

INSTRUCTIONS FOR ANIMAL PHYSIOLOGY PROJECT PAPER

(If you think your project might be publishable in the peer-reviewed literature and you are interested in doing so, you should discuss this with me BEFORE writing your paper).

Following these instructions is very important.

1. Papers should be written using a wordprocessor and printed on a laser printer. Staple all papers in the top left hand corner.
2. Font should be Times Roman or Times New Roman, 12 point.
3. Papers should be double spaced. One inch margins
4. Length: 8 pages of text (excluding figures and literature cited). If you believe you have a valid reason for exceeding the page limit, you should talk to me before turning in your paper.

Sections: (in order) - I will discuss what should be included in each section in class.

- Title page
- Introduction
- Material and Methods
- Results
- Discussion
- Acknowledgments
- Literature Cited
- Appendices (if needed)

5. Page numbering - top right corner, Times Roman 12 point font. (Excluding title page)

6. Figures:

- a. should be as simple as practical.
- b. figures should be used in lieu of tables when possible.
- c. should be inserted into text as soon as possible after first reference to the figure.
- d. figures should be appropriately sized
- e. Should use block letter font (e.g., Arial)
- f. Figures should not have a title as part of the figure.
- g. Generally, it is not necessary to have a right or top border for graphs. Additionally, all backgrounds for figures should generally be white. You never need a box around the entire figure.
- h. Within the text, figures should be enclosed in parentheses as follows:
Frogs jumped considerably further than goldfish (Fig. 1).

Figure Captions:

Figures should have a figure caption (Times Roman) below the figure with enough information to completely understand the meaning of the figure. For example:

Figure 2. Preferred regional body temperatures of corn snakes (*Elaphe guttata*) before and during digestion. Note that mean digesting temperatures are significantly greater than mean nondigesting temperatures for all body regions. Bars represent one standard error.

7. Tables should have a table description AT THE TOP of the table, the first "sentence" of which should be a phrase describing the table. Tables should all be in Times Roman. See example below.

Table 1. Preferred anterior, midbody, and posterior Tb=s of corn snakes (*Elaphe guttata*). Anterior temperatures were found to be significantly greater than midbody. Values are means ± 1 SD. Sample sizes are in parentheses.

Within the text, references to tables should be enclosed in parentheses as follows:
Frogs jumped considerable further than goldfish (Table 1).

8. Subheadings should be used where appropriate. (Introduction, Material and Methods, Results, Discussion, Acknowledgments, Literature Cited). Other subheadings can be used to break up these sections if needed.

10. A title page should be on the front of each paper/report.

Title (all caps) - should be descriptive and include animal species and problem.

Author(s)

Affiliation (i.e., Department of Biology, Davidson College, Davidson, NC, 28035-7118.)

11. All units should be metric. Always put a zero before the decimal place for values less than one (e.g., 0.003). Generally, three decimal points is enough.

12. Carefully edit all papers submitted for grammar, spelling, etc. Feel free to use spell checkers and grammar checkers if needed. I highly encourage you to get other people to comment on your paper before you make final revisions. You should always write precisely, concisely, yet completely.

Some general rules:

1. Italicize all scientific names. The common and scientific name (in parentheses) should be used the first time the animal is referred to in the paper. Afterwards, you should use only the common name or only the scientific name, but be consistent. You should abbreviate the genus (e.g., *Elaphe guttata* = *E. guttata*) after the first use.

2. Never start a sentence with an abbreviation.

3. Never start a sentence with a number (e.g., 1, 2, or 3).

4. Be specific. Avoid vague terms like "these", "this", "it", etc.

5. Use topic sentences at the beginning of paragraphs.

6. Write in the first person (i.e., active voice) when appropriate. For example, "We measured the pH of the water" as opposed to "The pH of the water was measured".

Literature Cited:

In your Literature Cited section, spell out journal names and organize the papers alphabetically by first authors last name, then by date (oldest first). Your Literature Cited should match the following examples:

Journal article

Arnold, S. J., and C. R. Peterson. 1989. A test for temperature effects on the ontogeny of shape in the garter snake, *Thamnophis sirtalis*. *Physiological Zoology* 62:1316-1333.

Fox, W. W., C. Gordon, and M. H. Fox. 1961. Morphological effects of low temperatures during the embryonic development of the garter snake, *Thamnophis elegans*. *Zoologica* 46:57-71.

Book chapter in an edited book

Avery, R. A. 1982. Field studies of body temperatures. Pp. 25-91 In C. Gans and F. H. Pough, (Eds.). *Biology of the Reptilia*, Vol. 12. Academic Press, New York, New York.

Books

- Cossins, A. R., and K. Bowler. 1987. *Temperature Biology of Animals*. Chapman and Hall, New York, New York.
- Nussbaum, R. A., E. D. Brodie, Jr., and R. M. Storm. 1983. *Amphibians and Reptiles of the Pacific Northwest*. University of Idaho Press, Moscow, Idaho.

15. Citations within the text should be as follows:

Body temperature affects nearly every aspect of the biology of ectotherms (Huey, 1982; Lillywhite, 1987; Peterson et al., 1993). However, many ectotherms do not maintain a uniform temperature among their different body regions (Webb and Heatwole, 1971; Webb et al., 1972; Pough and McFarland, 1976; Dorcas and Peterson, 1997). In the past, most researchers have measured the body temperatures (T_b) of ectotherms at only one location, either cloacal or core T_b. Because T_b differences among body regions are common in many reptiles and other ectotherms (Heinrich, 1974; Block and Carey, 1985), studies of ectotherm thermal biology should consider both the degree of regional variation in preferred T_b and the precision with which regional temperatures are maintained.

16. Results of statistics should be presented (usually only in the Results section of your paper) in parentheses at the end of statements which are supported by those particular statistics. Also, usually you shouldn't say "we found a significant difference between.....". Instead, you should just make your statement (e.g., "Fish were better swimmers than rocks") and include your stats results after the statement. You should include the type of test, the test statistic, the within variance degrees of freedom, and the p value all in parentheses after whatever statement you are supporting. See below for example.

"During the day, at average body temperatures above their thermal preference, snakes tended to have oral temperatures lower than their cloacal temperatures (Linear Regression, $R^2 = 0.60$, $F = 47.6$, $df = 32$, $p < 0.001$; Fig. 2A). At night, snakes were active at relatively low body temperatures (Dorcas, 1995) and had oral temperatures that averaged 2.0°C higher than their cloacal temperatures (T-test, $t < 9.8$, $df = 10$, $p < 0.001$; Table 1 and Fig. 2A and B). In all five instances in which we measured soil surface and 1 cm air temperatures (in conjunction with oral and cloacal temperatures) at night, the oral and cloacal temperatures were lower than the soil surface temperature but higher than the air temperature (Fig. 2B)."