**Exercise 1: Logistic Regression**

Use the dataset, “turnout,” by typing the following into your R terminal:

data(turnout)

attach(turnout)

1. Summarize the variable, “educate”
2. Use Zelig to conduct a logistic regression to predict voter turnout (“vote”) using race (“race”), age (“age”), and education level (“educate”). Make sure you save your results into an object so you can conduct further analyses on the object.
3. Predict the probability of voter turnout for individuals who have 16 years of education versus individuals who have 12 years of education

**Exercise 2: Creating Multiply Imputed Datasets**

Load the dataset, gssIMPUTE2.Rdata

1. Using Amelia, generate 5 imputed versions of the gssIMPUTE2 dataset. Make sure you tell Amelia that “marital” and “happy” are nominal variables and that ID variable is “id.”
2. Create plots that compare imputed values to observed values
3. Overimpute the variable, “inc”
4. Save your imputed datasets into 5 separate files

**Exercise 3: Manipulating Variables**

*Make sure the nlme and multilevel libraries are loaded before proceeding*

Use the dataset, “bh1996” by typing the following into your terminal:

data(bh1996)

attach(bh1996)

This dataset contains 7,382 participants from 99 companies and was designed to examine work-related stress. Variables that begin with “G.” are group-level variables. The variable, “GRP” is the grouping variable. We’re going to run a few models predicting wellbeing (“WBEING”).

1. Create a null model predicting wellbeing (“WBEING”)
2. Calculate the ICC for your null model
3. Run a second multi-level model that adds two individual-level predictors, average number of hours worked (“HRS”) and leadership skills (“LEAD”) to the model and interpret your output.
4. Now, add a random effect of average number of hours worked (“HRS”) to the model and interpret your output. Test the significance of this random term.
5. Finally, add a group-level term, workplace cohesion (“G.COHES”) to the model and interpret your output.