

Lab Report Guidelines

Writing up the results of a scientific study is an essential part of being a successful scientist. The lab report mimics the style used in real scientific journals where prominent researchers publish their data. Below you will find brief guidelines for writing a good lab report, and a breakdown of grading for each section. Please do not hesitate to ask questions!

- Lab reports should be typed and have **labeled sections** as outlined here (in this order):
 1. **Title (5%)** – Come up with an original title that gives some idea about the topic of the report.
 2. **Abstract (10%)** – A concise summary of the whole report. Don't exceed 1 page. Should cover (1) Why is this study important/interesting? (2) Objective or hypotheses (3) Basic methodology/investigative approach (4) Summary of results and conclusions
 3. **Introduction (20%)** – Make the reader interested in your work: point out the value of your work, provide the background information the reader needs to understand your work. Also, state your hypotheses/predictions. This section will require some outside research/reading. Cite your sources! A good way to approach this section is to think of it like an inverted pyramid, where you start with general broad information/concepts at the top, and then work your way down to the details of your project. This way, the information will logically progress to convey why someone should care about the research.
 4. **Methods (10%)** – In paragraph form, explain what you did in sufficient detail that someone who is familiar with this type of work could perform the experiment. It should not be an excessively detailed explanation of the protocol. For example, it is important to note that you fixed the tissue in 1% glutaraldehyde, but not that you used 500 μ l of this fixative. This section should NOT be directly copied from the lab protocol and should NOT be a step-by-step list of what was done. Use past tense.
 5. **Results (20%)** – In this section you must explain your results in writing. Figures or tables are important to help illustrate your data, but they must be accompanied by text which describes it (a figure legend alone is not sufficient). Do not interpret the data in this section; that is for the next section.

6. **Discussion (20%)** – Interpret your results. Consider questions like: What do the results mean or suggest? Do you think your results are accurate? Are they what you expected? Why or why not? Were there any problems or changes you would make to the experiment? Are there follow-up experiments you would do? This section is like the opposite of the introduction, where you can imagine it like a regular pyramid. Start at the top with the details of your research, and work your way down to the base by tying your results back into general concepts and information. This tells us what the results mean in a broader context, and what experiments we should logically do next.
7. **Literature cited (5%)** – You should use journal articles and books for background information (Pubmed and Google scholar are good places to find these). Please don't cite Wikipedia! Use formatting similar to standard scientific journals, and include the following information:
For articles:
Authors. Year. Article title. Journal name, Vol:page#s.
For books:
Authors. Year. Book title. Place of publication: Publisher. # of pages.

Extra:

- The remaining 10% is for overall flow, grammar, spelling, etc. (i.e. take some time to proofread it!).
- You may use either active or passive voice (1st or 3rd person), but pick one and be consistent!
- Your reports will probably be about 5 to 10 pages, but content is important, not the length. Please try to print double sided if possible.
- Though not required, I would recommend the book: Writing Papers in the Biological Sciences by Victoria E. McMillan for a more detailed explanation of good scientific writing.
- If you have questions please email me at kjl76@cornell.edu