and many journals are experimenting with hybrid approaches to enhance transparency, fairness, and efficiency.

## How to review a manuscript

Peer reviewing is both a responsibility and an opportunity — to contribute to the integrity of academic research while sharpening your own critical thinking and analytical skills. Before accepting a review invitation, consider:

### **Do you have the right expertise?**

- Ensure the manuscript falls within your area of expertise, so you can provide informed feedback.
- If the topic is only partially familiar, you may still accept but should flag limitations in your review.

### **Are there any conflicts of interest?**

- A conflict of interest occurs when you have a personal, financial, or professional relationship with the authors that could bias your judgment.
- If in doubt, disclose any potential conflicts to the editor and let them decide whether you should proceed.

### **Can you meet the deadline?**

- Peer review is time-sensitive. If you can't complete the review within the requested time frame, notify the editor promptly. If you need an extension, request it as early as possible.

## Step-by-step review process

A structured approach ensures your review is thorough, fair, and constructive.

### Initial read-through

Skim the manuscript to grasp its core message, structure, and potential concerns.

### Assessing research relevance and rigor

Evaluate whether the study addresses a significant gap and if its methodology is sound.

### Evaluating results and conclusions

Determine if conclusions are supported by data, checking for logical inconsistencies or overgeneralizations.

### Assessing clarity and structure

Review readability, coherence, and the proper citation of literature.

### Finalizing feedback

Provide specific, constructive suggestions, and a clear recommendation (accept, minor/major revisions, or reject).

## Tools and resources for effective reviewing

Many journals provide **reviewer checklists** to help structure feedback, ensuring that reviewers address key areas such as methodological rigor, clarity of argumentation, and adherence to ethical guidelines. Before submitting your review, it's beneficial to check whether the journal requires reviewers to use specific templates or scorecards.

Plagiarism detection tools, often integrated into journal editorial systems, can help verify originality. While reviewers aren't typically expected to run independent plagiarism checks, staying vigilant for inconsistencies in writing style, uncited sources, or duplicated figures can help flag potential concerns.

For those looking to refine their reviewing skills further, structured courses such as the **Wiley Researcher Academy Peer Review Course**<sup>1</sup> provide comprehensive training on best practices in peer review.<sup>2</sup>

## Communicating your feedback

A well-structured review should begin with a concise summary of the manuscript's aims and contributions. Recognizing the strengths of the study before identifying areas for improvement helps authors understand where their work succeeds and where it needs refinement.

Criticism should be constructive and specific, with clear explanations of why particular revisions are needed. Rather than vague comments like "The discussion is unclear," an actionable suggestion would be, "Consider reorganizing the discussion section to align more closely with the results, particularly in paragraphs 3 and 4."

The final section of the review should include a clear recommendation on whether to accept, request minor or major revisions, or reject the manuscript. Regardless of the recommendation, feedback should be professional and unbiased, contributing to the improvement of scholarly communication.

## How to become a reviewer

Becoming a peer reviewer is a valuable opportunity for researchers to contribute to their field, enhance their professional reputation, and stay informed about emerging research. This section outlines the key benefits of reviewing, pathways to becoming a reviewer, and strategies for developing the necessary skills.

### Why become a reviewer?

Serving as a reviewer offers numerous professional and academic advantages. It enhances your scholarly credentials by demonstrating expertise in your field, which can lead to invitations for editorial board positions and bolster your academic profile.<sup>3</sup> The reviewing process also keeps you current with emerging research, offering early access to new studies, methodologies, and trends within your discipline. This engagement not only expands your knowledge, but also sharpens your critical analysis skills.

Beyond personal academic growth, reviewing offers valuable networking opportunities. By collaborating with journal editors, fellow researchers, and academic institutions, you can build meaningful professional connections that support career development. Finally, reviewing is a way to give back to the scientific community. By providing thoughtful and constructive feedback, reviewers help maintain research integrity and improve the overall quality of published work, contributing to a robust and trustworthy body of scientific knowledge.

## Pathways to becoming a reviewer

### ■ Express interest to journals

Contact editors and highlight your expertise.

### ■ Engage in academic societies and conferences

Submit abstracts and posters. Engage with editors at journal or publisher booths. Participation may lead to reviewer invitations.

### ■ Develop an online presence

Maintain an ORCID profile, engage in scholarly discussions on social media, and showcase expertise via Publons (Web of Science Reviewer Recognition).

## Developing the skills to review

New reviewers can gain experience through:

- Training programs such as the Wiley Researcher Academy.
- Mentorship opportunities with senior researchers.
- Co-reviewing manuscripts alongside established reviewers.

Editors look for reviewers who provide timely, constructive, and unbiased feedback while upholding professionalism and integrity.

# Ethics and integrity in peer review

Peer review's credibility depends on maintaining high ethical standards throughout the process, and that means reviewers need to ensure fairness, transparency, and integrity in academic research.

## Core ethical principles

Ethical peer review is built on three fundamental principles: **confidentiality, integrity, and impartiality.**

Confidentiality is the first step to maintaining trust in the peer review process. Reviewers must respect the anonymity of authors and the unpublished nature of the manuscript. Manuscripts should never be shared, discussed, or used for personal research before they're published. Editors and journals strictly prohibit leaking manuscript details or using privileged information for competitive advantage.

Integrity in peer review requires a commitment to honest and unbiased assessment of the manuscript. Reviewers should evaluate submissions solely based on their academic merit, avoiding personal, institutional, or ideological biases. Fabricating, manipulating, or misrepresenting data in a review undermines the credibility of the process and can have serious professional consequences.

Impartiality means that reviewers must avoid conflicts of interest and ensure that their feedback is objective and constructive. Personal opinions, professional rivalries, or external pressures should never influence a review. The goal is to support rigorous and ethical research, helping authors improve their work rather than obstructing publication.

## Identifying and managing conflicts of interest

A conflict of interest arises when a reviewer's ability to provide an unbiased assessment is compromised due to personal, financial, or professional relationships with the authors or their institutions.

Common conflicts include:

- Collaborating with the authors within the past few years.
- Working at the same institution as one or more authors.
- Being a direct competitor in the same research niche.
- Holding a financial stake in the research topic or outcome.
- Having a personal relationship (positive or negative) with the authors.

If a conflict exists, it's the reviewer's responsibility to disclose it to the journal editor immediately. Editors will determine whether the conflict disqualifies the reviewer or if the review can proceed with transparency.

In cases of uncertainty, reviewers should err on the side of caution and consult the editorial office.

## The role of AI in peer review

AI is increasingly being integrated into the peer review process, assisting with tasks such as plagiarism detection, statistical validation, and language refinement. AI tools can help editors and reviewers identify potential duplicate submissions, manipulated data, or undisclosed conflicts of interest more efficiently than manual checks.

However, AI should be used as a complement, not a replacement, for human judgment. While AI can assist in screening manuscripts for ethical issues or inconsistencies, it cannot assess the depth of analysis, logical coherence, or originality of thought in a study.

Wiley and other publishers have established ethical guidelines for using AI in peer review. An AI 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. Reviewers should not upload manuscripts (or any parts of manuscripts including figures and tables) into AI tools or services. Finally, the peer review process is a human endeavor, and responsibility and accountability for submitting a peer review report rests with the reviewer, not the AI tool.

## Further reading and maintaining ethical standards

Reviewers looking to strengthen their understanding of peer review ethics can refer to established guidelines from leading publishers such as Wiley,<sup>4</sup> as well as broader industry organizations. **The Committee on Publication Ethics (COPE)**<sup>5</sup> provides globally recognized principles on maintaining transparency, fairness, and accountability in research publishing.

By adhering to these ethical standards, reviewers help safeguard the credibility, integrity, and fairness of the peer review process, ensuring that scholarly communication remains rigorous and trustworthy.

# The evolving landscape of peer review

Journals are embracing new approaches to reinforce trust in scientific research,<sup>7</sup> such as:

- **Open and transparent peer review** for accountability and public engagement.
- **Post-publication commentary** allowing for ongoing discourse.
- **AI-assisted screening** to improve peer review efficiency.
- **Collaborative review models** for consensus-driven evaluation.

## Addressing challenges and the future of peer review

While peer review remains vital, challenges such as delays, reviewer bias, and lack of diversity persist.<sup>6</sup> To address these, journals are implementing:

- Faster review workflows and incentives for timely responses.
- Diversity initiatives to expand reviewer representation.
- Training and mentorship programs to improve review quality.
- Community-driven engagement to increase transparency and trust.

Despite ongoing evolution, peer review's core principles of rigor, integrity, and ethics will continue to guide its future.

# Conclusion and next steps

Peer review is an essential process in scholarly publishing, ensuring research credibility, and continuous improvement. As publishing evolves, reviewers must stay informed, uphold ethical standards, and contribute constructively to advancing knowledge. Ongoing engagement with training programs and professional networks will enhance reviewers' skills, and strengthen the peer review ecosystem.

By maintaining high standards of integrity and critical analysis, reviewers play a key role in shaping the future of scientific communication.

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## Sources

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