



# The Writing Center

at

STETSON UNIVERSITY



## Writing Basics for Science Papers – Bio 141

If you remember nothing else: always short, always specific!

### The Basics

- Be consistent (in terminology, in tense, in citations, etc.)
- Be precise (avoid articles – use names instead, even if it seems slightly redundant)
- Use active voice (one exception – see below)
- Use transitions!
- Be simple (no unnecessary qualifiers, no fluff, basic but clear vocabulary!). Students have a tendency to be very lofty in science papers.
  - o Ex: “Based on the fact that the blue mixture became extremely warm, it is suggested that a relationship may exist in close proximity between factors A and B. This supports previously found results...” NO! SHOULD BE: “The blue mixture was warm, suggesting a relationship between A and B. This supports previous research (cite research).”
- Be simple, but don’t overgeneralize. It’s a balancing act.

### Title

- As short and specific as possible
- Avoid introductory words such as “observations of...” “A study off...” etc.
  - o Ex: “A Study of Evolutionary Behavior of Naked Mole Rats” should be “Evolutionary Behavior of *H. Glaber*”)

### Abstract

- One to two sentences of “big picture” and significance
- One to two sentences of research question or objectives
- One sentence of hypothesis (if applicable)
- Two to three sentences of approach to the problem (methods)
- Three to four sentences of trends seen in data (results)
- One to two sentences explaining potential next steps, failures, etc. (discussion)
- Less than 300 words (this is strict)

### Introduction

- Introduces reader to the place of the current work in a wider body of scientific knowledge
- Establishes significance of current work
- NO FLUFF! Everything should be cited
- Questions to Address: What is the problem? Why is it important? What solution do you propose?
- Moves from general to specific
- Avoid using too much detail to overshadow the general function of the work
- End with hypothesis and support for hypothesis (why do you think this?)



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## Methods/Procedure

- Paragraph form
- Very detailed; include materials in the paragraphs (no list)
- Follows chronological order
- Past tense, passive voice acceptable
- Avoid mixing results with procedure: stick to exactly what you (the researcher) did
- Can use first person

## Results/Data

- All graphs and figures should include a caption explaining the general argument being made
- Short, sweet, and specific!
- Put a space between numbers and units
- Question to address: what did you observe?
  - o How to address it: briefly describe experiment and follow up with most representative results or cases
- Avoid extra words (ex: "It is shown in Table A that X corresponds to Y" should be "X corresponds to Y")
- Note deviations! Deviations are where the best scientific discoveries come from. Students should explain these deviations to the best of their ability (environmental, chemical, atmospheric factors may be at play)

## Discussion

- Discusses the results. What do they mean?
- Continually refers to results but DOES NOT REPEAT THEM!
- Summarizes the best trends presented in result section
- Describes patterns, principles and relationships, then explains how these relate to the wider body of knowledge referenced in the introduction
- Explains agreements, contradictions, and exceptions
- Describes any additional research that can be performed to clarify or support arguments
- Suggest theoretical and practical applications
- Extend findings to the big picture (returns full circle to the introduction)

## Citations

- No formal way to cite scientific writing – varies among journals and professors
- The lab manual for Bio 141 gives specific format (called name-year format)
- Give the author and YEAR OF PUBLICATION in any in-paragraph citations. Do not give page number as it varies among journal editions.
  - o Referred to as "name-year" method of citation if you're googling

This is an awesome reference. I've used it for numerous papers:

<http://www.biochem.arizona.edu/marc/Sci-Writing.pdf>