Scoring Rubric for Project 1

1. (**45 points**) Describe how you selected your final model. What preliminary analysis did you do? How did you determine which predictors to include? Did you try any transformations or interactions? How well does the final model fit the data? How have you assessed predictive accuracy?

What preliminary analysis did you do? **10 points**. The paper should include some description of preliminary examination of the data. Univariate analysis. Bivariate analysis. Graphical displays would be helpful, particularly empirical logit plots.

How did you determine which predictors to include? Did you try any transformations or interactions? **10 points**. A description of what was done to prepare the data and check the need for transformations. Also, testing for interactions. We are not looking for a "correct" model. In practice, multiple models are possible. The focus is on the process. How did you make decisions? Using p-values testing whether a coefficient is different than zero to decide whether to retain coefficients is not a recommended approach.

How well does the final model fit the data? **10 points.** Ideally, assessing model fit to the data using LRT or similar approach (AIC). Describe what you have learned from such a test. Also good to check binned residuals (or similar) in a figure to review model fit.

How have you assessed predictive accuracy? **15 points**. Report a measure of predictive accuracy. If you are going to develop a confusion matrix, make a <u>strong</u> justification for the choice of cutpoint used. Other techniques, such as k-fold validation, are also fine.

2. (**30 points**) Explain your final model. What is the meaning of the coefficients? You need not explain each coefficient, but explain any that are particularly important.

What is the meaning of the coefficients? **15 Points.** Here, the explanations and interpretations need to be appropriate for logistic regression. There are several possible approaches suggested in the notes. Use at least two of these approaches. Also, explain the meaning of important coefficients in words.

Explain which predictors are particularly important. **15 points**. Here, the idea is that you can explain which predictors are most useful for making predictions or important for other reasons. Explain why you chose those.