

Peer Review

Why is peer review important in science?



Publishing your work ...

- How does your research make it into a scientific journal?
 - What does it mean to be listed as a co-author?
 - ✓ Made significant contribution to the work.
 - ✓ Shared responsibility and accountability for results.
 - ✓ Has had opportunity to comment on and approve the manuscript draft.
 - What does it mean to be listed as the first author?
- What does it mean to be listed as a corresponding author?
 - What are the ethical issues that should be considered by authors?

Process of Peer Review

- When an article is submitted to a peer reviewed journal, the editors send it out to other scholars in the same field (the author's peers) to get their opinion on the quality of the scholarship, its relevance to the field, its appropriateness for the journal, etc.
- Peer review is a recognized and critical component of the publication process that confers “added value” to a submitted paper.
- Peer review is usually one-way anonymous, i.e., peer reviewers usually know who the authors are, but the authors do not know who the reviewers are.



What do peer reviewers do?

Comment on the scientific **quality of the work**

- Originality and significance of the manuscript.
- Are the methods appropriate?
- Are they presented in sufficient detail to allow the results to be repeated?
- Are the conclusions adequately supported by data?

Comments should be consistent with the **overall rating**

- Publish as is
- Publish after minor revision
- Publish after major revision
- Possibly suitable, but major revisions required
- Work is unsuitable for publication in this journal

What do peer reviewers do?

Comment on the presentation:

- **writing**: Is it clear, concise, and well-written?
- **title**: Is it specific and does it reflect the content of the manuscript?
- **figures**: Are they justified? Is the font legible? Are the symbols explained?
- **tables**: Can they be simplified or condensed? Should any be omitted?
- **trade names, abbreviations, symbols**: Are they defined and used properly?

What don't peer reviewers do?

Confidentiality

- *DON'T TELL OTHERS ABOUT THE MANUSCRIPT.*
*The manuscript is a privileged communication; the data and findings are the exclusive property of the author(s) and **should not be disclosed to others** who might use this information in their research.*
- *DON'T HOLD ON TO THE MANUSCRIPT.*
*The manuscript, figures, tables, etc. **should be destroyed upon completing the review** or (if you anticipate a revision) kept confidential until the review process is complete.*

What the editor is looking for ...

- 1. A thorough and comprehensive evaluation.*
- 2. Timeliness (3-4 weeks).*
- 3. Citing appropriate evidence to support comments made to the author(s).*
- 4. Providing constructive criticism.*
- 5. Objectivity.*
- 6. Clear statement as to the appropriateness and priority of research for publication.*

Peer review ... Checklist

1. *Importance of research question.*
2. *Originality of the work.*
3. *Delineation of strengths and weaknesses of methodology/experimental/statistical approach/interpretation of results.*
4. *Writing style and figure/table presentation.*
5. *Ethical concerns.*



Proposal Peer Review

The same general principles apply.

Key questions reviewers consider:

- *What is the impact of the proposed work on the field?*
- *Are the proposed experiments in line with the objectives?*
- *Are the resources being asked for commensurate?*
- *Is there a reasonable Data Management Plan?*

Sometimes after the initial individual legwork is done, there is a funding panel. (We'll cover this in Week 13.)



CHEM396 Peer Review Form (Part 1)

Evaluate the research proposal draft on the following points using the grading scale:

	1	2	3	4	5			
	Poorly done				Very well done			
Do the authors clearly formulate the research question?				1	2	3	4	5
Do the authors clarify or define terms for the reader?				1	2	3	4	5
Is the proposal clear and easy to read?				1	2	3	4	5
Is the proposal written at a level appropriate for an advanced undergraduate chemistry or biochemistry major?				1	2	3	4	5
Are there sentences that are so unclear that you cannot tell what the author is trying to say?				1	2	3	4	5
Are there spelling and/or grammar errors?				1	2	3	4	5
Do the authors provide appropriate and adequate background information to understand and position the research plan?				1	2	3	4	5
Do the authors appropriately cite sources when presenting previous work or contributions?				1	2	3	4	5
Do the authors make clear the purpose and rationale for the proposed research plan?				1	2	3	4	5

CHEM396 Peer Review Form (Part 2)

General Comments

- *Summary of the proposal*
- *Anything noteworthy (good or bad) in the Introduction section*

Technical Comments

- *Anything noteworthy (good or bad) in the Proposed Research section*
- *Minor issues of formatting, terminology (to be fixed)*

We will cover this in more detail in Week 13.

