

**Statistics Seminar**  
Department of Mathematical Sciences

<b>DATE:</b>	Thursday, September 8, 2016
<b>TIME:</b>	1:15p-2:40p
<b>LOCATION:</b>	WH 100E
<b>SPEAKER:</b>	Qiqing Yu, Binghamton University
<b>TITLE:</b>	Piecewise Cox Models With Right-Censored Data

**Abstract**

We study a general class of piecewise Cox models. We discuss the computation of the semi-parametric maximum likelihood estimates (SMLE) of the parameters, with right-censored data, and a simplified algorithm for the maximum partial likelihood estimates (MPLE). Our simulation study suggests that the relative efficiency of the PMLE of the parameter to the SMLE ranges from 96% to 99.9%, but the relative efficiency of the existing estimators of the baseline survival function to the SMLE ranges from 3% to 24%. Thus the SMLE is much better than the existing estimators. To assess the appropriateness of the model assumption, we propose a simple diagnostic plotting method. This method enables us to determine an appropriate cut point. We apply the piecewise Cox model to our cancer research data.

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