



**STAT 538A, Generalized Linear Models
2017/18, Term 1
Instructor: Lang Wu**

Time and Place: M/W 9:30-11:00 am, Oct 23- Dec 1, 217, ESB 4192

Course description:

Generalized Linear Models (GLMs) and other regression models where response variable can be binary, ordinal, categorical, count, positive-valued etc. Extensions of generalized linear mixed models (GLMMs) or discrete response models with random effects will be discussed. Also the use of the regression models in multivariate, longitudinal and time series contexts. There is an emphasis on likelihood-based methods and interpretation of model parameters.

Prerequisites: Open to any interested graduate students in the Department of Statistics. Graduate students from other departments are welcome provided they have sufficient statistical and mathematical backgrounds. Such students should consult the instructor about suitability.

Recommended References: "Extending the linear model with R: generalized linear, mixed effects, and nonparametric regression models," by Julian Faraway. Chapman and Hall / CRC Press, 2006 (ISBN 1-58488-424-X).

Regression Analysis of Count Data, by Cameron and Trivedi. Cambridge, 1998.

An Introduction to Generalized Linear Models, Second Edition, by Annette J. Dobson. Chapman and Hall / CRC Press, 2001

Generalized Linear Models, Second Edition. McCullagh and Nelder. Chapman and Hall / CRC Press, 1989.

Modern Applied Statistics with S. By Venables and Ripley. Springer, 2002

Coursework: Coursework will include a mix of data-analytic and empirical exercises (i.e., using the computer) and more theoretical exercises. Also there is a term project. Students will develop (or already have) some computing skills with the R software package.