Stat 582/515 **Assignment #5** Due 3/27

The following problem is from an M.S. exam at Purdue University

An egg producer is interested in making production as cost effective as possible. Her current study focuses on the total feeder space provided hens in their cages. The experimental design (attached) was proposed by a statistician who has since left the company and cannot help with the analysis. Thus, she's seeking your help.

The experiment took place in a single hen house with a door on the center left. The plan was to have 15 hens per cage and a total of 96 cages. Each cage was outfitted with a feeder of a specific size. They considered eight different feeder sizes but the researcher is unclear how the randomization of feeder size to cages was done. She just followed the diagram presented to her.

For each cage, she measured the consumption of feed (g/hen/day) and the production of eggs (eggs/hen/day) at baseline and then over a 12 month period. A copy of the data set is also attached. She's interested in determining what sized feeder she should assign to all her cages in the future. Please perform the analysis and give her your recommendations.

On March 27th, we will exchange reports and critique them. Becasue of the Applied MS exam, these critiques will not be due until April 10th. To simplify this process, please turn a single copy of your report. I will hand this out to two students do not put your name on it should you wish to be anonymous.

In addition, a few of you (4 students) will be selected to do a oral presentation of your report on March 27th. I will contact you before the end of the week if you are one of them. This report can be no longer than 10-12 minutes and should highlight the key conclusions from your analysis.

Finally, you may have questions you'd like to ask the client prior to analyzing the data. Please send these questions to me via email no later than Fri 3/22 at 12:00 PM. I will respond to you with answers by Fri 3/22 at 10:00 PM. No other questions will be answered after that point.