**STAT 6740**

**Homework 6**

**Autumn 2015**

1. Recall the college and university data from Homeworks 1-5 (aaup, usnews). Different researchers may be interested in different regions and college types, so you are asked to write a program that provides summary statistics for any region and type that an individual may choose.

Create a SAS macro that allows the user to select/input a region and college type and produce a summary report that includes the following information:

* 1. a graphics-level chart of the mean professor salary by rank (across institutions) along with the total number of faculty (include the region and college type in the title);
  2. (using PROC TABULATE), a table containing the results of t-tests to determine whether the mean salaries are different between ranks. Include separate results (mean difference, t statistic, p-value) for each state.

1. Perform a Monte Carlo simulation using SAS Macros to determine coverage probability for a large-sample approximate 95% CI for a binomial probability. The formula for the CI is