**BIOST 514/517**

**Discussion Section: Week 1**

**Introduction to R**

**R Exercises**

Instructions:

Before you begin, make sure that you download to your laptop/computer the free R package: <http://www.r-project.org>

**AND**

the RStudio interface: <http://www.rstudio.com>

**Exercises:**

1. Read in the “mammals.csv” dataset. The is the same data used in the week 1 discussion section slides but the data format is “.csv”, i.e., data values are separated by commas. Make sure you obtain the same data summaries seen in the slides. This and other datasets are available on the course canvas website in the Datasets folder. If you decide to use this datasets from canvas, you will need to first download them to your computer before importing them to R. The mammals.csv datasets can also be read into R studio directly from the web using the following url: <http://faculty.washington.edu/tathornt/Biost509/DataSets/mammals.csv>
2. Read in the “crab.txt” dataset using the import dataset button within the environment window of RStudio. Note that this file is a space delimited file, and not a comma separated file (csv). The data are available from canvas (crab.txt in the datasets files folder) or from web: <http://faculty.washington.edu/tathornt/Biost509/DataSets/crab.txt>.

This dataset describes 173 female horseshoe crabs from a study of nesting horseshoe crabs (J. Brockman, Ethology, 1996). It is a commonly used dataset for illustrating categorical data analysis; see also Agresti (2002), Sect 4.3.

Each female horeshoe crab in the study had a male crab attached to her chest. The study investigated whether the female crab had other males, called satellites, residing near her. Variables include: the female crab's color, spine condition, weight, width, and number of satellites.

* 1. What is the mean number of satellites among all 173 female crabs?
  2. What is the mean number of satellites among female crabs whose width is <26cm?
  3. What is the mean number of satellites among female crabs whose width is >= 26 cm?
  4. Provide counts of each of the crab colors for
     1. All the crabs
     2. Those with width < 26cm
     3. Those with width >=26cm?

1. The “othercrab.csv” data set is also available in the datasets folder on canvas, and from web:

<http://faculty.washington.edu/tathornt/Biost509/DataSets/othercrab.csv>.

The othercrab.csv data set contains the same crab data used in question 2 but it is a comma-separated file, and has a .csv extension. Read in the othercrab dataset. Verify that you obtain the same answers to question #2.