CONFERENCE ON STATISTICAL LEARNING AND DATA SCIENCE

• SCHEDULE •

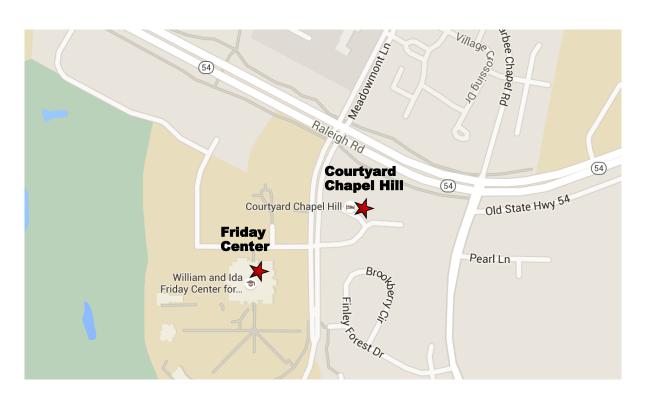


JUNE 6-8, 2016 CHAPEL HILL, NC



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MAP



SLDS 2016 3



SPONSORS

• The American Statistical Association Section on Statistical Learning and Data Science



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- Institute for Operations Research and the Management Sciences (INFORMS) Artificial Intelligence Section
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 RStudio
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- UCB Biosciences Inc.
- Department of Statistics & Operations Research, Department of Biostatistics at the University of North Carolina at Chapel Hill

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- DONGLIN ZENG (UNIVERSITY OF NORTH CAROLINA)
- Kai Zhang (University of North Carolina)

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SCHEDULE

Monday, June 6

7:30-8:30am	Registration & Continental Breakfast - <u>Atrium Center</u>
8:30-8:55am	Welcome
Dogwood AB	Professor Amarjit Budhiraja Chair, Department of Statistics and Operations Research, UNC
	Chair, Department of Statistics and Operations Research, one
9:00-10:30am	Parallel Sessions
7.00 10.30dill	raialiei Sessiolis
Dogwood AB	Theoretical Statistical Learning
<u>Dogwood Ab</u>	(organized by Yin Xia, UNC; chaired by Jan Hannig, UNC)
9:00-9:30am	Florentina Bunea (Cornell University)
7.00 7.30am	Minimax Optimal Variable Clustering in G-Models
9:30-10:00am	Andrew Nobel (UNC)
7.50 10.00am	Large Average Submatrices of a Gaussian Random Matrix: Be-
	havior of Global and Local optima
10:00-10:30am	Kai Zhang (UNC)
	Packing Inference of Correlation for an Arbitrarily Large Number of Variables
	ber or variables
A-ples AD	
<u>Azalea AB</u>	Distributed Optimization Methods for Machine Learning
Azaiea Ab	Distributed Optimization Methods for Machine Learning (organized and chaired by Yan Xu, SAS)
9:00-9:30am	-
	(organized and chaired by Yan Xu, SAS)
	(organized and chaired by Yan Xu, SAS) Alireza Yektamaram (Lehigh University and SAS)
9:00-9:30am	(organized and chaired by Yan Xu, SAS) Alireza Yektamaram (Lehigh University and SAS) A Nonconvex Hessian-free Method for Deep Learning Problems
9:00-9:30am	(organized and chaired by Yan Xu, SAS) Alireza Yektamaram (Lehigh University and SAS) A Nonconvex Hessian-free Method for Deep Learning Problems Jorge Silva (SAS) Learning Good Ensembles: New Approaches
9:00-9:30am 9:30-10:00am	(organized and chaired by Yan Xu, SAS) Alireza Yektamaram (Lehigh University and SAS) A Nonconvex Hessian-free Method for Deep Learning Problems Jorge Silva (SAS)
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9:00-9:30am 9:30-10:00am 10:00-10:30am Mountain Laurel AB	(organized and chaired by Yan Xu, SAS) Alireza Yektamaram (Lehigh University and SAS) A Nonconvex Hessian-free Method for Deep Learning Problems Jorge Silva (SAS) Learning Good Ensembles: New Approaches Patrick Koch (SAS) Local Search Optimization for Hyper-Parameter Tuning Applied Learning and Analysis (organized and chaired by Cynthia Rudin, MIT)
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9:00-9:30am 9:30-10:00am 10:00-10:30am Mountain Laurel AB 9:00-9:30am	(organized and chaired by Yan Xu, SAS) Alireza Yektamaram (Lehigh University and SAS) A Nonconvex Hessian-free Method for Deep Learning Problems Jorge Silva (SAS) Learning Good Ensembles: New Approaches Patrick Koch (SAS) Local Search Optimization for Hyper-Parameter Tuning Applied Learning and Analysis (organized and chaired by Cynthia Rudin, MIT) John Guerard (McKinley Capital Mgt., LLC) Robust Regression and Data Mining of Financial Data

10:00-10:30am	Stefano Traca (MIT)
	Regulating Greed Over Time
Bellflower AB	Network Inference
	(organized by Karl Rohe, Univ. Wisconsin Madison; chaired by Bailey Fosdick, Colorado State)
9:00-9:30am	Can Le (University of Michigan)
	Structure of sparse random networks
9:30-10:00am	Daniel Sussman (Harvard University)
	Unbiased Estimation of Causal Effects under Network Interference
10:00-10:30am	Alexander Volfovsky (Harvard/ Duke)
	Testing and estimation for relational data
10:30-11:00am	Break - <u>Atrium Center</u>
11:00am-12:00pm	Plenary Talk (chaired by Richard Smith, SAMSI & UNC)
<u>Dogwood AB</u>	Bin Yu, UC Berkeley
12:00-1:30pm	Lunch - Trillium AB
· ·	
1:30-3:00pm	Parallel Sessions
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1:30-3:00pm <u>Dogwood AB</u>	
	Parallel Sessions New Regularization Techniques (organized by Ji Zhu, Univ. Michigan; chaired by Annie Qu, UIUC)
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<u>Dogwood AB</u> 1:30-2:00pm	New Regularization Techniques (organized by Ji Zhu, Univ. Michigan; chaired by Annie Qu, UIUC) Yunzhang Zhu (Ohio State University) High-dimensional Multivariate Regression
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Dogwood AB 1:30-2:00pm 2:00-2:30pm	New Regularization Techniques (organized by Ji Zhu, Univ. Michigan; chaired by Annie Qu, UIUC) Yunzhang Zhu (Ohio State University) High-dimensional Multivariate Regression Fang Han (University of Washington) Optimal Structure-Induced Network Estimation
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Dogwood AB 1:30-2:00pm 2:00-2:30pm 2:30-3:00pm Azalea AB	New Regularization Techniques (organized by Ji Zhu, Univ. Michigan; chaired by Annie Qu, UIUC) Yunzhang Zhu (Ohio State University) High-dimensional Multivariate Regression Fang Han (University of Washington) Optimal Structure-Induced Network Estimation Qing Mai (Florida State University) Multiclass Sparse Discriminant Analysis Machine Learning on Big Data (organized and chaired by Matt Taddy, Univ. of Chicago)
Dogwood AB 1:30-2:00pm 2:00-2:30pm 2:30-3:00pm Azalea AB	New Regularization Techniques (organized by Ji Zhu, Univ. Michigan; chaired by Annie Qu, UIUC) Yunzhang Zhu (Ohio State University) High-dimensional Multivariate Regression Fang Han (University of Washington) Optimal Structure-Induced Network Estimation Qing Mai (Florida State University) Multiclass Sparse Discriminant Analysis Machine Learning on Big Data (organized and chaired by Matt Taddy, Univ. of Chicago) Daniel Roy (University of Toronto) Sparse Random Graphs arising from Exchangeable Random
Dogwood AB 1:30-2:00pm 2:00-2:30pm 2:30-3:00pm Azalea AB 1:30-2:00pm	New Regularization Techniques (organized by Ji Zhu, Univ. Michigan; chaired by Annie Qu, UIUC) Yunzhang Zhu (Ohio State University) High-dimensional Multivariate Regression Fang Han (University of Washington) Optimal Structure-Induced Network Estimation Qing Mai (Florida State University) Multiclass Sparse Discriminant Analysis Machine Learning on Big Data (organized and chaired by Matt Taddy, Univ. of Chicago) Daniel Roy (University of Toronto) Sparse Random Graphs arising from Exchangeable Random Measures

SLDS 2016 7 2:30-3:00pm Yichao Wu (NCSU) Principal Weighted Support Vector Machines for Sufficient Dimension Reduction in Binary Classification Mountain Laurel AB **High Dimensional Learning Methods and Theory** (organized by Xiaotong Shen, Univ. of Minnesota; chaired by Wei Sun, Fred Hutchinson Cancer Research Center) 1:30-2:00pm Jan Hannig (UNC) Generalized fiducial inference for high-dimensional data 2:00-2:30pm Yiyuan She (Florida State University) Indirect Gaussian Graph Learning beyond Gaussianity 2:30-3:00pm Zhigen Zhao (Temple University) A new approach to multiple testing of grouped hypotheses Bellflower AB **New Mining Tools for Complex Data** (organized by Hao Helen Zhang, U. Arizona; chaired by Xiaoli Gao, UNC -Greensboro) 1:30-2:00pm Ping Ma (University of Georgia) Smoothing spline ANOVA for super-large samples 2:00-2:30pm Junming Yin (University of Arizona) Latent Space Inference of Internet-Scale Networks 2:30-3:00pm Boxiang Wang (University of Minnesota) Another Look at DWD Break - Atrium Center 3:00-3:30pm **Parallel Sessions** 3:30-5:00pm Dogwood AB Machine Learning for Imaging and Medical Applications (organized and chaired by Donglin Zeng, UNC) 3:30-4:00pm Dinggang Shen (UNC) Machine Learning in Medical Imaging Analysis 4:00-4:30pm Yuanjia Wang (Columbia University) Support Vector Hazards Machine: A Counting Process Framework for Learning Risk Scores for Censored Outcomes 4:30-5:00pm Ming Yuan (University of Wisconsin Madison) Structured Correlation Detection with Application to Colocaliza-

ing

tion Analysis in Dual-Channel Fluorescence Microscopic Imag-

Azalea AB	High-dimensional Inference
	(organized and chaired by Kai Zhang, UNC)
3:30-4:00pm	Anru Zhang (University of Wisconsin at Madison)
	Rate-Optimal Perturbation Bounds for Singular Subspaces with Applications to High-Dimensional Statistics
4:00-4:30pm	Han Liu (Princeton University)
	Combinatorial Inference
4:30-5:00pm	Shu Lu (UNC)
	Confidence Regions and Intervals for Sparse Penalized Regression Using Variational Inequality Techniques
Mountain Laurel AB	Topics on High Dimensional Learning and Inference
	(organized and chaired by Genevera Allen, Rice Univ.)
3:30-4:00pm	Johannes Lederer (University of Washington)
	Efficient Feature Selection With Big Data
4:00-4:30pm	Weijie Su (Stanford University)
	Multiple Testing and Adaptive Estimation via the Sorted L-One Norm
4:30-5:00pm	Stefan Wager (Stanford University)
	Causal Inference with Random Forests
Bellflower AB	Biopharmaceutical Applications
	(organized and chaired by Robert Warnock, UCB Biosciences Inc.)
3:30-4:00pm	Bhargav Reddy (UCB Biosciences Inc.)
	Predicting Disease State in Crohn's Patients using Clinical Trial Data
4:00-4:30pm	Holger Frohlich (UCB Biosciences Inc.)
	Re-Use of Randomized Clinical Trials Data for Predictive Model- ing in Epilepsy and Systemic Lupus Erythematosus
4:30-5:00pm	Scott Clark (Eli Lilly)
	Discussion and vision of future developments in pharmaceutical research

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TUESDAY, JUNE 7

7:30-8:30am	Continental Breakfast - <u>Atrium Center</u>
8:30-10:00am	Parallel Sessions
Dogwood AB	The Challenges of machine learning methods and computing tools for large-scale data
	(organized by Annie Qu, UIUC; chaired by Yufeng Liu, UNC)
8:30-9:00am	Heping Zhang (Yale University)
	Inference with unequal knowledge: nuisance penalized regression, conditional distance correlation, and prior LASSO
9:00-9:30am	Annie Qu (UIUC)
	A Group-Specific Recommender System
9:30-10:00am	Yuan Zhang (University of Michigan)
	Estimating network edge probabilities by neighborhood smoothing
Azalea AB	Inference and Estimation in Statistical Machine Learning
	(organized and chaired by Han Liu, Princeton)
8:30-9:00am	Adel Javanmard (USC)
	Online Rules for Control of False Discovery Rate
9:00-9:30am	Zhao Ren (University of Pittsburgh)
	Robust Covariance/Scatter Matrix Estimation via Matrix Depth
9:30-10:00am	Zhaoran Wang (Princeton University)
	Probing the Pareto Frontier of Computational-Statistical Tradeoffs
Mountain Laurel AB	Network Analysis and Inference tools
	(organized by Kai Zhang, UNC; chaired by Mu Zhu, Univ. Waterloo)
8:30-9:00am	Shankar Bhamidi (UNC)
	Change Point Detection in Evolving Network Models
9:00-9:30am	Xi Luo (Brown University)
	Network Communities and Variable Clustering: A Covariance Matrix Approach
9:30-10:00am	Pingshou Zhong (Michigan State University)
	Tests for Covariance Structures with High-dimensional Repeated Measurements

Bellflower AB	Discovery of Features and Patterns (organized by Cynthia Rudin MIT; chaired by Yiyuan She, Florida State Univ.)
8:30-9:00am	Genevera Allen (Rice University)
0.30-3.00am	Algorithmic Regularization Paths: A New Approach to Variable Selection for High-Dimensional, Highly Correlated Data
9:00-9:30am	Lauren Hannah (Columbia University)
	Statistically Summarizing Labeled Text Data
9:30-10:00am	Shawn Mankad (Cornell University)
	Single Stage Prediction with Text Data using Dimension Reduction Techniques
10:00-10:30am	Break - <u>Atrium Center</u>
10:30-11:30am <u>Dogwood AB</u>	Plenary Talk (chaired by Michael Kosorok, UNC) Susan A. Murphy, University of Michigan Assessing Time-Varying Causal Effect Moderation in Intensive Time- Varying Treatment
11:30-1:00pm	Lunch - <u>Trillium AB</u>
1:00-2:30pm	Parallel Sessions
Dogwood AB	Network and Graphical Models
	(organized by Hernando Ombao, UC Irvine; chaired by Yunzhang Zhu, Ohio State)
1:00-1:30pm	Ali Shojaie (University of Washington)
	Network Reconstruction from High Dimensional Ordinary Dif-
	ferential Equations
1:30-2:00pm	ferential Equations Lina Lin (University of Washington)
1:30-2:00pm	ferential Equations
1:30-2:00pm 2:00-2:30pm	ferential Equations Lina Lin (University of Washington) Estimation of High-dimensional Graphical Models using Regu-
·	ferential Equations Lina Lin (University of Washington) Estimation of High-dimensional Graphical Models using Regularized Score Matching
·	ferential Equations Lina Lin (University of Washington) Estimation of High-dimensional Graphical Models using Regularized Score Matching Shuo Chen (University of Maryland)
2:00-2:30pm	ferential Equations Lina Lin (University of Washington) Estimation of High-dimensional Graphical Models using Regularized Score Matching Shuo Chen (University of Maryland) Network induced large covariance matrix estimation
2:00-2:30pm	ferential Equations Lina Lin (University of Washington) Estimation of High-dimensional Graphical Models using Regularized Score Matching Shuo Chen (University of Maryland) Network induced large covariance matrix estimation Flexible Methods for Genomic data

SLDS 2016 11 1:30-2:00pm Yuying Xie (Michigan State University) Joint Estimation of Multiple Dependent Gaussian Graphical Models with Applications to Mouse Genomics Dongmei Li (University of Rochester) 2:00-2:30pm An evaluation of statistical methods for RNA-Seg data analysis Mountain Laurel AB **Computational Methods in Statistics** (organized and chaired by Sahand Negahban, Yale Univ.) Constantine Caramanis (UT Austin) 1:00-1:30pm High-dimensional EM algorithm 1:30-2:00pm Sahand Negahban (Yale University) Restricted Strong Convexity and Weak Submodularity 2:00-2:30pm Garvesh Raskutti (University of Wisconsin Madison) High-dimensional Poisson auto-regressive models for dynamic network modeling Bellflower AB New developments for analyzing complex data (organized and chaired by Xingye Qiao, SUNY Binghamton) 1:00-1:30pm Xi Chen (NYU) Optimal Stopping and Worker Selection in Crowdsourcing: an Adaptive Sequential Probability Ratio Test Framework 1:30-2:00pm Jacob Bien (Cornell University) Lag Structured Modeling for High Dimensional Vector Autoregression 2:00-2:30pm Ganggang Xu (Binghamton University) A simple averaged post-model-selection confidence interval 2:30-3:00pm Break - Atrium Center **Parallel Sessions** 3:00-4:30pm Dogwood AB **Causal Inference** (organized and chaired by Eric Laber, NCSU) Tyler McCormick (University of Washington) 3:00-3:30pm Standard errors for exchangeable relational arrays 3:30-4:00pm Long Nguyen (University of Michigan) Bayesian Nonparametric Multilevel Clustering with Group-Level Contexts

4:00-4:30pm

Cynthia Rudin (MIT)

Causal Falling Rule Lists

Azalea AB	Machine Learning for Structured Data
	(organized by Xiaotong Shen, Univ. Minnesota; chaired by Shu Lu, UNC)
3:00-3:30pm	Shuheng Zhou (University of Michigan)
	High-dimensional statistical modeling and estimation with ma- trix variate data
3:30-4:00pm	Xingye Qiao (Binghamton University)
	Noncrossing Ordinal Classification
4:00-4:30pm	Cun-Hui Zhang (Rutgers University)
	Nonparametric Shrinkage Estimation
Mountain Laurel AB	Inference for regularized estimation in high dimensions
	(organized and chaired by Ali Shojaie, Univ. Washington)
3:00-3:30pm	Max G'Sell (CMU)
	Model selection via sequential goodness-of-fit testing
3:30-4:00pm	Mladen Kolar (University of Chicago)
	Post-Regularization Confidence Bands for High-Dimensional Nonparametric Models with Local Sparsity
4:00-4:30pm	Sen Zhao (University of Washington)
	High-Dimensional Hypothesis Testing with the Lasso
Bellflower AB	New learning tools for complex data and beyond
	(organized by Yufeng Liu, UNC; chaired by David Pritchard UNC)
3:00-3:30pm	J. Paul Brooks (Virginia Commonwealth University)
	Estimating L1-Norm Best-Fit Lines
3:30-4:00pm	Chengyong Tang (Temple University)
	Precision Matrix Estimation by Inverse Principal Orthogonal Decomposition
4:00-4:30pm	Mu Zhu (University of Waterloo)
	Networks, Small G Proteins, and Basketball Games
4:30-6:30pm	Poster Session - Atrium Center
6:30-8:30pm	Banquet - <u>Trillium AB</u>
	Speaker: J.S. Marron (UNC)

WEDNESDAY, JUNE 8

7:30-8:30am	Continental Breakfast - Atrium Center
	<u> </u>
8:30-10:00am	Parallel Sessions
Dogwood AB	Machine learning for precision medicine
	(organized by Yufeng Liu, UNC; chaired by Chengyong Tang, Temple Univ.)
8:30-9:00am	Donglin Zeng (UNC)
	Estimating Personalized Diagnostic Rules via Weighted Support Vector Machines
9:00-9:30am	Yingqi Zhao (Fred Hutchinson)
	Develop Parsimonious and Robust Treatment Strategies for Target Populations
9:30-10:00am	Haoda Fu (Eli Lily)
	Personalized Medicine, Machine Learning and Artificial Intelligence: Challenges and Opportunities
Azalea AB	New developments on sufficient dimension reduction and envelope estimation
	(organized and chaired by Yichao Wu, NCSU)
8:30-9:00am	Andreas Artemiou (Cardiff University)
	Robustifying sufficient dimension reduction against inliers and outliers
9:00-9:30am	Zhihua Su (University of Florida)
	Groupwise Envelope Models for Imaging Genetic Analysis
9:30-10:00am	Xin Zhang (Florida State University)
	Some Recent Advances in Envelope Methodology
Mountain Laurel AB	New Sparse Methods for Regression and Classification
	(organized by Hao Helen Zhang; University of Arizona; chaired by Zhigen Zhao, Temple Univ.)
8:30-9:00am	Ning Hao (University of Arizona)
	A rotate-and-solve procedure for high dimensional classifica-tion
9:00-9:30am	Gen Li (Columbia University)
	Supervised Integrative Principal Component Analysis
9:30-10:00am	Sijian Wang (University of Wisconsin Madison)
	Sparse additive index model for group variable selection

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10:00-10:30am	Break - <u>Atrium Center</u>
10:30-11:30am	Plenary Talk (chaired by Eric Laber, NCSU)
Dogwood AB	Michael R. Kosorok, UNC The Evolution of Data Science and Statistics
	The Evolution of Data Science and Statistics
11:30-1:00pm	Lunch - Trillium AB
11.30 1.00pm	TIMILITY AD
1:00-2:30pm	Parallel Sessions
Dogwood AB	Data Integration and Meta Analysis
	(organized and chaired by Quefeng Li, UNC)
1:00-1:30pm	Haitao Chu (University of Minnesota)
·	Bayesian Hierarchical Models for Multiple Diagnostic Tests Meta -analysis
1:30-2:00pm	Shuangge Ma (Yale University)
	Integrating multidimensional omics data for cancer prognosis
2:00-2:30pm	Chi Song (Ohio State University)
	A Bayesian Method for Transcriptomic Meta-analysis – Explor- ing the Homogeneity and Heterogeneity
Azalea AB	Flexible Learning Tools and Applications
	(organized and chaired by Yuying Xie, MSU)
1:00-1:30pm	Wei Sun (Yahoo)
	Provable Sparse Tensor Decomposition and Its Application to Personalized Recommendation
1:30-2:00pm	Peng Wang (University of Cincinnati)
	Selection by Partitioning the Solution Paths
2:00-2:30pm	Tian Zheng (Columbia University)
	Topic-adjusted visibility metric for scientific articles
Mountain Laurel AB	New Sparse Learning Techniques
	(organized by Yin Xia, UNC; chaired by Jingxiang Chen UNC)
1:00-1:30pm	Botao Hao (Purdue University)
	Simultaneous Clustering and Estimation of Multiple Graphical Models
1:30-2:00pm	Aaron Molstad (University of Minnesota)
	Indirect multivariate response linear regression

SLDS 2016	15
2:00-2:30pm	Xue Wang (Penn. State University)
	Folded Concave Penalized Nonconvex Learning via a Modern Optimization Lens
2:30-3:00pm	Break - <u>Atrium Center</u>
3:00-4:30pm	Parallel Sessions
Dogwood AB	Data Science and Networks: Methodology and Applications
	(organized and chaired by Shankar Bhamidi, UNC)
3:00-3:30pm	Bailey Fosdick (Colorado State University)
	Multiresolution models for networks
3:30-4:00pm	Anand Vidhyashankar (George Mason University)
	Implicit Networks in High Dimensional Problems
4:00-4:30pm	James Wilson (University of San Francisco)
	A Significance-based Community Extraction Method for Multi- layer Networks
Azalea AB	Industrial Applications
	(organized by Cynthia Rudin, MIT; chaired by J. Paul Brooks, Virginia Commonwealth Univ.)
3:00-3:30pm	Veena Mendiratta (Bell Labs, Nokia)
	Anomaly Detection in Wireless Networks using Mobile Phone Data
3:30-4:00pm	Matthew Lanham (Virginia Tech)
	A Framework for Combining Statistical & Business KPIs for Low -Turn Product Forecasts
4:00-4:30pm	C. Bayan Bruss (Accenture)
	When the Well Runs Dry: Predicting Observed GRACE Satellite Groundwater Storage Trends Using Data in 81 Countries
Mountain Laurel AB	Modern Statistical Learning Methods for Big Data
	(organized by Yingying Fan USC; chaired by Siliang Gong UNC)
3:00-3:30pm	Will Fithian (UC Berkeley)
	Local Case-Control Sampling: Efficient subsampling in imbal- anced data sets
3:30-4:00pm	Kun Chen (University of Connecticut)
	Sequential Estimation in Sparse Factor Regression
4:00-4:30pm	Yuekai Sun (UC Berkeley)
	Feature distributed sparse regression

Poster Information

June 07, 4:30-6:30pm

1. Anthony S. Abrantes (UNC)

Classifying EEG data for working memory load

2. Xuan Bi (UIUC)

A Group-Specific Recommender System

3. Kelly Bodwin (UNC)

Coherent Itemset Mining

4. Frederick Campbell (Rice University)

Within Group Variable Selection through the Exclusive Lasso

5. Jingxiang Chen (UNC)

Estimating Individualized Treatment Rules for Ordinal Treatments

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