**Lab 6** Self Assessment.

The data in alanine.csv are measurements of the alanine concentration in samples from two genotypes of Arabidopsis. This is part of a gene knockout study, but details of that are suppressed. There are six plants from each of two genotypes. The WT genotype is the wildtype; the HM genotype has the gene of interest "knocked out", so that it is not expressed. It is appropriate to consider plant the experimental unit even though genotype is not randomly assigned to a plant. The alanine concentration in each plant was measured three times.

The variables are the Genotype, the BIOLogical replicate number (i.e. the plant), the replicate measurement, and the alanine concentration measurement.

1) You would like to see whether the gene that was "knocked out" changed the mean alanine concentration. You want a p-value for the test of equal means. Look at the data and decide what statistical method is reasonably appropriate.

2) Now, you also want a 95% confidence interval for the effect of this gene on the alanine concentration. Decide what statistical method is reasonably appropriate and calculate a 95% confidence interval. Include in your answer a clear statement whether this interval is for a difference or for a multiplicative effect.

You will get the most value from this self assessment if you work it before looking at my answers. Hence my answers are in a separate word document.