**MTBI 2013: Dr Towers’ Homework #1**

1. Using Google Scholar find at least 4 papers related to a research topic that interests you (it may become an idea for your MTBI research topic, but it doesn’t necessarily have to). At least one paper must describe a mathematical model related to the research topic, and at least one paper must have a source (or sources) of data related to the topic. It is OK (and encouraged) if students wish to work together in groups of 3 to 4 to search for papers on the same topic, but each student must submit a list of a unique set of papers. Save the PDF of the papers to a directory on your computer newly created for this purpose, with a descriptive name. You do not need to submit printouts of the papers. **Please take note that the point of this exercise is to learn how to use Google Scholar, not to unnecessarily frustrate you; if you are having problems finding anything related to a research topic you have in mind, try talking to a faculty member or one of the grad students, and they can likely give tips on how to either broaden your topic a bit (to make it more likely to find papers), or what kind of search terms might yield better luck at finding papers. Because this topic doesn’t necessarily have to be related to your eventual MTBI research topic, I recommend perhaps looking for papers related to some really common modeling topics if you are having problems finding papers (like perhaps try to find papers related to the spread of some disease, or social dynamics, etc). But first attempt to find papers related to a topic that you really find interesting.**
2. Open a text file (not a Word document!) and create an annotated bibliography that contains the bibtex entry for each paper, along with the abstract, and a short summary in your own words of the importance of the paper to the topic of interest. Bonus points if you make comments on how you might expand the model to make a novel research topic. Submit a printout of your bibtex text file with your homework.
3. Using DataThief, extract the data from one of the figures in one of the papers into a text file (or, alternatively, from a figure in any paper, even if it is unrelated to the research topic… the point of this exercise is to learn how to use DataThief). Read the file into R and plot the data with appropriately labeled axes. When submitting the homework, on one page give a screenshot of the figure from the paper, and on the next page give a printout of your figure.