

Writing a Statistical Report for STAT 411/511

I. Introduction:

- Give a brief background of the research problem and how the data were collected.
- Clearly outline the question(s) of interest that you will address with the statistical analysis.

II. Statistical Procedures Used

- Describe how you plotted the data (boxplots, QQ-plots, residual plots, etc.) [Include pertinent plots in the appendix]
- Describe how you checked each assumption and what your conclusions regarding the assumptions are (provide any justification you need to at this point).
- Describe the statistical procedures used to complete the analysis (e.g. two-sample t-test, analysis of variance, extra sum-of-squares F-test, etc). Be specific about which procedures are answering which questions of interest (if there are multiple questions).

III. Summary of Statistical Findings

- Write up your summary of statistical findings for each question of interest. Follow the examples given in *The Sleuth* and in the *Writing a Summary of Statistical Findings* handout.

IV. Scope of Inference

- Address the scope of inference. Follow the examples given in *The Sleuth* and in the *Scope of Inference writing examples* handout. Specifically, answer these two questions and comment on their implications:
 - (a) Were the units randomly selected from some larger population? (i.e. What, if any, larger population can you infer the results to?)
 - (b) Were the units randomly assigned to groups? (i.e. Are cause-and-effect statements justified?)
- Make sure you write the *Scope of Inference* specific to the language of the problem (*not* just generic statements). For example, DO NOT say “There was no randomization so cause and effect statements cannot be made.” Instead, for example, say “The lizards were not randomly assigned to groups, therefore we can not conclude that the fly diet caused the increased average weight of the those lizards over the lizards in the tofu diet.”

- OTHER:

- **Style:** Report must be written in complete sentences in paragraph format. Use the above four headings in your report so that it is clearly organized.
- **Length:** The body of the report should be NO more than 2 pages double spaced!
- **Appendix:** You can include any plots, hand calculations, and R-code (as little as is necessary) in an appendix and NOT in the body of the report!