

Handout on Scientific Writing: How to write a scientific research paper

- ❖ Scientific writing is a form of technical writing by a scientist on a topic of their interest/research with an audience of peers of other scientists.

	WHAT DO I WRITE HERE???	Get the point? Now you try it 😊
<u>Introduction</u>	<ul style="list-style-type: none"> ● Establish the context of the work being reported. ● Clear Purpose and rationale. ● Substantial and important information about your research. ● Useful background information. 	
<u>Abstract</u>	<ul style="list-style-type: none"> ● What question did you investigate? (hypothesis) ● Briefly, how did you do it? ● In a nutshell, what did you do? ● What were the Key results? ● Brief meaning of results ● Provide enough Key information 	
<u>Materials and Methods</u>	<ul style="list-style-type: none"> ● Clearly explain what you have done (the organisms used, the protocol of data collection, the protocol of data analysis) ● This is NOT a step by step procedure ● Should be written in the past tense. 	
<u>Results</u>	<ul style="list-style-type: none"> ● Objectively present your findings, with no interpretation ● Use Figures, Pictures, Tables and Charts. ● Each figure used should include a figure legend 	
<u>Discussion</u>	<ul style="list-style-type: none"> ● What do your results mean? Interpret your findings ● Do they agree with previous research that has been done? ● Any future studies? What could have been done next? 	

A few Pointers for each of the sections of the paper

Abstract:

- Should be between 200-300 words.
- This section of the paper should be written last because it encompasses all the other parts.
- The abstract should be precise enough to let a reader know if they want to continue reading your paper. (Should tell the reader exactly what was done/obtained in as few words as possible)
- Only text, no figures, tables, charts or images. No

Introduction:

- Use the active voice as much as possible.
- Can be thought of as an inverted triangle. From broad to very specific.
- It is usually encouraged to place the mission statement towards the end of the introduction.

Materials and Methods:

- It should be organized, so that the reader understands the logical flow of the experiments that were performed.
- Assume that the audience has basic understanding of scientific research protocol
- Do not document everything. If you have to ask yourself if something is “absolutely necessary?”, it most likely isn't and should be taken out.

Results:

- Write as objectively and concisely as possible. Use of passive voice is okay.
- If possible, follow the same order as in the Material & Methods
- Ask yourself what are the key results that pertain to your research question
- Figures should be able to stand alone. The figure legend should be concise and provide appropriate information.
- Document negative results, or “bad data”

Discussion:

- Use active voice in this section. Avoid wordy and lengthy sentences.
- You should have a discussion on each of the results that were presented.
- DO NOT introduce new results in the discussion.

Literature Cited:

- Refer to:
<http://abacus.bates.edu/~ganderso/biology/resources/writing/HTWcitations.html#fullcitations>

For more examples and ample explanation on each section, please visit the article about scientific writing from the Department of Biology at Bates College.

<http://abacus.bates.edu/~ganderso/biology/resources/writing/HTWtoc.html>