FRES 101 — Mythbusting, Skepticism, and Statistics
Homework 1 – Due Wednesday, Jan. 18

Homework Guidelines:

- The written portion of your homework assignment (if there is one) is due at the beginning of class on the due date specified above. **No late homeworks will be accepted.** paper and use only one

Data Collection Assignment:

This week we are going to investigate the myth of the bread landing butter-side down. Here are your instructions:

1. Go to the grocery store and buy one loaf of sliced white bread. Any brand will do, but get a large loaf of cheap, traditional, American white bread (e.g., wonder bread). Also buy a tub of soft margarine. Again, any brand will do, but try to get a spreadable type.

2. Throw out the end-slices and count the remaining slices of bread. If there is an odd number, throw one slice away. Then, **at random,** select half the slices and place them in one pile (this will be the "buttered" group) and the remaining slices in another pile (this will be the "control" group).

3. Butter (margarine, really) one side of each slice of bread in the buttered pile. Try to butter the bread evenly and uniformly from one slice to the next. Being consistent is important. For the slices in the non-buttered pile, use a felt-tipped pen to mark one side of each slice as the "up" side (the analogue of the buttered side in the buttered group).

4. Then, one at a time but **using a random order**, select slices of bread from each pile and test them. Use the test procedure described in class.

5. For each slice, record whether or not it landed upside down (butter side down or marked side down). In addition, measure and record the height at which you dropped the bread. This height should be the same for all slices, so you only need to measure it once. I will send you an Excel spreadsheet in which to record your data. Also record the brand and type of margarine you used and the brand and type of bread.

Additional Assignment:

In addition to your bread experiment, I want each of you to try to generate three good ideas for myths that we can try to bust or verify this term. Each of these should be amenable to investigation via a simple experiment that is practical for us to accomplish as a class. In addition, **these ideas cannot duplicate the ones already mentioned in the syllabus** — in that sense, they must be original. For each of your three ideas,

write down a short description of the myth and a brief description of how we might investigate it experimentally. You don't have to go into great detail, but I want you to sketch an idea for how it might be done. If you can't think of a **practical** way for us to do the experimentation with the resources at hand (given our scarcity of time, money, laboratory facilities, etc.) but still think it is a good idea, try to find whether this myth has been investigated by others. If so, we may be able to use existing data.

A couple of good resources you can check to try to generate ideas are:

i. The magazine, The Skeptical Inquirer. Search for this online and in the UGA library electronic catolog. You should be able to link to an index of article topics and the articles themselves.

ii. *Encyclopedia of Pseudoscience*, W.F. Williams, Editor. 2000. This is available in the Reference collection of the Science Library (call number Q157.E57 2000).

There are undoubtedly other good sources of ideas out there that you can dig up if you want to. The most important source of ideas for this assignment, though, is your own creativity.