INTERFACE 2008 Program

Technical Talks

THURSDAY 22 May

Thursday 10:30 am – 12:15 pm

Modeling of Extreme Events and Analysis of Risk
Organizers: Dipak Dey & David Rios-Insua

Elijah Gaioni	U Conn	*Semiparametric Functional Estimation using Quantile-based Prior Elicitation*
Sourish Das		*Hurricane Activity in Context of Changing Environment*
Jesus Rios	SAMSI&Aalborg U	*Risk Analysis for Auctions*

Enhancing Knowledge and Assessing Risk through Analysis of Massive Data
Organizer: Karen Kafadar

Ginger Davis	UVA	*Analysis of Microsensor Networks from a Statistical Perspective*
Amy Braverman	JPL/Cal Tech	*Massive Data Set Analysis for NASA's Atmospheric Infrared Sounder*
Michael Trosset	Indiana U	*What Kind of Knowledge Does Locally Linear Embedding Extract?*

Streaming Data Analysis
Organizers: Edward Wegman

Bill Szewczyk	NSA	*Data Analysis on Streams*
Werner Stuetzle	Washington	*Using Labeled Data to Evaluate Change Detectors in a Multivariate Streaming Environment*
Shen-Shyang Ho	JPL/ Cal Tech	*Change Detection in Data Streams by Testing Exchangeability*

Contributed Paper Session

Zhiliang Ma	Johns Hopkins	*Combining Dissimilarity Representations in Embedding Product Space*
Adam Cardinal-Stakenas	Johns Hopkins	*Comparing dissimilarity representations of disparate information*
Joel Bernanke	Boston U	*Network Mapping of large data sets*

LUNCH BREAK: 12:15 pm – 1:45 pm

Thursday 1:45 pm – 3:30 pm

Probabilistic Models in Risk Assessment
Organizer: David Banks

Mehmet Sahinoglu	Troy U	*Security Risk for Computer Systems*
Alyson Wilson	LANL	*Bayesian Reliability Analysis*

David Banks	Duke U	*Adversarial Risk Analysis*

Air Pollution Risk Assessment: from Research to Regulation
Organizer: Amy Nail

Allen Lefohn	ASL & Associates	*Realistic Biological and Exposure/Dose Relationships: How They Modify Perceived Human Health & Ecological Risk*
Roger Peng	Johns Hopkins U	*Statistical Methods for Assessing the Health Risks of Particulate Matter Components*
Yongku Kim	SAMSI	*How Changing the Ozone Standard Might Affect Respiratory Mortality*

New Developments in Machine Learning and Statistical Modeling for Massive Data
Organizer: Helen Zhang

Jerry Zhu	U Wisconsin	*Online Semi-Supervised Learning*
Yufeng Liu	UNC	*Robust Large-Margin Classifiers*
Howard Bondell	NCSU	*Simultaneous Feature Selection and Structure Identification for ANOVA Models*

Contributed Paper Session

Roy E. Welsch	MIT	*Robust Risk: Using Robust Methods to Improve Investment Performance*
Bonnie K. Ray	IBM	*Challenges in Integrated Risk Management for the Enterprise*
Leming Qu	Boise State U	*Copula density estimation by total variation penalized with constraints*

Thursday 3:45 pm – 5:30 pm

Multivariate Extremes
Organizer: Richard Smith

Richard Smith	UNC	*Multivariate Extremes and Risk*
Jan Heffernan	Lancaster U	*A Conditional Approach to Modeling Multivariate Extremes*
Dan Cooley	Colorado State	*Prediction for Max-stable Processes via an Approximated Conditional*

Model-based Risk Assessment in Life Science
Organizer: Lutz Edler

C. Portier	NIEHS	*Finding the Right Path: Using Structurally-Enhanced Pathway Enrichment Analysis to Identify Targets for High-Throughput Screening*
Lutz Edler	German Cancer Research Center	*Data Gaps and Needs in Model-based Risk Assessment*
Matthew Wheeler	UNC	*Dose Response Uncertainty and Model Averaging*

Recent Developments in Machine Learning and Classification
- to appear in the *Journal of Computational and Graphical Statistics*
Organizer: David van Dyk

George Michailidis	U Michigan	*An Iterative Algorithm for Extending Learners to a Semi-supervised Setting*

Tong Tong Wu	U Maryland	*An MM Algorithm for Multicategory Vertex Discriminant Analysis*
Han-Ming (Hank) Wu	Tamkang U	*Kernel Sliced Inverse Regression with Applications to Classification*

FRIDAY 23 May

Friday 8:30 am – 10:15 am

Statistics and Modern Image Analysis, I

Organizer: Steve Marron

S.M. Pizer	UNC	*M-reps, Curved Feature Space, Bayesian Segmentation*
R. E. Broadhurst	UNC	*Quantile Functions for Texture Analysis and M-rep Segmentation*
Suman Sen	UNC	*Manifold SVM for M-rep Data*

SNP Analysis Methods and Software

Organizer: Stan Young

Danyu Lin	UNC	*HapStat*
Kejun (Jack) Liu	OmicSoft	*Analysis and Visualization of SNP Data*
Dmitri Zaykin	SAS	*Whole-genome SNP Analysis*

Text Mining

Organizers: Edward Wegman & Yasmin Said

Paul Whitney	PNNL	*TBA*
TBA		*TBA*
TBA		*TBA*

Contributed Paper Session

Dusan Maletic	Rutgers U	*Bayesian Methodology for Precision Astrometry of Highly Undersampled Images*
Amy Nail	N.C. State U	*Quantifying local creation and regional transport using a hierarchical hierarchical space-time model of ozone as a function of observed NOx, a latent space-time VOC process, emissions, and meteorology*
Mariana Toma-Drane	USC	*Post-Chernobyl psychological effects on individuals in Belarus*

Friday 10:30 am – 12:15 pm

Statistics and Modern Image Analysis, II

Organizer: Steve Marron

Brad Davis	Kitware & UNC	*Smoothing over Diffeomorphisms*
Hongtu Zhu	UNC	*Intrinsic Regression Model for Positive Definite Matrices*
Haipeng Shen	UNC	*Supervised Singular Value Decomposition for Independent Component Analysis of fMRI*

Statistical and Computational Issues in Analyzing Sensor Networks
Organizer: Alan Gelfand

George Michailidis	U Michigan	*Robust Target Detection & Localization in Wireless Sensor Networks*
Carol Y. Lin	CDC	*Statistical Issues in Designing an Optimal Detection System with Multiple Heterogeneous Sensors*
Soumendra Lahiri	Texas A&M	*Analysis of Microsensor Networks from a Statistical Perspective*

Text Data Analysis
Organizer: Jeffrey Solka

Elizabeth Hohman	NSWC	*Generalization of the Vector Space Model for a Streaming Corpus of Text Documents*
Kendall Giles	VCU	*Interactive Text Mining with Iterative Denoising*
Avory Bryant	NSWC	*Cross Corpus Discovery via Nearest Neighbor Change-point Analysis*

Contributed Paper Session

Zhenyu Liu	GWU	*A Triangle Test for Equality of Distribution Functions in High Dimensions*
Ori Rosen	UTEP	*A Bayesian Model for Multivariate Functional Data*
Shih-Chuan Cheng	Creighton U	*Confidence Estimation of the Parameter Involving in the Distribution of the Total Time on Test for Censored Data*
E. James Harner	WVU	*LifeStats: An Interactive Environment for Teaching Statistics*

LUNCH BREAK: 12:15 pm – 1:45 -pm

Friday 1:45 pm – 3:30 pm

Statistics and Evolutionary Biology, I
Organizer: Haipeng Shen

Joel Kingsolver	UNC	*Evolutionary Analyses of Function-valued Traits*
Travis Gaydos	UNC	*Quantification of Curves' Variation and Simplicity to Find Genetic Constraints*
Brian O'Meara	National Evolutionary Synthesis Center	*Extending Models of Character Coevolution*

Sensor Networks and Statistics - New Researchers Session
Organizer: George Michailidis

Sheela Nair	UCLA	*Fault Detection for Embedded Networked Sensing*
Natalia Katneka	U Michigan	*A Cost-efficient Approach to Wireless Sensor Network Design*
Gavino Puggioni	Duke U	*Analyzing Space-time Sensor Network Data under Suppression and Failure in Transmission*

Alcohol-related Public Health Risks

Organizer: Yasmin Said

Paul Gruenewald	UC Berkeley	*TBA*
TBA	???	*TBA*
TBA	???	*TBA*

Contributed Paper Session

Vincent A. Cicirello	R. Stockton	*Statistically Modeling the Performance of a Multistart Randomized Heuristic Algorithm*
Eric Tassone	Google	*Keeping a Search Engine Index Fresh: Risk versus optimality trade-offs in estimating frequency of change in web pages*

Friday 3:45 pm – 5:30 pm

Statistics and Evolutionary Biology, II

Organizer: Haipeng Shen

Christina Burch	UNC	*Distribution of Mutation Effects and Adaptation in an RNA Virus*
Mihee Lee	UNC	*Deconvolution and Sieve Estimation of Mutation Effect Distribution*
Paul Magwene	Duke U	*Modularity in Biological Systems: Statistical Challenges and Evolutionary Insights*

Assessing Health Risk from Complex Data

Organizer: David Dunson

Joseph Ibrahim	UNC	*A Bayesian Hidden Markov Model for Motif Discovery through Joint Modeling of Genomic Sequence and ChIP-chip Data*
Jason Fine	UNC	*Analysis of Left-truncated Semi-competing Risks Data with Application to Disease Registries*
Lianming Wang	NIEHS	*Semiparametric Bayes Modeling of Onset and Progression from Current Status Data*

Integration of Disparate Types of Information

Organizer: Wendy Martinez

Carey Priebe	Johns Hopkins U	*Disparate Information Fusion: On the Exploitation of Multiple Disparate Dissimilarities*
Brent Castle	Indiana U	*Combining Disparate Information by Nonmetric Multidimensional Scaling*
Jeffrey Solka	NSWC	*Disparate Information Fusion on Images and Text*

SATURDAY 24 May

Saturday 8:30 am – 10:15 am

Spatial Risk Mapping: Prediction and Change Detection

Organizer: Michael Porter

Jason Dalton	SPADAC	*Space-time Forecasting of Extreme Events in Complex Environments*
Ronald D. Fricker, Jr.	Naval Postgraduate School	*Using the Repeated Two-sample Rank Procedure for Detecting Anomalies in Space and Time*
Michael Porter	NCSU	*A Martingale Methodology for the Quick Identification of Point Process Anomalies*

Text Mining Applications

Organizers: Edward Wegman & Yasmin Said

Andris Abakuks	U London-Birbeck	*The Synoptic Gospels Problem and the Trips-Link*
Walid Sharabati	American U	*The Relationship between Prophets and Chapters in the Quran: A Two-Mode Social Network Model*

Contributed Paper Sessions

Andrejus Parfionovas	Utah State U	*Classification Trees with Oblique Splits for Multidimensional Datasets*
Rebecca Nugent	CMU	*Clustering with Confidence: A Binning Approach*
Joran Elias	U Montana	*Making Tree Ensembles More Robust to Noisy Data*

Saturday 10:30 am – 12:15 pm

Change Detection in Random Graphs

Organizer: David Marchette

David Marchette	NSWC	*Detecting Activity Changes in Graphs*
Youngser Park	Johns Hopkins U	*Scan Statistics in Hypergraphs*
Elizabeth Beer	Johns Hopkins U	*Torus Graph Inference for Detection of Localized Activity*

Risk of Reaching False Conclusions

Organizer: Stan Young

Stan Young	NISS	*The Problem of Observational Studies*
Robert Obenchain	SoftRx	*A Complete Illustration of Local Control for Observational Studies*
Patrick Ryan	GlaxoSmithKline	*Exploring the Effects of Medicines: Managing Risk across Multiple Outcomes*
Alice White	GlaxoSmithKline	*Discussant*