**BIOS 6643 – GzLM fitting in SAS and R**

Here is the basic SAS and R code for fitting Poisson and Binomial GzLMs.

**SAS PROC GENMOD**

/\* Poisson \*/

PROC GENMOD data=yours;

CLASS if you have any class variables;

MODEL Y = X / dist = poisson link=log;

RUN;

/\* Binomial \*/

PROC GENMOD data=yours;

CLASS if you have any class variables;

MODEL Y/N = X / dist = binomial link=logit;

RUN;

**SAS PROC NLMIXED**

/\* Poisson \*/

PROC NLMIXED data=yours;

\* if you have any class variables you need to create dummy variables;

eta = b0 + b1 \* X;

mu = exp( eta );

MODEL Y ~ poisson( mu );

RUN;

/\* Binomial \*/

PROC NLMIXED data=yours;

\* if you have any class variables you need to create dummy variables;

eta = b0 + b1 \* X;

p = exp( eta ) / (1 + exp( eta ));

MODEL Y ~ binomial(n, p );

RUN;

**R glm function**

# Poisson

glm( Y ~ X, family = poisson( link = “log” ) )

# Binomial

y.mat <- cbind( Y, N-Y ) # create a matrix of (successes, failures)

glm( y.mat ~ X, family = binomial( link = “logit” ) )