1161-62-129 **Karl B Gregory*** (gregorkb@stat.sc.edu), LeConte College, 1523 Greene St, Columbia, SC 29201, and **Dewei Wang** and **Chris McMahan**. *Penalized regression methods for group testing data.*

Regression methods for the binary outcome of disease status when individuals are tested in groups will be discussed. Group testing can be used to reduce the number of chemical assays required to screen a population for a disease, but, given assays that are subject to error, group testing induces complicated likelihood functions. We discuss, in particular, adaptive elastic net penalization for fitting logistic regression models with group testing data. In addition, we introduce a semi-parametric additive model with sparsity/smoothness penalization for modeling nonlinear effects; this model makes use of group lasso penalties to achieve sparsity in the nonparametric effects. We consider also how data from multiple studies of a single disease can be combined such that the analyses share information. (Received August 14, 2020)