Assignment 4

Create an R function named RLMstep that performs (hybrid) stepwise model selection based on the method illustrated in p. 11 of the article entitled "Robust Stepwise Regression". The function should be based on the existing *rlm* function; use the default settings. The function should take as input:

- a column vector y (response)
- a matrix X of predictors (predictors should be in columns)

Your function should report: a) the predictors that are included in the final robust regression model, and b) coefficient estimates, and their BCa confidence intervals.

Assignment 4

- Compare your function versus the *stepAIC* function (direction="both") using the HtVol data from the first assignment. The set of possible predictors includes *Male*, *Age*, *Ht*, *Wt*, *BMI*, *BSA*, all quadratic terms and all bivariate interactions.
- Discuss your findings; create a few figures that convey useful info wrt your results.

Assignment 4

- Submit your responses in Blacboard by midnight, Monday November 13.
- Your code should be included in the pdf (with comments that will help you presenting it in class), but also attached in a separate R script.
- Use the following file names for your pdf and script: LASTNAME_FIRSTNAME_ASUID_ASSIGNMENTNUMBER
- You should submit a single R script. Do not submit a zip or rar file.
- Prepare your pdfs carefully; each week some of you will present their work.
- You should work alone for your assignments.