Stat 616 Generalized Linear Models, Homework 9 **Spring 2019**

Due: Thursday, April 11, 2019

(The due date may be extended to Monday, April 15. I will update the due date on Monday, April 8 if needed.)

From Dobson & Barnett, An Introduction to Generalized Linear Models, p. 202~205

1. Exercises 10.1. (skip d)

   Notes:

   (1) Even though there is no censoring in this data, you need to create a survival object, with status=1 (1 for occurrence, 0 for censored) for all cases.

   (2) In part (b), plot the H(t) (H(t) = –log(S(t)), the cumulative hazard function) vs t, and log(H(t)) vs log(t).

   (3) In part (c), use the Exponential distribution. (If you start with the Weibull distribution, you will find that lambda is not significantly different from 1.) Be sure to include log(WBC) in the model as instructed in the exercise.

2. Exercises 10.6. (a)

   Notes:

   (1) Consider the "loss to follow-up" as censoring.

   (2) After you finish (a), use appropriate plots to consider whether Weibull or Exponential distribution will be appropriate.

   (3) Regardless your answer to the above question, fit the data with using Weibull distributions. Is the lambda parameter significantly differently from 1? (In general, AIC, BIC or Deviance can NOT be used to compare different distributional assumptions, because they depend on the likelihood functions. In this case, however, the Exponential distribution is a special case of Weibull distribution. Hence, the Deviance (LRT) may be used to compare Exponential vs Weibull distributions with minor modification. You do not have to do it though.)

This is the end of HW 9.