Additional Empirical Exercise 8.1

Using the data set **TeachingRatings** described in Empirical Exercise AEE4.2, carry out the following exercises.

a. Estimate a regression of *Course_Eval* on *Beauty*, *Intro*, *OneCredit*, *Female*, *Minority*, and *NNEnglish*.

b. Add *Age* and Age^2 to the regression. Is there evidence that *Age* has a nonlinear effect on *Course_Eval*? Is there evidence that *Age* has any effect on *Course_Eval*?

c. Modify the regression in (a) so that the effect of *Beauty* on *Course_Eval* is different for men and women. Is the male–female difference in the effect of *Beauty* statistically significant?

d. Professor Smith is a man. He has cosmetic surgery that increases his beauty index from one standard deviation below the average to one standard deviation above the average. What is his value of *Beauty* before the surgery? After the surgery? Using the regression in (c), construct a 95% confidence for the increase in his course evaluation.

e. Repeat (d) for Professor Jones, who is a woman.