ENAR 2011
spring meeting
with ims and sections of asa

ENAR

meeting summary
and scientific program

MARCH 20–23 | HYATT REGENCY MIAMI | MIAMI, FLORIDA

SATURDAY, MARCH 19

3:30 p.m.–5:30 p.m.   **Conference Registration**
Lower Promenade (Terrace Level)

SUNDAY, MARCH 20

7:30 a.m.–6:30 p.m.   **Conference Registration**
Lower Promenade (Terrace Level)

8:00 a.m.–12:00 p.m.

Short Courses

SC3: Statistical Methods for New High Throughput
Technological Measurements
Jasmine (Terrace Level)

SC4: Roles of Adaptive Designs in Drug Development
Monroe (Terrace Level)

SC5: Propensity Score Matching in R
Tuttle (Terrace Level)

8:00 a.m.–5:00 p.m.

Short Courses

SC1: A Practical Introduction to the Analysis of
Geocoded and Areal Health Data
Flagler (Terrace Level)

SC2: Modeling and Data Analysis for Complex Surveys
Brickell (Terrace Level)

12:30 p.m.–5:00 p.m.   **Diversity Workshop**
Orchid CD (Terrace Level)

1:00 p.m.–5:00 p.m.

Short Courses

SC6: Statistical Methods for Next Generation
Studies in Genetic Epidemiology
Jasmine (Terrace Level)

SC7: Introduction to the Main Ideas and
Basic Concepts of Empirical Processes,
with Examples
Monroe (Terrace Level)

SC8: Methodological Considerations for Clinical
Trial Design Including an Active Control
Tuttle (Terrace Level)

3:00 p.m.–5:00 p.m.   **Exhibits Open**
*Lower Promenade
(Terrace Level)*

4:30 p.m.–7:30 p.m.   **ENAR Executive
Committee** (By Invitation Only)
Orchid A (Terrace Level)

4:00 p.m.–6:30 p.m.   **Placement Service**
Hibiscus A (Terrace Level)

7:30 p.m.– 8:00 p.m.   **New Member Reception**
Riverfront Ballroom (2nd Floor)

8:00 p.m.–11:00 p.m.   **Social Mixer Honoring
the ENAR Presidents
and Poster Session**
Riverfront Ballroom (2nd Floor)

Posters

1. Adaptive Designs, Sample Size and Power
2. Biomarkers and Surrogate Markers
3. Nonparametric Methods and Missing Data Methods
4. Epidemiologic, Environmental and Ecological
Applications
5. Genomics I
6. Genomics II
7. Microarray Analysis
8. Causal Inference
9. Imaging
10. Applications to Cancer Research
11. Agreement, Categorical Data and Generalized
Linear Models
12. Longitudinal Data
13. Joint Models for Longitudinal and Survival Data
14. High Dimensional Data
15. Spatial and Temporal Modeling
16. Survival Analysis I
17. Multiple Testing and Multivariate Methods
18. Survival Analysis II
19. Measurement Error and ROC Analysis
20. Hierarchical Models and Latent Variables

21. Variable Selection and Model Selection

22. Bayesian and Machine Learning Methods in Statistical Genetics

23. Statistical Genetics

24. Data Mining, Pharmacodynamics and Toxicology

25. Bayesian Methods

26. Biopharmaceutical Research

27. Clinical Trials

28. Applied Data Analysis

MONDAY, MARCH 21

7:30 a.m.–5:00 p.m. **Conference Registration**
Lower Level Promenade (Terrace Level)

7:30 a.m.–5:00 p.m. **Speaker Ready Room**
Azalea B (Terrace Level)

9:30 a.m.–5:00 p.m **Placement Service**
Hibiscus A (Terrace Level)

8:30 a.m.–5:00 p.m. **Exhibits Open**
Lower Promenade (Terrace Level)

8:30 a.m.–10:15 a.m.

Tutorial

T1: Nearest Neighbors Techniques for Natural Resources Applications
Jasmine (Terrace Level)

8:30 a.m.–10:15 a.m.

Scientific Program

29. Current Issues and Controversies for Clinical Trial Data Monitoring Committees
Tuttle (Terrace Level)

30. Risk Assessment and Survival Analysis
Brickell (Terrace Level)

31. Statistical Applications in Genomics
Ashe Auditorium (3rd Floor)

32. Statistical Methods for Complex Functional Biological Signals
Miami Lecture Hall (3rd Floor)

33. Practical Applications of Dynamic Treatment Regimes in Medicine
Gautier (3rd Floor)

34. Joint Modeling of Multivariate Longitudinal and Survival Data
Flagler (Terrace Level)

35. Variable Selection in High Dimensional Data
Johnson (3rd Floor)

36. Biomarkers and Surrogate Markers
Foster (3rd Floor)

37. Spatial Statistics
Pearson 2 (3rd Floor)

38. Clustered Data Methods
Merrick 2 (3rd Floor)

39. Competing Risks Quantile Residual Life Regression
Pearson 1 (3rd Floor)

40. Constrained Estimation Models and Agreement Models
Stanford (3rd Floor)

41. Survival Analysis: Causal Inference
Ibis (3rd Floor)

9:30 a.m. – 5:00 p.m. **Placement Service**
Hibiscus A (Terrace Level)

10:15 a.m.–10:30 a.m. **Refreshment Break and Visit Our Exhibitors**
Lower Promenade (Terrace Level)

10:30 a.m.–12:15 p.m.

Tutorial

T2: Software for Bayesian Adaptive Drug and Device Trials
Jasmine (Terrace Level)

10:30 a.m.–12:15 p.m

Scientific Program

42. Statistical Methods for High-throughput Sequencing Data
Tuttle (Terrace Level)

43. New Development of Propensity Score Related Methods
Brickell (Terrace Level)

44. Moving Beyond the Rolodex of Formulas: Teaching Statistical Thinking
Ashe Auditorium (3rd Floor)

45. Recent Advances in Multiple Testing with Multiple Treatments/Multiple Endpoints
Miami Lecture Hall (3rd Floor)

46. Survival Analysis and Clinical Trials
Gautier (3rd Floor)

47. Statistical Methods for Analysis of Large Functional Data Sets
Flagler (Terrace Level)

48. Adaptive Randomization and Dose Finding
Pearson 2 (3rd Floor)

49. Assessing Biosimilarity on Follow-on Biologics
Johnson (3rd Floor)

50. Modernizing Meta-Analysis
Foster (3rd Floor)

51. Diagnostic and Screening Tests
Merrick 2 (3rd Floor)

52. Longitudinal Data
Pearson 1 (3rd Floor)

53. Epidemiologic Methods in Statistical Genetics
Stanford (3rd Floor)

54. Spatial and Environmental Statistics
Ibis (3rd Floor)

12:15 p.m.–1:30 p.m. **Roundtable Luncheons**
Monroe Room (Terrace Level)

1:30 p.m.– 4:30 p.m. **Regional Advisory Board (RAB) Meeting**
(By Invitation Only)
Hibiscus B (Terrace Level)

1:45 p.m.–3:30 p.m.
Tutorial

T3: Statistical Inference with Missing Data
Jasmine (Terrace Level)

1:45 p.m.–3:30 p.m.
Scientific Program

55. High Dimensional Data Analysis with Applications in the Biosciences
Tuttle (Terrace Level)

56. Statistical Issues in Next Generation Sequencing
Brickell (Terrace Level)

57. New Directions in Functional Data Analysis
Ashe Auditorium (3rd Floor)

58. New Statistical Methods for Evaluating Diagnostic Tests in the Absence of Gold
Miami Lecture Hall (3rd Floor)

59. Characterizing Longitudinal Data to Predict Health Outcomes
Gautier (3rd Floor)

60. Statistical Analysis of Brain Imaging Data
Flagler (Terrace Level)

61. Statisticians as Leaders: Why it is Increasingly Important, and What it Means
Johnson (3rd Floor

62. Spatial Models and Surveillance
Foster 1 (3rd Floor)

63. Pharmacokinetics and Toxicology
Pearson 2 (3rd Floor)

64. Linear Mixed Models
Ibis (3rd Floor)

65. Statistical Genetics: Methodology
Merrick 2 (3rd Floor)

66. Applied Data Analysis
Pearson 1 (3rd Floor)

67. Bayesian Methods in Survival Analysis
Stanford (3rd Floor)

3:30 p.m.–3:45 p.m. **Refreshment Break and Visit Our Exhibitors**
Lower Promenade (Terrace Level)

3:45 p.m.–5:30 p.m.
Tutorial

T4: Snakes and Ladders: Building a Career in Statistics
Jasmine (Terrace Level)
(Note this tutorial is only for students and there is no registration fee to attend. However, registration is required to ensure a place in the tutorial)

3:45 p.m.–5:30 p.m.
Scientific Program

68. New Developments in Functional Principal Component and Regression Analysis
Tuttle (Terrace Level)

69. Statistical Learning Methods in High Dimensional Data Analysis
Brickell (Terrace Level)

70. Current Statistical Perspectives and Approaches to Gene Set Analysis
Ashe Auditorium (3rd Floor)

71. Causal Inference and Case-Control Data
Miami Lecture Hall (3rd Floor)

72. Regulatory and Legal Statistics
Gautier (3rd Floor)

73. Disease Mapping and Spatial Regression as Emerging Tools for Surveillance Epidemiology
Flagler (Terrace Level)

74. Adaptive Designs for Clinical Trials
Johnson (3rd Floor)

75. Joint Models for Longitudinal and Survival Data
Foster (3rd Floor)

76. Imaging and Time Series
Pearson 2 (3rd Floor)

77. Statistical Genetics and Applications
Merrick 2 (3rd Floor)

78. Estimating Equations and Semiparametric Models for Longitudinal Data
Pearson 1 (3rd Floor)

79. Epidemiologic, Environmental and Health Policy Applications
Ibis (3rd Floor)

80. Statistical Genetics: Genomics
Stanford (3rd Floor)

5:30 p.m.–6:30 p.m. **Student Mixer**
Monroe Room (Terrace Level)

6:00 p.m.–7:30 p.m. **President's Reception**
(By Invitation Only)
Riverwalk (Terrace Level)

TUESDAY, MARCH 22

7:30 a.m.–5:00 p.m. **Conference Registration**
Lower Promenade (Terrace Level)

7:30 a.m.–5:00 p.m. **Speaker Ready Room**
Azalea B (Terrace Level)

9:00 a.m.–3:30 p.m. **Placement Service**
Hibiscus A (Terrace Level)

8:30 a.m.–5:30 p.m. **Exhibits Open**
Lower Promenade (Terrace Level)

8:30 a.m.–10:15 a.m.
Scientific Program

81. Design, Analysis and Decision-Making in Drug Safety Assessment
Hibiscus B (Terrace Level)

82. Statistical Analysis of Functional Imaging Data
Pearson 2 (3rd Floor)

83. Analysis of Multivariate Non-Gaussian Longitudinal Data
Ashe Auditorium (3rd Floor)

84. Statistical Methods in HIV/AIDS Research
Miami Lecture Hall (3rd Floor)

85. Statistics in Protein and Proteomics Data Analysis
Gautier (3rd Floor)

86. Recent Issues of Generalized Estimating Equations in Practice
Orchid C (Terrace Level)

87. Genomics
Merrick 1 (3rd Floor)

88. Hierarchical Models
Merrick 2 (3rd Floor)

89. Missing Data
Pearson 1 (3rd Floor)

90. Spatial and Temporal Modeling
Johnson (3rd Floor

91. Analysis of Binary Data
Foster 1 (3rd Floor)

92. Measurement Error
Ibis (3rd Floor)

93. Applications to Cancer Research
Stanford (3rd Floor)

10:15 a.m.–10:30 a.m. **Refreshment Break and Visit Our Exhibitors**
Lower Promenade (Terrace Level)

10:30 a.m.–12:15 p.m. **94.** Presidential Invited Address and Student Paper Awards
Regency Ballroom (Terrace Level)

1:30 p.m.–4:30 p.m. **Regional Committee Meeting** (By Invitation Only)
Hibiscus B (Terrace Level)

1:45 p.m.–3:30 p.m.
Tutorial

T5: Essentials for Success in Research: Everything You Ever Wanted to Know About NIH Grants and Publishing in Biostatistical Journals
Jasmine (Terrace Level)

1:45 p.m.–3:30 p.m.
Scientific Program

95. Nonparametric Bayes Methods for High-Dimensional Data
Tuttle (Terrace Level)

96. Semiparametric Regression Methods for Longitudinal Data
Pearson 2 (3rd Floor)

97. Innovative Adaptive Designs in Early-Phase Oncology Clinical Trials
Ashe Auditorium (3rd Floor)

98. Statistics and Networks
Miami Lecture Hall (3rd Floor)

99. Assessing DNA Copy Number Variation from High-Throughput Technologies

Gautier (3rd Floor)

100. Modeling and Inference of NeuroImaging Data

Orchid C (Terrace Level)

101. Functional Data Analysis

Merrick 1 (3rd Floor)

102. ROC Analysis

Merrick 2 (3rd Floor)

103. Genome-Wide Association Studies

Johnson (3rd Floor)

104. Models for Infectious Diseases

Pearson 1 (3rd Floor)

105. Survival Analysis

Stanford (3rd Floor)

106. Sample Size and Power

Foster 1 (3rd Floor)

107. Causal Inference

Ibis (3rd Floor)

3:30 p.m.–3:45 p.m. **Refreshment Break and Visit Our Exhibitors**

Lower Promenade (Terrace Level)

3:45 p.m –5:30 p.m.

Tutorial

T6: Introduction to the MCMC Procedure in SAS/STAT Software

Jasmine (Terrace Level)

3:45 p.m.–5:30 p.m.

Scientific Program

108. Next-Generation Sequencing Data Analysis

Tuttle (Terrace Level)

109. Recent Advances in Functional and Longitudinal Data Analysis

Pearson 2 (3rd Floor)

110. Recent Method Development on Reinforcement Learning and Personalized Medicine

Miami Lecture Hall (3rd Floor)

111. Flexibly Modeling Overdispersed Hierarchical Data

Gautier (3rd Floor)

112. Advances in the Spatio-Temporal Analysis of Functional Magnetic Resonance Imaging (fMRI) Data

Orchid C (Terrace Level)

113. Estimation of Air/Soil Pollution Levels and Their Effects on Health

Johnson (3rd Floor)

114. IMS Medallion Lecture

Ashe Auditorium (3rd Floor)

115. Clinical Trials

Orchid D (Terrace Level)

116. Variable and Model Selection

Merrick 1 (3rd Floor)

117. High Dimensional Data

Foster 1 (3rd Floor)

118. Bayesian Methods and Applications

Merrick 2 (3rd Floor)

119. Multivariate and Nonparametric Survival Analysis

Pearson 1 (3rd Floor)

120. Analysis of Networks

Stanford (3rd Floor)

121. Survey Research

Ibis (3rd Floor)

5:30 p.m.–6:30 p.m. **ENAR Business Meeting**
(Open to All ENAR Members)
Tuttle (Terrace Level)

6:45 p.m.–10:30 p.m. **Tuesday Night Event**

WEDNESDAY, MARCH 23

7:30 a.m.–12:00 p.m.   **Speaker Ready Room**
Azalea B (Terrace Level)

7:30 a.m.–9:00 a.m.   **Planning Committee Meeting** (By Invitation Only)
Orchid A (Terrace Level)

8:00 a.m.–12:30 p.m.   **Conference Registration**
Lower Promenade (Terrace Level)

8:00 a.m.–12:00 p.m.   **Exhibits Open**
Lower Promenade (Terrace Level)

8:30 a.m.–10:15 a.m.

Scientific Program

122. New Functional Data Analysis Methodologies with Applications to Biostatistics
Ibis (3rd Floor)

123. Statistical Challenges and Effective Solutions for Handling High-Dimensional Data
Tuttle (Terrace Level)

124. Recurrent Events: New Practical Applications and Theoretical Developments
Merrick 2 (3rd Floor)

125. Statistics for Studying Gene Regulation
Miami Lecture Hall (3rd Floor)

126. Recent Development in Spatial and Spatio-Termporal Point Pattern Analysis
Merrick 1 (3rd Floor)

127. Bayesian Clinical Trials in Practice: When Rubber Meets the Road
Gautier (3rd Floor)

128. Cancer Applications
Ashe Auditorium (3rd Floor)

129. Research Ethics in Biostatistics: A Panel Discussion
Stanford (3rd Floor)

130. Methods for Biopharmaceutical Research
Johnson (3rd Floor)

131. Microarray Analysis
Pearson 1 (3rd Floor)

132. Generalized Linear Models
Jasmine (Terrace Level)

133. Survival Analysis Applications
Foster 1 (3rd Floor)

134. Image Data Analysis
Foster 2 (3rd Floor)

10:15 a.m.–10:30 a.m.   **Refreshment Break and Visit Our Exhibitors**
Lower Promenade (Terrace Level)

10:30 a.m.–12:15 p.m.

Scientific Program

135. Applications of Sparsity in Unsupervised Learning
Ibis (3rd Floor)

136. Adaptive Optimal Designs
Tuttle (Terrace Level)

137. Bayesian Graphical Models for High Dimensional Data
Ashe Auditorium (3rd Floor)

138. Recent Development in Panel Count Data Inference
Miami Lecture Hall (3rd Floor)

139. Impact of Biostatistical Methods on HIV/AIDS Studies in Resource-Limited Environments
Merrick 1 (3rd Floor)

140. Recent Advances in Spatial Statistics and Their Applications to Environmental Problems
Gautier (3rd Floor)

141. Kidney Paired Donation Program: Statistical Model and Clinical Practice
Stanford (3rd Floor)

142. Estimating Equations
Merrick 2 (3rd Floor)

143. Multiple Testing
Foster 1 (3rd Floor)

144. Models Involving Latent Variables
Pearson 1 (3rd Floor)

145. Nonparametric Methods
Jasmine (Terrace Level)

146. Machine Learning and Gene-Gene Interaction
Johnson (3rd Floor

147. Bayesian Methods for Longitudinal Data
Foster 2 (3rd Floor)

SUNDAY, MARCH 20

7:30–8:00 p.m.
New Member Reception
Riverfront Ballroom (2nd Floor)

8:00–11:00 p.m.
Social Mixer Honoring the Presidents
and Poster Session
Riverfront Ballroom (Terrace Level)

Poster Presentations

1. ADAPTIVE DESIGNS, SAMPLE SIZE AND POWER
Sponsor: ASA Biopharmaceutical Section

1a. Adaptive Design with Application to a Vaccine Clinical Trial
Shu-Chih Su*, Merck & Company

1b. Covariate-Adaptive Randomization and Estimation of Treatment Effect in a Large Phase III Trial of Hemorrhagic Stroke
Gayane Yenokyan*, Jonathan Gellar, Michael Rosenblum, Richard E. Thompson, Johns Hopkins School of Public Health and Daniel F. Hanley, Johns Hopkins School of Medicine

1c. Strategies for Adding Treatment Arms to an Ongoing Multi-arm Clinical Trial
Jordan J. Elm*, Yuko Y. Palesch, Medical University of South Carolina, Barbara C. Tilley, University of Texas at Houston, Wenle Zhao, Vanessa Hinson, Medical University of South Carolina, Bernard Ravina, Biogen Inc.

1d. Flexible Group Sequential Clinical Trials Using Sample Size Re-estimation
Yi Wu*, Ajit C. Tamhane, Northwestern University, Cyrus Mehta, Cytel, Inc.

1e. Internal Pilot with Interim Analysis for Multiple Degree of Freedom Hypothesis Tests
John A. Kairalla* and Keith E. Muller, University of Florida, Christopher S. Coffey, University of Iowa

1f. Review and Comparisons of Adaptive Design Methods
Corina Sirbu*, i3 Statprobe, Ingenix

1g. Analysis and Sample Size Determination for Biosimilar Compounds
J.W. Adair, Jennifer Nezzer*, PPD Inc. Austin Combest, PPD Inc and Dirk Reitsma, PPD Inc

1h. A More Powerful Test Based on Ratio Distribution for Retention Non-inferiority Hypothesis
Ling Deng*, Johnson & Johnson Pharmaceutical R&D and Gang Chen, University of Iowa

2. POSTERS: BIOMARKERS AND SURROGATE MARKERS
Sponsor: ASA Biopharmaceutical Section

2a. Biomarker Enrichment in Clinical Trials: Caveats from the ADNI Dataset
Richard E. Kennedy* and Gary Cutter, University of Alabama-Birmingham, Lon Schneider, University of Southern California

2b. A Hidden Markov Chain Model for Joint SNP and CNP Calling
Gun Ho Jang* and Rui Feng, University of Pennsylvania

2c. Classification Methods for Censored Longitudinal Biomarker Data
Yeonhee Kim* and Lan Kong, University of Pittsburgh

2d. Sensitivity Analysis for the Identification of Surrogate Variables
Holger Brandt* and Andreas G. Klein, University of Western Ontario

2e. Estimating Proportion of Treatment Effect Explained for Categorical Endpoints
Bin Huang*, Cincinnati Children's Hospital Medical Center, Chen Chen, University of Cincinnati, Todd G. Nick, Arkansas Children's Hospital

3. POSTERS: NONPARAMETRIC METHODS AND MISSING DATA METHODS
Sponsor: ENAR

3a. Nonparametric Estimation in Semivarying Coefficient Models
Young-Ju Kim*, Kangwon National University

3b. Statistical Inference in Partial Linear Model with Double Smoothing Method
Wan Tang, Hua He and Guoxin Zuo*, University of Rochester

3c. Using Rank Based Tests for Treatment Effects in Combined Designs
Yvonne M. Zubovic*, Indiana University Purdue University, Fort Wayne

3d. Semiparametric Mixed Model for Evaluating Pathway-Environment Interaction
Zaili Fang* and Inyoung Kim, Virginia Polytechnic Institute and State University

3e. Joint Nonparametric Bayes Modeling via Factor Partition Models
Anjishnu Banerjee* and David B. Dunson, Duke University

3f. Correction of Bias in Estimating Rates of Cognitive Decline Using Auxiliary Telephone Cognitive Evaluation Data
Cuiling Wang and Charles B. Hall*, Albert Einstein College of Medicine

3g. A Comparison of Techniques for Analyzing Left-Censored Biomarker Data with Application to Secondhand Smoking Research
Tulay Koru-Sengul*, John D. Clark, Lora E. Fleming and David J. Lee, University of Miami

3h. Proportional Hazards Regression with Missing Covariates
Yeonjoo Yi*, Duke University

4. POSTERS: EPIDEMIOLOGIC, ENVIRONMENTAL AND ECOLOGICAL APPLICATIONS
Sponsor: ASA Section on Statistics in Epidemiology

4a. A Retrospective Analysis of the Association of Dust Storms and Respiratory Hospitalizations in El Paso, Texas, Using a Case-Crossover Study Design
Yanlei Peng*, University of South Carolina – Columbia, Joan G. Staniswalis, Sara E. Grineski, Tom Gill, University of Texas at El Paso

4b. HIV-Malaria Co-Infection: Effects of Malaria on the Prevalence of HIV in East Sub-Saharan Africa
Diego Cuadros, University of Kentucky, Adam Branscum*, Oregon State University, Philip Crowley, University of Kentucky

4c. Random-Effects Regression Models for Analyzing Asbestos Data with Heteroscedastic Errors
Yoonsang Kim* and Dulal Bhaumik, University of Illinois at Chicago

4d. The Effect of Water Disinfection By-Products on Pregnancy Outcomes in Two Southeastern U.S. Communities
Bethany J. Horton*, University of North Carolina at Chapel Hill, Thomas J. Luben, National Center for Environmental Assessments, U.S. Environmental Protection Agency, Amy H. Herring, University of North Carolina at Chapel Hill and Carolina Population Center, David A. Savitz, Brown University, Philip C. Singer and Howard S. Weinberg, University of North Carolina at Chapel Hill, Katherine E. Hartmann, Vanderbilt University

4e. Visualizations of the Interactive Effects of Alcohol and Tobacco on Pharyngeal Cancer using Bivariate Splines
Jennifer Clark*, Andrew Olshan and Amy Herring, University of North Carolina at Chapel Hill

4f. Separating and Explaining Different Scales in Water Use Time Series
Katerina Tsakiri*, University of Florida, Igor G. Zurbenko, State University of New York at Albany, James P. Heaney, University of Florida

5. POSTERS: GENOMICS I
Sponsor: ASA Biometrics Section

5a. Detecting Genetic Variants with High-Throughput Sequencing
Margaret Taub*, Ingo Ruczinski and Rafael Irizarry, Johns Hopkins University

5b. Joint Analysis of Multiple ChIP-seq Experiments
Hao Wu*, Emory University and Hongkai Ji, Johns Hopkins University

5c. Testing for the Effect of a Genetic Pathway in Longitudinal Data: Kernel Machine Regression
Stacey E. Alexeeff*, Harvard School of Public Health, Arnab Maity, North Carolina State University, Xihong Lin, Harvard School of Public Health

5d. A Bayesian Partitioning Model for Detection of Multi-locus Interaction in Case-Control Studies
Saonli Basu* and Xiang Li, University of Minnesota

5e. Genetic Association Test Using Next Generation Sequencing Data
Hongyan Xu* and Varghese George, Georgia Health Science University

5f. Bayes Factors in the Presence of Population Stratification
Linglu Wang*, George Washington University, Qizhai Li, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, China, Zhaohai Li, George Washington University, Gang Zheng, National Heart, Lung and Blood Institute

6. POSTERS: GENOMICS II
Sponsor: ASA Biometrics Section

6a. Statistical Methods for the Analysis of Yeast Growth Phenotypes to Reveal Functional Relationships Between Genes
Sarah Marks*, Emory University and Alan Marks, Georgia Gwinnett College

6b. Efficient Study Design for Next Generation Sequencing
Joshua N. Sampson*, Nilanjan Chatterjee, Meredith Yeager, Kevin Jacobs, Stephen Chanock, National Cancer Institute

6c. Boosting Signals in Gene Set Association Studies via Selective SNP Profiling
Cen Wu* and Yuehua Cui, Michigan State University

6d. Regularized Mixed Models to Account for Population Stratification
Lin Li*, Harvard University School of Public Health, Keyan Zhao, Carlos D. Bustamante, Stanford University School of Medicine

6e. Subset Based Meta-Analysis in Presence of Heterogeneity
Samsiddhi Bhattacharjee* and Nilanjan Chatterjee, National Cancer Institute

6f. Incorporating Multiple Gene Networks into Gene-Based Analysis of Genome-Wide Association Data
Peng Wei*, University of Texas School of Public Health

7. POSTERS: MICROARRAY ANALYSIS
Sponsor: ASA Biometrics Section

7a. A Bayesian Approach in Testing for Periodicity in Cell-Cycle Gene Expression Profiles
Mehmet Kocak*, St. Jude Children's Research Hospital and E. Olusegun George, University of Memphis

7b. A Bayesian Hierarchical Model for Correlated Microarray Datasets
Bernard Omolo*, University of South Carolina – Upstate, Ming-Hui Chen, University of Connecticut, Haitao Chu, University of Minnesota, Joseph G. Ibrahim, University of North Carolina at Chapel Hill

7c. The Practical Effect of Batch on Genomic Prediction
Hilary S. Parker*, Rafael A. Irizarry and Jeffrey T. Leek, Johns Hopkins School of Public Health

7d. High Dimensional ODEs Coupled with Mixed-Effects Modeling Techniques for Dynamic Gene Regulatory Network Identification
Tao Lu*, Hua Liang, University of Rochester, Hongzhe Li, University of Pennsylvania, Hulin Wu, University of Rochester

7e. Multilayer Correlation Structure of Microarray Gene Expression Data
Linlin Chen*, Rochester Institute of Technology, Lev Klebanov, Charles University in Prague, Anthony Almudevar, University of Rochester

7f. Integrative Analysis of DNA Copy Number and Gene Expression
Guanghua Xiao, University of Texas Southwestern Medical Center, Xinlei Wang, Runqi Lin*, Southern Methodist University

7g. Gene Set Analyses Using the Variance Component Test
Yen-Tsung Huang* and Xihong Lin, Harvard University

7h. Modeling and Simulating RNA-Seq Data for Complex Experiments
Wade Davis*, University of Missouri and Ann L. Oberg, Mayo Clinic

8. POSTERS: CAUSAL INFERENCE
Sponsor: ASA Section on Statistics in Epidemiology

8a. Inference for the Effect of Treatment on Survival Probability in Randomized Trials with Noncompliance and Administrative Censoring
Hui Nie*, The Wharton School, University of Pennsylvania, Jing Cheng, UCSF School of Dentistry, Dylan S. Small, The Wharton School, University of Pennsylvania

8b. Assessing Causal Effect of Treatment Dosages with Self-selection
Xin Gao* and Michael R. Elliott, University of Michigan

8c. Equivalence of Rank Preserving Structural Models and Instrumental Variable Models for Causal Mediation Analysis
Richard A. Emsley*, School of Community Based Medicine, The University of Manchester, United Kingdom, Frank Windmeijer, Centre for Market and Public Organisation, The University of Bristol, United Kingdom, Hanhua Liu, School of Community Based Medicine, The University of Manchester, United Kingdom, Paul Clarke, Centre for Market and Public Organisation, The University of Bristol, United Kingdom, Ian R. White, Cambridge, United Kingdom, Graham Dunn, School of Community Based Medicine, The University of Manchester, United Kingdom

8d. Causal Inference about Mediation When There are Several Mediators
Jing Zhang*, Joseph Hogan, Brown University, Michael Daniels, University of Florida

8e. Evaluation of Treatments with Heterogeneous Effects using Principal Strata Latent Survival Classes
Brian L. Egleston* and Mark Buyyounouski, Fox Chase Cancer Center

8f. Variation Independent Parameterization and Doubly Robust Estimation of the Multiplicative Local Average Treatment Effect with Binary Outcome
Elizabeth L. Ogburn*, Harvard University Thomas S. Richardson, James Robins, Andrea Rotnitzky, Harvard University

8g. Learning Causal Protein-Signaling Networks with Stability Control
Wanlu Deng*, Zhi Geng and Hongzhe Li, University of Pennsylvania School of Medicine

9. POSTERS: IMAGING
Sponsor: ENAR

9a. Use of Outlier-sum Statistics for Identifying Informative Brain Regions in the Analysis of Magnetic Resonance Imaging Data
Nathan Pugh*, University of Pittsburgh

9b. Nonparametric Independent Component Analysis for Colored Sources
Seonjoo Lee*, Haipeng Shen and Young Truong, University of North Carolina at Chapel Hill

9c. Practice-Related Changes in Neural Circuitry Supporting Eye Movements Investigated via Wavelet-Based Clustering Analysis
Jinae Lee* and Cheolwoo Park, University of Georgia, Benjamin Austin, University of Wisconsin, Kara Dyckman, Qingyang Li, Jennifer McDowell, Nicole A. Lazar, University of Georgia

9d. Penalized Multiscale Adaptive Model for Regularizing High Angular Resolution Diffusion Imaging
Shangbang Rao* and Hongtu Zhu, University of North Carolina at Chapel Hill, Chapel Hill

9e. A Statistical Validation and Evaluation Framework for Accuracy of Automated Segmentation and Classification Algorithms in Pathology Image Analysis
Jingjing Gao*, Emory University

9f. Random Forests for Exploring Functional Connectivity in fMRI
Qiang Chen*, National Institute of Mental Health

9g. A Feature Selection Method to Allow Clustering with Scattered Samples
Wenzhu Bi*, George C. Tseng, Lisa A. Weissfeld and Julie C. Price, University of Pittsburgh

9h. Variable Selection and Prediction with High-dimensional Matched Case-Control Neuroimaging Data
Jing Qian* and Rebecca A. Betensky, Harvard School of Public Health

10. POSTERS: APPLICATIONS TO CANCER RESEARCH
Sponsor: ASA Biometrics Section

10a. Prediction of Individual Long-term Outcomes in Smoking Cessation Trials Using Frailty Models
Yimei Li*, The Children's Hospital of Philadelphia & University of Pennsylvania, E. Paul Wileyto and Daniel F. Heitjan, University of Pennsylvania

10b. Comparison of Analytic Methods for Toxicity in Phase II Studies
Stacey A. Slone* and Brent Shelton, Markey Cancer Center, University of Kentucky, John Rinehart, University of Kentucky

10c. On Statistical Methodology for Pile Sorting and its Use in Cancer Screening Research
Hung-Wen Yeh*, Byron Gajewski, Baljit Kaur and Christine Daley, University of Kansas Medical Center

10d. Physical Activity and Leukocyte DNA Methylation in a Cancer-free Population
Shun Zhang*, University of North Texas Health Science Center and Fangfang Zhang, Tufts University

10e. Parametric and Non-Parametric Methods for Estimating Conditional Survival
Victoria Gamerman*, DuPont Guerry and Phyllis A. Gimotty, University of Pennsylvania

10f. Prospective Predictive Biomarker Discovery and Validation using Targeted Maximum Likelihood
Mary W. Redman*, Fred Hutchinson Cancer Research Center

10g. Identifying the Transition of the CBMN Biomarker in the Lung Cancer Risk Model
Chung-Han Ho*, Wenyaw Chan, Randa El-Zein and Carol J. Etzel, University of Texas MD Anderson Cancer Center

10h. Classification of Cancer Hazard Rate Curves into Five Order-Restricted Typologies
Michael J. Schell, Xiuhua Zhao* and Vernon Sondak, H. Lee Moffitt Cancer Center & Research Institute, George Simon, University of North Carolina at Chapel Hill

11. POSTERS: AGREEMENT, CATEGORICAL DATA AND GENERALIZED LINEAR MODELS
Sponsor: ENAR

11a. Blinding Assessment in Randomized Controlled Trial: A Regulatory Reviewers Perspective
Ying Yang*, U.S. Food and Drug Administration

11b. Assessment of Agreement for Intensive Longitudinal Data
Mina Yoo* and Runze Li, The Pennsylvania State University

11c. Process Modeling for Contingency Tables with Ordered Categories
Matthew Heaton, Duke University, Simone Gray*, Environmental Protection Agency, Alan Gelfand, Duke University

11d. Accessing the Precision and Bias of Intra-Class Correlation Coefficient Estimation, Type I Error Rate, and Power in Generalized Mixed Linear Models
Omar B. Mbowe* and Dr. David Redden, University of Alabama at Birmingham

11e. Using SAS for Calculation of Prentice Constraints for GEE Analysis of Binary Data
Matthew Davis* and Justine Shults, University of Pennsylvania

11f. The Poisson-Normal Model as an Alternative Approach for Analyzing Psychopharmacologic Challenge Study Data
Brian Pittman*, John H. Krystal and Ralitza Gueorguieva, Yale University School of Medicine

11g. Adaptive Trimmed Likelihood Estimation of Polytomous Logistic Regression
Xiaoshan Wang* and Pranab K. Sen, University of North Carolina at Chapel Hill

11h. Asymptotic Properties of an R2 Statistic for Fixed Effects in the Linear Mixed Model
Jeanine Matuszewski* and Lloyd Edwards, University of North Carolina at Chapel Hill

11i. Modeling and Analysis of Multi-neuronal Spike Train Data
Kohinoor Dasgupta*, XuanLong Nguyen, Stilian Stoev and Vijay Nair, University of Michigan

12. POSTERS: LONGITUDINAL DATA
Sponsor: ENAR

12a. Modeling CD4 Cell Counts Over Time in HIV-Infected Adults in Central Africa
Jeniffer Iriondo Perez*, Hrishikesh Chakraborty, Godfrey Woelk, Jennifer Hemingway-Foday and Jamie E. Newman, RTI International

12b. Development of Objective Quadratic Inference Functions Based On Gaussian Graphic Models
Yan Zhou*, Yijiang Li and Peter X. K. Song, University of Michigan

12c. A Mixed Effects Least Squares Support Vector Machine Model for Classification of Longitudinal Data
Jan Luts*, Katholieke Universiteit Leuven, Belgium, Geert Molenberghs, Universiteit Hasselt and Katholieke Universiteit Leuven, Belgium, Geert Verbeke, Sabine Van Huffel and Johan A.K. Suykens, Katholieke Universiteit Leuven, Belgium

12d. Joint Modeling of Missing Data Due to Drop-Out and Death in Obesity and Depression Longitudinal Studies
Ping Yao* and Arlene Keddie, Northern Illinois University

12e. Estimating Correlations Between Biomarkers With Repeated Measures and Left-Censoring due to Minimum Detection Levels
Xianhong Xie* and Xiaonan Xue, Albert Einstein College of Medicine, Stephen Gange, Johns Hopkins Bloomberg School of Public Health, Howard Strickler, Mimi Kim, Albert Einstein College of Medicine

12f. Developing a Test of Separate Hypotheses for the Linear Mixed Model
Che L. Smith* and Lloyd J. Edwards, University of North Carolina at Chapel Hill

13. POSTERS: JOINT MODELS FOR LONGITUDINAL AND SURVIVAL DATA
Sponsor: ASA Biometrics Section

13a. Joint Modeling of Longitudinal Data with Informative Dropout in the Presence of Changepoints
Pulak Ghosh, Indian Institute of Management, Bangalaore, India, Kaushik Ghosh*, University of Nevada, Las Vegas, Ram C. Tiwari, U.S. Food and Drug Administration

13b. Joint Modeling of Longitudinal and Survival Data with Missing and Left-Censored Time-Varying Covariates
Ryan C. May* and Joseph G. Ibrahim, University of North Carolina at Chapel Hill, Haitao Chu, University of Minnesota, Stephen R. Cole, University of North Carolina at Chapel Hill

13c. Analysis of Longitudinal Data on Cognitive Scores Controlling for Missingness Due to Death
Xianchong Zhou*, Richard Thompson and Scott Zeger, Johns Hopkins University

13d. Accounting for a Doubly Censored Longitudinal Covariate in Survival Analysis by Joint Modeling
Francis Pike*, University Of Pittsburgh

13e. Joint Modeling of Menstrual Cycle Length and Fecundity
Alexander C. McLain, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Kirsten J. Lum*, Johns Hopkins University, Rajeshwari Sundaram and Germaine M. Buck Louis, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health

14. POSTERS: HIGH DIMENSIONAL DATA
Sponsor: ENAR

14a. A ROAD to Classification in High Dimensional Space
Jianqing Fan, Princeton University, Yang Feng, Columbia University, Xin Tong*, Princeton University

14b. A Semiparametric Approach to Dimension Reduction
Yanyuan Ma*, Texas A&M University and Liping Zhu, East China Normal University

14c. Survival Analysis with Compound Covariate for Omics Data
Pei-Fang Su*, Heidi Chen, Xi Chen and Yu Shyr, Vanderbilt University

14d. Comparison of Performances of Penalty Functions with Sparse Canonical Correlation Analysis
Prabhakar Chalise*, Liewei Wang and Brooke Fridley, Mayo Clinic College of Medicine

14e. Estimating Temporal Associations in Electrocorticographic (ECoG) Time Series Using Multiple Subjects
Haley Hedlin*, Johns Hopkins School of Public Health, Dana Boatman, Johns Hopkins Hospital and Brian Caffo, Johns Hopkins School of Public Health

14f. Integrative Set Enrichment Testing for Multiple Omics Platforms
Laila M. Poisson*, Henry Ford Health Systems, Jeremy MG Taylor, University of Michigan, Debashis Ghosh, Penn State University

14g. Graphical Models for High Dimensional Data
Munni Begum*, Jay Bagga and Ann Blakey, Ball State University

15. POSTERS: SPATIAL AND TEMPORAL MODELING
Sponsor: ASA Section on Statistics and the Environment

15a. Decomposing the Effects of Space, Environment, and Social Ties on Placebo Incidence in Vaccine Trials
Carolina Perez-Heydrich*, Sophia Giebultowicz, Amy Herring and Michael Emch, University of North Carolina at Chapel Hill, Mohammad Ali, International Vaccine Institute

15b. The Effect of Air Pollution Control on Life Expectancy in the United States: A Population-Based Analysis of Major Metropolitan Areas
Andrew W. Correia* and Francesca Dominici, Harvard University

15c. Assessing the Impact of Alcohol Establishment Density on Violent Crime in Minneapolis Neighborhoods Using Univariate and Multivariate Conditionally Autoregressive Models
Harrison S. Quick*, Traci L. Toomey and Bradley P. Carlin, University of Minnesota

15d. Does Work Environment Affect Weight Status? A Spatial Analysis to Assess the Availability of Local Food Stores Among Elementary Schools Employees in New Orleans, LA.
Adriana C. Dornelles*, Janet Rice, Larry Webber and Rose Diego, Tulane University

15e. Analysis of Periodontal Data using Circular Statistics
Samopriyo Maitra* and Thomas Braun, University of Michigan

15f. Attaching Uncertainty to Deterministic Spatial Interpolations
Souparno Ghosh* and Alan E. Gelfand, Duke University

15g. Emulating a Gravity Model to Infer the Spatiotemporal Dynamics of an Infectious Disease
Roman Jandarov*, Murali Haran and Ottar Bjornstad, Penn State University, Bryan Grenfell, Princeton University

15h. Spatial Population Estimation
Kristian Lum*, Federal University of Rio de Janeiro

16. POSTERS: SURVIVAL ANALYSIS I
Sponsor: ASA Biometrics Section

16b. Tree-Based Identification of Subgroups for Time-Varying Covariate Survival Data
Marnie Bertolet* and Maria M. Brooks, University of Pittsburgh, Vera Bittner, University of Alabama at Birmingham

16c. Time-Varying Coefficient Survival Model: An Application in Examing the Dynamic Association of BMI and Mortality
Jianghua He*, University of Kansas Medical Center

16d. Statistical Testing on Non-Proportional Hazards
Yabing Mai*, Merck Research Laboratories, Zhen Chen, University of Rochester, Amarjot Kaur, Merck Research Laboratories

16e. Predictive Accuracy of Covariates for Event Times
Li Chen*, University of Kentucky, Danyu Lin and Donglin Zeng, University of North Carolina at Chapel Hill

16f. A Semi-Parametric Joint Model for Semi-Competing Risk Data
Renke Zhou*, University of Texas at Houston; University of Texas at M.D. Anderson Cancer Center, Jing Ning, Weiwei Wang, University of Texas at Houston, Melissa Bondy, University of Texas M. D. Anderson Cancer Center

17. POSTERS: MULTIPLE TESTING AND MULTIVARIATE METHODS
Sponsor: ENAR

17a. Adaptive Multiple Testing Procedures Incorporating Correlations
Li He* and Sanat K. Sarkar, Temple University

17b. On Controlling Pairwise-False Discovery Rate
Bhramori Banerjee* and Sanat K. Sarkar, Temple University

17c. Equivalence Testing and Multiplicity
Celeste Yang*, University of Alabama at Birmingham

17d. Joint Models and Tests of Multiple Non-Commensurate Outcomes
Frank B. Yoon*, Stuart R. Lipsitz and Garrett M. Fitzmaurice, Harvard Medical School, Nicholas J. Horton, Smith College, Sharon-Lise T. Normand, Harvard Medical School

17e. A Simple Graphical Method to Check Dependence Structure Using Copula
Eun-Joo Lee*, Millikin University

17f. Characterizing Heterogeneity: An Application of Principal Point Classification to Autism Data
Jing Wang* and Eva Petkova, New York University, Thaddeus Tarpey, Wright State University

17g. Testing a Common Mean of a Large Number of Normal Populations
Junyong Park and DoHWan Park*, University of Maryland-Baltimore County

18. POSTERS: SURVIVAL ANALYSIS II
Sponsor: ASA Biometrics Section

18a. Semiparametric Stochastic Modeling for Epidemic Data
Chia-Hui Huang*, Columbia University

18b. Regression Analysis of Clustered Interval-Censored Failure Time Data
Junlong Li* and Jianguo Sun, University of Missouri, Xingwei Tong, Beijing Normal University

18c. Covariate Selection Method in Mixture Cure Model for Survival Data
Junichi Asano* and Akihiro Hirakawa, Center for Product Evaluation, Pharmaceuticals and Medical Devices Agency, Japan

18d. Modeling Bivariate Weibull Distributions Using Archimedean Copulas
Seung-Hwan Lee*, Illinois Wesleyan University

18e. Association Analysis of Bivariate Recurrent Event Data with Marks
Hao Wang*, University of Pittsburgh

18f. Efficient Estimation in AFT Frailty Model for Clustered Survival Data
Bo Liu* and Wenbin Lu, North Carolina State University

19. POSTERS: MEASUREMENT ERROR AND ROC ANALYSIS
Sponsor: ENAR

19a. Modeling Response Errors in Repeated Self-Report Surveys: An Example of Multiple Editing for Categorical Data
Robin A. Jeffries* and Robert E. Weiss, University of California, Los Angeles

19b. Extending Carri ability Models to H sreported Family His
Danielle B vard University, Giovanni Parmig Farber Cancer Institute, Harv n of Public Health, Lorenzo Tripp a-Farber Cancer Institute, Hormuzd Katki, N ional Cancer Institute

Withdrawn

19c. Multiple Indicators, Multiple Causes Measurement Error Models
Carmen D. Tekwe*, Texas A&M University and Randy L. Carter, University at Buffalo

19d. Optimal Two-Stage Design for Evaluation of Measurement Errors in Reliability Studies
Mei Jin*, George Washington University, Aiyi Liu, National Institute of Child Health and Human Development, National Institutes of Health, Zhaohai Li, George Washington University

19e. Adjustment for Measurement Error in Diagnostic Tests
Matthew T. White* and Sharon X. Xie, University of Pennsylvania School of Medicine

19f. Optimal Use of Selective Viral Load Testing for HIV Treatment Monitoring in Resource Limited Settings
Tao Liu*, Joseph Hogan, Brown University and Rami Kantor, Brown University and Lifespan

19g. Assessing Database Privacy Using the Area Under the Receiver-Operator Characteristic Curve
Gregory J. Matthews*, Ofer Harel and Robert H. Aseltine, Jr., University of Connecticut

20. POSTERS: HIERARCHICAL MODELS AND LATENT VARIABLES
Sponsor: ENAR

20a. Conditional Decomposition Diagnostics for Regression Analysis of Zero-inflated and Left-Censored Data
Yan Yang*, Arizona State University and Douglas Simpson, University of Illinois

20b. Variable Selection for Multilevel Models in the Presence of Missing Data
Miguel Marino* and Yi Li, Harvard University

20c. Analysis of Heterogeneous Outcomes in a Randomized Clinical Trial for the Treatment of Methamphetamine Addiction with the Latent Variable Approach
Jennie Z. Ma*, University of Virginia

20d. Latent Mixture Analysis of Effect Modification
Tanzy M. Love* and Sally W. Thurston, University of Rochester

20e. Discrimination Index for Latent Group-Based Trajectory Models
Nilesh Shah*, University of Pittsburgh

20f. Multilevel Bayesian Modeling of Follow-up Studies with Missing Data
Monica M. Bennett*, James Stamey and John Seaman, Jr., Baylor University

20g. Constructing Bivariate Contours for Censored Data
Jamila Mathias*, North Carolina State University

21. POSTERS: VARIABLE SELECTION AND MODEL SELECTION
Sponsor: ENAR

21a. A Multivariate Penalized Regression Method for eQTL Mapping
Ting-Huei Chen*, Wei Sun and Fred A. Wright, University of North Carolina at Chapel Hill

21b. Weakness of Cross-Validation
Laurence de Torrenté*, Ecole Polytechnique Fédérale de Lausanne (EPFL)

21c. Bootstrapping in Sparse Correlation Models
Mihai C. Giurcanu*, University of Louisiana at Lafayette and Brett D. Presnell, University of Florida

21d. Comparative Study of Methods for Variables Selection in the Context of Developing Diagnostic Instruments
Lassell (Feihan) Lu* and Eva Petkova, New York University Child Study Center

21e. Network-Constrained Sparse Canonical Correlation Analysis with Applications in Genomic and Metagenomic Data Analysis
Jun Chen*, University of Pennsylvania School of Medicine

21f. Comparison and Summary of Criteria for Working Correlation Structure and Covariate Selection in Generalized Estimating Equation
Ming Wang* and Lijun Zhang, Emory University

21g. Transcriptional and Metabolic Data Integration and Modeling for Pathway Identification
Alexandra Jauhiainen*, University of Michigan, Olle Nerman, Chalmers University of Technology and the University of Gothenburg, Göteborg, Sweden, George Michailidis, University of Michigan, Rebecka Jörnsten, Chalmers University of Technology and the University of Gothenburg, Göteborg, Sweden

22. POSTERS: BAYESIAN AND MACHINE LEARNING METHODS IN STATISTICAL GENETICS
Sponsor: ENAR

22a. Bayesian Modeling for the Number of Underlying Susceptibility Loci and Their Effect Size Distribution in Genome-Wide Association Studies
Ju-Hyun Park*, Nilanjan Chatterjee, National Cancer Institute, National Institute of Health and Raymond J. Carroll, Texas A&M University

22b. Utilizing Gene Pathway-Based Priors in Bayesian Association Studies
Abra Brisbin*, Liewei Wang and Brooke L. Fridley, Mayo Clinic

22c. Statistical Properties of Maximum Likelihood and Bayesian Estimates Under k-allele Models with Selection

Erkan O. Buzbas*, University of Michigan, Paul Joyce, University of Idaho, Noah A. Rosenberg, University of Michigan

22d. A Hierarchical Bayesian Mixed Model for Characterizing Genetic, Sex, and Parent-of-Origin Effects in Diallel Crosses of Model Organisms

William Valdar* and Alan Lenarcic, University of North Carolina at Chapel Hill, Gary Churchill, Jackson Laboratory, Bar Harbor

22e. A Bayesian Latent Model for Prioritization of SNPs for Follow-up Studies

Brooke L. Fridley*, Mayo Clinic, Ed Iversen, Duke University, Ya-Yu Tsai, Moffitt Cancer Center, Gregory D. Jenkins and Ellen L. Goode, Mayo Clinic, Thomas A. Sellers, Moffitt Cancer Center

22f. Extensions of Random Forests for Genetic Data Analysis

Xin Wang* Mariza de Andrade, Colin Colby, Marianne Huebner, Robert Freimuth and Joanna Biernacka, Mayo Clinic

22g. Detection of Genetic Marginal and Interaction Effects using Random Forests

Joanna M. Biernacka*, Xin Wang, Mariza de Andrade, Robert R. Freimuth, Colin Colby and Marianne Huebner, Mayo Clinic

23. POSTERS: STATISTICAL GENETICS
Sponsor: ASA Biometrics Section

23a. A Hidden Markov Model for Haplotype Inference Using Previously Identified Haplotype and Haplotype Patterns

Jihua Wu, Guo-bo Chen, Degui Zhi, Nianjun Liu and Kui Zhang*, University of Alabama at Birmingham

23b. An E-M Algorithm for Rapidly Fitting Mixture Regression Models to Test Imputed Data in Genome-Wide Association Studies

Rui Xia* and Paul Scheet, University of Texas MD Anderson Cancer Center

23c. A Model for Transgenerational Imprinting Variation in Complex Traits

Chenguang Wang*, Center for Devices and Radiological Health, U.S. Food and Drug Administration, Zhong Wang, Pennsylvania State University, Daniel R. Prows, University of Cincinnati College of Medicine, Rongling Wu, Pennsylvania State University

23d. Score Tests to Copy Number Polymorphism Data Under Non-Differential Errors

Wonkuk Kim*, University of South Florida

23e. A Population Based Simulation of Lung Cancer Prevention Among High-Risk Individuals Defined by Genetic Factors

Jing Su*, Bo Peng, University of Texas MD Anderson Cancer Center, Millennia Foy, Brown Foundation Institute of Molecular Medicine, University of Texas Health Science Center at Houston, Olga Gorlova, Christopher Amos, University of Texas MD Anderson Cancer Center

23f. Interval Mapping with a Parametric Accelerated Failure Time Cure Model

Devrim Bilgili*, University of North Florida

23g. Identifying Transcription Co-Regulator Binding Sites in ChIP-seq Data

Mengyuan Xu*, Clarice Weinberg, David Umbach and Leping Li, The National Institute of Environmental Health Sciences, National Institutes of Health

24. POSTERS: DATA MINING, PHARMACODYNAMICS AND TOXICOLOGY
Sponsor: ASA Biopharmaceutical Section

24a. Empirical Bayes Characterization for a Weighted-Sum of Environmental Chemical Concentrations

Stephanie M. Pearson*, Roy T. Sabo and Nitai D. Mukhopadhyay, Virginia Commonwealth University

24b. Biclustering to Identify the Relationship of Drugs and Adverse Events

Hung-Chia Chen* and James J. Chen, National Center for Toxicological Research, U.S. Food and Drug Administration

24c. Searching for Clinically Interesting Subgroups Using Patient Rule Induction Method

Xiwu Lin*, Daniel Parks, Jie Cheng and Kwan Lee, GlaxoSmithKline

24d. Robustifying a Non-Linear Model Using Wavelets with an Application to PK Modeling

Yuanshu Zou* and Siva Sivaganesan, University of Cincinnati, Peter Mueller, University of Texas, MD Anderson Cancer Center

24e. Preliminary Test Estimation Procedures in High Throughput Screening Assays

Changwon Lim*, The National Institute of Environmental Health Sciences, National Institutes of Health, Pranab K. Sen, University of North Carolina at Chapel Hill, Shyamal D. Peddada, The National Institute of Environmental Health Sciences, National Institutes of Health

25. POSTERS: BAYESIAN METHODS
Sponsor: ENAR

25a. Bayesian Sample Size Estimates in Clinical Trials with Dichotomous and Countable Outcomes

Boris G. Zaslavsky, U.S. Food and Drug Administration

25b. Bayesian Benchmark Dose Estimator for the Logistic Extra Risk Function

Stacey A. Dunlop*, University of North Carolina Wilmington

25c. Bayesian Independent Component Analysis

Ani Eloyan*, Johns Hopkins University and Sujit K. Ghosh, North Carolina State University

25d. Bayesian Analysis of MTD Models

Huiming Song*, University of California, Riverside

25e. Efficient Interpolation of Computationally Expensive Posterior Densities with Variable Parameter Costs

Nikolay Bliznyuk*, Texas A&M University

25f. A Modified Adaptive Accept-Reject Algorithm for Univariate Densities with Bounded Support

Carsten H. Botts*, Williams College

26. POSTERS: BIOPHARMACEUTICAL RESEARCH
Sponsor: ASA Biopharmaceutical Section

26a. Comparison of Methods for Countering Selection Bias in Comparative Effectiveness Studies of Medical Therapies in Nonrandomized Patient Databases

Paul Kolm*, Christiana Care Health System, Paulo Carita, sanofi-aventis R&D, Alice Guiraud, Keyrus Biopharma Levallois-Perret, France, Christine Taniou, Alios Conseil Boulogne-Billancourt, France, Edward Ewen, Claudine Jurkovitz, William S. Weintraub, Christiana Care Health System

26b. Validation of Probability Estimates Produced by Diagnostic Devices

Chava E. Zibman*, U.S. Food and Drug Administration

26c. Modeling Asymmetry, High Kurtosis and Heavy Tails in Longitudinal Endpoints Using Multivariate Skew Laplace Distribution

Jingyuan Yang*, Grace Park, Huei Wang and Lifen Zhou, Amgen

26d. Estimating Covariate-Adjusted Incidence Density Ratios for Multiple Time Intervals in Clinical Trials using Nonparametric Randomization Based ANCOVA

Benjamin Saville*, Vanderbilt University School of Medicine, Lisa LaVange and Gary Koch, University of North Carolina at Chapel Hill

26e. Predictive Modeling of Weight Loss Curves

Menghui Chen* and Shailaja Suryawanshi, Merck & Co.

26f. Meta-Regression and the Ecological Fallacy in Depression Treatment Studies
Thaddeus Tarpey*, Wright State University, Eva Petkova, Lei Huang, New York University, Liping Deng, Providence LLC

27. POSTERS: CLINICAL TRIALS
Sponsor: ASA Biopharmaceutical Section

27a. Variability of Placebo Effects Across Antidepressant Clinical Trials
Eva Petkova*, New York University and Thaddeus Tarpey, Wright State University

27b. Information Growth in Cluster Crossover Clinical Trials
Siobhan P. Brown*, ROC Clinical Trials Center, University of Washington

27c. Meta-Optimization of Different Stages of Clinical Trials
Frank Mannino*, GlaxoSmithKline

27d. Comparison of Non-Linear vs. Linear Models in Detecting Disease Modification Effects in Alzheimer's Trials
Lola Luo*, University of Pennsylvania, Anthony R. Entsuah, Merck Research Laboratory, Daniel F. Heitjan, University of Pennsylvania

27e. Change Point Survival Models: An Application to Acute Kidney Injury Data
Jane H. Zhang*, Bingqing Zhou and Peter Guarino, West Haven Cooperative Studies Program, VA Connecticut HCS

27f. A Comparison of Q- and A-Learning Methods for Estimating Optimal Treatment Regimes
Phillip J. Schulte*, Marie Davidian and Anastasios A. Tsiatis, North Carolina State University

28. POSTERS: APPLIED DATA ANALYSIS
Sponsor: ENAR

28a. Regression Parameter Estimate Adjustments With the Addition of Correlated and/or Interacting Variables
Julia L. Sharp* and William C. Bridges, Clemson University

28b. Using Latent Profile Analysis to Characterize Glycemic Control During Pregnancy
Heidi Sucharew*, Rhonda VanDyke and Jane Khoury, Cincinnati Children's Hospital Medical Center

28c. Comparison of High Dimensional Multivariate Profiles with Small Sample Sizes Using u-Scores
Margo A. Sidell* and Leann Myers, Tulane University

28d. Improved Prediction of Subjective Hearing Aid Benefit via Mixed-effects Models
David Afshartous* and Benjamin Hornsby, Vanderbilt University

28e. Comparison of the C-statistic and Information Gain
Bo Fu*, University of Pittsburgh, Chenyu Gao, Cornell University and Chung-Chou H. Chang, University of Pittsburgh

28f. Graphical Interface for Kidney Paired Donation Program
Yanhua Chen* and Peter X.K. Song, University of Michigan

28g. Fractional Polynomials: Issues of Identifiability and Fitting
Nancy Chalmers* and Don Edwards, University of South Carolina

29. CURRENT ISSUES AND CONTROVERSIES FOR CLINICAL TRIAL DATA MONITORING COMMITTEES

Tuttle (Terrace Level)
Sponsor: ASA Biopharmaceutical Section
Organizer
Chair: Susan Ellenberg,
University of Pennsylvania

8:30 **Communications Between DSMBs**
Dennis Dixon*, Formerly National Institute of Allergy and Infectious Diseases, National Institutes of Health

8:55 **Independence of Data Monitoring Committees and Sponsors**
Jay Herson*, Johns Hopkins University

9:20 **Adverse Event Summaries for the DMC: How to See the Forest Through the Trees**
James D. Neaton*, University of Minnesota

9:45 **After the Party's Over: Post-trial Responsibilities of the DMC**
Janet T. Wittes*, Statistics Collaborative

10:10 **Floor Discussion**

30. RISK ASSESSMENT AND SURVIVAL ANALYSIS

Brickell (Terrace Level)
Sponsor: ASA Section on Statistics in Epidemiology
Organizer: Xin He, University of Maryland
Chair: Mei-Ling Ting Lee,
University of Maryland

8:30 **Competing Risks in Health Surveys**
Bo H. Lindqvist*, Norwegian University of Science and Technology, Trondheim, Norway

8:55 **ROC Analysis for Recurrent Events Data**
Mei-Cheng Wang*, Johns Hopkins University and Chin-Tsang Chiang, National Taiwan University

9:20 **Analysis of Recurrent Event Studies with Incomplete Information and Complex Structure**
(Tony) Jianguo Sun*, University of Missouri

9:45 **Inference on Survival Models with Induced Smoothing**
Zhezhen Jin*, Columbia University

10:10 **Floor Discussion**

31. STATISTICAL APPLICATIONS IN GENOMICS

Ashe Auditorium (3rd Floor)
Sponsor: IMS
Organizer: Matthew Stephens,
University of Chicago
Chair: Matthew Stephens, University of Chicago

8:30 **Population Genetic Inference in the Person Genome Era**
Carlos Bustamante*, Stanford University

9:00 **Statistical Analysis of Modern High-Throughput Sequencing Data**
Jonathan Pritchard*, University of Chicago

9:30 **Stochastic Epigenetic Variation as a Driving Force for Evolutionary Adaptation and Disease**
Raphael Irrizary*, Johns Hopkins University

10:00 **Floor Discussion**

32. STATISTICAL METHODS FOR COMPLEX FUNCTIONAL BIOLOGICAL SIGNALS

Miami Lecture Hall (3rd Floor)
Sponsor: ASA Biometrics Section
Organizer: Brain Caffo, Johns Hopkins University
Chair: Ciprian Crainiceanu, Johns Hopkins University

8:30 **Bayesian Nonparametric Modeling of Non-Euclidean Objects**
David Dunson*, Duke University

8:55 **A Bayesian Hierarchical Nonlinear Mixture Model in the Presence of Artifactual Outliers in a Population Pharmacokinetic Study**
Leena Choi*, Vanderbilt University, Brian S. Caffo, Johns Hopkins University, Utkarsh Kohli, C. Michael Stein, Vanderbilt University

9:20 **HARK: A New Approach for Regression with Functional Predictors**
Dawn B. Woodard*, Cornell University School of Operations Research and Information Engineering, Ciprian Crainiceanu, Johns Hopkins University, David Ruppert, Cornell University

9:45 **Indirect Estimation of Kinetic Parameters in Dual Isotope Single Photon Emission Computed Tomography Studies of Microbicide Lubricants**
Brian S. Caffo*, Jeffrey Goldsmith, Craig Hendrix and Ciprian Crainiceanu, Johns Hopkins University

10:10 **Floor Discussion**

33. PRACTICAL APPLICATIONS OF DYNAMIC TREATMENT REGIMES IN MEDICINE
Gautier (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Organizer: Peter F. Thall, University of Texas MD Anderson Cancer Center
Chair: Peter F. Thall, University of Texas MD Anderson Cancer Center

8:30 **Statistical Inference in Dynamic Treatment Regimes**
Eric B. Laber*, University of Michigan, Min Qian, Columbia University, Susan A. Murphy, University of Michigan

9:00 **Evaluating Joint Effects of Induction-Salvage Treatment Regimes on Overall Survival in Acute Leukemia**
Abdus S. Wahed*, University of Pittsburgh and Peter F. Thall, University of Texas MD Anderson Cancer Center

9:30 **Personalized Medicine and Clinical Trials**
Michael R. Kosorok*, University of North Carolina at Chapel Hill

10:00 **Floor Discussion**

34. JOINT MODELING OF MULTIVARIATE LONGITUDINAL AND SURVIVAL DATA
Flagler (Terrace Level)
Sponsor: ASA Biopharmaceutical Section
Organizer: Abdus Sattar, Case Western Reserve University
Chair: Abdus Sattar, Case Western Reserve University

8:30 **A Joint Longitudinal and Illness-Death Model**
Elizabeth R. Brown*, University of Washington

8:55 **A Mixed Model for High-Dimensional Multivariate Longitudinal Data**
Geert Verbeke* and Steffen Fieuws, I-BioStat, K.U.Leuven

9:20 **Multilevel Bayesian Models for Zero-Inflated Longitudinal Patient-Reported Outcomes and Survival Times in Mesothelioma**
Laura A. Hatfield, University of Minnesota, Mark E. Boye, Eli Lilly and Company, Michelle D. Hackshaw, Merck and Company, Bradley P. Carlin*, University of Minnesota

9:45 **Joint Modeling of High-Dimensional Epidemiologic Data**
Amy H. Herring*, University of North Carolina at Chapel Hill, David B. Dunson, Duke University, Andrew F. Olshan, University of North Carolina at Chapel Hill

10:10 **Floor Discussion**

35. CONTRIBUTED PAPERS: VARIABLE SELECTION IN HIGH DIMENSIONAL DATA
Johnson (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Hao Helen Zhang, North Carolina State University

8:30 **Variable Selection in High-Dimensional Logistic Regression**
Fengrong Wei*, University of West Georgia

8:45 **A New Class of Estimating Equation-Based Dantzig Selectors with Applications to Clinical Trials and Cancer Genomics**
Sihai D. Zhao* and Yi Li, Harvard University

9:00 **Estimation and Variable Selection for High-Dimensional Logistic Models**
Pang Du*, Virginia Tech University, Pan Wu and Hua Liang, University of Rochester

9:15 **Model Selection for Correlated Data with Diverging Number of Parameters**
Hyunkeun Cho* and Annie Qu, University of Illinois at Urbana-Champaign

9:30 **A New Model-Free Sure Independence Screening for Ultra-High Dimensional Problems**
Runze Li, Wei Zhong*, The Pennsylvania State University and Liping Zhu, Shanghai University of Finance and Economics

9:45 **Bayesian Variable Selection in Semiparametric Proportional Hazards Model for High Dimensional Survival Data**
Kyu Ha Lee*, Sounak Chakraborty and Jianguo Sun, University of Missouri, Columbia

10:00 **Reduced-Rank Stochastic Regression with Sparse Singular Value Decomposition**

Kun Chen* and Kung-Sik Chan, University of Iowa

36. CONTRIBUTED PAPERS: BIOMARKERS AND SURROGATE MARKERS

Foster (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Gene Pennello, U.S. Food and Drug Administration

8:30 **A Bayesian Approach for Biomarker Measurement with Detection-Limit with an Application to Acute Lung Injury**
Qingxia Chen*, Huiyun Wu, Tatsuki Koyama, Richard D. Fremont and Lorraine B. Ware, Vanderbilt University

8:45 **Subgroup Specific Incremental Value of New Markers for Risk Prediction**
Qian Zhou*, Harvard School of Public Health, Yingye Zheng, Fred Hutchinson Cancer Research Center, Tianxi Cai, Harvard School of Public Health

9:00 **A New Approach for the Analysis of Surrogacy for Dichotomous Variables**
Andreas G. Klein* and Holger Brandt, University of Western Ontario

9:15 **Two-Sample Empirical Likelihood Ratio Tests for Medians in Application to Biomarker Evaluations**
Jihnhee Yu*, Albert Vexler, Seong-Eun Kim and Alan Hutson, University at Buffalo, SUNY

9:30 **Combining Multiple Biomarkers Using U-scores to Assess Treatment Effects**
Ying Ding*, Ming-Dauh Wang and Alan Chiang, Eli Lilly and Company

9:45 **An Integrated Bayesian Lasso and Multiple Imputation Framework, with Applications to a Biomarker Selection Problem**
Nick Sabbe*, Olivier Thas and Jean-Pierre Ottoy, Ghent University

10:00 **Investigation of Methods for Identifying a Predictive Biomarker for the Occurrence of Disease with Application to an Imaging Data for Cardiac Events**
Ian Huang*, Jyoti Zalkikar and Ram Tiwari, U.S. Food and Drug Administration

37. CONTRIBUTED PAPERS: SPATIAL STATISTICS

Pearson 2 (3rd Floor)
Sponsor: ASA Section on Statistics and the Environment
Chair: Junhee Han, University of Arkansas

8:30 **Spatio-Temporal Modeling of NO_2 Based on Data with Different Resolutions**
Lixun Zhang*, Yale University

8:45 **Predicting a New Time Series Using Multiple Partially Observed Time Series**
Thomas Bohrmann*, Andrew Hein, Forrest Stevens, Mollie Brooks, Joseph Lucchetti and Mary Christman, University of Florida, Benjamin Bolker, McMaster University, Craig Osenberg, University of Florida, Hilary Swain, Archbold Biological Station

9:00 **Accounting for Spatial Misalignment in a National Study of Particulate Matter Constituents and Mortality**
Jenna R. Krall*, Johns Hopkins Bloomberg School of Public Health, Michelle L. Bell, School of Forestry and Environmental Studies, Yale University, Roger D. Peng, Johns Hopkins Bloomberg School of Public Health

9:15 **A Bayesian Model Averaging Approach for Estimating the Relative Risk of Mortality Associated with Heat Waves in 105 U.S. Cities**
Jennifer F. Bobb*, Johns Hopkins Bloomberg School of Public Health, Francesca Dominici, Harvard School of Public Health, Roger D. Peng, Johns Hopkins Bloomberg School of Public Health

9:30 **Estimating Distance to Care: Is Distance Between Zip Code Centroids a Good Enough Proxy?**
Robin Bliss*, Jeffrey N. Katz, Elizabeth A. Wright and Elena Losina, Orthopedic and Arthritis Center for Outcomes Research, Brigham and Women's Hospital, Harvard Medical School

38. CONTRIBUTED PAPERS: CLUSTERED DATA METHODS

Merrick 2 (3rd Floor)
Sponsor: ENAR
Chair: Bibhas Chakraborty, Columbia University

8:30 **Clustering of Population Pyramids**
Katarina Kosmelj*, University of Ljubljana, Slovenia

8:45 **Improving the Efficiency of Existing Group Randomized Trials using Bayesian Joint Modeling and Informative Priors**
Xinyi Xu, Michael L. Pennell*, Bo Lu and David Murray, The Ohio State University

9:00 **Augmented GEE for Efficiency Improvement in Cluster Randomized Trials by Leveraging Individual- and Cluster-Level Covariates**
Alisa J. Stephens*, Eric J. Tchtegen and Victor G. DeGruttola, Harvard School of Public Health

9:15 **Sample Size Determination for Three-level Randomized Clinical Trials with Treatment Randomized at the Second or First level**
Melissa J. Fazzari*, Mimi Y. Kim and Moonseong Heo, Albert Einstein College of Medicine

9:30 **Recent Issues Regarding the Prentice Constraints for Correlated Binary Data**
Matthew Guerra* and Justine Shults, University of Pennsylvania School of Medicine

9:45 **Comparison of Intraclass Correlation Estimators for Clustered Binary Data**
Hrishikesh Chakraborty*, Mark Kindem, Dhuly Chowdhury, RTI International, Pranab K. Sen, University of North Carolina at Chapel Hill

10:00 **Sample Size Determination for Clustered Count Data**
Anup K. Amatya* and Dulal K. Bhaumik, University of Illinois at Chicago

39. CONTRIBUTED PAPERS: QUANTILE REGRESSION

Pearson 1 (3rd Floor)
Sponsor: ENAR
Chair: Oliver Lee, University of Michigan

8:30 **Nonparametric Quantile Regression for Identification of Developmental Biomarkers**
Philip T. Reiss, Lei Huang*, Eva Petkova, Michael P. Milham and Fransicsco X. Catellanos, New York University

8:45 **Competing Risks Quantile Residual Life Regression**
Jeong Youn Lim* and Jong-Hyeon Jeong, University of Pittsburgh

9:00 **Penalized Joint Quantile Regression**
Liewen Jiang*, Huixia Wang and Howard Bondell, North Carolina State University

9:15 **Estimating Shelf Life Using Mixed Model Quantile Regression**
Michelle Quinlan*, Novartis Oncology, Walt Stroup, University of Nebraska-Lincoln

9:30 **Variance Estimation in Censored Quantile Regression via Induced Smoothing**
Lei Pang*, Wenbin Lu and Judy H. Wang, North Carolina State University

9:45 **Quantile Regression Adjusting for Dependent Censoring**
Ruosha Li* and Limin Peng, Emory University

10:00 **Censored Quantile Regression For Longitudinal Data with Dropouts**
MinJae Lee* and Lan Kong, University of Pittsburgh

40. CONTRIBUTED PAPERS: CONSTRAINED ESTIMATION MODELS AND AGREEMENT MODELS

Stanford (3rd Floor)
Sponsor: ENAR
Chair: Yvonne Zubovic, Indiana University Purdue University, Fort Wayne

8:30 **Estimation of Vaccination Coverage Using a Constrained Logistic Model**
Shannon K. McClintock*, Emory University

8:45 **Modeling Infant Mortality Data using Shape Restricted Multivariate Bernstein Polynomials**
Jiangdian Wang* and Sujit K. Ghosh, North Carolina State University

9:00 **Classical and Bayesian Inference For A Hidden Truncated Bivariate Pareto (type(II)) Distribution**
Indranil Ghosh*, University Of California, Riverside

9:15 **Broad Sense Agreement Between Continuous Measurements**
Limin Peng*, Ruosha Li, Ying Guo and Amita Manatunga, Emory University

9:30 **Rank-Based Agreement or Reproducibility Indices**
Zheng Zhang*, Brown University

9:45 **Evaluating the Agreement Between Two Observers with Replicated Quantitative Measurements Using the Coefficient of Individual Equivalence**
Yi Pan*, Jingjing Gao and Michael Haber, Emory University

41. CONTRIBUTED PAPERS: SURVIVAL ANALYSIS: CAUSAL INFERENCE
Ibis (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Michael Rosenblum, Johns Hopkins Bloomberg School of Public Health

8:30 **Causal Inference for Survival Times with Informative Censoring & Missing Exposure, with Application to Treatment of TB/HIV Coinfection in Western Kenya**
✯ Ann W. Mwangi*, Brown University and Moi University School of Medicine, Eldoret, Kenya, Joseph W. Hogan, Rami Kantor, Jane Carter, Brown University, Abraham Siika, Moi University School of Medicine, Eldoret, Kenya

8:45 **Comparing Competing Risk Outcomes Within Principal Strata**
Dustin M. Long* and Michael G. Hudgens, University of North Carolina at Chapel Hill

9:00 **Comparing Cumulative Incidence Functions Between Non-Randomized Groups in the Presence of Competing Risks**
Ludi Fan* and Douglas E. Schaubel, University of Michigan

9:15 **Semiparametric Estimator for Differences in Restricted Mean Lifetimes in Observational Studies**
Min Zhang* and Douglas Schaubel, University of Michigan

9:30 **Joint Accelerated Failure Time Models for Sequential Treatments**
Xuelin Huang*, University of Texas MD Anderson Cancer Center and Jing Ning, University of Texas Health Science Center at Houston

9:45 **Inference for Dynamic Treatment Strategies from Observational Data with Failure Time Outcomes**
Zhiguo Li*, Duke University Medical Center, Marcia Valenstein, Paul Pfeiffer, University of Michigan, Dara Ganoczy, SMITREC, HSR&D Center of Excellence, Department of Veterans Affairs

10:00 **Survival Analysis by Cause of Death among Bariatric Surgery Patients Matched by Propensity Score**
Diqiong Xie* and Michael P. Jones, University of Iowa, Edward E. Mason, GI Surgery University of Iowa Hospital and Clinics

MONDAY, MARCH 21

10:15–10:30 a.m.
Refreshment Break and Visit Our Exhibitors
Lower Promenade (Terrace Level)

10:30 a.m.–12:15 p.m.

42. STATISTICAL METHODS FOR HIGH-THROUGHPUT SEQUENCING DATA
Tuttle (Terrace Level)
Sponsor: ASA Biometrics Section
Organizer: Wei Sun, University of North Carolina at Chapel Hill
Chair: Wei Sun, University of North Carolina at Chapel Hill

10:30 **Discovering Cis-Regulatory Regions from Differential Nucleosome Occupancy Patterns**
Jun Liu*, Harvard University

10:55 **Statistical Issues in Next Generation Sequencing Data Analysis**
Hongyu Zhao*, Yale University

11:20 **Small-Sample Differential Expression Analysis with RNA-seq Data**
Fred A. Wright* and Yihui Zhou, University of North Carolina at Chapel Hill

11:45 **Functional Interpretation of ChIP-seq Using Publicly Available Gene Expression Data**
Hongkai Ji* and George Wu, Johns Hopkins University

12:10 **Floor Discussion**

43. NEW DEVELOPMENT OF PROPENSITY SCORE RELATED METHODS
Brickell (Terrace Level)
Sponsor: ASA Section on Statistics in Epidemiology
Organizer: Zhiqiang Tan, Rutgers University
Chair: Stijn Vansteelandt, Ghent University, Belgium

10:30 **Bounded, Efficient, and Doubly Robust Estimation with Inverse Weighting**
Zhiqiang Tan*, Rutgers University

10:55 **An Information Criterion for Specification of Marginal Structural Models**
Robert W. Platt*, McGill University, Stephen R. Cole, University of North Carolina at Chapel Hill, Daniel Westreich, Duke University, M. Alan Brookhart, University of North Carolina at Chapel Hill, Enrique F. Schisterman, National Institutes of Health

11:20 **Multiply Robust Inference for Statistical Interactions**
Eric Tchetgen*, Harvard University

11:45 **Targeted Maximum Likelihood Estimation for Dynamic Treatment Regimes**
Michael Rosenblum*, Johns Hopkins Bloomberg School of Public Health, Mark J. van der Laan, University of California, Berkeley, Stephen Gange, Johns Hopkins Bloomberg School of Public Health

12:10 **Floor Discussion**

44. MOVING BEYOND THE ROLODEX OF FORMULAS: TEACHING STATISTICAL THINKING
Ashe Auditorium (3rd Floor)
Sponsor: ASA Section on Statistical Education
Organizer: Leah Welty, Northwestern University
Chair: Xiao-Li Meng, Harvard University

10:30 **Teaching Confounding and Effect Modification Conceptually**
Felicity Boyd Enders*, Mayo Clinic

10:55 **Conditioning Non-Statisticians to Think Conditionally**
Joseph Blitzstein*, Harvard University

11:20 **Demystifying Hypothesis Testing**
John McGready*, Johns Hopkins University Bloomberg School of Public Health

11:45 **Double Sampling in Psychiatry: An Example that Keeps on Giving**
Leah J. Welty*, Northwestern University

12:10 **Floor Discussion**

45. RECENT ADVANCES IN MULTIPLE TESTING WITH MULTIPLE TREATMENTS/MULTIPLE ENDPOINTS
Miami Lecture Hall (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Organizer: Donna Kowalski, Astellas Pharma Global Development, Inc
Chair: Donna Kowalski, Astellas Pharma Global Development, Inc

10:30 **Accounting for Model Uncertainty via Multiple Comparisons Tests**
Jose C. Pinheiro*, Johnson & Johnson PRD

11:00 **Flagging Clinical Adverse Experiences: Reducing False Discoveries without Compromising Powe**r
Devan V. Mehrotra* and Adeniyi Adewale, Merck Research Laboratories

11:30 **Mixture Gatekeeping Procedures with Clinical Trial Applications**
Ajit C. Tamhane*, Northwestern University and Alex Dmitrienko, Eli Lilly & Company

12:00 **Floor Discussion**

46. SURVIVAL ANALYSIS AND CLINICAL TRIALS

Gautier (3rd Floor)
Sponsor: ASA Health Policy Statistics Section
Organizer: Tongtong Wu, University of Maryland
Chair: Xin He, University of Maryland

10:30 **Predictive Accuracy of Covariates for Event Times**
Li Chen, University of Kentucky, D.Y. Lin* and Donglin Zeng, University of North Carolina at Chapel Hill

10:55 **Estimate Treatment Efficacy Among Latent Subgroups of a Randomized Clinical Trial**
Lily L. Altstein and Gang Li*, UCLA

11:20 **Additive Mixed Effect Model for Clustered Failure Time Data**
Jianwen Cai* and Donglin Zeng, University of North Carolina at Chapel Hill

11:45 **Variable Selection for High-Dimensional Panel Count Data**
Tongtong Wu* and Xin He, University of Maryland, College Park

12:10 **Floor Discussion**

47. STATISTICAL METHODS FOR ANALYSIS OF LARGE FUNCTIONAL DATA SETS

Flagler (Terrace Level)
Sponsor: ASA Biometrics Section
Organizer: Ana-Maria Staicu, North Carolina State University
Chair: Ana-Maria Staicu, North Carolina State University

10:30 **Adaptive, Robust Functional and Image Regression in Functional Mixed Models**
Hongxiao Zhu, SAMSI, Philipi J. Brown, The University of Kent, Canterbury, Jeffrey S. Morris*, University of Texas, MD Anderson Cancer Center

10:55 **My First 100 Terabytes of Data: Statistical Principles and Methods**
Ciprian M. Crainiceanu*, Johns Hopkins University

11:20 **Sliced Inverse Regression for Functional and Longitudinal Data**
Jane-Ling Wang*, University of California, Davis and Wei Yu, Genentech Inc.

11:45 **Functional and Hierarchical Data Analysis**
Raymond J. Carroll*, Texas A&M University

12:10 **Floor Discussion**

48. CONTRIBUTED PAPERS: ADAPTIVE RANDOMIZATION AND DOSE FINDING

Pearson 2 (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Chair: Nancy Flournoy, University of Missouri

10:30 **Bayesian Dose Finding in Combinations with Discrete-Dose and Continuous-Dose Drugs**
Lin Huo* and Ying Yuan, University of Texas MD Anderson Cancer Center, Guosheng Yin, University of Hong Kong

10:45 **Adaptive Optimal Designs for Correlated Binary Responses**
Yuehui Wu* and Valerii V. Fedorov, GlaxoSmithKline

11:00 **Robust Statistical Method for Finding Optimal Treatment Regimes**
Baqun Zhang*, Anastasios A. Tsiatis and Marie Davidian, North Carolina State University

11:15 **Weighted Cumulative Treatment Estimation for Sequentially Randomized Clinical Trials in the Presence of Non-proportional Hazards**
Xinyu Tang*, University of Arkansas for Medical Sciences and Abdus S. Wahed, University of Pittsburgh

11:30 **Optimal Dynamic Treatment Regime Estimation in the Presence of Partial Model Misspecification**
Benjamin Rich*, Erica E. M. Moodie and David A. Stephens, McGill University

11:45 **Bayesian Adaptive Dose-Finding Studies with Delayed Responses**
Haoda Fu* and David Manner, Eli Lilly and Company

12:00 **Dose Finding Trials in 2 Dimensions: Sequential tite-CRM**
Matthew J. Schipper*, University of Michigan

49. CONTRIBUTED PAPERS: ASSESSING BIOSIMILARITY ON FOLLOW-ON BIOLOGICS

Johnson (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Chair: Eric Chi, Amgen Inc.

10:30 **Determination of the Similarity of Follow-on Biologics**
Laszlo Endrenyi*, University of Toronto

10:45 **Impact of Variability on the Criteria of Biosimilarity in Assessing Follow-on Biologics**
Nan Zhang, Jun Yang*, Amgen Inc., Shein-Chung Chow Duke University School of Medicine, Eric Chi, Amgen Inc.

11:00 **Using Linear Model to Assess Individual Biosimilarity for Drug Interchangeability of Follow-on Biologics**
Eric Chi, Amgen Inc., Shein-Chung Chow, Duke University School of Medicine, Hao Zhang*, University of California, Davis

11:15 **The Use of Biosimilar Index for Assessment of Follow-on Biologics**
Shein-Chung Chow*, Duke University School of Medicine and Eric Chi, Amgen, Inc.

11:30 **Bayesian Approach for Assessment of Biosimilarity Based on Reproducibility Probability**
Lan-Yan Yang*, Shein-Chung Chow, Duke University School of Medicine, Tsung-Cheng Hsieh, Institute of Medical Sciences, Buddhist Tzu-Chi University, Hualien, Taiwan, Eric Chi, Amgen, Inc.

11:45 **Statistical Evaluation of Follow-on Biologics in Preclinical Space**
Rong Liu* and Robert Capen, Merck & Co., Inc.

12:00 **Floor Discussion**

50. CONTRIBUTED PAPERS: MODERNIZING META-ANALYSIS

Foster (3rd Floor)
Sponsor: ENAR
Chair: Christopher Schmid, Tufts Medical Center

10:30 **Open Meta-Analyst: Open Source, Cross-Platform Software for Meta-Analysis**
Thomas A. Trikalinos*, Byron C. Wallace, Issa J. Dahabreh, Joseph Lau and Christopher H. Schmid, Tufts Medical Center and Tufts University

10:45 **Semi-Automated Classification of Biomedical Citations for Meta-Analysis Via Machine Learning**
Byron C. Wallace*, Kevin Small, Carla E. Brodley, Joseph Lau, Chris H. Schmid and Thomas A. Trikalinos, Tufts Medical Center

11:00 **Standards Proposed by the Institute of Medicine for Conducting Systematic Reviews**
Kay Dickersin*, Johns Hopkins Bloomberg School of Public Health

11:15 **Challenges of Network Meta-Analysis for Comparative Effectiveness Research: Resolving Discrepancies Between Systematic Reviews**
Tianjing Li*, Johns Hopkins Bloomberg School of Public Health

11:30 **Graphical Displays to Analyze and Report Network Meta-Analysis**
Milo Puhan and Tianjing Li*, Johns Hopkins Bloomberg School of Public Health

11:45 **Multiple Treatments Meta-Analysis for Ordered and Unordered Categorical Outcomes**
Christopher H. Schmid* and Thomas Trikalinos, Tufts Medical Center, Ingram Olkin, Stanford University

12:00 **Floor Discussion**

51. CONTRIBUTED PAPERS: DIAGNOSTIC AND SCREENING TESTS

Merrick 2 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Timothy E. Hanson, University of South Carolina

10:30 **Central Tolerance Regions and Reference Regions in Multivariate Normal Populations with Applications in Laboratory Medicine**
Xiaoyu Dong* and Thomas Mathew, University of Maryland, Baltimore County

10:45 **Statistical Methods for Evaluating Diagnostic Accuracy of Incomplete Multiple Tests**
Yi Zhang*, University of North Carolina at Chapel Hill, Haitao Chu, University of Minnesota, Donglin Zeng, University of North Carolina at Chapel Hill

11:00 **A Simulation Study to Evaluate the Operating Characteristics of a Two-stage Study to Develop and Validate a Panel of Biomarkers for Predicting Prostate Cancer Recurrence**
Joseph S. Koopmeiners*, School of Public Health, University of Minnesota and Rachel Isaksson Vogel, University of Minnesota Masonic Cancer Center

11:15 **A Sequential Diagnostic Method Based on Multiple Diagnostic Tests without a Gold Standard**
Jingyang Zhang*, University of Iowa

11:30 **Augmented Cross-Sectional Studies with Abbreviated Follow-up for Estimating HIV Incidence**
Brian Claggett*, Stephen W. Lagakos and Rui Wang, Harvard School of Public Health

11:45 **The National Research Council Report on Biometric Recognition, the Other Biometrics**
Peter B. Imrey*, Cleveland Clinic Foundation and Case Western Reserve University

52. CONTRIBUTED PAPERS: LONGITUDINAL DATA

Pearson 1 (3rd Floor)
Sponsor: ENAR
Chair: Joseph C. Cappelleri, Pfizer Inc

10:30 **Modeling Longitudinal Clinical Outcomes of Pancreatic Islet Transplant**
Zhi Wen*, Yang Hong, Steven Anderson and Richard Forshee, Office of Biostatistics and Epidemiology, Center of Biologics Evaluation and Research, U.S. Food and Drug Administration

10:45 **Models for the Covariance Structure of Multivariate Longitudinal Data: Unconstrained Parameterization**
Chulmin Kim*, Rochester Institute of Technology and Dale L. Zimmerman, University of Iowa

11:00 **A 3-Level Mixed-Effects Location Scale Model with An Application In Ecological Momentary Assessment (EMA) Data**
Xue Li, VA Cooperative Studies Program Coordinating Center and Don Hedeker, University of Illinois at Chicago

11:15 **Principal Component Methods for Exploratory Longitudinal Data Analysis**
Guojun Yuan*, Pfizer Inc. and Robert Pruzek, State University of New York at Albany

11:30 **A Shared-Parameter Model for the Estimation of Longitudinal Concomitant Intervention Effects**
Colin Wu, Xin Tian, National Heart, Lung and Blood Institute and Wenhua Jiang*, Johns Hopkins University School of Medicine

11:45 **Fiducial Generalized p-Values for Testing Zero-Variance Components in Linear Mixed-Effects Models**
Xinmin Li, Shandong University of Technology, China, Hua Liang, University of Rochester Medical Center, Haiyan Su*, Montclair State University, Hulin Wu, University of Rochester Medical Center

12:00 **Addressing Selective Mortality with Dynamic Cohort Analysis**
Wen Ye* and Jersey Liang, University of Michigan

53. CONTRIBUTED PAPERS: EPIDEMIOLOGIC METHODS IN STATISTICAL GENETICS

Stanford (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Joshua Sampson, National Cancer Institute

10:30 **Mediation and Interaction: The Case of Genetic Variants on 15q25.1, Smoking and Lung Cancer**
Tyler J. VanderWeele*, Kofi Asomaning, David C. Christiani and Xihong Lin, Harvard School of Public Health

10:45 **Genotype-Based Association Mapping of Complex Diseases: Gene-Environment Interactions with Multiple Genetic Markers and Measurement Errors in Environmental Exposures**
Iryna Lobach*, New York University, Ruzong Fan and Raymond J. Carroll, Texas A&M University

11:00 **Unified Analysis of Secondary Phenotypes in Case-Control Association Studies**
Arpita Ghosh*, Biostatistics Branch, National Cancer Institute, Fei Zou and Fred A. Wright, University of North Carolina at Chapel Hill

11:15 **FamilyCNV: An Efficient and Accurate Algorithm for Calling Germline Copy Number Variants in Family-Based Genome-Wide Association Studies**
Jianxin Shi* and Peng Li, Division of Cancer Epidemiology and Genetics, National Cancer Institute

11:30 **Incorporating Global Tests of P-values in Multifactor Dimensionality Reduction Models for Genotyping Data**
Hongying Dai*, Children's Mercy Hospital, University of Missouri Kansas City

11:45 **Evaluating the Effect of Haplotypes on Quantitative Traits When Linkage Phase is Unknown**
Fu-Wen Liang*, Yanhong Liu, Georgina Armstrong, Xifeng Wu, Qingyi Wei, Melissa L. Bondy and Carol J. Etzel , University of Texas MD Anderson Cancer Center, Wenyah Chen, University of Texas

12:00 **Floor Discussion**

Connect with the Statistical Community

54. CONTRIBUTED PAPERS: SPATIAL AND ENVIRONMENTAL STATISTICS

Ibis (3rd Floor)
Sponsor: ASA Section on Statistics and the Environment
Chair: Tapabrata Maiti, Michigan State University

10:30 **Cross-covariance Functions for Multivariate Random Fields**
Marc G. Genton*, Texas A&M University

10:45 **A Generalized Convolution Model for Multivariate Spatial Models**
Anandamayee Majumdar*, Arizona State University and Debashis Paul, University of California, Davis

11:00 **Matern Cross-Covariance Functions for Multivariate Random Fields**
William P. Kleiber*, National Center for Atmospheric Research, Institute for Mathematics Applied to Geosciences, Tilmann Gneiting, Martin Schlather, Institut fur Mathematische Stochastik, Universitat Gottingen, Germany

11:15 **A Valid Matern Class of Cross-Covariance Functions for Multivariate Random Fields with any Number of Components**
Tatiyana V. Apanasovich*, Thomas Jefferson University, Marc G. Genton and Ying Sun, Texas A&M University

11:30 **A Test for Stationarity of Spatio-Temporal Random Fields on Planar and Spherical Domains**
Mikyoung Jun* and Marc G. Genton, Texas A&M University

11:45 **Floor Discussion**

MONDAY, MARCH 21

12:15-1:30 p.m.
Roundtable Luncheons
Monroe Room (Terrace Level)

1:45-3:30 p.m.

55. HIGH DIMENSIONAL DATA ANALYSIS WITH APPLICATIONS IN THE BIOSCIENCES

Tuttle (Terrace Level)
Sponsor: ASA Section on Statistics and the Environment
Organizer: Bret Hanlon, University of Wisconsin - Madison
Chair: Bret Hanlon, University of Wisconsin - Madison

1:45 **A Perturbation Approach to Improved Variable Selection in High-Dimensional Data**
Howard D. Bondell*, Chen-Yen Lin and Hao Helen Zhang, North Carolina State University

2:10 **Variable Selection in High Dimensional Varying Coefficient Models with Global Optimality**
Lan Xue, Oregon State University and Annie Qu*, University of Illinois at Urbana-Champaign

2:35 **Survival Analysis with Ultra-High-Dimensional Covariates: Identifying Predictive Genes for Cancer Survival**
Dave Zhao and Yi Li*, Harvard University

3:00 **Joint Estimation of Multiple Graphical Models**
Jian Guo, Liza Levina, George Michailidis and Ji Zhu*, University of Michigan

3:25 **Floor Discussion**

56. STATISTICAL ISSUES IN NEXT GENERATION SEQUENCING

Brickell (Terrace Level)
Sponsor: IMS
Organizer: John Marioni, University of Chicago
Chair: John Marioni, University of Chicago

1:45 **Statistical Issues When Modeling RNA-Seq Data for Differential Expression**
Rebecca W. Doerge, Purdue University and Paul L. Auer*, Fred Hutchison Cancer Research Center

2:15 **Statistical Framework for Mapping Cell-Type Specific Transcription Factor Binding from DNase-seq Assays**
Roger Pique-Regi*, Jacob F. Degner, Athma A. Pai, Daniel J. Gaffney, Yoav Gilad and Jonathan K. Pritchard, The University of Chicago

2:45 **Statistical Analysis of ChIP-seq: From Diversity to Consensus**
Kun Liang* and Sunduz Keles, University of Wisconsin-Madison

3:15 **Floor Discussion**

57. NEW DIRECTIONS IN FUNCTIONAL DATA ANALYSIS

Ashe Auditorium (3rd Floor)
Sponsor: ASA Biometrics Section
Organizer: David Ruppert, Cornell University
Chair: Dawn B. Woodard, Cornell University

1:45 **Skewed Functional Processes and their Applications**
Ana-Maria Staicu*, North Carolina State University, Ciprian Crainiceanu, Johns Hopkins University, Daniel Reich National Institute of Neurological Disorders and Stroke, National Institutes of Health, David Ruppert, Cornell University

2:15 **Generalized Additive Functional Regression**
David Ruppert* and Mathew M. McLean, Cornell University

2:45 **Functional Convolution Models and Smooth Time Series Analysis**
Giles Hooker* and Maria Acensio, Cornell University

3:15 **Longitudinal Penalized Functional Regression**
Jeff Goldsmith* Ciprian Crainiceanu, Brian Caffo, Johns Hopkins Bloomberg School of Public Health, Daniel Reich, National Institute of Neurological Disorders and Stroke

58. NEW STATISTICAL METHODS FOR EVALUATING DIAGNOSTIC TESTS IN THE ABSENCE OF GOLD STANDARD

Miami Lecture Hall (3rd Floor)
Sponsor: ASA Section on Statistics in Epidemiology
Organizer: Haitao Chu, University of North Carolina at Chapel Hill
Chair: Lei Nie, Office of Biometrics/OTS/CDER /U.S. Food and Drug Administration

1:45 **Evaluation of Diagnostic Accuracy in Detecting Ordered Symptom Statuses in Absent of a Gold Standard**
Xiao-Hua A. Zhou* and Zheyu Wang, University of Washington

2:15 **Identifiability of Models for Multiple Diagnostic Testing in the Absence of a Gold Standard**
Timothy Hanson*, University of South Carolina, Geoffrey Jones, Massey University, Wesley Johnson, University of California, Irvine, Ronald Christensen, University of New Mexico

2:45 **Estimating Diagnostic Accuracy from Designs with no Gold Standard**
Paul S. Albert*, Eunice Kennedy Shriver National Institute of Child Health and Human Development

3:15 **Floor Discussion**

59. CHARACTERIZING LONGITUDINAL DATA TO PREDICT HEALTH OUTCOMES

Gautier (3rd Floor)
Sponsor: ASA Section on Statistics in Epidemiology
Organizer: Mary D. Sammel, University of Pennsylvania
Chair: Li Chen, University of Kentucky

1:45 **Evaluation of Bayesian Latent Class Models for Predicting Colorectal Cancer Recurrence Using Longitudinal Biomarker Measurements**
Benjamin E. Leiby*, Thomas Jefferson University, Mary D. Sammel, University of Pennsylvania, Terry Hyslop, Thomas Jefferson University

2:15 **Variability as a Predictor of Health in Longitudinal Studies**
Mary D. Sammel*, University of Pennsylvania, Michael R. Elliott and Jessica Faul, University of Michigan

2:45 Modeling and Classifying Women's Mensopausal Transition Patterns Using Menstrual Diary Data
Xiaobi Huang*, Michael R. Elliott and Sioban D. Harlow, University of Michigan

3:15 Joint Analysis of Longitudinal Multi-State Transition and Time-to-Event
Haiqun Lin*, Yale University School of Public Health

60. STATISTICAL ANALYSIS OF BRAIN IMAGING DATA

Flagler (Terrace Level)
Sponsor: ASA Biometrics Section
Organizer: Yimei Li, St. Jude Children's Research Hospital
Chair: Simina M Boca, Johns Hopkins Bloomberg School of Public Health

1:45 Brain Connectivity and Causal Inference
Martin A. Lindquist*, Columbia University

2:15 Heat Kernel Smoothing on Manifolds and its Application to Longitudinal Brain Substructure Modeling
Moo K. Chung*, University of Wisconsin-Madison

2:45 Identifying Spatial Differences in Multiple Sclerosis Subtypes via a Marked Log Gaussian Cox Process
Timothy D. Johnson*, University of Michigan, Thomas E. Nichols, University of Warwick, Ernst-Wilhelm Radue, University Hospital Basel

3:15 TwinMARM: Two-Stage Multiscale Adaptive Regression Methods for Twin Neuroimaging Data
Yimei Li*, St. Jude Children's Research Hospital, Hongtu Zhu, John H. Gilmore and Martin Styner, University of North Carolina at Chapel Hill

61. CONTRIBUTED PAPERS: STATISTICIANS AS LEADERS: WHY IT IS INCREASINGLY IMPORTANT, AND WHAT IT MEANS

Johnson (3rd Floor)
Sponsor: ASA Section on Statistical Education
Chair: Eric B Laber, University of Michigan

1:45 A Leadership Development Program for Statisticians in the Pharmaceutical Industry
Paul. H. Berg*, Walter W. Offen, Gary R. Sullivan, Yoko Tanaka, Sandra L. Toledo Marquette, Ilker Yalcin and Aarti S. Shah, Eli Lilly and Company

2:00 Leadership in Government
Joan Buenconsejo*, U.S. Food and Drug Administration

2:15 Skilled Statistical Consultants are Often Skilled Leaders. Why?
Murray Clayton*, University of Wisconsin-Madison

2:30 Leadership in Biostatistics: A Required Skill to Have an Impact
David L. DeMets*, University of Wisconsin-Madison

2:45 Statisticians as Leaders: Why it is Increasingly Important, and What it Means
Walter W. Offen, Eli Lilly and Company

3:00 Floor Discussion

62. CONTRIBUTED PAPERS: SPATIAL MODELS AND SURVEILLANCE

Foster (3rd Floor)
Sponsor: ASA Section on Statistics and the Environment
Chair: David Banks, Duke University

1:45 Detecting Disease Surveillance Using Local Spatiotemporal Methods
Yingqi Zhao*, University of North Carolina at Chapel Hill

2:00 Surveillance Conditional Predictive Ordinate: A Bayesian Model-Based Approach for On-Line Spatio-Temporal Disease Surveillance
Andrew B. Lawson and Ana Corberan-Vallet*, Medical University of South Carolina

2:15 Simultaneous Statistical Bias Correction of Multiple PM2.5 Species from a Regional Photochemical Model
James L. Crooks* and Haluk Ozkaynak, U. S. Environmental Protection Agency

2:30 A Geostatistical Approach to Large-Scale Disease Mapping with Temporal Misalignment
Lauren Hund*, Harvard University, Jarvis T. Chen, Nancy Krieger and Brent A. Coull, Harvard School of Public Health

2:45 Unbiased Estimates of Uncertainty in General Linear Regression Models with Spatially Misaligned Data
Kenneth K. Lopiano* and Linda J. Young, University of Florida, Carol A. Gotway, Centers for Disease Control and Prevention

3:00 **Effect of Modeling Expected Counts on Small Area Disease Mortality Maps**
Manoj Pathak*, Jane L. Meza, University of Nebraska Medical Center, Kent M. Eskridge, University of Nebraska-Lincoln

63. CONTRIBUTED PAPERS: PHARMACOKINETICS AND TOXICOLOGY

Pearson 2 (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Chair: Rong Liu, Merck & Company, Inc.

1:45 **Stochastic Approaches to Pharmacokinetic Modelling**
Ziad Taib*, Chalmers University of Technology, Sweden

2:00 **Statistical Inference for Dynamic Systems Governed by Differential Equations with Applications to Toxicology**
Siddhartha Mandal* and Pranab K. Sen, University of North Carolina at Chapel Hill, Shyamal D. Peddada, National Institute of Environmental Health Sciences

2:15 **A Semiparametric Bayesian Approach to Population Pharmacokinetic Modeling**
Lili Ding*, Bin Huang, Cincinnati Children's Hospital Medical Center and Siva Sivaganesan, University of Cincinnati

2:30 **Desgins for Estimating EC50**
Seung Won Hyun*, North Dakota State University and Nancy Flournoy, University of Missouri, Columbia

2:45 **Toxicity Profiling of Engineered Nanomaterials via Multivariate Dose Response Surface Modeling**
Patel Trina* and Donatello Telesca, UCLA School of Public Health, Saji George, Andre E. Nel, UCLA California NanoSystems Institute

3:00 **The Interactive Decision Committee for Chemical Toxicity Data Analysis**
Chaeryon Kang*, Hao Zhu, Fred A. Wright, Fei Zou and Michael R. Kosorok, University of North Carolina at Chapel Hill

3:15 **Determining a Robust D-Optimal Design for Testing for Departures from Additivity in a Mixture of 4 PFAAs**
Caroline K. Carr*, Chris Gennings, Virginia Commonwealth University, Barbara D. Abbott, Judy E. Schmid, U.S. Environmental Protection Agency, Wen Wan, Virginia Commonwealth University, Lyle Burgoon, Cynthia J. Wolf, Christopher Lau, U.S. Environmental Protection Agency

64. CONTRIBUTED PAPERS: LINEAR MIXED MODELS

Ibis (3rd Floor)
Sponsor: ENAR
Chair: Jose Pinheiro, Johnson & Johnson PRD

1:45 **A Flexible Random Effects Density for Censored Longitudinal Data**
David M. Vock*, Marie Davidian, Anastasios A. Tsiatis and North Carolina State University, Andrew J. Muir, Duke University

2:00 **A Permutation Test for Random Effects in Generalized Linear Mixed Models**
Oliver Lee* and Thomas Braun, University of Michigan

2:15 **Designing Longitudinal Studies with Repeated Measures: The Case of Salivary Cortisol in the Multi-Ethnic Study of Atherosclerosis**
Meihua Wu*, Brisa N. Sánchez, Trivellore E. Raghunathan and Ana V. Diez-Roux, University of Michigan

2:30 **Autoregressive Linear Mixed Effects Model for Analysis of Unequally Spaced Longitudinal Data with Dynamic Dose Modification**
Ikuko Funatogawa* and Takashi Funatogawa, Vanderbilt University School of Medicine

2:45 **A New Class of Link Function for Generalized Linear Mixed Models**
Marcos O. Prates*, Dipak K. Dey and Jun Yan, University of Connecticut

3:00 **Conditional Inference Functions for Mixed-Effects Models with Unspecified Random-Effects Distribution**
Peng Wang*, University of Illinois at Urbana-Champaign, Guei-Feng Tsai, Center for Drug Evaluation, Taipei, Taiwan, Annie Qu, University of Illinois at Urbana-Champaign

65. CONTRIBUTED PAPERS: STATISTICAL GENETICS: METHODOLOGY

Merrick 2 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Arpita Ghosh, National Cancer Institute

1:45 **A Regularized Hotelling's T2 Test for Pathway Analysis in Proteomic Studies**
Debashis Paul, University of California-Davis, Ross L. Prentice and Pei Wang, Fred Hutchinson Cancer Research Center

2:00 **A Two-Stage Mixed-Effects Model Approach for Pathway Analyses in Candidate Gene Studies**
Roula Tsonaka* and Jeanine J. Houwing-Duistermaat, Leiden University Medical Center, The Netherlands

2:15 **Biological Pathway Selection through Nonlinear Dimension Reduction**
Hongjie Zhu* and Lexin Li, North Carolina State University

2:30 **Whole Genome Enabled Prediction of Liability to Cancer Related Outcomes**
Ana I. Vazquez*, Gustavo de los Campos, University of Alabama-Birmingham, Guilherme J.M. Rosa, Daniel Gianola, University of Wisconsin-Madison, Yann C. Klimentidis, University of Alabama-Birmingham, Kent A. Weigel, University of Wisconsin-Madison, David B. Allison, University of Alabama-Birmingham

2:45 **Beyond Missing Heritability: Prediction of Complex Traits**
Robert Makowsky*, Nicholas M. Pajewski, Yann C. Klimentidis, Ana I. Vazquez, Christine W. Duarte, David B. Allison and Gustavo de los Campos, University of Alabama at Birmingham

3:00 **A Statistical Model for Mapping Biological**
ShapeGuifang Fu* and Rongling Wu, Penn State University

66. CONTRIBUTED PAPERS: APPLIED DATA ANALYSIS

Pearson 1 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Yufeng Liu, University of North Carolina at Chapel Hill

1:45 **A Comparison of Statistical Methods for Characterizing Pulses in Time Series of Hormone Data**
Nichole E. Carlson*, Kenneth Horton and Gary K. Grunwald, University of Colorado-Denver

2:00 **A Nonparametric Phenotypic Coding of the Univariate Family-Based Association Test Statistic in Late Times-to-onset Analysis**
Rong Lu* and Don Hong, Middle Tennessee State University

2:15 **BM-Map: Bayesian Mapping of Multi-reads for Next-Generation Sequencing Data**
⭐ Yanxun Xu*, Rice University, Yuan Ji, Han Liang, University of Texas M. D. Anderson Cancer Center

2:30 **Multi-Nomial Logistic Regression for Health-Related Outcomes in Clinical Trail**
Zugui Zhang*, Paul Kolm and William S. Weintraub, Christiana Care Health System, John A. Spertus, Mid-America Heart Institute/University of Missouri-Kansas City

2:45 **Course of Comorbidity of Tobacco and Marijuana Use: Psychosocial Risk Factors**
Judith S. Brook, Jung Yeon Lee* and Elaine N. Brown, New York University School of Medicine, Stephen J Finch, Stony Brook University

3:00 **Much Ado About Almost Nothing: Methods for Dealing With Limited Data**
Stephen W. Looney*, Medical College of Georgia

3:15 **Factor Analysis as a Tool for Assessments of Clinical Teaching Evaluations.**
Jay Mandrekar*, Mayo Clinic

67. CONTRIBUTED PAPERS: BAYESIAN METHODS IN SURVIVAL ANALYSIS

Sponsor: ASA Biometrics Section
Chair: Chongzhi Di, Fred Hutchinson Cancer Research Center
Stanford (3rd Floor)

1:45 **Bayesian Sufficient Dimension Reduction in Survival Analysis**
Shraddha S. Mehta*, Purdue University, Surya T. Tokdar, Duke University, Bruce A. Craig, Jayanta K. Ghosh, Purdue University

2:00 **Bayesian Influence Methods with Missing Covariates in Survival Analysis**
Diana Lam*, Joseph G. Ibrahim and Hongtu Zhu, University of North Carolina at Chapel Hill

2:15 **Semiparametric Bayesian Survival Analysis via Transform-Both-Sides Model**
Jianchang Lin*, Debajyoti Sinha, Florida State University and Stuart Lipsitz, Brigham and Women's Hospital

2:30 **Non-Parametric Bayesian Methods for Prediction of Event Times for Analysis with Failure-Time Data**
Stephanie Lustgarten* and Gheorghe Doros, Boston University

2:45 **A New Bayesian Joint Model via Subdistribution for Survival Data with Competing Risks**
Miaomiao Ge* and Ming-Hui Chen, University of Connecticut

3:00 **Bayesian Semiparametric Inference of Nonproportional Hazard Models with Gamma Process**
Arijit Sinha* and Ming-Hui Chen, University of Connecticut

MONDAY, MARCH 21

3:30–3:45 p.m.
Refreshment Break and Visit Our Exhibitors
Lower Promendade (Terrace Level)

3:45–5:30 p.m.
68. NEW DEVELOPMENTS IN FUNCTIONAL PRINCIPAL COMPONENT AND REGRESSION ANALYSIS
Tuttle (Terrace Level)
Sponsor: ASA Biometrics Section
Organizer: Chongzhi Di, Fred Hutchinson Cancer Research Center
Chair: Vadim V. Zipunnikov, Johns Hopkins University

3:45 **Functional Varying Coefficient Models for Longitudinal Data**
Hans-Georg Müller*, University of California, Davis and Damla Sentürk, Pennsylvania State University

4:10 **Functional Regression Models with Wavelets**
Todd Ogden* and Yihong Zhao, Columbia University

4:35 **Principal Component Analysis for Multilevel and Multivariate Functional Data**
Chongzhi Di*, Fred Hutchinson Cancer Research Center and Ciprian M. Crainiceanu, Johns Hopkins University

5:00 **Longitudinal Functional Principal Component Analysis**
Sonja Greven*, Ludwig-Maximilians-University Munich, Ciprian Crainiceanu, Brian Caffo, Johns Hopkins University, Daniel Reich, National Institute of Neurological Disorders and Stroke, National Institutes of Health

5:25 **Floor Discussion**

69. STATISTICAL LEARNING METHODS IN

HIGH DIMENSIONAL DATA ANALYSIS
Brickell (Terrace Level)
Sponsor: ASA Biometrics Section
Organizer: Cheolwoo Park, University of Georgia
Chair: Sangwook Kang, University of Connecticut

3:45 Multiclass Probability Estimation via Large-Margin Classifiers
Hao Zhang* and Yichao Wu, North Carolina State University, Yufeng Liu, University of North Carolina at Chapel Hill

4:05 Data-Adaptively Weighted Large Margin Classifiers
Yufeng Liu*, University of North Carolina at Chapel Hill and Yichao Wu, North Carolina State University

4:25 High-Dimensional Proteomic Data Analysis Using Gaussian Mixture Basis Functions
Ian L. Dryden*, University of South Carolina, William J. Browne, University of Bristol, Kelly Handley, University of Birmingham, United Kingdom

4:45 Analysis of Long Period Variable Stars with Nonparametric Tests for Trend Detection
Cheolwoo Park* University of Georgia, Jeongyoun Ahn, University of Georgia, Martin Hendry University of Glasgow, Woncheol Jang University of Georgia

5:05 Clustering High Dimension, Low Sample Size Data Using the Maximal Data Piling Distance
Jeongyoun Ahn*, University of Georgia, Myung Hee Lee, Colorado State University, Young Joo Yoon, Konkuk University, South Korea

70. CURRENT STATISTICAL PERSPECTIVES AND APPROACHES TO GENE SET ANALYSIS
Ashe Auditorium (3rd Floor)
Sponsor: ASA Biometrics Section
Organizer: Giovanni Parmigiani, Dana-Farber Cancer Institute, Harvard School of Public Health
Chair: Jeffrey Leek, Johns Hopkins University

3:45 Gene Set Enrichment: Posterior Probability and Related Problems
Michael Newton*, University of Wisconsin-Madison

4:10 Integrating Diverse Genomic Data Using Gene Sets
Svitlana Tyekucheva*, Dana-Farber Cancer Institute, Harvard School of Public Health, Luigi Marchionni, Rachel Karchin, Johns Hopkins University, Giovanni Parmigiani, Dana-Farber Cancer Institute, Harvard School of Public Health

4:35 Integrating Biological Knowledge into the Evaluation of Genomic Data
Francesco S. Stingo, Rice University, Yian A. Chen, Moffit Cancer Center, Mahlet G. Tadesse*, Georgetown University, Marina Vannucci, Rice University

5:00 A Decision-Theory Approach to Interpretable Set Analysis for High-Dimensional Data
Simina M. Boca*, Johns Hopkins Bloomberg School of Public Health, Hector Corrada Bravo, University of Maryland at College Park, Jeffrey T. Leek, Johns Hopkins Bloomberg School of Public Health, Giovanni Parmigiani, Dana Farber Cancer Institute and Harvard School of Public Health

5:25 Floor Discussion

71. CAUSAL INFERENCE AND CASE-CONTROL DATA
Miami Lecture Hall (3rd Floor)
Sponsor: ASA Section on Statistics in Epidemiology
Organizer: Tyler J. VanderWeele, Harvard University
Chair: Tyler J. VanderWeele, Harvard University

3:45 Causal Inference for Case-Control Studies in the Presence of Background Knowledge on the Population Exposure Distribution
Stijn Vansteelandt*, Ghent University, Belgium

4:15 Estimating Effects by Combining Instrumental Variables with Case-Control Designs: The Role of Principal Stratification
Constantine Frangakis*, Johns Hopkins University

4:45 Targeted MLE of Causal Effect in Case-Control Studies
Mark J. van der Laan* and Sherri Rose, University of California-Berkeley

5:15 Floor Discussion

72. REGULATORY AND LEGAL STATISTICS

Gautier (3rd Floor)
Sponsor: ASA Health Policy Statistics Section
Organizer: Lisa M. DeTora, Albany Medical College
Chair: James O'Malley, Harvard Medical School

3:45 **Recent Developments in the Statistical Evaluation of Medical Devices under FDA Regulatory Review**
Gene A. Pennello*, U.S. Food and Drug Administration

4:10 **The Use of Survival Analysis to Estimate Compensation in Equal Employment Litigation**
Joseph L. Gastwirth and Qing Pan*, George Washington University

4:35 **Revisiting the P-value: A Comparison of Statistical Evidence in Clinical and Legal Medical Decision Making**
Kelly H. Zou, Pfizer Inc., Lisa M. DeTora*, Albany Medical College, Steven J. Haker, Robert V. Mulkern, Harvard Medical School

5:00 **Statistical Considerations on Patient-Reported Outcomes for Labeling Claims**
Joseph C. Cappelleri*, Pfizer Inc.

5:25 **Floor Discussion**

73. DISEASE MAPPING AND SPATIAL REGRESSION AS EMERGING TOOLS FOR SURVEILLANCE EPIDEMIOLOGY

Flagler (Terrace Level)
Sponsor: ASA Section on Statistics and the Environment
Organizer: Samiran Sinha, Texas A&M University
Chair: Samiran Sinha, Texas A&M University

3:45 **Spatial Common Factor Models with Multiple Causes**
Peter Congdon*, Queen Mary, University of London

4:10 **Spatial Analysis in Disease Ecology**
Lance Waller*, Emory University

4:35 **Spatial Ordinal Data Analysis of SEER Breast Cancer Data**
Tapabrata Maiti*, Michigan State University

5:00 **Bayesian Spatial Surveillance of Small Area Infectious Disease Data**
Andrew Lawson*, Medical University of South Carolina

5:25 **Floor Discussion**

74. CONTRIBUTED PAPERS: ADAPTIVE DESIGNS FOR CLINICAL TRIALS

Johnson (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Chair: John J. Chen, Stony Brook University

3:45 **Sample Size Re-estimation Using Adaptive Tests and Generalized Likelihood Ratio: A Comparative Study**
Shanhong Guan*, Merck & Co.

4:00 **A Bayesian-Frequentist Two-Stage Single-Arm Phase II Clinical Trial Design**
Gaohong Dong*, Novartis Pharmaceuticals Corporation, Weichung Joe Shih, School of Public Health, University of Medicine and Dentistry of New Jersey

4:15 **Bayesian Adaptive Trial Design for a Newly Validated Surrogate Endpoint**
Lindsay A. Renfro*, Baylor University, Bradley P. Carlin, University of Minnesota, Daniel J. Sargent, Mayo Clinic

4:30 **Optimal Two-Stage Designs in Randomized Comparative Phase II Clinical Trials with Long-Term Endpoints**
Bo Huang*, Neal Thomas, Pfizer Inc. and Pei Fen Kuan, University of North Carolina at Chapel Hill

4:45 **Statistical Properties of a Design with Multiple Analyses of Futility**
A. Lawrence Gould*, Merck Research Laboratories

5:00 **Mean-Variance Relationships in Longitudinal Group Sequential Trials**
Abigail B. Shoben*, The Ohio State University and Scott Emerson, University of Washington

5:15 **A New Method of Balancing Treatments for Covariates and its Properties**
Yanqing Hu* and Feifang Hu, University of Virginia

75. CONTRIBUTED PAPERS: JOINT MODELS FOR LONGITUDINAL AND SURVIVAL DATA

Foster (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Bradley P. Carlin, University of Minnesota

3:45 **Multilevel Bayesian Models of Zero-Inflated Longitudinal Outcomes and Survival Times in Mesothelioma**
Laura A. Hatfield*, University of Minnesota, Mark E. Boye, Eli Lilly and Company, Michelle D. Hackshaw, Merck & Co., Inc., Bradley P. Carlin, University of Minnesota

4:00 **Joint Modeling of a Binary Outcome and Bivariate Longitudinal Markers Subject to Censoring Due to Detection Limits**
Ching-Wen Lee* and Lan Kong, University of Pittsburgh

4:15 **Joint Modeling the Relationship Between Longitudinal and Survival Data Subject to Left Truncation with Applications to Cystic Fibrosis**
Annalisa VanderWyden Piccorelli* and Mark D. Schluchter, Case Western Reserve University

4:30 **A Joint Model of Longitudinal Data and Time to Event Data with Latent Subclasses**
Ashok Panneerselvam*, Novartis Pharmaceuticals Corporation and Mark D. Schluchter, Case Western Reserve University

4:45 **Analysis of Longitudinal Data with Time-Varying Dependence on Observation Times**
Na Cai*, Wenbin Lu and Hao Zhang, North Carolina State University

5:00 **Prospective Accuracy in Joint Models for Longitudinal and Time-to-Event Data**
Dimitris Rizopoulos*, Erasmus Medical Center

5:15 **Joint Modeling of Primary Binary Outcome and Longitudinal Data Measured at Informative Observation Times**
Song Yan*, North Carolina State University

76. CONTRIBUTED PAPERS: IMAGING AND TIME SERIES

Pearson 2 (3rd Floor)
Sponsor: ENAR
Chair: Timothy D. Johnson, University of Michigan

3:45 **A Bayesian Spatial Point Process Classification Model with Application to Functional Neuroimaging Inverse Inference**
Jian Kang*, Timothy D. Johnson, University of Michigan, Thomas E. Nichols, University of Warwick, Lisa Feldman Barrett, Northeastern University, Tor D. Wager, University of Colorado

4:00 **Joint Modeling of MRI and Polychotomous Disease Status Using Wavelet with Application to Alzheimer's Disease**
Jincao Wu* and Timothy D. Johnson, University of Michigan

4:15 **SBLFM: Semiparametric Bayesian Local Functional Models for Diffusion Tensor Tract Statistics**
Zhaowei Hua*, University of North Carolina at Chapel Hill, David B. Dunson, Duke University, Hongtu Zhu, University of North Carolina at Chapel Hill

4:30 **Detecting Significance Level of Brain Activity Using Self-Calibrated Method**
Hana Lee*, Young Truong and Xuemei Huang, University of North Carolina at Chapel Hill

4:45 **Local Polynomial Regression for Symmetric Positive Definite Matrices**
Ying Yuan* Hongtu Zhu, Weili Lin and J. S. Marron, University of North Carolina at Chapel Hill

5:00 **Regression Spline Model for Neural Spike Train Data**
Ruiwen Zhang*, Young K. Truong and Haipeng Shen, University of North Carolina at Chapel Hill

77. CONTRIBUTED PAPERS: STATISTICAL GENETICS AND APPLICATIONS

Merrick 2 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Xingdong Feng, National Institute of Statistical Sciences

3:45 **Likelihood Based Approach to Identify Gene Sets with Either up- or Down-Regulated Genes**
Sang Mee Lee* and Baolin Wu, University of Minnesota

4:00 **Statistical Methods for Analyzing Customized Copy Number Variation Array**
Guanhua Chen*, Wei Sun and Patrick F. Sullivan, University of North Carolina at Chapel Hill

4:15 **Bayesian Analysis of Rare Variants with Disparate Effects in Association Studies**
Degui Zhi* and Nengjun Yi, University of Alabama at Birmingham

4:30 **An Empirical Bayes Hierarchical Model for Inference in RNA-seq Experiments**
Ning Leng* and Christina Kendziorski, University of Wisconsin-Madison

4:45 **Statistical Methods for Rare Variants Identification**
Wan-Yu Lin and Nianjun Liu*, University of Alabama at Birmingham

5:00 **Bayesian Models in Biomarker Discovery Using Spectral Count Data in the Label-Free Shotgun Proteomics**
Xia Wang* and Nell Sedransk, National Institute of Statistical Sciences

5:15 **Estimating and Improving Next-Generation Sequence-Based Genotype Accuracy**
ZhengZheng Tang*, University of North Carolina at Chapel Hill, Matthew R. Nelson, GlaxoSmithKline, Claudio J. Verzilli, Imperial College London

78. CONTRIBUTED PAPERS: ESTIMATING EQUATIONS AND SEMIPARAMETRIC MODELS FOR LONGITUDINAL DATA

Pearson 1 (3rd Floor)
Sponsor: ENAR
Chair: Guojun Yuan, Pfizer Inc.

3:45 **Joint Modeling of Ordinal and Binary Longitudinal Outcomes Using GEE: Application to Medication Adherence**
Zhen Jiang* and Abdus S. Wahed, University of Pittsburgh

4:00 **Analyzing Merged Longitudinal Data Using Estimating Equation Approach**
Fei Wang*, Lu Wang and Peter X.K. Song, University of Michigan

4:15 **Working Correlation Selection in GEE**
Mijin Jang* and Jane F. Pendergast, University of Iowa

4:30 **Generalized Empirical Likelihood Methods for Analyzing Longitudinal Data**
Suojin Wang, Texas A&M University, Lianfen Qian*, Florida Atlantic University, Raymond J. Carroll, Texas A&M University

4:45 **Interrelating of Longitudinal Processes: A Pseudolikelihood Approach**
Tamika Y. Royal-Thomas*, Daniel McGee, Debajyoti Sinha, Florida State University, Clive Osmond, MRC Lifecourse Epidemiology Unit, University of Southampton and Terrence Forrester, Tropical Medicine Research Institute, University of the West Indies"

5:00 **Efficient Algorithms for Computing the Non- and Semi-Parametric Maximum Likelihood Estimates of Panel Count Data**
Gang Cheng*, Ying Zhang, University of Iowa and Liqiang Lu, Fudan University, P.R. China

79. CONTRIBUTED PAPERS: EPIDEMIOLOGIC, ENVIRONMENTAL AND HEALTH POLICY APPLICATIONS

Ibis (3rd Floor)
Sponsor: ASA Health Policy Statistics Section
Chair: Marnie Bertolet, University of Pittsburgh

3:45 **On Scaling Regression Coefficients by Interquartile Ranges for Comparison**
Sandrah P. Eckel*, W. James Gauderman and Kiros T. Berhane, University of Southern California

4:00 **Robust Estimation for Homoscedastic Regression in the Secondary Analysis of Case-Control Data**
Jiawei Wei*, Raymond J. Carroll, Ursula U. Muller, Texas A&M University, Ingrid Van Keilegom, Universite catholique de Louvain, Nilanjan Chatterjee, Division of Cancer Epidemiology and Genetics, National Cancer Institute

4:15 **Restricted Mean Models for Transplant Benefit and Urgency**
Fang Xiang* and Susan Murray, University of Michigan

4:30 **Sieve Likelihood Estimation of Partial Poisson Regression with Single-Index Model**
Minggen Lu*, University of Nevada, Reno and Dana Loomis, University of Nebraska Medical Center

4:45 **Methods for Forecasting Census in Hospital Units**
Devin C. Koestler* and Hernando Ombao, Brown University

5:00 **A Hierarchical Bayesian Mixture Model for Repeated Dietary Records**
Ayona Chatterjee*, University of West Georgia, Graham Horgan, Biomathematics and Statistics of Scotland and Rowett Institute of Nutrition and Health at the University of Aberdeen, UK, Chris Theobald, Biomathematics & Statistics Scotland and University of Edinburgh, UK

5:15 **Cox Model To Evaluate the Comparative Effectiveness of Oral Anti-diabetic Drugs on Chronic Kidney Disease**
Yahya AH Daoud*, Dunlei Cheng, Neil Fleming, Rustam Kudyakov and Andrew Masica, Baylor Health Care System

80. CONTRIBUTED PAPERS: STATISTICAL GENETICS: GENOMICS

Stanford (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Don Hong, Middle Tennessee State University

3:45 **A General Mixture Regression Framework for The Detection of Biologically Relevant Loci from NGS Data**
Naim U. Rashid*, Wei Sun, Joseph Ibrahim, University of North Carolina at Chapel Hill

4:00 **A Robust Model for Multilocus Population Genetics**
Jingyuan Liu*, Penn State University, Xiyang Zhao, Fang Fu, Beijing Forestry University, Beijing, China, Runze Li, Rongling Wu, Penn State University

4:15 **Combining Family- and Population-Based Genetic Association from Multiple Rare Variants**
David Fardo*, Anthony Druen, University of Kentucky and Iuliana Ionita-Laza, Columbia University

4:30 **Estimation and Algorithm for Joint Linkage and Linkage Disequilibrium Analysis in Family Data**
Jiangtao Luo*, University of Nebraska Medical Center, Zhong Wang and Rongling Wu, Penn State University

4:45 **LD-Aware Variant Calling and Phasing Method for Next Generation Sequencing in Trios**
Wei Chen*, Bingshan Li, University of Michigan Yun Li, University of North Carolina at Chapel Hill, Serena Sanna, Carlo Sidore, Fabio Busonero and Goncalo Abecasis, University of Michigan

5:00 **A Robust Likelihood-Based Framework for Disease Association Studies with Copy Number Variation**
Yijuan Hu*, Danyu Lin and Wei Sun, University of North Carolina at Chapel Hill

5:15 **Mapping High-Order Epistasis for Complex Traits in Experimental Crosses Using the Score Test**
John Stephen Yap*, Chenguang Wang, U.S. Food and Drug Administration, Song Wu, St. Jude Children's Hospital, Yao Li, West Virginia University, Myron Chang, University of Florida, Rongling Wu, Penn State University

TUESDAY, MARCH 22
8:30–10:15 a.m.

81. DESIGN, ANALYSIS AND DECISION-MAKING IN DRUG SAFETY ASSESSMENT

Hibiscus B (Terrace Level)
Sponsor: ASA Biopharmaceutical Section
Organizer: H. Amy Xia, Amgen, Inc.
Chair: Ming-Hui Chen, University of Connecticut

8:30 **Bayesian Meta Experimental Design: Evaluating Cardiovascular Risk in New Anti-diabetic Therapies to Treat Type 2 Diabetes**
Joseph G. Ibrahim*, University of North Carolina at Chapel Hill, Ming-Hui Chen, University of Connecticut, Amy Xia, Thomas Liu, Amgen Inc.

9:00 **Continuous Monitoring of a Safety Event of Interest in an Ongoing Phase 2 Trial**
Amy Xia, Amgen Inc.

9:30 **Safety Decision-Making with Multiple Sources and Different Types of Studies: Recent Examples from FDA Advisory Committees**
Mark S. Levenson*, U.S. Food and Drug Administration

10:00 **Floor Discussion**

82. STATISTICAL ANALYSIS OF FUNCTIONAL IMAGING DATA

Pearson 2 (3rd Floor)
Sponsor: ASA Biometrics Section
Organizer: Hongtu Zhu, University of North Carolina at Chapel Hill
Chair: Robert B Scharpf, Johns Hopkins University

8:30 **Multiple Testing Via FDR_L for Large Scale Imaging Data**
Chunming Zhang*, University of Wisconsin-Madison, Jianqing Fan, Princeton University, Tao Yu, National University of Singapore

8:55 **Signal and Noise in Complex-Valued SENSE MR Image Reconstruction**
Daniel B. Rowe*, Marquette University

9:20 **Multiscale Adaptive Spatial-Temporal Models for Functional Images**
Hongtu Zhu*, University of North Carolina at Chapel Hill, Jianqing Fan, Princeton University, Japing Wang and Weili Lin, University of North Carolina at Chapel Hill

9:45 **Modeling Dependence in a Network of Brain Signals**
Hernando Ombao* and Cristina Gorrostieta, Brown University

10:10 **Floor Discussion**

83. ANALYSIS OF MULTIVARIATE NON-GAUSSIAN LONGITUDINAL DATA

Ashe Auditorium (3rd Floor)
Sponsor: ASA Section on Statistics in Epidemiology
Organizers: Abdus S. Wahed and Zhen Jiang, University of Pittsburgh
Chair: Abdus S. Wahed, University of Pittsburgh

8:30 **Analysis of Longitudinal Quality of Life Data Using Principal Stratification and a New Multivariate Longitudinal Ordinal Model**
Keunbaik Lee, Louisiana State University Health Sciences Center and Michael Daniels*, University of Florida

9:00 **Joint Estimation for Multivariate Longitudinal Binary Outcomes with Missing Data: An Application to AIDS Study**
Debajyoti Sinha*, Florida State University and Stuart Lipsitz, Brigham and Women's Hospital, Harvard Medical School

9:30 **A Model for Hierarchical Data With Combined Normal and Conjugate Random Effects**
Geert Molenberghs*, Geert Verbeke, I-BioStat, Katholieke Universiteit Leuven & Universiteit Hasselt and Clarice G.B. Demetrio, Universidade Sao Paulo, Brazil

10:00 **Discussant: Marie Davidian, North Carolina State University**

84. STATISTICAL METHODS IN HIV/AIDS RESEARCH

Miami Lecture Hall (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Organizer: Michael Hudgens, University of North Carolina at Chapel Hill
Chair: Michael Hudgens, University of North Carolina at Chapel Hill

8:30 **Mixture Modeling for Multi-Locus Genotype-Trait Association**
Andrea S. Foulkes*, University of Massachusetts Amherst

8:55 **Applying Copula Methods to Estimating Reliability and Dependence in a Couple-Based Randomized Controlled Trial for HIV Sero-Discordant Couples**
Scarlett L. Bellamy*, University of Pennsylvania

9:20 **Estimating Longitudinal HIV RNA Data Subject to a Limit of Detection using Constrained Bayes Methodology**
Reneé H. Moore*, University of Pennsylvania, Robert H. Lyles and Amita K. Manatunga, Emory University

9:45 **Estimation of Risk Ratios in Cohort Studies with Common Outcomes: A Bayesian Approach**
Haitao Chu*, University of Minnesota and Stephen R. Cole, University of North Carolina at Chapel Hill

10:10 **Floor Discussion**

85. STATISTICS IN PROTEIN AND PROTEOMICS DATA ANALYSIS

Gautier (3rd Floor)
Sponsor: ASA Biometrics Section
Organizer: Xia Wang, National Institute of Statistical Sciences
Chair: Nell Sedransk, National Institute of Statistical Sciences

8:30 **A Dirichlet Process Mixture of Hidden Markov Models for Protein Structure Prediction**
Kristin P. Lennox, Lawrence Livermore National Laboratory, David B. Dahl*, Texas A&M University, Marina Vannucci, Rice University, Ryan Day, Jerry W. Tsai, University of the Pacific

9:00 **A Regularized Hotelling's T2 Test for Pathway Analysis in Proteomic Studies**
Lin S. Chen, University of Chicago, Debashis Paul, University of California-Davis, Ross L. Prentice and Pei Wang*, Assistant Professor at Biostat Department, University of Chicago

9:30 **Calibration Using Constrained Smoothing with Applications to Mass Spectrometry Data**
Xingdong Feng*, Nell Sedransk and Jessie Xia, National Institute of Statistical Sciences

10:00 **Floor Discussion**

86. RECENT ISSUES OF GENERALIZED ESTIMATING EQUATIONS IN PRACTICE

Orchid C (Terrace Level)
Sponsor: ASA Section on Statistics and the Environment
Organizer: Jun Yan, University of Connecticut
Chair: Jun Yan, University of Connecticut

8:30 **Working Covariance Model Selection for Generalized Estimating Equations**
Vincent J. Carey*, Channing Laboratory, Harvard Medical School and You-Gan Wang, University of Queensland, Australia

9:00 **Doubly Robust Estimates for Binary Longitudinal Data Analysis with Missing Response and Missing Covariates**
Baojiang Chen*, University of Nebraska Medical Center and Xiao-Hua Zhou, University of Washington

9:30 **Comparing Regression Coefficients Between Nested Models for Clustered Data with Generalized Estimating Equations**
Jun Yan, Robert Aseltine and Ofer Harel*, University of Connecticut

10:00 **Floor Discussion**

87. CONTRIBUTED PAPERS: GENOMICS

Merrick 1 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Kellie J. Archer, Virginia Commonwealth University

8:30 **A Statistical Framework for Illumina DNA Methylation Arrays**
Pei Fen Kuan*, University of North Carolina at Chapel Hill, Sijian Wang, University of Wisconsin-Madison, Xin Zhou, University of North Carolina at Chapel Hill, Haitao Chu, University of Minnesota

8:45 **A Novel Statistical Method to Detect Mosaic Rearrangements Using SNP Array Data**
Juan R. Gonzalez*, Center for Research in Environmental Epidemiology, Barcelona, Spain, Benjamin Rodriguez-Santiago, Dpt Ciencies Experimentals i de la Salut, University Pompeu Fabra, Barcelona, Spain, Cáceres Alejandro, Center for Research in Environmental Epidemiology, Barcelona, Spain, Roger Pique-Regi, University of Chicago, Lluis Armengol, Quantitative Genomic Medicine Laboratories, Barcelona, Spain and Luis A. Pérez-Jurado, Dpt Ciencies Experimentals i de la Salut, University Pompeu Fabra, Barcelona, Spain

9:00 **A Hierarchical Bayesian Model for Estimating and Inferring Differential Isoform Expression for Multi-Sample RNA-Seq Data**
Saran Vardhanabhuti*, Mingyao Li and Hongzhe Li, University of Pennsylvania

9:15 **Detecting Epistatic SNPs Associated with Complex Diseases Via a Bayesian Classification Tree Search Method**
Min Chen*, University of Texas Southwestern Medical Center at Dallas, Judy Cho and Hongyu Zhao, Yale University.

9:30 **A Statistical Framework for Expression Quantitative Trait Loci (eQTL) Mapping using RNA-seq Data**
Wei Sun*, University of North Carolina at Chapel Hill

9:45 **A Maximum Likelihood Genotype Imputation Method to Correct for Allelic Dropout in Microsatellite Data**
Chaolong Wang*, University of Michigan, Kari B. Schroeder, University of California-Davis, Noah A. Rosenberg, University of Michigan

10:00 **Rapid Bayesian Segmentation of Next-Generation Sequencing Data for Genomic Copy Number Analysis of Tumors**
Fridtjof Thomas*, University of Tennessee Health Science Center, Stanley Pounds and Jinghui Zhang, St. Jude Children's Research Hospital

88. CONTRIBUTED PAPERS: HIERARCHICAL MODELS
Merrick 2 (3rd Floor)
Sponsor: ENAR
Chair: Zhiwei Zhang, Eunice Kennedy Shriver National
Institute of Child Health and Human Development, National
Institutes of Health

8:30 **A Zero-Inflated Markov Random Field Model with Applications to Asthma Mortality**
Dipankar Bandyopadhyay*, Medical University of South Carolina and Luis E. Nieto-Barajas, ITAM, Mexico

8:45 **On Differential Gene Expression Using RNA-Seq Data**
Juhee Lee*, Yuan Ji, Shoudan Liang, Guoshuai Cai and Peter Mueller, University of Texas MD Anderson Cancer Center

9:00 **Bayesian Hierarchical Models for Massive Count Data: An Application to a Driving Study with Kinematic Events**
Sungduk Kim*, Zhen Chen, Zhiwei Zhang and Paul S. Albert, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health

9:15 **An Empirical Bayes Model for Metabolite Identifications Using Mass Spectrometry**
Jaesik Jeong*, Indiana University Purdue University-Indianapolis, Xiang Zhang, University of Louisville, Changyu Shen, Indiana University Purdue University-Indianapolis

9:30 **Bayesian Variable Selection with Biological Prior Information**
DeukwooKwon*, National Cancer Institute, National Institutes of Health

89. CONTRIBUTED PAPERS: MISSING DATA
Pearson 1 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Yolanda Munoz Maldonado, Michigan Tech University

8:30 **A Pseudo Bayesian Shrinkage Approach to Regression with Missing Covariates**
Nanhua Zhang* and Roderick J. A. Little, University of Michigan

8:45 **A Nonparametric Multiple Imputation Approach for Data with Missing Covariate Values with Application to Colorectal Adenoma Data**
Chiu-Hsieh Hsu*, University of Arizona and Qi Long, Emory University and Yisheng Li, University of Texas MD Anderson Cancer Center

9:00 **Beyond Double Robustness: Multiple Working Models for Missing Data Problems**
Kwun Chuen Gary Chan*, University of Washington

9:15 **Improved Doubly Robust Estimation When Data are Monotonely Coarsened, with Application to Longitudinal Studies with Dropout**
Anastasios Tsiatis, Marie Davidian, North Carolina State University and Weihua Cao*, U.S. Food and Drug Administration

9:30 **Missing Value Estimation in Repeated-Measures ANOVA**
Özge Karadag* and Serpil Aktas, Hacettepe University

9:45 **Generating Multiple Imputations From Multiple Models to Incorporate Model Uncertainty in Nonignorable Missing Data Problem**
Juned Siddique*, Northwestern University and Ofer Harel, University of Connecticut

10:00 **Effects of Estimation of Missing Data by Stage and Time**
J. Lynn Palmer* and Janice Cormier, University of Texas MD Anderson Cancer Center

90. CONTRIBUTED PAPERS: SPATIAL AND TEMPORAL MODELING
Johnson (3rd Floor)
Sponsor: ASA Section on Statistics and the Environment
Chair: Jian Huang, University of Iowa

8:30 **Bayesian Areal Wombling Using False Discovery Rates**
Pei Li*, Medtronic, Sudipto Banerjee, Alexander McBean and Bradley Carlin, University of Minnesota

8:45 **Multivariate Spatial Factor Analysis With Missingness Using Gaussian Predictive Processes**
Qian Ren* and Sudipto Banerjee, University of Minnesota

9:00 **Novel Bayesian Models and Inference for High-Resolution Lattice Data**
Chiranjit Mukherjee* and Mike West, Duke University.

9:15 **Bias-Adjusted Hierarchical Low Rank Spatial Process Models for Large Datasets**
Rajarshi Guhaniyogi* and Sudipto Banerjee, University of Minnesota

9:30 **Estimating the Minimum Rate and Identifying the Best Region**
Ronald E. Gangnon*, University of Wisconsin

9:45 **Kernel Averaged Predictors for Spatio-Temporal Processes**
Matthew J. Heaton* and Alan E. Gelfand, Duke University

91. CONTRIBUTED PAPERS: ANALYSIS OF BINARY DATA
Foster (3rd Floor)
Sponsor: ENAR
Chair: Hrishikesh Chakraborty, RTI International

8:30 **Methods for Determining the Order of Antedependence in Binary Longitudinal Data**
Yunlong Xie* and Dale L. Zimmerman, University of Iowa

8:45 **A Copula-based Model for Longitudinal Data with Bivariate Binary Outcomes,with Application to Depression Data**
Andrea B. Troxel, Scarlett L. Bellamy, Thomas R. Ten Have, University of Pennsylvania and Steven Palmer, University of Pennsylvania

9:00 **Group Testing for Case Identification with Correlated Responses**
Samuel D. Lendle*, Michael G. Hudgens and Bahjat F. Qaqish, University of North Carolina at Chapel Hill

9:15 **Latent Variable Models for Longitudinal Count and Binary Data**
John C. Jackson*, Paul S. Albert and Zhiwei Zhang, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health

9:30 **Comparing Margins of Multivariate Binary Data**
Bernhard Klingenberg* and Ville Satopaa, Williams College

9:45 **Using an EM Algorithm to Fit a 4-Parameter Logistic Model**
Gregg E. Dinse*, National Institute of Environmental Health Sciences, National Institutes of Health

92. CONTRIBUTED PAPERS: MEASUREMENT ERROR

Ibis (3rd Floor)
Sponsor: ASA Section on Statistics in Epidemiology
Chair: Daniel Beavers, Wake Forest University

8:30 **Measurement Error in 1-1 Matched-Case Control Studies**
Nels G. Johnson* and Inyoung Kim, Virginia Polytechnic Institute and State University

8:45 **Using Orthogonal Decomposition to Correct Correlated Measurement Errors in Physical Activity Studies**
Chang Yu*, Vanderbilt University School of Medicine, Charles E. Matthews, National Cancer Institute. Christine Friedenreich, Alberta Cancer Board

9:00 **Regression Analysis for Differentially Misclassified Binary Covariates in Longitudinal Studies**
Li Tang*, Robert H. Lyles, Emory University, Caroline C. King, Centers for Disease Control and Prevention, David Celantano, Johns Hopkins University School of Medicine, Yungtai Lo, Montefiore Medical Center and Albert Einstein College of Medicine, Jack Sobel, Wayne State University School of Medicine

9:15 **Semiparametric Estimators for Restricted Moment Models with Measurement Error**
Tanya P. Garcia* and Yanyuan Ma, Texas A&M University

9:30 **A New Multivariate Measurement Error Model with Zero-Inflated Dietary Data, and its Application to Dietary Assessment**
Saijuan Zhang*, Texas A&MUniversity, Douglas Midthune, National Cancer Institute, Patricia M. Guenther, U.S. Department of Agriculture, Susan M. Krebs-Smith, Victor Kipnis, Kevin W. Dodd, National Cancer Institute, Dennis W. Buckman, Information Management Services, Inc., Janet A. Tooze, Wake Forest University School of Medicine, Laurence S. Freedman, Sheba Medical Center, Israel, Raymond J. Carroll, Texas A&M University

9:45 **Adaptive Deconvolution of Distribution Functions**
Itai Dattner*, University of Haifa, Israel

10:00 **Nonparametric Estimation of a Heaping Mechanism from Precise and Heaped Self-Report Data**
Sandra D. Griffith*, University of Pennsylvania, Saul Shiffman, University of Pittsburgh, Daniel F. Heitjan, University of Pennsylvania

93. CONTRIBUTED PAPERS: SURVIVAL ANALYSIS: APPLICATIONS TO CANCER RESEARCH

Stanford (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Kevin Dobbin, University of Georgia

8:30 **A Parametric Comparison for Survival data with Multiple Events and Failure Changes**
Gang Han*, Ji-Hyun Lee, and Janelle Perkins, H. Lee Moffitt Cancer Center & Research Institute

8:45 **Adjusted Prostate Cancer Mortality Rates under Misattributed Cause of Death**
Jinkyung Ha* and Alexander Tsodikov, University of Michigan

9:00 **Predicting the Absolute Risk of Dying from Colorectal Cancer and from Other Causes Using Population Based Cancer Registry Data**
Minjung Lee*, Kathleen A. Cronin, Mitchell H. Gail and Eric J. Feuer, National Cancer Institute

9:15 **Semiparametric Transformation Models for Joint Analysis of Multivariate Recurrent and Terminal Events**
Liang Zhu*, St. Jude Children's Research Hospital, Jianguo Sun, University of Missouri-Columbia, Xingwei Tong, Beijing Normal University, Deo Kumar Srivastava, St. Jude Children's Research Hospital

9:30 **Cure Survival Models with Change-Point Covariates**
Megan Othus*, Fred Hutchinson Cancer Research Center, Yi Li, Dana Farber Cancer Institute and Harvard University, Ram Tiwari, U.S. Food and Drug Administration

9:45 **Modeling Cure Rates Using the Survival Distribution of the General Population**
Wei Hou*, Keith Muller, University of Florida, Michael Milano, University of Rochester, Paul Okunieff, Myron Chang, University of Florida

10:00 **Censored Tumor Growth Delay Data Analysis**
Jianrong Wu*, St. Jude Children's Research Hospital

TUESDAY, MARCH 22

10:15–10:30 a.m.
Refreshment Break and Visit Our Exhibitors
Lower Promenade (Terrace Level)

10:30 a.m.–12:15 p.m.

94. PRESIDENTIAL INVITED ADDRESS
Regency Ballroom (Terrace Level)
Sponsor: ENAR
Chair: Amy Herring, The University of North Carolina at Chapel Hill

10:30 **Introduction:**
Amy Herring, The University of North Carolina at Chapel Hill

10:35 **Distinguished Student Paper Awards**

10:45 **Generalists and Specialists: A Contemplation of the Vitality of Statisticians via Paradoxes**
Xiao-Li Meng, Department of Statistics, Harvard University

TUESDAY, MARCH 22
1:45–3:30 p.m.

95. NONPARAMETRIC BAYES METHODS FOR HIGH-DIMENSIONAL DATA
Tuttle (Terrace Level)
Sponsor: IMS
Organizer: David Dunson, Duke University
Chair: David Dunson, Duke University

1:45 **Sufficient Dimensionality Reduction Through Logistic Gaussian Processes, with Application in Biomedical Studies**
Surya Tokdar*, Duke University

2:15 **Dirichlet Mixtures of Normals for Patient Based Drug Use - Tentative Suggestions**
Jayanta K. Ghosh*, Purdue University

2:45 **Bayesian Nonparametric Covariance Regression**
Emily B. Fox* and David B. Dunson, Duke University

3:15 **Floor Discussion**

96. SEMIPARAMETRIC REGRESSION METHODS FOR LONGITUDINAL DATA
Pearson 2 (3rd Floor)
Sponsor: ASA Section on Statistics and the Environment
Organizer: Abdus Sattar, Case Western Reserve University
Chair: Pingfu Fu, Case Western Reserve University

1:45 **Efficient Semiparametric Regression for Longitudinal Data with Nonparametric Covariance Estimation**
Yehua Li*, University of Georgia

2:10 **Testing for the Association of the SNP/Gene Set and Phenotypes Using an Efficient Adaptive Score Test**
Xihong Lin* and Tianxi Cai, Harvard School of Public Health, Raymond J. Carroll, Texas A&M University

2:35 **Enhanced Double-Robust Locally-Efficient Estimation in Regression Models for Longitudinal Studies**
Andrea Rotnitzky*, Harvard University

3:00 **Analysis of Lonigutindal Data with Informative Drop-Out**
Li Chen, University of Kentucky, Donglin Zeng* and Danyu Lin, University of North Carolina at Chapel Hill

3:25 **Floor Discussion**

97. INNOVATIVE ADAPTIVE DESIGNS IN EARLY-PHASE ONCOLOGY CLINICAL TRIALS
Ashe Auditorium (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Organizer: Ying Yuan, University of Texas MD Anderson Cancer Center
Chair: Yisheng Li, University of Texas MD Anderson Cancer Center

1:45 **Optimizing the Concentration and Bolus of a Drug Delivered by Continuous Infusion**
Peter F. Thall*, University of Texas MD Anderson Cancer Center, Aniko Szabo, Medical College of Wisconsin, Hoang Q. Nguyen, University of Texas MD Anderson Cancer Center, Catherine M. Amlie-Lefond and Osama O. Zaidat, Medical College of Wisconsin

2:10 **Fractional 3+3 Design with Late-onset Toxicity in Phase I Clinical Trials**
Guosheng Yin, The University of Hong Kong and Shurong Zheng*, Northeast Normal University, Changchun City, China

2:35 **Stochastic Approximation with Virtual Observations for Dose-Finding on Discrete Levels**
Ying Kuen Cheung* and Mitch Elkind, Columbia University

3:00 **Robust EM Continual Reassessment Method in Oncology Dose Finding**
Ying Yuan*, University of Texas MD Anderson Cancer Center and Guosheng Yin, The University of Hong Kong

3:25 **Floor Discussion**

98. STATISTICS AND NETWORKS
Sponsor: IMS
Organizer: Eric Kolaczyk, Boston University
Chair: Eric Kolaczyk, Boston University
Miami Lecture Hall (3rd Floor)

1:45 **Community Extraction for Social Networks**
Yunpeng Zhao*, Elizaveta Levina* and Ji Zhu, University of Michigan

2:15 **The Sparse Laplacian Shrinkage Estimator for High-Dimensional Regression**
Jian Huang*, University of Iowa, Shuangge Ma, Yale University, Hongzhe Li, University of Pennsylvania School of Medicine, Cun-Hui Zhang, Rutgers University

2:45 **Statistical Methods for Studying Social Networks Using Aggregated Relational Data**
Tian Zheng* and Tyler H. McCormick, Columbia University

3:15 **Floor Discussion**

99. ASSESSING DNA COPY NUMBER VARIATION FROM HIGH-THROUGHPUT TECHNOLOGIES
Gautier (3rd Floor)
Sponsor: ASA Biometrics Section
Organizer: Jeff Leek, Johns Hopkins University
Chair: Jeff Leek, Johns Hopkins University

1:45 **Tackling Batch Effects and Estimating Copy Number in High-Throughput Genotyping Arrays**
Robert B. Scharpf*, Ingo Ruczinski, Johns Hopkins University, Benilton Carvalho, Cambridge Research Institute, Matthew Ritchie, The Walter and Eliza Hall Institute of Medical Research, Rafael A. Irizarry, Johns Hopkins University

2:10 **Copy Number Profiling Using Next-Generation DNA Sequencing with Change-Point Methods**
Jeremy J. Shen* and Nancy R. Zhang, Stanford University

2:35 **Improved Interpretation of Post-Segmentation Parent-Specific Copy Numbers from a Single Heterogeneous Tumor-Normal Pair**
Henrik Bengtsson*, University of California, San Francisco

3:00 **Methods for Parent-Specific Analysis of SNP Array Data**
Adam B. Olshen*, University of California-San Francisco, Richard A. Olshen, Stanford University, Henrik Bengtsson, University of California-San Francisco Pierre Neuvial, University of California-Berekely, Paul Spellman, Lawrence Berkeley National Laboratory, Venkatraman E. Seshan, Memorial Sloan-Kettering Cancer Center

3:25 **Floor Discussion**

100. MODELING AND INFERENCE OF NEUROIMAGING DATA
Orchid C (Terrace Level)
Sponsor: ASA Biometrics Section
Organizer: Hernando Ombao, Brown University
Chair: Hernando Ombao, Brown University

1:45 **Empirical Null and False Discovery Rate Analysis in Neuroimaging**
Armin Schwartzman*, Harvard School of Public Health, Robert F. Dougherty, Stanford University, Jongho Lee, National Institutes of Health, Dara Ghahremani, University of California, Los Angeles, Jonathan E. Taylor, Stanford University

2:15 **Social Network Models for fMRI**
Nicole A. Lazar*, University of Georgia

2:45 **The Likelihood Paradigm in Action: An Application to fMRI Data and Evaluation of Performance**
Jeffrey Blume*, Vanderbilt University

3:15 **Floor Discussion**

101. CONTRIBUTED PAPERS: FUNCTIONAL DATA ANALYSIS
Merrick 1 (3rd Floor)
Sponsor: ENAR
Chair: Thomas M. Braun, University of Michigan

1:45 **Simultaneous Inference For The Mean Function Of Dense Longitudinal**
Guanqun Cao*, Lijian Yang and David Todem, Michigan State University

2:00 **A Confidence Corridor for Sparse Longitudinal Data Curves**
Shuzhuan Zheng*, Michigan State University, Lijian Yang, Soochow University, People's Republic of China and Michigan State University, Wolfgang K. Hardle, Humboldt-University zu Berlin

2:15 **Regression Models on Lie Groups**
Emil A. Cornea*, Hongtu Zhu and Joseph G. Ibrahim, University of North Carolina at Chapel Hill

2:30 **Sample Size Calculation for Comparison of Two Functional Means**
Yolanda Munoz Maldonado*, Michigan Tech University

2:45 **Bivariate Surface Estimation for Functional Data**
Andrada E. Ivanescu*, East Carolina University

3:00 **Dynamic System Modeling of Blood Glucose and Insulin in Type I Diabetic Subjects**
Inna Chervoneva* and Boris Freydin, Thomas Jefferson University

102. CONTRIBUTED PAPERS: ROC ANALYSIS
Merrick 2 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Haitao Chu, University of Minnesota

1:45 **Comparing Accuracy among Clustered Diagnostic Markers with Applications to the BioCycle Study**
Liansheng Tang*, George Mason University

2:00 **Semiparametric ROC Analysis Using Accelerated Regression Models**
Eunhee Kim*, Brown University and Donglin Zeng, University of North Carolina at Chapel Hill

2:15 **Calibration of ROC Curves in Multireader Studies**
Andriy Bandos* and Howard E. Rockette, School of Public Health, University of Pittsburgh, David Gur, School of Medicine, University of Pittsburgh

2:30 **Summarizing the Time-Dependent ROC Curve and its Application to Comparison of Predictive Accuracy**
Paramita Saha Chaudhuri*, National Institute of Environmental Health Sciences, National Institutes of Health and Patrick J. Heagerty, University of Washington

2:45 **Multiple Imputation Methods for ROC Analysis in the Presence of Missing Data**
Xiaoxi Zhang*, Pfizer Inc., Qi Long, Emory University, Chiu-Hsieh Hsu, University of Arizona

3:00 **Estimation of AUC with Censored Data**
Qihua Wang, Chinese Academy of Sciences, Lili Yao*, Northwestern University, Peng Lai, Chinese Academy of Sciences

3:15 **Nonparametric Tests for Equality of Distributions Based on Precedence Probabilities**
Rajarshi Dey* and Paul I. Nelson, Kansas State University

103. CONTRIBUTED PAPERS: GENOME-WIDE ASSOCIATION STUDIES

Johnson (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Andrea Foulkes, University of Massachusetts Amherst

1:45 **Sample Size and Power Analysis for Sparse Signal Recovery in Genome-Wide Association Studies**
Jichun Xie*, University of Pennsylvania School of Medicine, Tony Cai, The Wharton School University of Pennsylvania, Hongzhe Li, University of Pennsylvania School of Medicine

2:00 **Accounting for Linkage Disequilibrium in Genome-Wide Association Studies: A Penalized Regression Method**
Jin Liu*, Kai Wang, University of Iowa, Shuangge Ma, School of Public Health, Yale University, Jian Huang, University of Iowa

2:15 **SNP Set Analysis in Genome-wide Association Studies for Familial Data**
Elizabeth D. Schifano*, Harvard School of Public Health, Michael P. Epstein, Emory University School of Medicine, Xihong Lin, Harvard School of Public Health

2:30 **Modeling Multi-Reads in ChIP-seq Analysis**
Dongjun Chung*, University of Wisconsin-Madison, Pei Fen Kuan, University of North Carolina at Chapel Hill, Bo Li, University of Wisconsin-Madison, Sanal Kumar, University of Wisconsin School of Medicine and Public Health, Kun Liang, University of Wisconsin-Madison, Emery Bresnick, University of Wisconsin School of Medicine and Public Health, Colin Dewey and Sunduz Keles, University of Wisconsin-Madison

2:45 **Using Ascertainment for Targeted Resequencing to Increase Power to Identify Causal Variants**
Michael D. Swartz*, University of Texas School of Public Health, Bo Peng, Cielito C. Reyes-Gibby and Sanjay Shete, University of Texas MD Anderson Cancer Center

3:00 **Group Iterative Sure Independent Screening**
Ning Hao*, University of Arizona

104. CONTRIBUTED PAPERS: MODELS FOR INFECTIOUS DISEASES

Pearson 1 (3rd Floor)
Sponsor: ASA Health Policy Statistics Section
Chair: Melanie Wall, Columbia University

1:45 **An Individual Level SEIR Model for Infectious Diseases using General Distributions on the Latent Period**
Aaron T. Porter* and Jacob Oleson, University of Iowa

2:00 **Discrete-Time Semi-Markov Two-State Modeling of Human Papillomavirus Type-Specific Persistence**
Cicely E. Mitchell*, Michael G. Hudgens, University of North Carolina at Chapel Hill, Caroline King, Centers for Disease Control and Prevention, Susan Cu-Uvin, Brown Medical School, Yungtai Lo, Montefiore Medical Center and Albert Einstein College of Medicine, Ann Rompalo, Johns Hopkins University School of Medicine, Jack Sobel, Wayne State University School of Medicine, Jennifer S. Smith, University of North Carolina at Chapel Hill

2:15 **Predicting Infectious Disease Outbreak Carried by Migratory Waterfowl**
Jacob J. Oleson*, University of Iowa and Christopher K. Wikle, University of Missouri

2:30 **Informative Dorfman Screening**
✴ Christopher S. McMahan* and Joshua M. Tebbs, University of South Carolina, Christopher R. Bilder, University of Nebraska

2:45 **A Modeling Framework for Analysis of HPV Incidence and Persistence**
Xiangrong Kong*, Johns Hopkins Bloomberg School of Public Health

3:00 **Exploratory Spatial Analysis of in vitro RSV Co-infections**
Ivan B. Simeonov*, Xiaoyan Gong, Oekyung Kim, Pennsylvania State University, Mary Poss, Pennsylvania State University; Fogarty International Center, National Institutes of Health, Francesca Chiaromonte, John Fricks, Pennsylvania State University

3:15 **Effects of Time-line Uncertainty upon Infectious Disease Modeling**
Jourdan C. Gold*, Rob Deardon and Zeny Feng, University of Guelph

105. CONTRIBUTED PAPERS: SURVIVAL ANALYSIS

Sponsor: ASA Biometrics Section
Chair: Hani Samawi, Georgia Southern University
Stanford (3rd Floor)

1:45 **Censored Empirical Likelihood with Over-determined Hazard-type Constraints**
Yanling Hu* and Mai Zhou, University of Kentucky

2:00 **An Alternative Estimation Method for the Semiparametric Accelerated Failure Time Mixture Cure Model**
Linzhi Xu, Albert Einstein College of Medicine and Jiajia Zhang*, University of South Carolina

2:15 **Semiparametric Methods for the Analysis of Failure Time Data with Outcome-Dependent Sampling and Dependent Censoring**
Hui Zhang*, Douglas E. Schaubel and John D. Kalbfleisch, University of Michigan

2:30 **Recursively Imputed Survival Trees**
Ruoqing Zhu* and Michael R. Kosorok, University of North Carolina at Chapel Hill

3:45 **Regression Modeling of Time to Event Data using the Ornstein-Uhlenbeck Process**
Roger A. Erich* and Michael L. Pennell, The Ohio State University, Mei-Ling T. Lee, University of Maryland

4:00 **Proportional Hazards Model for Competing Risks Data with Missing Cause of Failure**
Seunggeun Hyun*, University of South Carolina Upstate and Jimin Lee, University of North Carolina Asheville

106. CONTRIBUTED PAPERS: SAMPLE SIZE AND POWER

Foster (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Chair: John A. Kairalla, University of Florida

1:45 **Sample Size Determination in Shared Frailty Models for Multivariate Time-to-Event Data**
✴ Liddy M. Chen*, University of North Carolina at Chapel Hill and Premier Research Group Limited, Joseph G. Ibrahim, University of North Carolina at Chapel Hill and Haitao Chu, University of North Carolina at Chapel Hill and University of Minnesota

2:00 **Bayesian Average Error Based Approach to Sample Size Calculations for Hypothesis Testing**
Eric M. Reyes* and Sujit K. Ghosh, North Carolina State University

2:15 **Bayesian Sample Size Determination for a Dual Test Diagnostic Protocol with a Binary Predictor Measured Without a Gold Standard Classifier**
Daniel P. Beavers*, Wake Forest University and James D. Stamey, Baylor University

2:30 **Bayesian Power Analysis Accounting for Response Misclassfication and Covariate Measurement Error in Epidemilogical Studies**
Dunlei Cheng*, Baylor Health Care System, Adam J. Branscum, School of Public Health, Oregon State University, James D. Stamey, Baylor University

2:45 **Sample Size Requirements to Detect an Intervention by Time Interaction in Longitudinal Cluster Randomized Clinical Trials with Random Slopes**
Moonseong Heo*, Xiaonan Xue and Mimi Y. Kim, Albert Einstein College of Medicine

3:00 **A Sample Size Method for Training High Dimensional Risk Predictors from Right-Censored Survival Data**
Kevin K. Dobbin* and Xiao Song, College of Public Health, University of Georgia

107. CONTRIBUTED PAPERS: CAUSAL INFERENCE

Ibis (3rd Floor)
Sponsor: ASA Section on Statistics in Epidemiology
Chair: Theodore Holford, Yale University

1:45 **Treatment Heterogeneity and Individual Qualitative Interaction**
Robert S. Poulson* and Gary L. Gadbury, Kansas State University, David B. Allison, University of Alabama at Birmingham

2:00 **Assessing the Sensitivity of Treatment Effect on Cost to Unknown Confounders**
Elizabeth A. Handorf, University of Pennsylvania School of Medicine, Justin E. Bekelman, Hospital of the University of Pennsylvania, Daniel F. Heitjan, Nandita Mitra, University of Pennsylvania School of Medicine

2:15 **Randomization-Based Inference within Principal Strata**
Tracy L. Nolen* and Michael G. Hudgens, University of North Carolina at Chapel Hill

2:30 **Causal Inference in Repeated Cross-Sectional Observational Studies**
Bo Lu and Chih-Lin Li*, The Ohio State University

2:45 **Optimal Matching with Minimal Deviation from Fine Balance in a Study of Obesity and Surgical Outcomes**
Dan Yang*, Dylan Small, The Wharton School, University of Pennsylvania, Jeffrey H. Silber, School of Medicine, University of Pennsylvania and The Children's Hospital of Philadelphia, Paul R. Rosenbaum, The Wharton School, University of Pennsylvania

3:00 **Selective and Future Ignorability in Causal Inference**
Marshall M. Joffe* and Wei P. Yang, University of Pennsylvania

TUESDAY, MARCH 22
3:30–3:45 p.m.
Refreshment Break and Visit Our Exhibitors
Lower Promenade (Terrace Level)

3:45–5:30 p.m

108. NEXT-GENERATION SEQUENCING DATA ANALYSIS

Tuttle (Terrace Level)
Sponsor: ASA Biometrics Section
Organizer: Xiangqin Cui, University of Alabama at Birmingham
Chair: Degui Zhi, University of Alabama at Birmingham

3:45 **Local Alignments as Approximations for Next-Generation Sequencing Statistical Models**
Colin Dewey*, University of Wisconsin-Madison

4:10 J**oint Analysis of Multiple ChIP-seq Experiments**
Hao Wu*, Emory University and Hongkai Ji, Johns Hopkins University

4:35 **Empirical Bayes Analysis of Sequencing-based Transcriptional Profiling without Replicates**
Zhijin Wu*, Brown University

5:00 **Length Bias Correction for RNA-seq Data in Gene Set Analyses**
Liyan Gao, University of Alabama at Birmingham, Zhide Fang, Louisiana State University, Kui Zhang, Degui Zhi and Xiangqin Cui*, University of Alabama at Birmingham

5:25 **Floor Discussion**

109. RECENT ADVANCES IN FUNCTIONAL AND LONGITUDINAL DATA ANALYSIS

Pearson 2 (3rd Floor)
Sponsor: ASA Section on Statistics in Epidemiology
Organizer: Lu Wang, University of Michigan
Chair: Ofer Harel, University of Connecticut

3:45 **The Use of Multiple Functional Data As Predictors**
Naisyin Wang*, University of Michigan

4:10 **Partially Empirical Eigenvectors for Regression (PEER) for Generalized Functional Linear Models (GFLM)**
Jaroslaw Harezlak*, Indiana University School of Medicine, Timothy W. Randolph and Ziding Feng, Fred Hutchinson Cancer Research Center

4:35 **Permutation Tests for Random Effects in Linear Mixed Models**
Thomas M. Braun* and Oliver Lee, University of Michigan

5:00 **Detecting Critical Windows for Functional Curves**
Lu Wang*, University of Michigan

5:25 **Floor Discussion**

110. RECENT METHOD DEVELOPMENT ON REINFORCEMENT LEARNING AND PERSONALIZED MEDICINE

Miami Lecture Hall (3rd Floor)
Sponsor ASA Biopharmaceutical Section
Organizer: Rui Song, Colorado State University
Chair: Rui Song, Colorado State University

3:45 **Inverse Preference Elicitation for Dynamic Treatment Regimes**
Dan Lizotte, University of Michigan, Michael Bowling, University of Alberta, Susan Murphy*, University of Michigan

4:10 **Statistical Inference for Q-Learning with Support Vector Regression Under Right Censoring**
Yair Goldberg* and Michael R. Kosorok, University of North Carolina at Chapel Hill

4:35 **Influence Bounding in G-estimation of Optimal Dynamic Treatment Regimes**
Erica Moodie*, McGill University

5:00 **Estimating Optimal Dynamic Treatment Regimes with Shared Decision Rules across Stages: An Extension of Q-learning**
Bibhas Chakraborty*, Columbia University and Erica Moodie, McGill University

5:25 **Floor Discussion**

111. FLEXIBLY MODELING OVERDISPERSED HIERARCHICAL DATA

Gautier (3rd Floor)
Sponsor: ASA Section on Statistics in Epidemiology
Organizers: Geert Verbeke and Geert Molenberghs, Katholieke Universiteit Leuven and Universiteit Hasselt
Chairs: Geert Verbeke and Geert Molenberghs, Katholieke Universiteit Leuven and Universiteit Hasselt

3:45 **Partial Linearity and Likelihood-Based Inference for GLMMs**
Vadim Zipunnikov* and Johns Hopkins School of Public Health, James Booth, Cornell University

4:15 **Marginal Analysis of Longitudinal Count Data in Long Sequences**
Zhiwei Zhang* and Paul S. Albert, Eunice Kennedy Shriver National Institute of Child Health and Human Development

4:45 **Correlation from Logit- and Probit-Beta-Normal Models for Hierarchical Binary Data**
Tony JP Vangeneugden*, Janssen, Pharmaceutical Companies of J&J, Geert Molenberghs, Geert Verbeke, Katholieke Universiteit Leuven, Belgium, Clarice GB Demetrio, Universidade de Brasilia, Brasil

5:15 **Floor Discussion**

112. ADVANCES IN THE SPATIO-TEMPORAL ANALYSIS OF FUNCTIONAL MAGNETIC RESONANCE IMAGING (FMRI) DATA

Orchid C (Terrace Level)
Sponsor: ASA Biometrics Section
Organizers: Stewart Anderson and Sati Mazumdar, University of Pittsburgh
Chair: Stewart Anderson, University of Pittsburgh

3:45 **Estimation and Classification of BOLD Responses Over Multiple Trials**
Kush K. Kapur, Edward Hines Jr. VA Hospital, Anindya Roy, University of Maryland Baltimore County, Dulal K. Bhaumik*, University of Illinois at Chicago, Robert D. Gibbons, University of Chicago, Nicole Lazar, University of Georgia, John A. Sweeney, University of Illinois at Chicago, Subhash Aryal, University of North Texas Health Science Center, Dave Patterson, Discerning Systems Inc.

4:10 **Regression for Analyzing Functional MRI Data with Custom Contrasts**
Rajesh Ranjan Nandi*, University of California, Los Angeles

4:35 **A Bayesian Method for Simultaneous Smoothing and Functional Connectivity of Event-Related fMRI Data**
Dongli Zhou, University of Pittsburgh and Wesley K. Thompson*, University of California, San Diego

5:00 **Testing Equality of Latent Functional Features Across Groups**
Anindya Roy*, University of Maryland Baltimore County

5:25 **Floor Discussion**

113. ESTIMATION OF AIR/SOIL POLLUTION LEVELS AND THEIR EFFECTS ON HEALTH

Johnson (3rd Floor)
Sponsor: ASA Section on Statistics and the Environment
Organizer: Yongtao Guan, Yale University
Chair: Yongtao Guan, Yale University

3:45 **Bayesian Spatially Varying Coefficient Models to Assess Long Term Health Effects of the Chemical Composition of Particulate Matter**
Yeonseung Chung and Francesca Dominici*, Harvard School of Public Health

4:10 **Air Pollution and Preterm Pregnancy: Identifying Critical Windows of Exposure**
Montse Fuentes* and Josh Warren, North Carolina State University, Amy Herring, University of North Carolina at Chapel Hill, Peter Langlois, Texas Department of State Health Service

4:35 **Estimation of Air Pollution Dispersion from Nonpoint Sources**
Theodore R. Holford*, Yale University

5:00 **Spatial Latent Class Analysis Model for Spatially Distributed Multivariate Binary Data**
Melanie M. Wall*, Columbia University

5:25 **Floor Discussion**

114. IMS MEDALLION LECTURE

Ashe Auditorium (3rd Floor)
Sponsor: IMS
Chair: Jing Huang, Amgen Inc.

3:45 **A Nonparametric Test for Multivariate Outcomes and Studies of Comorbidity**
Heping Zhang, Yale University and Sun Yat-Sen University

115. CONTRIBUTED PAPERS: CLINICAL TRIALS

Orchid D (Terrace Level)
Sponsor ASA Biopharmaceutical Section
Chair: J. Lynn Palmer, University of Texas MD Anderson Cancer Center

3:45 **Evaluating the Effect of Early Versus Late ARV Regimen Change After Failing on an Initial Regimen**
Li Li*, Emory University, Joseph J. Eron, University of North Carolina at Chapel Hill, Heather Ribaudo, Harvard University, Roy Gulick, Weill Medical College, Cornell University, Brent A. Johnson, Emory University

4:00 **Estimating the Probability of Sustained Virologic Response to Treatment Against Hepatitis C Virus Infection Under Response-Guided Two-Stage Randomization Designs**
Ulysses A. Diva*, Bristol-Myers Squibb Co.

4:15 **Dynamic Inference of Potentially Causal Relationships Across Clinical Safety Domains**
Russ Wolfinger* and Kelci Miclaus, SAS Institute, Inc.

4:30 A Broad Symmetry Criterion for Nonparametric Validity of Parametrically-Based Tests in Randomized Trials
Russell T. Shinohara*, Constantine E. Frangakis, Johns Hopkins University and Constantine G. Lyketsos, Johns Hopkins Bayview Hospital

4:45 Group Variable Selection in Cardiopulmonary Cerebral Resuscitation Data for Veterinary Patients
Young joo Yoon, Konkuk University, Cheolwoo Park, Erik Hofmeister, University of Georgia, Sangwook Kang*, University of Connecticut

5:00 Adverse Event Signal Detection: Overall comparisons, Future Projections and False Discoveries
Guoguang (Julie) Ma*, Jitendra Ganju, Amgen Inc. and Jing Huang, Amgen Inc.

5:15 On Center Grouping in Multicenter Clinical Trials
Min A. Lin*, Duke University, Tsung-Cheng Hsieh, National Taiwan University, Shein-Chung Chow, Duke University

116. CONTRIBUTED PAPERS: VARIABLE AND MODEL SELECTION
Merrick 1 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Andrada Ivanescu, East Carolina University

3:45 Bayesian Adaptive Calibration and Variable Selection in Linear Models with Mismeasured Covariates
Hongmei Zhang*, University of South Carolina, Xianzheng Huang and Wilfried Karmaus, University of South Carolina. Jianjun Gan, GlaxoSmithKline. Tara Sabo-Attwood, University of Florida

4:00 Variable Selection in Semiparametric Cure Models based on Penalized Likelihood Principle, with Application to Breast Cancer Clinical Trials
Xiang Liu*, University of Rochester Medical Center, Yingwei Peng, Dongsheng Tu, Queen's University, Hua Liang, University of Rochester Medical Center

4:15 An L1-regularized Logistic Model for Detecting Short-Term Neuronal Interactions
Mengyuan Zhao*, Aaron Batista, University of Pittsburgh, John P. Cunningham, Cindy Chestek, Zuley R. Alvidrez, Rachel Kalmar, Stanford University, Stephen Ryu, Stanford University Medical Center, Krishna Shenoy, Stanford University, Satish Iyengar, University of Pittsburgh

4:30 Variable Selection in Monotone Single-Index Models Via the Lasso
Jared C. Foster*, Jeremy M.G. Taylor and Bin Nan, University of Michigan

4:45 Sparse Association Analysis of Multivariate Response; Effect of Air Particles on DNA Methylation in a Gene Set
Tamar Sofer*, Arnab Maity, Brent Coull, Andrea Baccarelli, Joel Shwartz and Xihong Lin, Harvard School of Public Health

5:00 Model and Variable Selection for Counting Data Based on Information Criteria: Statistical Modelling on Tick Burden and the Host Characteristics
Hyun-Joo Kim and Stephanie Fore, Truman State University

117. CONTRIBUTED PAPERS: HIGH DIMENSIONAL DATA
Foster (3rd Floor)
Sponsor: ENAR
Chair: Sudipto Banerjee, University of Minnesota

3:45 A Comparison of Frequentist and Bayesian Penalized Continuation Ratio Models for Predicting an Ordinal Response in High-Dimensional Datasets
Kellie J. Archer* and Andre A.A. Williams, Virginia Commonwealth University

4:00 Non-concave Penalized Composite Likelihood Estimation of Sparse Ising Models
Lingzhou Xue and Hui Zou, University of Minnesota, Tianxi Cai, Harvard School of Public Health

4:15 Prediction of Survival with Accelerated Failure Time Kernel Machine Model
Jennifer A. Sinnott* and Tianxi Cai, Harvard School of Public Health

4:30 **Monitoring the Covariance Matrix in High Dimension**
Edgard M. Maboudou*, University of Central Florida

4:45 **Modeling High-Dimensional Data with the Matrix-Variate Normal**
Genevera I. Allen*, Baylor College of Medicine & Rice University and Justin S. Dyer, Stanford University

5:00 **Asymptotic Properties of Fused Lasso Regularization Procedure in L1 regression**
Xiaoli Gao*, Oakland University

5:15 **Forward Stagewise Shrinkage and Addition for High and Ultrahigh Dimensional Censored Regression**
Zifang Guo*, Wenbin Lu and Lexin Li, North Carolina State University

118. CONTRIBUTED PAPERS: BAYESIAN METHODS AND APPLICATIONS
Merrick 2 (3rd Floor)
Sponsor: ENAR
Chair: Haipeng Shen, University of North Carolina at Chapel Hill

3:45 **Steady State Ranked Gibbs Sampler**
Hani M. Samawi*, Martin Dunbar and Ding-Geng (Din) Chen, Georgia Southern University

4:00 **A More Efficient Steady State Independent Gibbs Sampler with its Application to Diabetes Data**
Martin Dunbar*, Hani Samawi and Ding-Geng Chen, Georgia Southern University

4:15 **Single Factor Transformation Priors for Density Regression**
Suprateek Kundu*, University of North Carolina at Chapel Hill and David Dunson, Duke University

4:30 **Testing Homogeneity of Survival/ Reliability Distributions Stemming from Different Maintenance Decisions**
Li Li* and Tim Hanson, University of South Carolina

4:45 **The Bayesian Covariance Lasso**
Zakaria S. Khondker*, Hongtu Zhu, University of North Carolina at Chapel Hill, Haitao Chu, University of Minnesota, Weili Lin, Joseph G. Ibrahim, University of North Carolina at Chapel Hill

5:00 **Bayesian Analysis of Repeated Compositional Data**
Tielin Qin* and Vicki S. Hertzberg, Emory University

119. CONTRIBUTED PAPERS: MULTIVARIATE AND NONPARAMETRIC SURVIVAL ANALYSIS
Pearson 1 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Donglin Zeng, University of North Carolina at Chapel Hill

3:45 **Estimation in Multistage Models in Presence of Informative Observation Times**
Rajeshwari Sundaram*, Eunice Kennedy Shriver National Institute of Child Health and Human Development

4:00 **Time-Dependent Cross-Ratio Estimation for Bivariate Failure Times**
Tianle Hu* and Bin Nan, University of Michigan, Xihong Lin and James Robins, Harvard School of Public Health

4:15 **A Novel Rank Test for a Time-to-Event Outcome that Incorporates Information on a Surrogate Event**
Pamela A. Shaw* and Michael P. Fay, National Institute of Allergy and Infectious Diseases, National Institutes of Health

4:30 **Estimation of Medical Costs Associated with Recurrent Events in the Presence of a Terminating Event**
Yu Ma* and Douglas E. Schaubel, University of Michigan

4:45 **Semiparametric Transformation Frailty Models for Survival Cure Data**
Sangbum Choi* and Xuelin Huang, University of Texas MD Anderson Cancer Center, Yi-Hau Chen, Academia Sinica

5:00 **Partially Monotone Tensor Spline Estimation of the Joint Distribution Function with Bivariate Current Status Data**
Yuan Wu* and Ying Zhang, University of Iowa

120. CONTRIBUTED PAPERS: ANALYSIS OF NETWORKS

Stanford (3rd Floor)
Sponsor: ENAR
Chair: Wei Zhong, Penn State University

3:45 Genetic Alleles as Instrumental Variables for Peer Effects
A James O'Malley*, Harvard Medical School, J Niels Rosenquist, Massachusetts General Hospital, Alan M. Zaslavsky, Nicholas A. Christakis, Harvard University

4:00 Network Models for Studying Frailty as a Dynamic System
Hong Zhu*, College of Public Health, The Ohio State University and Ravi Varadhan, School of Medicine, Johns Hopkins University

4:15 Multiple Latent Trait Interaction Graphical Model
Alan B. Lenarcic* and William Valdar, University of North Carolina at Chapel Hill, Edo Airoldi Harvard University

4:30 Longitudinal Modeling of Relationships in Social Networks
Sudeshna Paul* and A James O'Malley, Harvard Medical School

4:45 The Role of Network Analysis in Prevention of HIV Infection
Ravi Goyal*, Joseph Blitzstein and Victor DeGruttola, Harvard University

5:00 Do Kids in Diet Have Friends in Diet? Comparison Study of Exponential Random Graph and Autologistic Regression Model Via Simulation
Sunkyung Kim*, University of Minnesota and Melanie M. Wall, Columbia University

5:15 Floor Discussion

121. CONTRIBUTED PAPERS: SURVEY RESEARCH

Ibis (3rd Floor)
Sponsor: ASA Survey Research and Methodology Section
Chair: Robert L. Vogel, Georgia Southern University

3:45 Two-Stage Semiparametric Bayesian Model-Based Inference for the Finite Population Total in Probability Proportional to Size Samples
Sahar Z. Zangeneh* and Roderick AJ Little, University of Michigan

4:00 A Design-Based Analysis of Complex Survey Data on Chronic Kidney Disease
Beverly M. Schnell*, Mekibib Altaye and Jane C. Khoury, Cincinnati Children's Hospital Medical Center

4:15 The Impact of Survey Design Modifications on Health Insurance Coverage Estimates in a National Longitudinal Health Care Survey
Steven B. Cohen*, Trena M. Ezzati-Rice and Marc Zodet, Agency for Healthcare Research and Quality

4:30 Developing the Sampling Approach to Measure the Food and Physical Activity Environment
Oksana Pugach*, Institute for Health Research and Policy, University of Illinois at Chicago, Dianne C. Barker, Public Health Institute, Oakland, Frank J. Chaloupka, Lisa Powell, Sandy Slater, Leah Rimkus, Institute for Health Research and Policy, University of Illinois at Chicago

4:45 Adaptive Survey Sampling for Functional Data
David Degras*, Statistical and Applied Mathematical Sciences Institute

5:00 Combining Multiple Data Sources Using Calibrated Imputation
Irina Bondarenko* and Trivellore Raghunathan, University of Michigan

5:15 Floor Discussion

WEDNESDAY, MARCH 23
8:30–10:15 a.m.

122. NEW FUNCTIONAL DATA ANALYSIS METHODOLOGIES WITH APPLICATIONS TO BIOSTATISTICS
Ibis (3rd Floor)
Sponsor: ASA Section on Statistics in Epidemiology
Organizer: Yixin Fang, Georgia State University
Chair: Yixin Fang, Georgia State University

8:30 **Recovering Derivatives from Sparsely Observed Functional Data**
Ian McKeague*, Columbia University

8:55 **Spline Confidence Envelopes for Covariance Function in Dense Functional\longitudinal Data**
Guanqun Cao, Michigan State University, Li Wang and Yehua Li, University of Georgia, Lijian Yang*, Michigan State University

9:20 **Analysis of Discretely Sampled Functional Data**
Ming Yuan*, Georgia Institute of Technology

9:45 **Nonlinear Dependence of Functional Responses on Scalar Predictors**
Philip T. Reiss*, New York University and Nathan Kline Institute and Lei Huang, New York University

10:10 **Floor Discussion**

123. STATISTICAL CHALLENGES AND EFFECTIVE SOLUTIONS FOR HANDLING HIGH-DIMENSIONAL DATA
Tuttle (Terrace Level)
Sponsor: ASA Biometrics Section
Organizer: Annie Qu, University of Illinois at Urbana-Champaign
Chair: Annie Qu, University of Illinois at Urbana-Champaign

8:30 **When can We Rely on a Uni-dimensional Summary of High-dimensional Data?**
Xuming He*, University of Illinois, Xingdong Feng, National Institute of Statistical Science

8:55 **High Dimensional Variable Selection for Grouped Covariates with Applications in Cancer Genomics**
Bret Hanlon*, University of Wisconsin, Ji Zhu, University of Michigan, Yi Li, Harvard School of Public Health

9:20 **Consistent Model Selection for Marginal Generalized Additive Model for Correlated Data**
Lan Xue, Oregon State University, Annie Qu, University of Illinois at Urbana-Champaign, Jianhui Zhou*, University of Virginia

9:45 **Necessary and Sufficient Conditions Towards High-dimenisonal Feature Selection**
Xioaotong Shen*, Wei Pan and Yunzhang Zhu, University of Minnesota

10:10 **Floor Discussion**

124. RECURRENT EVENTS: NEW PRACTICAL APPLICATIONS AND THEORETICAL DEVELOPMENTS
Merrick 2 (3rd Floor)
Sponsor: ASA Health Policy Statistics Section
Organizer: Adin Cristian Andrei, University of Wisconsin - Madison
Chair: Lei Liu, University of Virginia

8:30 **On Model Misspecification with Composite Endpoints**
Richard J. Cook* and Longyang Wu, University of Waterloo

8:55 **Uncovering Symptom Progression History from Large Disease Registries, with Application to Young Cystic Fibrosis Patients**
Jason P. Fine*, University of North Carolina at Chapel Hill

9:20 **An Estimating Function Approach to the Analysis of Recurrent and Terminal Events**
John D. Kalbfleisch and Douglas E. Schaubel*, University of Michigan, Yining Ye, Amgen, Qi Gong, University of Michigan

9:45 **Gap Time Modeling using Pseudo-values with an Application to Breast Cancer**
Adin-Cristian Andrei*, University of Wisconsin-Madison

10:10 **Floor Discussion**

125. STATISTICS FOR STUDYING GENE REGULATION
Miami Lecture Hall (3rd Floor)
Sponsor: ASA Biometrics Section
Organizer: Hongkai Ji, Johns Hopkins University
Chair: Hongkai Ji, Johns Hopkins University

8:30 **Probabilistic Approach for Unbiased Estimation of Genome-wide Methylation Levels from Next-generation Sequencing Data**
W. Evan Johnson* and Spencer Clement, Brigham Young University, Nathan Clement, University of Texas, Mark Clement, Brigham Young University

8:55 **Statistical Modeling of RNA-seq Data**
Ming Hu, Harvard University, Zhaohui S. Qin*, Emory University, Yu M. Zhu, Purdue University

9:20 **Analysis of Multi-dimensional Genomic Data**
Shihua Zhang, Chun-Chi Liu, Wenyuan Li and Jasmine Zhou*, University of Southern California

9:45 **Statistics for Measuring Network Module Preservation**
Steve Horvath* and Peter Langfelder, University of California-Los Angeles

10:10 **Floor Discussion**

126. RECENT DEVELOPMENT IN SPATIAL AND SPATIO-TERMPORAL POINT PATTERN ANALYSIS
Merrick 1 (3rd Floor)
Sponsor: ASA Section on Statistics and the Environment
Organizer: Yongtao Guan, Yale University
Chair: Yongtao Guan, Yale University

8:30 **Point Pattern Modeling for Degraded Presence-only Data over Large Spatial Regions**
Alan E. Gelfand*, Duke University

8:55 **Decomposition of Variance for Spatial Cox Processes**
Rasmus P. Waagepetersen*, Aalborg University-Denmark

9:20 **Burgers and Fried Chicken - Characterizing Spatial Patterns of Fast Food in New York City**
Ji Meng Loh*, AT&T Labs-Research, Naa Oyo Kwate, Rutgers University

9:45 **Selecting the Optimal Window Size for Spatial Scan Statistics**
Junhee Han, University of Arkansas, Li Zhu*, Eric Feuer, David Stinchcomb and Zaria Tatalovich, National Cancer Institute

10:10 **Floor Discussion**

127. BAYESIAN CLINICAL TRIALS IN PRACTICE: WHEN RUBBER MEETS THE ROAD
Gautier (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Organizers: J. Jack Lee, University of Texas, MD Anderson Cancer Center and Ming-Hui Chen, University of Connecticut
Chair: Ying Yuan, University of Texas, MD Anderson Cancer Center

8:30 **Bayesian Design of Non-inferiority Trials using Historical Data via Power Priors**
Ming-Hui Chen*, University of Connecticut, Joseph G. Ibrahim, University of North Carolina, Peter Lam, Boston Scientific Corporation, Alan Yu, Independent Consultant, Yuanye Zhang, University of Connecticut

8:55 **Bayesian Adaptive Designs for Targeted Agent Development in Cancer Clinical Trials**
J. Jack Lee*, Xuemin Gu, Suyu Liu and Nan Chen, University of Texas, MD Anderson Cancer Center

9:20 **Implementation and Lessons Learned from Bayesian Clinical Trials: from Theory to Practice**
Jason T. Connor*, Berry Consultants

9:45 **Bayesian Medical Device Clinical Trials in the Regulatory Setting**
Telba Irony*, Center for Devices and Radiological Health, U. S. Food and Drug Administration

10:10 **Floor Discussion**

128. CONTRIBUTED PAPERS: CANCER APPLICATIONS

Stanford (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Chair: Ali Shojaie, University of Michigan

8:30 **Bayesian Analysis of Correlated Data in Limiting-Dilution Transplantation Experiments**
Hao Liu*, Baylor College of Medicine

8:45 **Mathematical and Statistical Modeling of an Experiment that Investigates the Effects of an In Vivo Factor on Lung Cancer Drugs Effectiveness**
Peter Hendricks, Francisco J. Diaz*, University of Kansas Medical Center, Sarah Schmitt, University of Kansas, Sitta Sittampalam and Victor S. Nirmalanandhan, University of Kansas Medical Center

9:00 **A Method to Estimate Non-Cancer Life Table for US Cancer Patients**
Hyunsoon Cho*, Angela B. Mariotto and Eric J. Feuer, National Cancer Institute

9:15 **Semiparametric Regression Inference for Cancer Stage-Diagnosis Time Relationship in Cancer Studies**
Chen Hu* and Alex Tsodikov, University of Michigan

9:30 **A Bayesian Normal Mixture Accelerated Failure Time Spatial Model and its Application to Prostate Cancer**
Songfeng Wang* and Jiajia Zhang, University of South Carolina-Columbia, Andrew B. Lawson, Medical University of South Carolina

9:45 **A Bayesian Model for Misclassified Binary Outcomes and Correlated Survival Data**
Min Yi*, University of Texas MD Anderson Cancer Center, Sheng Luo, University of Texas Health Science Center at Houston, Xuelin Huang and Kelly K. Hunt, University of Texas MD Anderson Cancer Center

10:00 **Beyond Traditional Biomarkers: Methods for Identifying a Non-Traditional Class of Biomarkers in Cancer**
Peter R. Dawson*, DuPont Guerry and Phyllis A. Gimotty, University of Pennsylvania

129. RESEARCH ETHICS IN BIOSTATISTICS

Ashe Auditorium (3rd Floor)
Sponsor: ENAR
Organizers: Lance Waller, Emory University; Sharon-Lise Normand, Harvard University; Amy Herring, The University of North Carolina at Chapel Hill; Jeff Morris, The University of Texas M.D. Anderson Cancer Center; David Banks, Duke University
Chair: David Banks, Duke University
Panelists: Keith Baggerly, The University of Texas M.D. Anderson Cancer Center; Larry Kessler, The University of Washington; Roger Peng, Johns Hopkins University

8:30 **Research Ethics in Biostatistics: A Panel Discussion**
David Banks*, Duke University

130. CONTRIBUTED PAPERS: METHODS FOR BIOPHARMACEUTICAL RESEARCH

Johnson (3rd Floor)
Sponsor: ASA Biopharmaceutical Section
Chair: Hongyuan Cao, University of Chicago

8:30 **Futility Analysis, Conditional Power Analysis and EaSt**
Angela Liu*, PPD, Inc. and Jurgen Hummel, PPD Inc.

8:45 **On the Frequentist Properties of Bayesian Credible Intervals for Intraclass Correlation Coefficients with Small Number of Raters**
Dai Feng*, Vladimir Svetnik, Alexandre Coimbra and Richard Baumgartner, Merck & Co., Inc.

9:00 **Improving Efficacy of Clinical Pharmacokinetic Studies using Dependence**
Hui Zhi*, GlaxoSmithKline

9:15 **A Consistency-Adjusted Strategy for Testing Alternative Endpoints in a Clinical Trial**
Mohamed Alosh* and Mohammad Huque, U.S. Food and Drug Administration

9:30 **Analysis of Covariance with Pre-Treatment Measurements in Randomized Trials Under the Cases that Covariances and Post-Treatment Variances Differ Between Groups**
Takashi Funatogawa*, Ikuko Funatogawa and Yu Shyr, Vanderbilt University School of Medicine

9:45 **Two-Stage k-Sample Designs for the Ordered Alternative Problem**
Guogen Shan*, Gregory E. Wilding and Alan D. Hutson, University at Buffalo

10:00 **Fundamentals of Elements for Ethical Translational Data Analysis**
Jonathan A. Gelfond*, University of Texas Health Science Center San Antonio, Elizabeth Heitman, Vanderbilt University, Brad H. Pollock, University of Texas Health Science Center San Antonio, Craig Klugman, The Center for Medical Humanities & Ethics at the University of Texas Health Science Center San Antonio

131. CONTRIBUTED PAPERS: MICROARRAY ANALYSIS
Pearson 1 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Taesung Park, Seoul National University

8:30 **A Generalized Test Statistic to Identify Differentially Expressed Genes**
Sunil Mathur*, University of Mississippi

8:45 **Statistical Methods for DNA Resequencing Analysis in Disease-Gene Studies**
Wenyi Wang*, University of Texas MD Anderson Cancer Center, Peidong Shen, Sreedevi Thyagarajan, Curtis Palm, Lynn Pique, Iris Schrijver, Ronald W. Davis, Michael Mindrinos, Stanford University, Terence P. Speed, University of California-Berkeley, Curt Scharfe, Stanford University

9:00 **Concordant Gene Set Enrichment Analysis of Two Large-Scale Expression Data Sets**
Yinglei Lai*, George Washington University

9:15 **Statistical Integration of Weak-Signal Microarray Studies with Confounded Clinical Variables: Application to Human Depression Analysis**
Xingbin Wang*, Etienne Sibille and George C. Tseng, University of Pittsburgh

9:30 **Meta-Diagnosis: Quantitative Quality Assessment for Inclusion/Exclusion Criteria of Genomic Meta-Analysis**
Dongwan D. Kang* and George C. Tseng, University of Pittsburgh

132. CONTRIBUTED PAPERS: GENERALIZED LINEAR MODELS
Jasmine (Terrace Level)
Sponsor: ENAR
Chair: Hui Zhang, Ph.D, St. Jude Children's Research Hospital

8:30 **Modeling and Estimating Rates**
Serpil Aktas*, Hacettepe University, Ankara, Turkey

8:45 **BLUP(REMQL) Estimation of a Correlated Random Effects Negative Binomial Hurdle Model**
Sunghee Kim* and Roslyn A. Stone, University of Pittsburgh

9:00 **A Semiparametric Extension of Generalized Linear Models in the Multi-way Layout**
Alan Huang*, University of Chicago, Paul J. Rathouz, University of Wisconsin-Madison

9:15 **Profile Likelihood Based Confidence Interval for the Dispersion Parameter in Count Data, with Applications to Tumor Data**
Krishna K. Saha*, Central Connecticut State University, Debaraj Sen, Concordia University, Montreal, Quebec, Chun Jin, Central Connecticut State University

9:30 **A Semiparametric Correction to Score Tests in the Presence of Errors-in-covariate in the Generalized Linear Model**
Samiran Sinha*, Texas A&M University and Jenny X. Sun, Boston University

9:45 **Generalized Semiparameric Single Index Model for High Dimension Variable Selection**
Inyoung Kim* and Chongrui Yu, Virginia Polytechnic Institute and State University

10:00 **Sensitivity Analysis for Non-Ignorable Missing Data in Logistic Regression via Weighting**
Ji Lin* and Robert Lyles, Emory University

133. CONTRIBUTED PAPERS: SURVIVAL ANALYSIS APPLICATIONS

Foster (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Eunhee Kim, Brown University

8:30 **A Symbolic Analysis of Survival Times for Cardiac Patients**
L. Billard*, University of Georgia and C. Quantin, Hospitalier Universitaire de Dijon

8:45 **Modifications of and Alternatives to the Standardized Mortality Ratio in Evaluating Center-Specific Mortality**
Kevin He* and Douglas E. Schaubel, University of Michigan

9:00 **A Risk-Adjusted O-E CUSUM with a V-mask for Monitoring Medical Outcomes**
Jie (Rena) Sun* and John D. Kalbfleisch, University of Michigan

9:15 **Incorporating Short-Term Outcome Information to Predict Long-Term Survival with Discrete Markers**
Layla Parast*, Harvard University, Su-Chun Cheng, Dana Farber Cancer Institute, Tianxi Cai, Harvard University

9:30 **Competing Risks Analysis with Uncertain Causes**
Jonathan G. Yabes* and Chung-Chou H. Chang, University of Pittsburgh

9:45 **Group Sequential Tests for Long-Term Survival Comparison**
Shuyuan Mo* and Brent R. Logan, Medical College of Wisconsin

134. CONTRIBUTED PAPERS: IMAGE DATA ANALYSIS

Foster 2 (3rd Floor)
Sponsor: ENAR
Chair: Yuan Ji, University of Texas MD Anderson Cancer Center

8:30 **Spatio-Spectral Mixed Effects Model for Functional Magnetic Resonance Imaging Data**
Hakmook Kang*, Hernando Ombao, Crystal Linkletter, Nicole Long and David Badre, Brown University

8:45 **Two-Stage Decompositions for Analysis of fMRI Data**
Shanshan Li* and Brian Caffo, Johns Hopkins University

9:00 **Projection Regression Models for Multivariate Measure: Theory and Applications**
Ja-An Lin*, Hongtu Zhu and Joseph G. Ibrahim, University of North Carolina at Chapel Hill

9:15 **Missing Data Approaches for Partial Correlations of Regional Volumetric Data**
Gina M. D'Angelo*, Jingqin Luo and Chengjie Xiong, Washington University School of Medicine

9:30 **Enhanced Regional Control of Global False Discovery Rate for fMRI Data**
Shuzhen Li* and Lynn E. Eberly, School of Public Health, University of Minnesota, Brian Caffo, Johns Hopkins Bloomberg School of Public Health

9:45 **Spatio-Temporal Models for Resting-State Functional Connectivity in fMRI**
Mark Fiecas* and Hakmook Kang, Brown University

10:00 **Nomparametric Approach for Hemodynamic Response Function Modeling in Functional MRI**
Wenjie Chen*, Haipeng Shen and Young Truong, University of North Carolina at Chapel Hill

WEDNESDAY, MARCH 23

10:15—10:30 a.m.
Refreshment Break and Visit Our Exhibitors
Lower Promenade (Terrace Level)

10:30 a.m.—12:15 p.m.

135. APPLICATIONS OF SPARSITY IN UNSUPERVISED LEARNING
Ibis (3rd Floor)
Sponsor: IMS
Organizer: Daniela Witten, University of Washington
Chair: W. Evan Johnson, Brigham Young University

10:30 **Regularization Algorithms for Learning Large Incomplete Matrices**
Rahul Mazumder*, Trevor Hastie and Robert Tibshirani, Stanford University

10:55 **High-Dimension Network Inference with Re-Sampling Methods**
Li Hsu, Shuang Li Fred Hutchinson Cancer Research Center, Jie Peng*, University of California-Davis, Pei Wang, Fred Hutchinson Cancer Research Center

11:20 **Sparse Regularization of Principal Component Analysis**
Haipeng Shen*, University of North Carolina at Chapel Hill

11:45 **A Framework for Feature Selection in Clustering**
Daniela M. Witten*, University of Washington and Robert Tibshirani, Stanford University

12:10 **Floor Discussion**

136. ADAPTIVE OPTIMAL DESIGNS
Tuttle (Terrace Level)
Sponsor: ASA Biopharmaceutical Section
Organizer: Min Yang, University of Missouri
Chair: Lijian Yang, Michigan State University

10:30 **Best Intention Designs in Early Clinical Trials**
Valerii V. Fedorov*, GlaxoSmithKline

10:55 **Interim Analysis of Response-Adaptive Randomized Clinical Trials.**
Feifang Hu*, University of Virginia and Hongjian Zhu, Yale University

11:20 **Issues to Consider in Selecting an Adaptive Design for Dose-Finding Experiments**
Nancy Flournoy*, University of Missouri

11:45 **Adaptive Optimal Designs for Dose-Finding Studies**
Tianhua Wang and Min Yang*, University of Missouri

12:10 **Floor Discussion**

137. BAYESIAN GRAPHICAL MODELS FOR HIGH DIMENSIONAL DATA
Ashe Auditorium (3rd Floor)
Sponsor: ASA Biometrics Section
Organizer: Veera Baladandayuthapani, University of Texas MD Anderson Cancer Center
Chair: Steve Horvath, University of Los Angeles, California

10:30 **Joint Inference of Sparse Network and Genetic Association in Genetical Genomics Studies**
Hongzhe Li* and Jianxin Shi, University of Pennsylvania

10:55 **Bayesian Models for Variable Selection Incorporating Biological Information**
Marina Vannucci* and Francesco Stingo, Rice University

11:20 **Bayesian Network Models with Application to High-Throughput Sequence Data**
Riten Mitra, University of Texas MD Anderson Cancer Center, Peter Mueller, University of Texas at Austin, Yuan Ji*, University of Texas MD Anderson Cancer Center

11:45 **Bayesian Sparse Graphical Models for Classification with Application to Protein Expression Data**
Veera Baladandayuthapani*, University of Texas MD Anderson Cancer Center, Rajesh Talluri, Bani K. Mallick, Texas A&M University, Yuan Ji and Kevin R. Coombes, University of Texas MD Anderson Cancer Center

12:10 **Floor Discussion**

138. RECENT DEVELOPMENT IN PANEL COUNT DATA INFERENCE

Miami Lecture Hall (3rd Floor)
Sponsor: ASA Health Policy Statistics Section
Organizer: KyungMann Kim, University of Wisconsin-Madison
Chair: KyungMann Kim, University of Wisconsin-Madison

10:30 **Semiparametric Estimating Method for Over-dispersed Panel Count Data**
Lei Hua*, Harvard School of Public Health and Ying Zhang, University of Iowa

11:00 **Augmented Estimating Equations for Semiparametric Panel Count Regression with Informative Observation Times and Censoring Time**
Xiaojing Wang, University of Connecticut, Shuangge Ma, Yale University, Jun Yan*, University of Connecticut

11:30 **Variable Selection for Multivariate Panel Count Data**
Xin He*, Tongtong Wu, University of Maryland, College Park and Richard J. Cook, University of Waterloo

12:00 **Floor Discussion**

139. IMPACT OF BIOSTATISTICAL METHODS ON HIV/AID STUDIES RESOURCE-LIMITED ENVIRONMENTS

Merrick 1 (3rd Floor)
Sponsor: ASA Health Policy Statistics Section
Organizer: Michael Hudgens, University of North Carolina at Chapel Hill
Chair: Renee Moore, University of Pennsylvania

10:30 **Statistical Methods for Evaluating the Effect of Food Assistance as a Supplement to HIV Treatment in Kenya**
Joseph W. Hogan*, Brown University, Catherine N. Gichunge, Edwin Sang, F. Komen and Abraham Siika, Moi University and AMPATH, Eldoret Kenya

10:50 **Does Oral Dose-Modified Chemotherapy Have Effect on CD4 Lymphocyte Count and HIV-1 Plasma RNA?**
Pingfu Fu*, Case Western Reserve University, Walter Mwanda, University of Nairobi, Jackson Orem, Makerere University, Guang Zeng, Texas A&M University-Corpus Christi, Scot Remick, West Virginia University

11:10 **Efficiently using Repeated Measurements of CD4 Counts and Viral Loads in Survival Analysis**
Sarah Holte*, Fred Hutchinson Cancer Research Center and University of Washington

11:30 **Collaborative Research in Low Income Countries and the Need for in Country Biostatisticians**
Misrak Gezmu*, National Institute of Allergy and Infectious Diseases, National Institutes of Health

11:50 **Assessment of Condom Use in HIV-infected Patients from South African**
Hua Liang*, University of Rochester

140. RECENT ADVANCES IN SPATIAL STATISTICS AND THEIR APPLICATIONS TO ENVIRONMENTAL PROBLEMS

Gautier (3rd Floor)
Sponsor: IMS
Organizer: Mikyoung Jun, Texas A&M University
Chair: Mikyoung Jun, Texas A&M University

10:30 **Measurement Error Effects on Bias and Variance in Two-Stage Regression, with Application to Air Pollution Epidemiology**
Christopher J. Paciorek*, Harvard School of Public Heath and University of California, Berkeley and Adam A. Szpiro, University of Washington

10:55 **Statistical Issues with Estimating the Health Effects of Particulate Matter Constituents**
Roger D. Peng*, Johns Hopkins University

11:20 **On Hierarchical Modeling Strategies for Large Spatial Datasets**
Sudipto Banerjee*, University of Minnesota and Andrew O. Finley, Michigan State University

11:45 **Estimating Individual-Level Risk in Spatial Epidemiology Using Spatially Aggregated Information on the Population at Risk**
Yongtao Guan*, Lancaster University

12:10 **Floor Discussion**

141. KIDNEY PAIRED DONATION PROGRAM: STATISTICAL MODEL AND CLINICAL PRACTICE

Stanford (3rd Floor)
Sponsor: ASA Section on Teaching Statistics in the Health Sciences
Organizer: Peter Song, University of Michigan
Chair: Peter Song, University of Michigan

10:30 **Current Clinical Practice of Kidney Transplantation**
Alan Leichtman*, University of Michigan

10:55 **Kidney Paired Donation Program with Altruistic Donors**
Michael Rees*, University of Toledo

11:20 **Micro-Simulation Model for a Kidney Paired Donation Program**
John D. Kalbfleisch*, Peter X. Song, John Y. Li and Yan Zhou, University of Michigan

11:45 **Approaches to Optimization in Micro-Simulation KPD Program**
Yijiang (John) Li*, Yan Zhou, John D. Kalbfleisch and Peter X.K. Song, University of Michigan

12:10 **Floor Discussion**

142. CONTRIBUTED PAPERS: ESTIMATING EQUATIONS

Merrick 2 (3rd Floor)
Sponsor: ENAR
Chair: Gina D'Angelo, Washington University School of Medicine

10:30 **Semiparametric Transformation Models for Joint Analysis of Observation and Recurrent Event Processes**
Ni Li*, University of Missouri, Liuquan Sun, Chinese Academy of Sciences, Jianguo Sun, University of Missouri

10:45 **Weighted GEE for Response-Adaptive Treatment Regimes in Two-Stage Longitudinal Studies**
Yen-Chih Hsu* and Abdus S. Wahed, University of Pittsburgh

11:00 **An Efficient Composite Likelihood Approach to Spatial-Clustered Data**
Yun Bai* and Peter X.-K. Song, University of Michigan

11:15 **Quasi- and Pseudo-Maximum Likelihood Estimators for Discretely Observed Continuous-Time Markov Branching Processes**
Rui Chen* and Ollivier Hyrien, University of Rochester

11:30 **Adjustment to the Pseudolikelihood**
Yang Ning*, Johns Hopkins Bloomberg School of Public Health and Kung-Yee Liang, President, National Yang-Ming University, Taiwan

11:45 **Methods of Finding the Initial Values of Parameters in the Maximum Likelihood Estimating Equations for a Logistic Regression Model and Comparison of Their Final Solutions**
Dr. Subir Ghosh, University of California, Riverside and Hiya Banerjee*, Medical University of South Carolina.

143. CONTRIBUTED PAPERS: MULTIPLE TESTING

Foster (3rd Floor)
Sponsor: ENAR
Chair: Alan Gelfand, Duke University

10:30 **On optimal Testing Strategies when Multiple Hypotheses are Grouped into Two Ordered Families**
Haihong Li* and Abdul J. Sankoh, Vertex Pharmaceuticals

10:45 **A Wald Test for Homogeneity in Zero-Inflated Models for Discrete Data**
Wei-Wen Hsu* and David Todem, Michigan State University

11:00 **On Multiple Testing and the Monotone Likelihood Ratio**
Hongyuan Cao*, University of Chicago, Wenguang Sun, North Carolina State University, Michael R. Kosorok, University of North Carolina at Chapel Hill

11:15 **Principal Component Analysis When the Number of Variables Exceeds the Sample Size**
Yueh-Yun Chi* and Keith E. Muller, University of Florida

11:30 **Pathway Enrichment Analysis using P-value Selection**
Ali Shojaie*, Xiangfei Qi, Moulinath Banerjee and George Michailidis, University of Michigan

144. CONTRIBUTED PAPERS: MODELS INVOLVING LATENT VARIABLES

Pearson 1 (3rd Floor)
Sponsor: ENAR
Chair: Rasmus Waagepetersen, Aalborg University

10:30 **Bayesian Lasso for Semiparametric Structural Equation Models**
Ruixin Guo*, Hongtu Zhu, Sy-Miin Chow and Joseph G. Ibrahim, University of North Carolina at Chapel Hill

10:45 **A Monte Carlo EM Algorithm for the Estimation in Latent Class Model Analysis: Application for Assessing Accuracy of Diagnostic Tests of Cervical Neoplasia in Women with AGC**
Le Kang*, Randy Carter, University at Buffalo and Kathleen Darcy, Roswell Park Cancer Institute

11:00 **Latent Variable Approach to Studies of Gene-Environment Interactions in the Presence of Multiple Correlated Exposures**
Brisa N. Sanchez*, Shan Kang, Howard Hu and Bhramar Mukherjee, University of Michigan

11:15 **IRT Summarized Pattern Mixture Model for Data not Missing at Random**
Jian Zhu* and Trivellore E. Raghunathan, University of Michigan

11:30 **A Joint Latent Variable Model Approach to Item Reduction and Validation**
Steffanie M. Halberstadt*, Mary D. Sammel and Ellen W. Freeman, University of Pennsylvania

11:45 **Simplex Factor Models for Multivariate Unordered Categorical Data**
Anirban Bhattacharya* and David Dunson, Duke University

12:00 **Semiparametric Latent Variable Transformation Models for Multiple Outcomes**
Anna Snavely* and Yi Li, Harvard University

145. CONTRIBUTED PAPERS: NONPARAMETRIC METHODS

Jasmine (Terrace Level)
Sponsor: ENAR
Chair: Sunil Mathur, University of Mississippi

10:30 **New Estimation Method for Generalized Mixed Models with Nonparametric Functions**
Jinsong Chen and Lei Liu*, University of Virginia

10:45 **Distribution-Free Models for Latent Population Mixtures**
Hui Zhang*, St. Jude Children's Research Hospital and Xin M. Tu, University of Rochester Medical Center

11:00 **Log-Rank-Type Tests for Equality of Distributions in High-Dimensional Spaces**
Xiaoru Wu*, Zhiliang Ying and Tian Zheng, Columbia University

11:15 **Topics in U-Statistics and Risk Estimation**
Qing Wang* and Bruce G. Lindsay, Pennsylvania State University

11:30 **Analysis of Principal Nested Spheres**
✦ Sungkyu Jung*, University of North Carolina at Chapel Hill, Ian L. Dryden, University of Nottingham, J. Steve Marron, University of North Carolina at Chapel Hill

11:45 **A More Efficient Nonparametric Test of Symmetry Based on the Overlapping Coefficient Using Extreme Ranked Set Sample**
Robert L. Vogel* and Hani Samawi, Georgia Southern University, Barbara Weaver, Medical Center of Central Georgia, Joseph Van de Water, Mercer University School of Medicine

146. CONTRIBUTED PAPERS: MACHINE LEARNING AND GENE-GENE INTERACTION

Johnson (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Steve Qin, Emory University

10:30 **Simultaneous Multiple Response Regression and Inverse Covariance Matrix Estimation via Penalized Gaussian Maximum Likelihood**
Wonyul Lee* and Yufeng Liu, University of North Carolina at Chapel Hill

10:45 **Risk Classification with an Adaptive Naive Bayes Kernel Machine Model**
Jessica Minnier*, Harvard School of Public Health, Jun Liu, Harvard University, Tianxi Cai, Harvard School of Public Health

11:00 **High Dimensional Predictive Modeling in Pharmacogenetics: Application of Machine Learning Techniques to Predict Warfarin Dose Response in African Americans**
Erdal Cosgun, Nita Limdi and Christine W. Duarte*, University of Alabama at Birmingham

11:15 **Gene-Centric Gene Gene Interaction: A Model Based Kernel Machine Method**
Yuehua Cui and Shaoyu Li*, Michigan State University

11:30 **Gene-Gene Interaction Analysis for Clustered Phenotypes**
Ik Soo Huh, Sohee Oh, Seoul National University, Seungyeoun Lee, Sejong University and Taesung Park*, Seoul National University

11:45 **Case-Parent Triad Studies of Genetic Association and Gene-Gene Interaction in the Presence of Missing Data**
Tracy L. Bergemann*, School of Public Health, University of Minnesota and Matt Deyo-Svendsen, University of Minnesota Medical School-Duluth

12:00 **Groupwise Thresholding of Covariance Matrices for Identifying Gene-Gene Interactions**
Hokeun Sun* and Hongzhe Li, University of Pennsylvania School of Medicine

147. CONTRIBUTED PAPERS: BAYESIAN METHODS FOR LONGITUDINAL DATA

Foster 2 (3rd Floor)
Sponsor: ASA Biometrics Section
Chair: Jason Connor, Berry Consultants

10:30 **Posterior Predictive Loss for Model Selection in Incomplete Longitudinal Data**
Arkendu S. Chatterjee* and Michael J. Daniels, University Of Florida

10:45 **Marginal Likelihood and Bayes Factor for Nonlinear Mixed Effects Model with Dirichlet Process Mixture Prior**
Huaiye Zhang* and Inyoung Kim, Virginia Tech University

11:00 **Bayesian Analysis of Unbalanced and Unequally Spaced Familial Data Using a Generalized Markov Dependence Structure**
Roy T. Sabo*, Zheng Lu, Virginia Commonwealth University, Yihao Deng, Indiana University Purdue University Fort-Wayne, N.R. Chaganty, Old Dominion University

11:15 **Modeling Correlation of Longitudinal Data Based on Partial Autocorrelation with Bayesian Methods**
Yanpin Wang* and Michael Daniels, University of Florida

11:30 **Bayesian Joint Modeling of Longitudinal and Event-Time Data in Clinical Trials**
Yi Qian* Amgen Inc., Jeesun Jung, Indiana University School of Medicine, Deukwoo Kwon, National Cancer Institute

11:45 **Dynamic Semiparametric Bayesian Model for Functional Mapping**
Kiranmoy Das* and Rongling Wu, Pennsylvania State University

12:00 **Floor Discussion**