**Module 9 Assignment: Version Control**

NR 995 (1BB)

Fall 2017

For this assignment, each group will create one repository hosted on GitHub. One person in each group should initialize a repository as described in the 2nd video, naming the repository “GroupLetter\_module9”, then invite each member of their group as collaborators through GitHub. Each group member should clone the repository through RStudio using the URL of their group’s repository (e.g., https://github.com/initializer’s\_username/A\_module9.git).

Create and save an R script in RStudio with the file name *GroupLetter\_module9.R* within your group’s repository. You will submit this file as this week’s assignment, so be sure to follow good coding practices throughout. Include your answers to the following questions as labeled comments in the script. The coding & questions should be completed as a group, with all members staging, committing, and pushing their changes, and pulling changes from the group.

1. The mammal sleep dataset is included in the ggplot2 package and provides information about the sleeping habits of 83 species of mammals. Load the dataset (library(ggplot2); data(msleep); ?msleep).

How many categories of diet type (i.e., vore) are there? Visually investigate whether daily sleep totals vary with diet type: Produce a boxplot comparing the categories within the vore column, excluding records that do not have data in the vore column. Remember to include informative axis labels.

Briefly describe in 1-2 sentences the major patterns in the plot.

1. Using the mammal sleep dataset, use the plot() function to show the relationship between the natural log of body size and the length of the sleep cycle, labelling axes appropriately.

Using ggplot(), produce this same plot, but with a separate panel for each conservation status, excluding species that do not have data for all variables, and including a trend line for each by adding “+ stat\_smooth(method="lm", se=F)“ to your ggplot code.

Do the species within each conservation status appear to show the same relationship between weight and sleep cycle length? Which categories appear most data-deficient?

1. How does the ratio of brain weight to body weight (i.e., brainwt/bodywt) vary by diet type? Write a function called brain\_body\_ratio() that returns a dataframe with a row for each diet type category (i.e., vore), and three columns named “vore”, “brain\_body\_mean”, and “brain\_body\_se”, where “brain\_body\_mean” contains the mean brain-to-body weight ratio within a vore category, and “brain\_body\_se” contains the standard error for the brain-to-body weight ratio within a vore category.

In 1-2 sentences, identify the contribution of each group member to the assignment. Upload a link to your group’s GitHub repository (i.e., http://github.com/username/reponame) to submit your assignment in myCourses, one per group.