

Writing a Scientific Abstract

Summer Workshop Series

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What is an abstract?

- ❖ An abstract is an abbreviated version of the paper (or presentation) written for people who may never read or see the complete version
 - *Successful Scientific Writing (Matthews)*
- ❖ By definition, the abstract strives to provide an abbreviated, but accurate, representation of the contents of a document without added interpretation or criticism

An Abstract Should....

- Be complete, concise, clear, and cohesive (the 4 C's)
- Present a summary of the project in a way that is appropriate to the background knowledge of the intended audience.
- Present the hypothesis or research question.
- Outline the methodology used to test the hypothesis/ answer the research question.
- Report the most important results, but not include figures or tables unless they are allowed.
- Provide the main conclusions of the study.

Writing an Abstract

- ❖ Staying within an abstract word count is a challenge for any writer. The title and abstract are always read together, so no need to repeat words.
- ❖ Be as brief and specific as possible, but write complete sentences that logically follow one another.
- ❖ Write in active verbs and past tense unless it becomes awkward to do so.
- ❖ An abstract is not an add-on to a paper/presentation, but a stand-alone; if decapitated from the rest of the paper/presentation it conveys the bodily substance
- ❖ Eliminate extra words when possible; examples: “a large number of ” = “many” and “as a general rule” = “generally”
- ❖ avoid useless intensifiers; examples to avoid: really, always, clearly, extremely

Active vs Passive Voice

- ❖ In active voice, the subject is performing the action
 - ❖ We analyzed the results.
 - ❖ George loves research.
 - ❖ I heard it through the grapevine.
- ❖ In passive voice, the subject is the recipient of the action
 - ❖ The results were analyzed.
 - ❖ Research is loved by George.
 - ❖ It was heard by me through the grapevine.
- ❖ First person, active voice is the accepted standard and allows for more efficient and clear writing.

Parts of an Abstract

1. Big Picture/Importance
1 sentence
2. Background and Gap in Knowledge
3 sentences
3. Research Question or Hypothesis
1-2 sentences
4. Experimental Design or Methodology
1-2 sentences
5. Brief results
1-2 sentence
6. Conclusion(s) and Impact on Field
1-2 sentences

Clear and Concise Phrases Useful When Writing an Abstract:

- “The goal of our research is to . . .”
- “This study is important because . . .”
- “To test our hypothesis, we used . . .
[approach] . . . [rationale]”
- “The results indicate that . . .”
- “Our findings support the conclusion that . . .”

Coming up with a Title

- Your title is the first thing readers will see, and it should immediately convey the essence of your research.
- Aim for a title that is **descriptive, direct, accurate, and concise**, typically within **10-12 words**.
- Avoid jargon and abbreviations unless they are widely understood in your field.

Abstract Titles

- Consider phrasing your title as a statement of your findings, or if appropriate, as a research question.
- A strong title should pique the interest of your target audience and encourage them to read further

"A Study on Economic Growth,"

Vs.

"The Role of Foreign Direct Investment in Driving Economic Growth in Southeast Asia"

Writing a Title

1. **Labyrinthine Pattern Formation in Magnetic Fluids**
2. **To Create a Protein-Based Element of Inheritance**
3. **A Role for Protein Phosphatases in Long-Term Depression of the Hippocampus**
4. **Laboratory Model for Deep Earth Convection: How Important is a Thermally Heterogeneous Mantle?**
5. **An Unnatural Biopolymer**
6. **A Sustainable Route to the Creation of Microcellular Materials Using Carbon Dioxide to Produce Free-Standing Gels with Low Bulk Density and Nanometer-Size Cells**

Authorship ethics

1. Everyone who contributes meaningfully to the work gets authorship.
2. This list will include you, your bench mentor, and your PI (and perhaps others).

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 - **NOTE YOUR MENTORS MUST READ AND APPROVE YOUR ABSTRACTS AND POSTERS (and any other co-authors as well).**

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3. First authorship is typically reserved to the person who led the work and wrote up the results.
4. Senior authorship is usually reserved for the PI
5. Everyone else goes in the middle, ranked by their contributions from 2nd author to n-1 author.

Registration and Abstracts for Summer Showcase

- Due July 16th
- No special characters
- No changes once submitted
- Abstract booklet will be posted on our website