**Ecol 8990**

**Assignment # 1**

**Due Wed Aug 30, 5 pm**

Note: The work should be individual. Use R Markdown to complete the assignment. The Markdown (.Rmd) file itself is part of the assignment.

**Exercise 1**

Using the ‘Serengeti2.csv’ file from this week’s class, produce a dataframe that calculates median tree height across sites, and then generate a plot of median height across sites as a function of year. Include the final plot in your Markdown document.

**Exercise 2**

Write two R functions: one that can calculates the Euclidean distance between two given points with coordinates x1,y1 and x2,y2, and one that can calculate Simpson’s diversity index from a vector of species abundances. Include the R code for your functions in your Markdown document, and show a worked example.

**Exercise 3**

Using the ‘Datalogger\_data.r’ script from the Aug 16 class, write a script that subsets the daily soil moisture data to include only location VWC1, and produce a line plot showing daily soil moisture (VWC) as a function of time, with separate lines for each probe depth (5 to 70 cm). Include the final plot in your Markdown document.

Please put a hard copy of the final Markdown .pdf or Word document in my mailbox, and email me the .Rmd file that generated the document.

If any of this is unclear, let me know.