**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
* No R code or raw output should be found in main body of homework (see below)
* Homework must be word processed in R markdown
* Put questions in order

**R Code**

* Print and include any code as an appendix
* DO NOT include R code or raw output in the main part of your homework (exceptions can be made for short snippets of code or output that are specifically included to make a point about how you used R or how R did something interesting)
* Any numerical results should be stated, professionally formatted, and appropriately labeled in the main body of your homework
  + Example: If we ask you to plot something, include that plot in the main part of your homework, NOT in the appendix
  + 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, at the very least, labeled with what part of the code corresponds to which question. Even better would be to document your code 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
* Examples of good interpretation:
  + Reporting associations ([Scott Emerson’s website](http://www.emersonstatistics.com/GeneralMaterials/Reporting Associations.pdf))