



THE UNIVERSITY OF GEORGIA  
DEPARTMENT OF STATISTICS

*Colloquium Series*

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*Rice University*

**Friday, October 11, 2019**

3:30pm in room 202, Caldwell Building

**Spike-and-slab priors for variable and edge selection and applications to large-scale data**

There is now a huge literature on Bayesian methods for variable selection that use spike-and-slab priors. Such methods, in particular, have been quite successful for applications in a variety of different fields. High-throughput genomics and neuroimaging are two such examples. There, novel methodological questions are being generated, requiring the integration of different concepts, methods, tools and data types. In this talk I will first address variable selection in the context of linear models and describe spike-and-slab prior constructions that incorporate information about structural dependencies among the variables. I will motivate the development of the priors using neuroimaging applications. I will then talk about parallel methodological developments that have happened in graphical models, where priors are specified on precision matrices. I will address in particular the case of estimation on multiple graphs that may share common features, such as presence/absence of edges or strengths of connections. If time allows I will also describe extensions of the models to non-Gaussian data and computational challenges.

For more information, please contact us at:

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