STAT*6860
Linear Statistical Models
Fall 2016

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Lectures: Tuesdays: 7:00 – 9:50 pm

       Linear Models with R, by J. Faraway, Chapman and Hall, 2005

Additional Reading: Theory and Application of the Linear Model, by F. Graybill
       Linear Models, by S. Searle, Wiley. 1971
       Plane Answers to Complex Questions, 3rd Edition by R. Christensen, Springer

Course Outline:
1. Review of simple linear regression.
   Non-central distributions. Bayesian approaches to the Linear Model.
3. Analysis of variance models
   Prediction intervals. Weighted Linear Models
6. Random effects and mixed models. BLUP. Variance components.
7. Penalized Linear Models for High-Dimensional Data e.g. the LASSO and variants.

Prerequisites: A solid background in Regression e.g. STAT*3240, plus a background in Statistical Inference, ideally STAT*4340, but STAT*3110 may suffice; basic Linear Algebra.

Grading: Assignments: 30%
          Midterm: 30% Tuesday October 25, 7-9pm, MacKinnon Room 311
          Final exam: 40% Tuesday 11:30-1:30 December 13 2016, Room TBD