WRITING A LAB REPORT IN BIOLOGY 300

Format

- Include a descriptive title
- Times New Roman; 12 point font
- Double spaced
- Figures need to legible (don't make them too small)
- Don't go over the page limit (which includes figures!)—generally 4 pages (title page and references can be extra).
- Write in paragraph form
- Label each section with a heading (i.e. Introduction, Methods, etc)

Tone

- Avoid use of slang or casual abbreviations. Write in the first person, past tense. Read other journal articles to get an idea of tone used.

(section lengths for Intro., Methods, Results and Disc. are suggestions, not requirements)

Summary of Sections of Lab Report

Introduction

- Introduce the main topics and explain why they are important and why we care about them.
- Define any important concepts/terms that will be referred to in the paper.
- Clearly state the question being addressed by your experiment.
- Give a brief overview of what you are going to do to address the question.
- Mention the biological relevance or usefulness of the study.
- Start with broad conceptual information and narrow focus to the point of the study by the end of the intro.

In this course your intro could be ~1/2-1page.

Methods

- Summarize, in paragraph form, what you did.
- Choose an appropriate level of detail so that another scientist could repeat your study, but not so much detail that the reader is overwhelmed or disinterested (ie we don't need to know who in the group did what, the column titles in JMP, etc).
- Should be in paragraph form, like the other sections.

Typically in this course ~1/2 a page.

Results

- Report in paragraph form all findings that are relevant to your research question. Do not interpret these findings in this section; just state what you found. If necessary include figures or tables with complete captions.
- Every figure and table you include must be referred to in the text.
- Figures must include labeled axes (do this in JMP, or by hand) including units and scale.

- Figures should include legends when necessary.
- Note that figure captions are placed below the figure, whereas table captions are placed above the table.
- Captions should be detailed enough to stand alone. For example:

Figure 1. The difference in circumference between cowrie shells measured by groups A&B. Mean = 2mm (+/- SE .3 mm)

- Text should come before the figures and in the text you should refer to your figures in numerical order. You should also present your figures in numerical order.
- When you report a mean, you must also report the variance around the mean.

In this course, Results could be ~1/2 page, and total figures ~ 3/4 to 1 full page.

Discussion

- Discuss the implications of your Results. Explain why you think you found what you found.
- Relate your findings back to your initial question (from the Introduction). Did you find what you expected? If not, why not?
- Summarize the problems you encountered and how you think things could be done better next time.
- Finish with some general conclusions and potentially some ideas for more interesting follow up experiments.

In this course, ~1-1.5 pages.

General

- Avoid referencing the TA or saying things like "in the Bio 300 lab, etc."
- No need to talk about the details of how the data was stored (e.g., "we created columns in JMP labeled A1, A2, etc", unless this will make the methods easier to understand in some way.
- Remember that figures are used to display data, but figures themselves are not data.
- Do not describe figures that are included. Just reference them and report what they are showing. For example, do not say things like "the histogram of X has the highest bar at a frequency of 0.4"… this can be easily seen by someone who looks at the figure.
- Every figure and table needs to be referenced in the main text.
- Avoid repeating the same word multiple times in a sentence.
- Avoid including arbitrary information (e.g., "We labeled group members A1, A2, B1, B2), unless this somehow makes things clearer later on. Telling the reader the names you assigned to group members is otherwise not important to understanding the experiment. Do not include raw data unless it is critical to understanding some component of the paper.
- Read a few articles from a biology journal to get a good sense of appropriate tone and style.
- Have someone proofread to check for grammar, tense, spelling, paragraph structure and writing flow.