General Guidelines for Writing your BCMB 4960/4970 Report

Goal: A major goal of this course is to effectively communicate your scientific findings in writing as they relate to a central hypothesis. As such, an 8-page report that describes your research is due at the end of the semester. This report constitutes 25% of your grade.

Tip: Begin writing early. Follow the instructions outlined below and on the BCMB undergraduate webpage (http://www.bmb.uga.edu/students/undergraduate-program).

Timeline: The following schedule, which begins four weeks from the end of classes, is strongly recommended for students writing their first report:

Week 1
a. Be aware of your hypothesis
b. Review your data and methods
c. Begin an outline containing the following headers:
   o Title
   o Summary
   o Introduction
   o Experimental Methods
   o Results
   o Discussion
   o References
   o Tables
   o Figures with Figure Legends
d. Begin writing the Introduction (2-3 pages)

Week 2
a. Discuss your hypothesis, tentative titles, and introduction with your advisor
b. Create Tables, Figures, and write Figure Legends
c. Write Methods and Results section (2-3 pages each)

Week 3
a. Write Summary (300 word limit) and Discussion section (1-2 pages)
b. Discuss Methods, Figures, and Figure Legends with your advisor

Week 4
a. Discuss Summary and Discussion sections with your advisor
b. Revise paper per comments by instructor and/or readers and finalize changes
c. Format, print paper, and submit your paper. Submit your paper by the last day of classes in hard copy (to research mentor) and electronic format to the head BCMB advisor (Dr. Michael Adams: adams@bmb.uga.edu).

Detailed Instructions for Specific Sections

Title and Cover Page – Create a few informative and descriptive titles. Select the most appropriate title after completing the document. Include the name(s) of all the contributing authors and the site/department where the work was done. The Cover page does not count toward the 8 page minimum! The Cover page should include the following:
Summary – This section is a concise description (less than 300 words) of your research project and findings. Define the scientific problem, principal objective, methodology, results, and conclusions of your study. If applicable, explain the implications of your work to future research. This section should be clear enough to be readily understood by a general reader with some scientific background. Although this section is the first one in the body of the report, write this section last, after you’ve formulated your ideas for the rest of the paper.

Introduction – The introduction is meant to familiarize the reader with the scientific area you are studying. In doing so, you should provide a foundation for describing the overall importance of the specific problem you are addressing. State your hypothesis(es) and/or objective(s), and describe the reasoning behind them. Describe your model system and its advantages over other approaches.

Experimental Methods – Concisely describe all of the specialized and general methods used in your study so that another individual could potentially use the information to repeat and verify your observations. This section should not be a step-by-step instruction manual. Include the names of specialized chemicals, biological materials, and/or other equipment or supplies not typically used by laboratories. Do not include general laboratory supplies and/or equipment. If your project involved the use of buffers and/or solutions, include the final concentrations of all ingredients and final pH (applicable to buffered solutions). If a well-documented procedure was used as method, provide a brief general description along with a reference to the original procedure. Determining what to include or exclude may not be easy for you to determine without experience. A good rule of thumb is to ask your peers if they’ve heard of a particular method. If so, you can consider not including detailed descriptions of these methods (i.e., SDS-PAGE, agarose gel electrophoresis, PCR, etc.)

Results – This section should represent an objective view of your results; reserve all data interpretation for the discussion. You should refer to figures, tables, and other data presentation formats to effectively communicate your results. Use the text to point the reader to the most relevant observations. In this section, you should also describe the results of control experiments and observations that are not presented as part of a formal figure or table. Do not use raw data as your figures. Also, mark your figures with appropriate identifying labels; improperly labeled figures are impossible to evaluate. All figures and tables are part of the appendix of the report and should be placed at the end of the report. The minimum page limit for the report does not include Figures and Tables.

Discussion – This section provides an opportunity to interpret your findings as they support (or contest) your hypothesis(es) and objective(s). Do not simply
restate your results. If you believe that your results are supportive, describe your rationale for this conclusion and describe follow-up experiments that may be necessary. If your results contest your hypothesis, explain possible alternative hypotheses and how you might go about experimentally testing your new hypothesis(es). If your results are inconclusive, describe alternative methodologies that could be used to come to a final conclusion regarding your hypotheses. Keeping in mind that one study will not necessarily answer an overall question, where does your study lead you next? What questions remain? Be creative, and don’t be afraid to speculate.

**References** – Cite articles that the instructor provides or that you find for yourself that are relevant to your study. Use the “author, date” format, and list referenced articles in alphabetical order at the end of the report. Use only primary literature (original research articles authored by the original investigators) and/or reviews. Do not use a web site as a reference! If you prefer to use bibliography software, keep in mind that the UGA library has a site license for EndNote (see [http://guides.lib.uga.edu/content.php?pid=500113&sid=4114111](http://guides.lib.uga.edu/content.php?pid=500113&sid=4114111) for details). Software distribution is slated to begin Spring 2005.

**Figures and Tables** – Each figure must be numbered consecutively and be associated with a figure legend that briefly describes the method(s) used to generate the data. Tables should have clear and descriptive headers.

**General Formatting Considerations** - Follow the specifications described below and in the course description:

a. Font – 12 point Arial, Helvetica, Palantino, Times, or Times New Roman
b. Length – 8 pages, double-spaced (not including figures, tables, reference list, cover page)
c. Margins – 1 inch (top, bottom, and sides)
d. Page #s – top right or anywhere on the bottom
e. Page Breaks – do not use page breaks between sections!