Stat 616 Generalized Linear Models, HW #2   **Spring 2019**

Due: Thursday, February 7, 2019

- This set of problems are from Kutner et al., *Applied Linear Regression Models* 4th edition (or, Applied Linear Statistical Models, 5th edition), p. 625. You can find Chapter 14 of the book on Blackboard.

- You need to use software to finish this assignment. You can use any software as you see fit. If you use R, you can find examples of R code on Blackboard.

1. Kutner et al, Problem 14.4

   - The mean response function (p.561, Equation 14.16) is to write the (success) probability as a function of the linear component. We have seen it in HW 1 (Dobson & Barnett, Ex. 2.7, d), although Dobson & Barnett did not use the term "mean response."

2. Kutner et al, Problem 14.6

3. Kutner et al, Problem 14.7

   - To state the fitted response function, write your estimates as:

$$\hat{\pi} = \frac{\exp(-4.81 + 0.13x)}{1 + \exp(-4.81 + 0.13x)}.$$

   It is also common to present the results as:

$$\log\left(\frac{\hat{\pi}}{1 - \hat{\pi}}\right) = -4.81 + 0.13x.$$

   - We will not discuss the "lowess" fit in detail in this class. But you can find examples of lowess fit in file R03_IntroLogistic_2019.R. The R function is loess( ). Lowess is a non-parametric method that provides a "smoothed" fit to a scatter plot. It does not give a functional form like a regression model, but it shows the general pattern of a scatter plot.

4. Kutner et al, Problem 14.12

5. Kutner et al, Problem 14.14

<div align="center">This is the end of HW 2.</div>