INSTRUCTOR NOTES: SAMPLING STRINGS (Chapter 12)

(This is based on the Stringing Students Along activity in Scheaffer et al, Activity Based Statistics, Springer 1998)

This class activity has been quite effective in making the point that not everything that appears random at first sight really is random, and helping students recognize when this may occur. It points out a type of bias that one often needs to watch out for in sampling.

If the class is large enough (say, thirty or more), it works well enough to have the students work in pairs.

Materials needed:

1. Several rulers.

2. Student handouts for each student. (Duplicate them two-sided.)

3. Several bags each containing 25 strings of certain lengths (the same for each bag). I've made up several bags of strings, but don't seem to have them any more. The last I knew, John Luecke had them; he still might. If you want to make up some, the string lengths are as follows:

Length	Number of strings
4	2
5	6
6	2
7	2
8	1
9	5
10	4
12	3

The bags should be opaque (like brown lunch bags) so that the strings can be chosen by feel only.

The instructions on the handout should be fairly self-explanatory. Be sure that if students use a random number table, they each start on a different line. You will need to put up the stems for the stemplot as they work. (I usually take a sample by each method before class and start the stemplots with my means.) After the stemplots are finished, have the students observe that the string method stemplot tends to give higher means. Ask why. Also note that the stemplots are mound-shaped (if they are, as they most likely will be). Ask why. (They should have seen the Central Limit Theorem in M 362K, but some of them haven't, and, alas, most of those who have don't understand what it means in applications.) Discuss the two questions at the end of the handout to reinforce the idea and help them transfer it to other situations.