**How to Write a Proper Homework**

**BIOST 311: Regression Methods in the Health Sciences**

**Formatting**

* Write your homework as if you’re writing for a scientific or statistical collaborator, as appropriate
* Reporting results
  + Label all plots with a title and appropriate axis labels
  + Round numerical results to a reasonable number of digits
  + Tables should be formatted nicely with informative column/row names, titles, etc.
  + Include any important results in main body of homework, not in appendix
* All R code used to produce your results should be included. However, do not include raw output. For example, do not include the results of running summary(lm(y ~ x)).
* Homework must be word processed in R Markdown.
* Put questions in order.

**R Code**

* Include all the code you used to perform your analyses.
* Any numerical results should be stated, professionally formatted, and appropriately labeled in the main body of your homework. Rather than raw output, use a table, or describe the results in words.
  + Example: If we ask you to plot something, include that plot in the main part of your homework.
  + Example: If we ask you to interpret a coefficient from a regression analysis, the numerical value of the coefficient should appear in the main text
* Code should be documented such that it is easily understandable.
  + Example: Look at Google’s style guide for R: <https://google.github.io/styleguide/Rguide.xml>
  + Example: R script from discussion section 1

**Interpretation of Results**

* ALWAYS interpret your results
  + Example: if we ask you to run a t-test, report the estimated difference in means, confidence interval, and p-value; interpret the scientific meaning of the results
  + Example: if we ask you to plot something, include the plot AND an interpretation (what can we conclude by looking at this plot?)
  + Example: if we ask you to compare Item A to Item B, report both and provide some sort of conclusion: are they similar? Are they different? Why do you think they are similar/different?
* Write in a way that could be understood by a scientific collaborator
* Be careful about making unwarranted causal statements. That means avoid words like “effect”, “increase”, “decrease”, “change”, etc. Instead, use words like “associated” and “difference”
* Provide interpretation under the scientific context in question (if applicable). This includes units