Common problems in lake papers

Titles

-keep it simple, clear and descriptive, avoid unnecessary jargon

Abstract

-look at real abstracts from scientific journals for tips, make sure you cover all of the basic points that are in the paper (background, brief study design, key results and importance of your findings)

Keywords

-avoid repeating words that are in your title

Introduction

-start with the big picture: background theory, literature review

-connect background to your study: why are we looking at this question, what is the logic of the setup

-predictions and/or hypotheses

Methods

-give us enough information that we don't need to read the lab manual to understand what you did, but don't go into too much detail either. Example: you don't need to give every step of the phosphorus determination, but you should mention the method used. Another example: don't just say you analyzed zooplankton samples and reference the lab manual – we need to know how you classified and counted the samples and how you calculated abundance, richness, etc.

-describe the actual statistical tests you did (e.g. what ANOVA setup, what were your dependent and independent variables). For each statistical result you give in the Results section we should be able to tell how you did the statistical test

Results

-This was the most poorly done section overall

-keep the order the same as in the Methods

-for each statistical result you describe, we should be able to tell (A) what comparison the F & p values are referring to, (B) what the actual difference was (not just "they were significantly different", but "a was significantly higher than b") and (C) what degrees of freedom are associated with the F ratio. We weren't too picky about degrees of freedom for this paper but they should be there

-look in published papers to see how stats are presented: you should be able to give us the information without it getting bogged down in the stats

Discussion

-usually effective to start with a couple of overall statements about what you found, then

-talk about sources of error, but don't dwell on it too much. You don't want to appear blind to the problems with the study but you want your reader to feel that the paper is a worthwhile contribution.

-make sure you can bring the paper back to the big picture you started out with in the Introduction: how do your results contribute to the debate?

Literature Cited

-please be consistent in the format you use (full journal names vs. abbreviations, order of information)

-only use papers that you have referred to in the text, and that you have actually read

-please refer to the lab manual for proper formatting when referring to papers within the text

-lecture notes don't count as a reference. Lab manual also don't count, unless it is used to support procedures. Please find a paper.

Figures

-you should always have some measure of variance (e.g. standard error, standard deviation) when you give a mean, whether in a figure or in the text. You should indicate what kind of variance it is. In the figure caption, tell us what kind of error bar you are using.

-figures should be presented in the order that you refer to them in the text.

Overall style

-please proofread! Grammar, spelling and logic are all important. If we don't understand what you're saying, we cannot evaluate your arguments

-write clearly and concisely; avoid repeating information unnecessarily

-be careful with jargon and terminology; don't make things unnecessarily complicated just to sound scientific, and make sure you're using terminology correctly