

Fall 2010

# Vertebrate Physiology Research Proposal & Peer Review Criteria

Jonathan M. King  
Trinity University, [jking@trinity.edu](mailto:jking@trinity.edu)

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## **BIOL 3432: Vertebrate Physiology**

### **Fall 2010**

**Overview:** Students in this course will develop a research proposal that addresses a contemporary issue within endocrine, cardiovascular, pulmonary or renal physiology. A draft of the proposal will be subjected to an anonymous peer review process. Students will make a presentation to a small group in order to get additional feedback about their proposal. After students have received both written and verbal feedback the final proposal will be due in the middle of November.

### **Proposal Timeline:**

1) Expanded/Annotated outline submitted electronically for peer review. Students will upload an annotated draft outline by 5PM on October 18<sup>th</sup>, 2010. Students will then meet individually with instructor during the week of 10/18 to discuss their proposal.

### **WRITING THE ANNOTATED OUTLINE**

Start with a basic outline of your research proposal. Make this outline as close to final form as possible. Remember, changing the outline is a global revision issue that is generally more difficult than local revision issues. The outline is the foundation of the paper—the basic framework on which you hang your ideas. The annotations indicate the content level of each section and the substance of the paper's argument.

Keep the outline simple—no more than four or five sections in a 10-12-page paper. It should look—**roughly**—like a table of contents with abstracts underneath each major heading.

Keep the headings proportioned at the same level throughout the paper. Each heading should express the main idea of that section.

Keep the annotations brief and directly stated, at a level of generalization that summarizes the entire section. Discuss the main idea—the major contribution—of each section, not the details.

The annotations should reveal an orderly movement of thought from introduction to conclusion.

For each heading, use a topic sentence that directly expresses the main idea of the section. Your annotations must be directly related to this topic sentence—do not ramble about the details of the section, but rather elaborate on the section's main idea. The annotations should contain roughly three to six sentences under each

heading—enough to give the reader a clear idea of each section’s contents, and no more.

Remember—the annotated outline should help you conceptualize the larger paper and make timely progress toward the paper’s completion.

Adapted from:

[http://acc.roberts.edu/NEmployees/Hamilton\\_Barry/Tips%20for%20Writing%20the%20Annotated%20Outline.htm](http://acc.roberts.edu/NEmployees/Hamilton_Barry/Tips%20for%20Writing%20the%20Annotated%20Outline.htm) Barry W. Hamilton, Ph.D.

### **Proposal Guidelines:**

This exercise is designed to enhance your understanding of a relevant area within cardiovascular, pulmonary and/or renal physiology. The total assignment will have a point value of 150 pts. Use a 12 pt font with 1.5 line spacing and 1 inch margins and page numbers.

Sections:

Title – be descriptive and direct.

Table of Contents – one page – with expanded subheadings.

Objective/Specific Aim(s) Provide a clear and concise description of what you plan to accomplish in your study. This would be the portion of the proposal that would be used for publicity to the general public. 250 word limit.

Background – This should be clearly organized and provide context to your area of investigation. Start this section on a new page. It should have on the order of 10 to 15 primary sources of information. Limit your sources of information from clinical sources to no more than 30%. 7 page limit.

Research Methods – What studies will you perform, how will they be analyzed, potential pitfalls, alternative approaches, future directions (if successful). You should include at least two complementary experimental approaches for instance, a cell/molecular based approach and a systems approach. 3-4 pages.

Literature Cited – use primary literature as much as possible. Use American Journal of Physiology style citations and bibliography.

Appendix – for any supplemental models, figures or tables.

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2) Hard copy of draft due on 11/16 – each student will anonymously peer review one

proposal review due 11/23. Additionally, the instructor will provide comments for each proposal.

3) Final version of the proposal is due 12/7

**Peer Review:**

**Proposal ID#:** \_\_\_\_\_ **Reviewer ID#:** \_\_\_\_\_

**Each category rated on a scale of 0-5 and provide comments (type directly on form).**

How well did the proposal explain the context and scope of the articles, and the specific goals the researchers sought to achieve?

Does the proposal present the student's own organized ideas presenting a clear hypothesis based on the information that was summarized?

How well did the proposal display the concise, clear, and direct writing style, with well-constructed paragraphs and a logical arrangement of ideas?

Were the specific aims presented in a compelling accessible way?

Does this study address an important physiological problem?

Were references appropriate (quantity/contemporary)?

Were proposed studies presented with enough detail to evaluate scientific merit?

Was the experimental analysis appropriate to support the anticipated conclusions?

Overall Comments: