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Suvra Pal* (suvra.pal@uta.edu), 411 S Nedderman Drive, 478 Pickard Hall, Arlington, TX 76019. *On the Flexibility of COM-Poisson distribution in Cure Rate Modeling.*

In this talk, I will first introduce a cure rate model. Then, assuming a latent competing risks scenario, I will show the advantages of using the flexible COM-Poisson distribution in capturing the latent number of competing risks that are related to the occurrence of an event of interest. Considering right censored data, I will present the steps of the EM algorithm for the maximum likelihood estimation of the model parameters. To demonstrate the performance of the EM algorithm, I will present the results of an extensive Monte Carlo simulation study. Results of a sensitivity analysis with respect to model mis-specification will also be presented. Finally, to illustrate the flexibility of the COM-Poisson distribution in the context of cure rate modeling, I will analyze a well-known melanoma data. (Received August 16, 2020)