Mathematics, Statistics, and Computer Science **@ UIC**

## Statistics and Data Science Seminar

*Bayesian Variable Selection in Complex Linear and Lifetime Models*

Sanjib Basu (UIC)

**Abstract:** We consider the question of variable selection in complex models. This is often a difficult problem due to the inherent nonlinearity of the models and the resulting non-conjugacy in their Bayesian analysis. Bayesian variable selection in lifetime data models often utilize cross-validated predictive model selection criteria which can be relatively easy to estimate for a given model. However, the performances of these criteria are not well-studied in large-scale variable selection problems and, evaluation of these criteria for each model under consideration can be difficult to infeasible. An alternative criterion is based on the highest posterior model but its implementation is difficult in non-conjugate lifetime models. In this presentation, we compare the performances of these different criteria in complex lifetime data models including models with limited failure. We also propose an efficient variable selection method and illustrate its performance in simulation studies and real example

*TBA*

Wednesday, November 9 at 4:00 PM in SEO 636