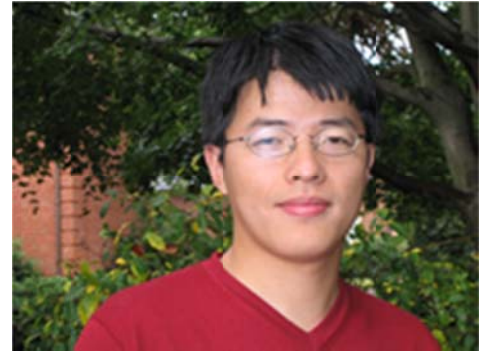


# EPSTEIN INSTITUTE SEMINAR ▪ ISE 651

## New Supervised Learning Techniques with Applications To Neuroimaging Data

**ABSTRACT** –Supervised learning techniques have been widely used in diverse scientific disciplines such as biology and neuroscience. In this talk, I will present some new techniques for flexible learning of data with complex structure. For the first part of the talk, a new efficient regularization technique incorporating graphical structure information among predictors will be introduced. A latent group lasso penalty is applied to utilize the graph structure node-by-node. For the second part of the talk, we focus on data with multiple modalities (sources or types). In practice, it is common to have block-missing structure for such multi-modality data. A new technique effectively using all available data information without imputation will be discussed. Finally, applications for the Alzheimer's Disease Neuroimaging Initiative (ADNI) data will be used to illustrate the performance of these methods



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**SPEAKER BIO** – Dr. Yufeng Liu obtained his Ph.D in Statistics in 2004. He is now Full Professor in Statistics, Biostatistics, and Genetics at University of North Carolina (UNC) at Chapel Hill, where he also holds a joint appointment with the Carolina Center for Genome Sciences and the Lineberger Comprehensive Cancer Center. His research interests are primarily on statistical machine learning, nonparametric statistics, high dimensional data analysis, and bioinformatics. He is a fellow of the American Statistical Association (ASA) and is the past-chair for the ASA session on statistical learning and data mining. He served as an associate editor of the Journal of the American Statistical Association and Statistica Sinica, and is currently an associate editor for Journal of Royal Statistical Society-Series B and Journal of Multivariate Analysis. He earned a National Science Foundation Faculty Early Career Development (CAREER) Award in 2008 and received the Ruth and Phillip Hettleman Prize for Artistic and Scholarly Achievement at UNC in 2010. He is currently an elected member of International Statistical Institute (ISI) and an elected fellow of ASA.

**USC Viterbi**

School of Engineering  
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**TUESDAY, APRIL 26, 2016**

**3:30PM – 4:50PM**

USC ANDRUS GERONTOLOGY CENTER (GER), Room 206