

ENAR 2022 Spring Meeting

Event Schedule

Sat, Mar 26, 2022

Sun, Mar 27, 2022

8:00 AM

SC1 - Introduction to Bayesian Methods for Clinical Trial Design and Sample Size Determination

🕒 8:00 AM - 5:00 PM, Mar 27

📍 Houston 7

Short Cou...

This short course is designed to give biostatisticians and data scientists a comprehensive overview of the use of Bayesian methods for clinical trial design and training on how these methods can be implemented using standard software. Specially, applications of methodology will be demonstrated using R, SAS or both. Part I will give a broad overview of Bayesian sample size determination with a focus on fixed sample size trials either in the phase II or the phase III setting. Focus is paid to four concepts that govern sample size determination: (1) the sampling prior that reflects knowledge about the parameter(s) in the data model, (2) the fitting prior used to analyze data once collected, (3) the criterion used as the basis of sample size determination, and (4) the strategy for monitoring, if the trial will include one or more interim analyses. For (3), a comprehensive review of Bayesian criterion for sample size determination will be given, covering such topics as Bayesian type I error rate control and power, average coverage criterion, average length criterion, and worst outcome criterion. For (4) multiple strategies will be discussed for monitoring accumulating data, including using predictive probability of success and sequential methods. Part II will focus broadly on advanced Bayesian trial designs that incorporate information borrowing. The types of designs considered fall into two broad categories: (1) designs that borrow information through the use of an informative prior specified a priori based on one or more historical datasets, and (2) designs that seek to borrow information across subgroups within a trial. Example designs of type (1) include trials where the goal may be to show that a next-generation medical device (e.g., a coronary stent) is non-inferior or superior to a previous generation of the same device, and designs that seek to extrapolate information on treatment efficacy from adult trials to the pediatric setting. Example designs of type (2) include basket trials where the goal is to make inferences regarding treatment activity for different tumor types in patients whose tumor has a genetic marker targeted by the investigational treatment.

🗣️ Speakers



Joseph Ibrahim

UNC



Matthew Psioda

Assistant Professor, Associate Director for Clinical Trials Research
University of North Carolina at Chapel Hill

SC2 - Guidelines for Using State-of-the-Art Methods to Estimate Propensity Score and Inverse Probability of Treatment Weights When Drawing Causal Inferences

🕒 8:00 AM - 5:00 PM, Mar 27

📍 Houston 6

Short Cou...

Estimation of causal effects is a primary activity of many studies. Examples include testing whether a substance abuse treatment program is effective, whether an intervention improves the quality of mental health care, or whether new medicines cure a disease. Controlled, random-assignment experiments are the gold standard for estimating such effects. However, experiments are often infeasible, forcing analysts to rely on observational data in which treatment assignments are out of the control of the researchers. This short course will provide an introduction to causal modeling using the potential outcomes framework and the use of propensity scores and weighting (i.e., propensity score or inverse probability of treatment weights) to estimate causal effects from observational data. The goals of the course are to increase attendee's understanding of: (i) how to define and estimate causal effects using the potential outcomes framework; (ii) how to use propensity scores and inverse probability of treatment weights when estimating causal effects; and (iii) how to assess the validity of key assumptions of the proposed methods. We will also provide attendees with step-by-step instructions for analyses

involving binary treatments, >2 treatments, and time-varying treatments. Attendees will gain hands-on experience estimating propensity score weights using boosted models in R, Shiny, SAS and Stata; evaluating the quality of those weights; and using them to estimate intervention effects. Additional topics will include methods for conducting sensitivity analyses for unobserved confounding and estimation of the effects of time-varying treatments. Attendees should be familiar with linear and logistic regression; no knowledge of propensity scores is expected.

Speakers



Beth Ann Griffin

Senior Statistician
RAND Corporation



Daniel McCaffrey

Associate Vice President of Psychometric Analysis and Research
ETS

SC4 - The Statistical Analysis of Composite Time-to-event Outcomes

🕒 8:00 AM - 12:00 PM, Mar 27

📍 Houston 4

Short Cou...

This course provides an overview of the emergent statistical methodology for the analysis of composite time-to-event outcomes. These outcomes combine death and (possibly recurrent) nonfatal events, such as hospitalization, tumor progression, or infection, and are routinely used as the primary efficacy endpoint in modern phase-III clinical trials. The traditional approach to composite outcomes focuses on time to the first event, whichever type it is, using standard univariate survival analysis techniques. Recent years have seen a surge of more sophisticated and versatile methods, attracting the attention of both statisticians and practitioners. Examples of such methods include the win ratio (Pocock et al., 2012) and its various extensions, the restricted mean time in favor of treatment (a generalized restricted mean survival time), the event (or loss) rate ratio while alive, generalized semiparametric proportional odds regression models, and so on. They improve upon the traditional time-to-first-event analysis in (1) proper prioritization of death over nonfatal events; (2) fuller utilization of multiple/recurrent events; (3) clear and interpretable definition of effect-size estimands; and (4) flexible modeling of different outcome types. In the meantime, a number of user-friendly R-packages that implement the aforementioned methodology have become available. This short course will provide a survey of these methodological developments, along with some practical guidance on using the associated R-packages for real data analysis.

Speaker



Lu Mao

Assistant Professor of Biostatistics
University of Wisconsin-Madison

1:00 PM

SC6 - Data Visualization with R

🕒 1:00 PM - 5:00 PM, Mar 27

📍 Houston 4

Short Cou...

This workshop is all about the art and science of visualizing data with R. Learn about the what (types of visualizations, tools to produce them), the how (start with a design, pre-process the data, map it to graphical attributes, make strategic decisions about visual encoding, post-process for readability and visual appeal), and the why (the theory behind the grammar of graphics). Do it all in R, reproducibly, and using a variety of modern data visualization packages, primarily ggplot2.

Speaker



Mine Cetinkaya-Rundel

Duke University and RStudio

SC7 - Intro to Machine Learning

🕒 1:00 PM - 5:00 PM, Mar 27

📍 Houston 5

Short Cou...

This course will offer an overview of machine learning methods, with an emphasis on how the methods can be used to develop and evaluate predictive models. Commonly used methods like random forests, generalized additive models, and deep neural networks will be discussed along with code examples for implementation. The different methods will be compared across a variety of scenarios with advice on selection of an algorithm and how to tune the associated hyperparameters. Along with an overview of different methods, topics will include a review of loss functions and optimization algorithm, how to evaluate a machine learning model for fairness, model interpretability, and how to monitor a machine learning model in practice.

🗣️ Speaker



Eric Polley

Associate Professor

The University of Chicago, Department of Public Health Sciences

4:30 PM

ENAR Executive Committee Meeting (Invitation Only)

🕒 4:30 PM - 7:00 PM, Mar 27

📍 Harris

Committee Meeting

Scientific Program

7:30 PM

Opening Mixer & New Member Reception (In-Person Attendees only)

🕒 7:30 PM - 8:30 PM, Mar 27

📍 Houston Foyer

Networking Event

Scientific Program

Mon, Mar 28, 2022

8:30 AM

1. Current Developments in Adaptive Designs

🕒 8:30 AM - 10:10 AM, Mar 28

📍 Fort Bend A

Scientific Progr...

Organizer: Haiwen Shi, Natera Inc. | Chair: Xiaoping (Janet) Jiang, FDA/CVM

4 Subsessions

● 1a. Structured Adaptive Sequential Design for Clinical Trials When There is Great Uncertainty About Effect Size

🕒 8:30 AM - 8:55 AM, Mar 28

● 1b. Optimal Adaptive Promising Zone Designs

🕒 8:55 AM - 9:20 AM, Mar 28

● 1c. Conditional Power in Vaccine Trials with Seasonal Variations

🕒 9:20 AM - 9:45 AM, Mar 28

● 1d. Discussant

🕒 9:45 AM - 10:10 AM, Mar 28

2. The COMPILE Consortium: Statistical Design Innovation and Implementation in the Time of a Pandemic

🕒 8:30 AM - 10:10 AM, Mar 28

📍 Fort Bend B

Scientific Progr...

Organizer/Chair: Thaddeus Tarpey, New York University

4 Subsessions

● **2a. The COMPILE Consortium: Inception, Development, and Implementation of a Novel, Real-Time Meta-Analysis Framework**

🕒 8:30 AM - 8:55 AM, Mar 28

● **2b. Statistical Design of COMPILE: Prospective Individual Patient Data Meta-Analysis**

🕒 8:55 AM - 9:20 AM, Mar 28

● **2c. The COMPILE Consortium: Statistical Results as the Pandemic Unfolded**

🕒 9:20 AM - 9:45 AM, Mar 28

● **2d. Developing a Precision Medicine Covid-19 Convalescent Plasma Treatment Benefit Index (CCP-TBI)**

🕒 9:45 AM - 10:10 AM, Mar 28

3. Novel Statistical Approaches to Analyzing Wearable Devices Data in Biomedical Research

🕒 8:30 AM - 10:10 AM, Mar 28

📍 Houston 2

Scientific Progr...

Organizer: Carmen Tekwe, Indiana University at Bloomington | Chair: Douglas Landsittel, Indiana University at Bloomington

4 Subsessions

● **3a. Effects of Obstructive Sleep Apnea on Glucose Profiles in Type 2 Diabetes**

🕒 8:30 AM - 8:55 AM, Mar 28

📍 Houston 2

● **3b. Influence of Head Impact Exposure on Sport-related Concussions: Functional Data Analytic Approach**

🕒 8:55 AM - 9:20 AM, Mar 28

📍 Houston 2

● **3c. A Function-Based Approach to Model the Measurement Error in Wearable Devices**

🕒 9:20 AM - 9:45 AM, Mar 28

📍 Houston 2

● **3d. A Bayesian Treatment of Mis-measured Function-valued Covariates in Latent Variable Models**

🕒 9:45 AM - 10:10 AM, Mar 28

📍 Houston 2

4. Novel Technologies, Novel Experiments and Novel Statistical Methodologies in Brain Studies

🕒 8:30 AM - 10:10 AM, Mar 28

📍 Houston 3

Scientific Progr...

Organizer: Mark Fiecas, University of Minnesota | Chair: Michele Guindani, University of California at Irvine

4 Subsessions

● **4a. Modeling Cortical Brain Network Activity Through Concurrent EEG-fNIRS**

🕒 8:30 AM - 8:55 AM, Mar 28

📍 Houston 3

● **4b. Bayesian Modeling and Model Diagnostics for Structured Functional Data: Nuances and Limitations**

🕒 8:55 AM - 9:20 AM, Mar 28

📍 Houston 3

● **4c. Modelling Dynamic Connectivity Using Resting-state fMRI from the Adolescent Brain Cognitive Development Study**

🕒 9:20 AM - 9:45 AM, Mar 28

📍 Houston 3

● **4d. Characterizing Complex, Multi-scale Neural Phenomena Using State-space Models**

🕒 9:45 AM - 10:10 AM, Mar 28

📍 Houston 3

5. New Advances on Statistical Methods for Optimal Treatment Regimes

🕒 8:30 AM - 10:10 AM, Mar 28

📍 Houston 4

Scientific Progr...

Sponsor: IMS | Organizer/Chair: Haoda Fu, Eli Lilly and Company

4 Subsessions

● **5a. Efficient Learning of Optimal Individualized Treatment Rules**

🕒 8:30 AM - 8:55 AM, Mar 28

📍 Houston 4

● **5b. Estimating Optimal Multi-channel Individualized Treatment Rules Under Budget Constraints**

🕒 8:55 AM - 9:20 AM, Mar 28

📍 Houston 4

● **5c. New Developments In Reinforcement Learning for Flexible Survival Outcomes**

🕒 9:20 AM - 9:45 AM, Mar 28

📍 Houston 4

● **5d. New Approaches for Inference on Optimal Treatment Regimes**

🕒 9:45 AM - 10:10 AM, Mar 28

📍 Houston 4

6. Advances in Analysis of High-Dimensional Data in Biomedicine

🕒 8:30 AM - 10:10 AM, Mar 28

📍 Houston 5

Scientific Progr...

Organizer/Chair: Cheng Cheng, St. Jude Children's Research Hospital

4 Subsessions

● **6a. Fast and efficient Bayesian Functional Predictor for High-dimensional Survival Data**

🕒 8:30 AM - 8:55 AM, Mar 28

● **6b. Variable Selection in Varying Multi-index Coefficients Model for Synergistic Gene-environment Interactions**

🕒 8:55 AM - 9:20 AM, Mar 28

● **6c. Bayesian Variable Selection for Longitudinal Gene-environment Interaction Studies**

🕒 9:20 AM - 9:45 AM, Mar 28

● **6d. A Joint Nested Random Effects Model for Metagenomic Trajectories Associated with Future Disease Status in a Study with Matched Sets**

🕒 9:45 AM - 10:10 AM, Mar 28

7. Contributed Papers: Biomarkers

🕒 8:30 AM - 10:00 AM, Mar 28

📍 Houston 6

Scientific Progr...

Chair: Rahul Ghosal, Johns Hopkins Bloomberg School of Public Health

6 Subsessions

● **7a. Challenges in the Analysis of Biomarker Data and How to Deal With Them**

🕒 8:30 AM - 8:45 AM, Mar 28

● **7b. Covariate Adjustment in Continuous Biomarker Evaluation**

🕒 8:45 AM - 9:00 AM, Mar 28

● **7c. Robust Statistical Method to Identify Optimal Biomarker Combination**

🕒 9:00 AM - 9:15 AM, Mar 28

● **Weak Signal and Gene Network Signature Detection, and Lung Cancer**

Survival Prediction Using TCGA DNA Methylation Profiles

🕒 9:15 AM - 9:30 AM, Mar 28

● **7e. Combining Multiple Biomarkers Linearly to Minimize the Euclidean Distance of the Closest Point on the ROC Surface to the Perfection Corner in Trichotomous Settings**

🕒 9:30 AM - 9:45 AM, Mar 28

● **7f. Flexible Lehman Family ROC Curves**

🕒 9:45 AM - 10:00 AM, Mar 28

8. Contributed Papers: Epidemiologic Methods

🕒 8:30 AM - 10:00 AM, Mar 28

📍 Houston 7

Scientific Progr...

Chair: Carmen Tekwe, Indiana University, Bloomington

6 Subsessions

● **8a. Bias Correction Models for EHR Data in the Presence of Non-random Sampling**

🕒 8:30 AM - 8:45 AM, Mar 28

● **8b. Nonparametric Estimation of the Potential Impact Fraction and the Population Attributable Fraction with Individual-Level and Aggregated Data**

🕒 8:45 AM - 9:00 AM, Mar 28

● **8c. Measuring Incremental Risk of Multiple Substance Abuse on Major Depression, Serious Psychological Distress and Any Mental Illness Among US Adults**

🕒 9:00 AM - 9:15 AM, Mar 28

● **8d. Casemix Adjustment Using Diagnosis Codes: Impact of Differential Coding Practices**

🕒 9:15 AM - 9:30 AM, Mar 28

● **8e. Addressing Bias in U.S. Hospital Rankings: Adjusting Standardized Infection Ratios to Account for Nonlinear Associations between Volume and Healthcare-Associated Infections**

🕒 9:30 AM - 9:45 AM, Mar 28

● **8f. An Inferential Approach for Coefficient Omega in Survey Design**

🕒 9:45 AM - 10:00 AM, Mar 28

9. Contributed Papers: Genomics

🕒 8:30 AM - 9:45 AM, Mar 28

📍 Liberty B

Scientific Progr...

Chair: Xiang Zhou, University of Michigan

4 Subsessions

● **9b. Leveraging Bayesian Networks to Provide Novel Insights from Microbiome Data**

🕒 8:45 AM - 9:00 AM, Mar 28

● **9c. An Integrated Bayesian Framework for Multi-omics Prediction and Classification**

🕒 9:00 AM - 9:15 AM, Mar 28

● **9d. Multi-Resolution Bayesian Hypothesis Testing for High Dimensional Data**

🕒 9:15 AM - 9:30 AM, Mar 28

● **9e. Testing Microbiome Association Using Integrated Quantile Regression Models**

🕒 9:30 AM - 9:45 AM, Mar 28

10. Contributed Papers: High Dimensional Data

🕒 8:30 AM - 10:15 AM, Mar 28

📍 Galveston A&B

Scientific Program

Student Award Winner

Chair: Sha Cao, Indiana University School of Medicine

7 Subsessions

● **10a. Statistical Inference of Decision Rules under a Non-differentiable Surrogate Loss in a General Classification Framework**

🕒 8:30 AM - 8:45 AM, Mar 28

● **10b. Integrative Dimension Reduction for Functional Dose-Response Toxicity Data**

🕒 8:45 AM - 9:00 AM, Mar 28

● **10c. Ridge Penalization in High-Dimensional Testing with Applications to Imaging Genetics**

🕒 9:00 AM - 9:15 AM, Mar 28

● **10d. Non-linear, Sparse Dimensionality Reduction via Path Lasso Penalized Autoencoders**

🕒 9:15 AM - 9:30 AM, Mar 28

● **10e. PCAN: Principal Component Analysis for Networks**

🕒 9:30 AM - 9:45 AM, Mar 28

● **10f. Clustering Compositional Microbiome Data Based on an Ising-Dirichlet Mixture Model**

🕒 9:45 AM - 10:00 AM, Mar 28

● **10g. A Nonparametric Test of Independence for Cluster-correlated Data**

🕒 10:00 AM - 10:15 AM, Mar 28

11. Contributed Papers: Survival Analysis

🕒 8:30 AM - 10:00 AM, Mar 28

📍 Montgomery

Scientific Progr...

Chair: Sandra Hurtaodo Rua, Cleveland State University

6 Subsessions

● **11a. Assessing Dynamic Covariate Effects with Survival Data**

🕒 8:30 AM - 8:45 AM, Mar 28

● **11b. Estimating the Generalized Odds Rate Cure Model with Background Mortality**

🕒 8:45 AM - 9:00 AM, Mar 28

● **11c. Flexible Spline Model for Estimating Survival after TEVAR for Thoracic Aortic Aneurysm**

🕒 9:00 AM - 9:15 AM, Mar 28

● **11d. Advancing Conditional Mean Imputation for Censored Predictors**

🕒 9:15 AM - 9:30 AM, Mar 28

● **11e. A Robust Solution to Covariate Censoring**

🕒 9:30 AM - 9:45 AM, Mar 28

● **11f. A Flexible-Hazards Cure Model**

🕒 9:45 AM - 10:00 AM, Mar 28

12. Contributed Papers: Variable Subset Selection/Model Selection

🕒 8:30 AM - 10:00 AM, Mar 28

Harris

Scientific Program

Student Award Winner

Chair: Abhisek Saha, Biostatistics and Bioinformatics Branch, DIPHR, NICHD, NIH

6 Subsessions

● 12a. Bayesian Knockoff Generators for Robust Inference under Complex Data Structure

⌚ 8:30 AM - 8:45 AM, Mar 28

● 12b. Bayesian Variable Selection for Time-to-event Data Using the Gaussian and Diffused-gamma Prior

⌚ 8:45 AM - 9:00 AM, Mar 28

● 12c. Bayesian Non-Homogeneous Hidden Markov Model with Variable Selection for Investigating Drivers of Seizure Risk Cycling

⌚ 9:00 AM - 9:15 AM, Mar 28

● 12d. Feature Selection in High-dimensional Genomic Data Using a Bayesian Stereotype Model

⌚ 9:15 AM - 9:30 AM, Mar 28

● 12e. Bayesian Continuous-Time Hidden Markov Models with Covariate Selection for Intensive Longitudinal Data with Measurement Error

⌚ 9:30 AM - 9:45 AM, Mar 28

● 12f. Extending the Spike-and-Slab Lasso for Generalized Linear Models to Accommodate Multinomial Outcomes

⌚ 9:45 AM - 10:00 AM, Mar 28

T1 | Incorporating Functional Data into Statistical Models

⌚ 8:30 AM - 10:15 AM, Mar 28

Houston 1

Tutorial

Functional data is all around us. Vast quantities of data are routinely gathered from accelerometers and other wearable devices, smartphones, imaging modalities, and many other sources. The term “functional data” refers to any data that can be thought of as multiple observations over some continuum. Examples include near-infrared spectra, growth curves, 2D or 3D images, time series of ecological momentary assessments (EMA), density functions or histograms, data from electroencephalography (EEG) or magnetic resonance spectroscopy (MRS) studies, and many others. To make the best use of such data, it is necessary to adapt statistical models and techniques to take advantage of the particular structure of functional data. This tutorial will survey some of the advances that have been made and provide examples of analyses that make good use of functional data. It will focus primarily on concepts and interpretation rather than on mathematical or computational details.

Speaker



Todd Ogden

Professor
Columbia University

10:30 AM

13. Addressing High-dimensionality and Weak-signal Issues in Causal Inference

⌚ 10:30 AM - 12:10 PM, Mar 28

Fort Bend A

Scientific Progr...

Organizer: Jiwei Zhao, University of Wisconsin-Madison | Chair: Trinetri Ghosh, University of Wisconsin-Madison

4 Subsessions

● 13a. How Well Can We Learn Large Factor Models without Assuming Strong Factors?

⌚ 10:30 AM - 10:55 AM, Mar 28

● **13b. Causal Inference in Radiomics**

🕒 10:55 AM - 11:20 AM, Mar 28

● **13c. Optimal and Safe Estimation for High-Dimensional Semi-Supervised Learning**

🕒 11:20 AM - 11:45 AM, Mar 28

● **13d. Improved Doubly Robust Inference for Treatment Effect Heterogeneity Using Nonparametric and High-dimensional Models**

🕒 11:45 AM - 12:10 PM, Mar 28

14. Collaborative Research Success: How to Build Your First Statistical Team

🕒 10:30 AM - 12:10 PM, Mar 28

📍 Fort Bend B

Scientific Progr...

Organizer: Christina Mehta, Emory University | Chair: Renee' Moore, Drexel University

4 Subsessions

● **14a. Evolution of a Collaborative Statistics Leader**

🕒 10:30 AM - 10:55 AM, Mar 28

● **14b. Developing a Business Model for your Collaborative Unit**

🕒 10:55 AM - 11:20 AM, Mar 28

● **14c. Identifying Partnerships to Build a Collaborative Program**

🕒 11:20 AM - 11:45 AM, Mar 28

● **14d. Case Study: Best Practices for Building an Effective Statistical Unit**

🕒 11:45 AM - 12:10 PM, Mar 28

15. Statistical Methods for Mixtures in Epidemiology

🕒 10:30 AM - 12:10 PM, Mar 28

📍 Houston 2

Scientific Progr...

Organizer: Daniel Kowal, Rice University | Chair: Katherine Ensor, Rice University

4 Subsessions

● **15a. Principal Component Pursuit for Pattern Recognition from Incomplete Environmental Data**

🕒 10:30 AM - 10:55 AM, Mar 28

📍 Houston 2

● **15b. Bayesian Graph Machine Regression with Applications to Large Multiple-exposure Health Data**

🕒 10:55 AM - 11:20 AM, Mar 28

📍 Houston 2

● **15c. Bayesian Subset Selection and Variable Importance for Interpretable Prediction and Classification**

🕒 11:20 AM - 11:45 AM, Mar 28

📍 Houston 2

● **15d. Estimating Perinatal Critical Windows of Susceptibility to Environmental Mixtures via Structured Bayesian Regression Tree Pairs**

🕒 11:45 AM - 12:10 PM, Mar 28

📍 Houston 2

16. Advanced Analytical Methods for mHealth Data

🕒 10:30 AM - 12:10 PM, Mar 28

📍 Houston 3

Scientific Progr...

Organizer: Matthew Koslovsky, Colorado State University | Chair: Marina Vannucci, Rice University

4 Subsessions

● **16a. Time-Dependent Associations Between Circadian Patterns of Measured Physical Activity and Mortality Modelled using Functional Cox Regression**

🕒 10:30 AM - 10:55 AM, Mar 28

📍 Houston 3

● **16b. Safely Learning Optimal Intervention Strategies in High-risk Settings**

🕒 10:55 AM - 11:20 AM, Mar 28

📍 Houston 3

● **16c. Bayesian Methods for Intensive Longitudinal Data Collected in MHealth Studies**

🕒 11:20 AM - 11:45 AM, Mar 28

📍 Houston 3

● **16d. Bayesian Methods for Intensive Longitudinal Data Collected in MHealth Studies**

🕒 11:45 AM - 12:10 PM, Mar 28

📍 Houston 3

17. Cutting Edge Statistics for Keeping Your Microbiome Analyses Out of the Toilet

🕒 10:30 AM - 12:10 PM, Mar 28

📍 Houston 4

Scientific Progr...

Organizer: Michael Wu, Fred Hutchinson Cancer Research Center and University of Washington | Chair: Wodan Ling, Fred Hutchinson Cancer Research Center

4 Subsessions

● **17a. Dimension Reduction of Longitudinal Microbiome Data by Tensor Functional SVD**

🕒 10:30 AM - 10:55 AM, Mar 28

📍 Houston 4

● **17b. Differential Microbiome Volatility: Detection and Impact on Longitudinal Association Testing**

🕒 10:55 AM - 11:20 AM, Mar 28

📍 Houston 4

● **17c. A Novel Approach to Mediation Analysis of the Microbiome using the LDM**

🕒 11:20 AM - 11:45 AM, Mar 28

📍 Houston 4

● **17d. Bayesian Zero-constrained Regression Modeling with Structured Prior for Microbiome Feature Selection**

🕒 11:45 AM - 12:10 PM, Mar 28

📍 Houston 4

18. Advanced in High-Dimensional Data Analysis

🕒 10:30 AM - 12:10 PM, Mar 28

📍 Houston 5

Scientific Progr...

Sponsor: IMS | Organizer/Chair: Ming Yuan, Columbia University

4 Subsessions

● **18a. Why and How to Use Orthogonally Decomposable Tensors in Statistics**

🕒 10:30 AM - 10:55 AM, Mar 28

● **18b. Fractal Gaussian Networks: A Sparse Random Graph Model Based on Gaussian Multiplicative Chaos**

🕒 10:55 AM - 11:20 AM, Mar 28

● **18c. Two-Sample Hypothesis Testing for Multiple-Network Data**

🕒 11:20 AM - 11:45 AM, Mar 28

● **18d. Self-Supervised Metric Learning in Multi-View Data: A Downstream**

Task Perspective

🕒 11:45 AM - 12:10 PM, Mar 28

19. Recent Advances in Graphical Models: Methodology, Computation and Applications

🕒 10:30 AM - 12:10 PM, Mar 28

📍 Houston 6

Scientific Progr...

Organizer/Chair: Anindya Bhadra, Purdue University

4 Subsessions

● **19a. Bayesian Structure Learning in Multi-layered Networks**

🕒 10:30 AM - 10:55 AM, Mar 28

● **19b. A Bayesian Subset Specific Approach to Joint Selection of Multiple Graphical Models**

🕒 10:55 AM - 11:20 AM, Mar 28

● **19c. Scalable Bayesian Models for Inference of Networks and Covariate Effects**

🕒 11:20 AM - 11:45 AM, Mar 28

● **19d. Ordinal Causal Discovery**

🕒 11:45 AM - 12:10 PM, Mar 28

20. Contributed Papers: Causal Inference

🕒 10:30 AM - 12:00 PM, Mar 28

📍 Houston 7

Scientific Program

Student Award Winner

Chair: Andriy Derkach, Memorial Sloan Kettering Cancer Center

6 Subsessions

● **20a. High-dimensional and Nonparametric Bayesian Methodology for Treatment Effect Heterogeneity**

🕒 10:30 AM - 10:45 AM, Mar 28

● **20b. Selecting the Optimal Number of Matched Controls Using Many-to-One Cardinality Matching with Multi-level Data**

🕒 10:45 AM - 11:00 AM, Mar 28

● **20c. Causal Inference in Transcriptome-Wide Association Studies with Invalid Instruments and GWAS Summary Data**

🕒 11:00 AM - 11:15 AM, Mar 28

● **20d. Causal Mediation Analysis: Selection with Asymptotically Valid Inference**

🕒 11:15 AM - 11:30 AM, Mar 28

● **20e. Solutions for Surrogacy Validation with Longitudinal Outcomes for a Gene Therapy**

🕒 11:30 AM - 11:45 AM, Mar 28

● **20f. Causal Mediation Analysis with Mediator Values Below an Assay Limit**

🕒 11:45 AM - 12:00 PM, Mar 28

21. Contributed Papers: Environmental and Ecological Applications

🕒 10:30 AM - 12:00 PM, Mar 28

📍 Liberty B

Scientific Progr...

Chair: Joshua Keller, Colorado State University

6 Subsessions

● **21a. A Joint Bayesian Source Apportionment Model for Personal Air Pollution**

Exposures

🕒 10:30 AM - 10:45 AM, Mar 28

● 21b. Heterogeneous Distributed Lag Models to Estimate Personalized Effects of Maternal Exposures to Air Pollution

🕒 10:45 AM - 11:00 AM, Mar 28

● 21c. Modeling Correlated Exposure Determinants using Bayesian Model Averaging

🕒 11:00 AM - 11:15 AM, Mar 28

● 21d. Partial Linear Single Index Distributed Lag Quantile Regression for Modeling Time-dependent Environmental Exposure Mixtures

🕒 11:15 AM - 11:30 AM, Mar 28

● 21e. A Hierarchical Integrative Group Least Absolute Shrinkage and Selection Operator for Analyzing Environmental Mixtures

🕒 11:30 AM - 11:45 AM, Mar 28

● 21f. Control Chart For Dynamic Process Monitoring With An Application To Air Pollution Surveillance

🕒 11:45 AM - 12:00 PM, Mar 28

22. Contributed Papers: Imaging

🕒 10:30 AM - 12:00 PM, Mar 28

📍 Galveston A&B

Scientific Program

Student Award Winner

Chair: Rongjie Liu, Florida State University

6 Subsessions

● 22a. Faster Estimation for Constrained Gamma Mixture Models Using Closed-form Estimators

🕒 10:30 AM - 10:45 AM, Mar 28

● 22b. A Novel Bayesian Functional Spatial Partitioning Method with Application to Prostate Cancer Lesion Detection Using MRI

🕒 10:45 AM - 11:00 AM, Mar 28

● 22c. Multi-task Learning with High-dimensional Noisy Images

🕒 11:00 AM - 11:15 AM, Mar 28

● 22d. Penalized Decomposition Using Residuals for Confounding Control and Enhanced Pattern Extraction in Neuroimaging

🕒 11:15 AM - 11:30 AM, Mar 28

● 22e. Envelop-based Quantile Tensor Regression Model with Application to Neuroimaging Data

🕒 11:30 AM - 11:45 AM, Mar 28

● 22f. A Novel Network Architecture Combining Central Peripheral Deviation with Image-based Convolutional Neural Networks for Diffusion Tensor Imaging Studies

🕒 11:45 AM - 12:00 PM, Mar 28

23. Contributed Papers: Infectious Disease Models

🕒 10:30 AM - 12:00 PM, Mar 28

📍 Montgomery

Scientific Progr...

Chair: Ali Arab, Georgetown University

5 Subsessions

● 23a. Bayesian Inference for Continuous-Time Transmission Processes of Infectious Diseases in Close Contact Groups

🕒 10:30 AM - 10:45 AM, Mar 28

● 23b. Exploring the Efficiency of Multistage Pooled Testing Models Using R

🕒 10:45 AM - 11:00 AM, Mar 28

● 23c. A Bayesian Model-based Approach for Estimating the Instantaneous

Reproduction Number Using Case-Notification Data in the Presence of Reporting Variation and Serial Interval Uncertainty

🕒 11:00 AM - 11:15 AM, Mar 28

● 23d. Modeling Infectious Disease Dynamics: Integrating Contact Tracing-based Stochastic Compartment and Spatio-temporal Risk Models

🕒 11:30 AM - 11:45 AM, Mar 28

● 23e. Estimation of Local Time-Varying Reproduction Numbers in Noisy Surveillance Data

🕒 11:45 AM - 12:00 PM, Mar 28

24. Contributed Papers: Semi-parametric and Non-parametric Models

🕒 10:30 AM - 12:15 PM, Mar 28

📍 Harris

Scientific Progr...

Chair: David P. Miller, Unlearn.AI

6 Subsessions

● 24a. Bayesian Semiparametric Hidden Markov Tensor Partition Models for Longitudinal Data with Local Variable Selection

🕒 10:30 AM - 10:45 AM, Mar 28

● 24b. Horseshoe Processes in Partial Linear Models

🕒 10:45 AM - 11:00 AM, Mar 28

● 24c. Bayesian Jackknife Empirical Likelihood

🕒 11:00 AM - 11:15 AM, Mar 28

● 24d. Bayesian Dynamic Double-regression Modeling of Multi-type Recurrent Event Data

🕒 11:15 AM - 11:30 AM, Mar 28

● 24e. A Novel Bayesian Continuous Piecewise Linear Log-hazard Model, with Estimation and Inference via Reversible Jump Markov Chain Monte Carlo

🕒 11:30 AM - 11:45 AM, Mar 28

● 24f. A Semiparametric Risk Score for Physical Activity

🕒 11:45 AM - 12:00 PM, Mar 28

T2 | Reproducible Workflow in R: Ready to Share

🕒 10:30 AM - 12:15 PM, Mar 28

📍 Houston 1

Tutorial

Importing and harmonizing varied data and file formats is difficult, which makes editing the data files themselves tempting. However, editing the data files risks introducing unreproducible steps or, worse, alterations of the raw data. Most of the time, formatting and editing the data can be accomplished programmatically, allowing a reproducible pipeline from raw data to analytical data and, ultimately, analysis. Developed with the Indiana University Biostatistics Consulting Center, this tutorial will share examples of cleaning and harmonizing data in R in the spirit of Wickham's 'tidy data,' creating well-documented and human-readable code and variables, and using R Markdown to avoid copy/paste and typographical errors in moving from analysis to sharing. We will conclude with a brief discussion of public data and code sharing. A working understanding of R is required, with familiarity of R Markdown helpful.

Files are uploaded on OSF <https://osf.io/ug7wp/>

🗣️ Speakers



Andrew Brown

Assistant Professor
Indiana University School of Public Health-Bloomington · Full-time



Lilian Golzarri Arroyo

Research Associate - Biostatistician II
Biostatistics Consulting Center

12:15 PM

RT1 | Bridging the Gap Between Machine Learning and Conventional Statistics

🕒 12:15 PM - 1:30 PM, Mar 28

📍 Galveston A&B

Roundtab...

Recent developments in statistical methodology and machine learning broaden the ways in which we think about predictive and inferential statistics. At this roundtable we will engage with how these changes mesh with more classical statistical models and approaches. I aim to have us examine/discuss scenarios where classical approaches are most appropriate, and contrast with scenarios where new approaches allow important flexibility and/or are critical to achieve our goals. In addition, I hope to have discussion around what training is most important for a modern-day data scientist.

🗣️ Speaker



Jean Feng

University of California, San Francisco

RT2 | Navigating the World of Grant Writing

🕒 12:15 PM - 1:30 PM, Mar 28

📍 Montgomery

Roundtab...

With the ever-increasing reliance on grants for maintaining sustainability of research programs, this roundtable focuses on the issue of grant writing and grant operational processes. The following topics will be discussed: the difference in grant cultures and processes/operations between NIH, NSF and other groups; the role of grant writing vis-a-vis one's career trajectory; the type of grants that are available; general strategies for structuring grants; the role of calls for proposals. At least 1/2 of the time will be devoted to a question-and-answer/discussion section between the roundtable leader with the participants.

🗣️ Speaker



Debashis Ghosh

Department of Biostatistics and Informatics Colorado School of Public Health

RT3 | Survival Kit for the Scientific Publication Jungle

🕒 12:15 PM - 1:30 PM, Mar 28

📍 Fort Bend A

Roundtab...

Scholarly papers constitute a time-honored communication channel within the scientific community. Contemporarily, academic, governmental, and granting authorities place increasing importance on a researcher's scientific output, often measured via the impact factor, the citation index, the Hirsch factor, etc.

Against this background, how should the junior and the senior scholar proceed to effectively communicate via scientific papers? How should one maximize chances of acceptance? What is the optimal journal? How should one ensure a published paper draws attention, is read, and gets cited? Are there specific issues for the non-native English speaker? Should one bother about collaborative papers or rather focus exclusively on methodological manuscripts?

These and other questions will be dealt upon in this roundtable, from the perspective of the editor, the associate editor, the referee, and the author. Scholarly and career-strategic considerations will be weighed.

🗣️ Speaker



Geert Molenberghs

UHasselt and KU Leuven

RT4 | Learnings and Opportunities from a Single Sponsor Master Protocol

🕒 12:15 PM - 1:30 PM, Mar 28

📍 Fort Bend B

Roundtab...

In the realm of modern-day drug development, the Complex Innovative Trial Design (CID) Pilot Meeting Program conducted by FDA plays a significant role in facilitating and advancing the use of novel clinical trial designs which accelerates patient access to life-altering therapies. This roundtable will primarily focus on the case study of chronic pain master protocol (CPMP), sponsored by Eli Lilly and Company which was accepted to the CID Pilot Meeting Program. The challenges, learnings, and opportunities of conducting a single sponsor master protocol will be shared. The master protocol provides the innovative framework to efficiently evaluate the safety and efficacy of multiple assets in multiple pain types which facilitates borrowing of key statistical information between assets and pain types. The roundtable will also provide the opportunity to discuss pros and cons of various data borrowing strategies within the framework of master protocol.

🗣️ Speaker



Saptarshi Chatterjee

Advisor
Eli Lilly and Company

RT5 | Establishing and Maintaining Successful Collaborations

🕒 12:15 PM - 1:30 PM, Mar 28

📍 Houston 1

Roundtab...

We will discuss principles of collaboration by statisticians in biomedical research contexts. We will stress the importance of articulating expectations, of clear and frequent communication, and of setting, understanding, and implementing ground rules. We will discuss the goal of acting as a true collaborator, rather than simply a service provider, and review common pitfalls and strategies for success. We will also discuss collaboration from the standpoint of various roles, including faculty, master's- and PhD-trained staff statisticians, and students. We will review case studies and provide time for Q&A and group discussion.

🗣️ Speaker



Andrea Troxel

NYU School of Medicine

RT6 | How to Leverage Mentoring and Networking for Career Success

🕒 12:15 PM - 1:30 PM, Mar 28

📍 Houston 2

Roundtab...

Career success for a biostatistician may be measured in different ways- as the highest position at your place of employment, as financial success, as national/international recognition, as client satisfaction, as mentee success, and/or as personal satisfaction. In all scenarios, success depends on interaction with others, for biostatistics is a collaborative profession. And every interaction, including mentoring and being mentored, is an opportunity for networking. The most effective mentoring and networking is strategic, where goals of relationships are identified, timelines for achieving goals are set, and where mentoring circles are created. We will discuss mentor/mentee planning and strategic networking within the multiple venues of engagement (mentor/mentee, supportive colleague, collaborator, the body of biostatisticians) that we encounter during our journey towards career success.

🗣️ Speaker



Renee Moore

Drexel University

RT7 | A Seat at the Table: The Key Role of Biostatistics and Data Science in the COVID-19 Pandemic

🕒 12:15 PM - 1:30 PM, Mar 28

📍 Houston 3

Roundtab...

The rapid emergence of the novelty virus SARS-CoV-2 and resulting pandemic has necessitated accelerated knowledge discovery much faster than the usual scientific timelines. Much of this involves rapid evaluation and aggregating of information across data and studies, most pre-peer review, with numerous tricky quantitative issues including observational studies with many potential sources of bias, measurement error and informative missingness, aggregation of disparate data sources, as well as uncertainty quantification and level of evidence. As a result the skill set of biostatistical scientists has never been more important or central. In this roundtable, I will discuss experiences from my blog page covid-datascience.com and highlight the need for our profession to engage more with society and the media and have a “seat at the table” with policymakers, to ensure the tricky quantitative nuances are taken into account.

RT8 | Building Competence and Confidence for the Academic Job Search

🕒 12:15 PM - 1:30 PM, Mar 28

📍 Houston 4

Roundtab...

One phrase sure to strike fear in the heart of any graduate student or post-doc is, “How’s the job search going?” Making the leap from trainee to professional can be daunting and particularly so for those interested in academic careers. The academic job search process is slow and complicated but, with appropriate preparation, need not feel overwhelming. The objective of this roundtable is to help demystify and reduce anxiety around the academic job search process by discussing the timeline and structure for academic hiring, sharing strategies for putting together a strong application, and sharing tips for preparing for the job interview that will help you put your best foot forward. This roundtable is intended for students, post-docs and early career professionals who are contemplating entering or re-entering the academic job market or who are currently in the midst of the job search process.

🗣️ Speaker



Rebecca Hubbard

Professor of Biostatistics
University of Pennsylvania

RT9 | Using Data Science to Improve Patient Care

🕒 12:15 PM - 1:30 PM, Mar 28

📍 Houston 5

Roundtab...

Healthcare is a business that is often data rich and insight poor. Healthcare analytics is a growing practice and integrating data science techniques into healthcare operations is a challenging, but high value effort. It requires a balance of clinical and data science. Complex models are difficult to communicate to a non-technical audience and a significant amount of transparency and attention to face validity of the models is required to gain momentum. Further, data science alone will not impact healthcare. The models and results need to be integrated into the clinical workflow. In this session, we will discuss challenges and successes in melding the two sciences to improve patient care.

🗣️ Speaker



Susan White

Chief Analytics Officer
The Ohio State University Wexner Medical Center

12:30 PM

Regional Advisory Board (RAB) Luncheon Meeting (by Invitation Only)

🕒 12:30 PM - 4:30 PM, Mar 28

📍 Harris

Committee Meeting

Scientific Program

25. Recent Advances on the Restricted Mean Survival Time (RMST)

🕒 1:45 PM - 3:25 PM, Mar 28

📍 Galveston A&B

Scientific Progr...

Organizer: Lu Mao, University of Wisconsin-Madison | Chair: Yi Chen, University of Wisconsin-Madison

4 Subsessions

● **25a. Restricted Mean Survival Time in the Presence of Competing Risks**

🕒 1:45 PM - 1:45 PM, Mar 28

● **25b. RMST and Beyond: Alternative Measures to Cox's Hazard Ratio**

🕒 2:10 PM - 2:45 PM, Mar 28

● **25c. On Restricted Mean Time in Favor of Treatment**

🕒 2:35 PM - 3:00 PM, Mar 28

● **25d. Window Mean Survival Time**

🕒 3:00 PM - 3:25 PM, Mar 28

26. New Developments in Mediation Analyses for High-dimensional Complex Biomedical Data

🕒 1:45 PM - 3:25 PM, Mar 28

📍 Montgomery

Scientific Progr...

Organizer/Chair: Annie Qu, University of California Irvine

4 Subsessions

● **26a. De-confounding Causal Inference via Latent Multiple Mediators**

🕒 1:45 PM - 1:45 PM, Mar 28

● **26b. Heterogeneous Mediation Analysis on Epigenomic PTSD and Traumatic Stress in an African American Cohort**

🕒 2:10 PM - 2:45 PM, Mar 28

● **26c. Generalized Structural Equation Models for Mediation Analysis with Data of Mixed Types**

🕒 2:35 PM - 3:00 PM, Mar 28

● **26d. Mediation Analysis for Survival Data with High-dimensional Mediators**

🕒 3:00 PM - 3:25 PM, Mar 28

27. Statistical Methods for Single-Cell Sequencing Data

🕒 1:45 PM - 3:25 PM, Mar 28

📍 Fort Bend A

Scientific Progr...

Organizer/Chair: Yuchao Jiang, University of North Carolina at Chapel Hill

4 Subsessions

● **27a. Quantification Uncertainty in Single-Cell Expression Data**

🕒 1:45 PM - 1:45 PM, Mar 28

● **27b. A Generalized Errors-in-variables Model for CRISPR Genome Engineering and Single-cell Sequencing**

🕒 2:10 PM - 2:45 PM, Mar 28

● **27c. Multi-resolution Analysis Enables Accurate Cell Type and Tissue Structure Detection in Spatial Transcriptomics**

🕒 2:35 PM - 3:00 PM, Mar 28

● **27d. DNA Copy Number Profiling from Bulk Tissues to Single Cells**

🕒 3:00 PM - 3:25 PM, Mar 28

28. New Graphical Model Approaches for Robust Inference of Individualized Multi-Omic Networks

🕒 1:45 PM - 3:30 PM, Mar 28

📍 Fort Bend B

Scientific Progr...

Organizer/Chair: Yang Ni, Texas A&M University

4 Subsessions

● 28a. Quantile Graphical Models: A Bayesian Approach

🕒 1:45 PM - 2:10 PM, Mar 28

● 28b. Identifying Covariate-driven Connections in Directed Networks

🕒 2:10 PM - 2:35 PM, Mar 28

● 28c. Covariate-Adjusted Differential Network Analysis

🕒 2:35 PM - 3:00 PM, Mar 28

● 28d. Bayesian Robust Learning in Chain Graph Models for Integrative Pharmacogenomics

🕒 3:00 PM - 3:25 PM, Mar 28

29. New Data Science Advances in Imaging

🕒 1:45 PM - 3:25 PM, Mar 28

📍 Houston 2

Scientific Progr...

Sponsor: IMS | Organizer/Chair: Raphael Murden, Emory University

4 Subsessions

● 29a. A Missing Data Method for Deconfounding in Neuroimaging Studies

🕒 1:45 PM - 1:45 PM, Mar 28

📍 Houston 2

● 29b. Topological Noise Curves for Brain Network Analysis

🕒 2:10 PM - 2:45 PM, Mar 28

📍 Houston 2

● 29c. Analytical Tools for Whole-Brain Networks: Fusing Statistics and Network Science to Understand Brain Function

🕒 2:35 PM - 3:00 PM, Mar 28

📍 Houston 2

● 29d. A Variational Bayesian Approach to Identifying Whole-Brain Directional Networks with fMRI Data

🕒 3:00 PM - 3:25 PM, Mar 28

📍 Houston 2

30. Recent Advances in Survival Analysis for Large-Scale Complex Biomedical Data

🕒 1:45 PM - 3:25 PM, Mar 28

📍 Houston 3

Scientific Progr...

Organizer/Chair: Kevin He, University of Michigan

4 Subsessions

● 30a. Matching Methods for Evaluating the Effect of a Time-dependent Treatment on the Survival Function

🕒 1:45 PM - 2:10 PM, Mar 28

📍 Houston 3

● 30b. Averaging-based Methods for Building Large Scale Survival Model

🕒 2:10 PM - 2:35 PM, Mar 28

📍 Houston 3

● **30c. Approaches to Fitting Hazard Models with Time-varying Coefficients to Large Datasets**

🕒 2:35 PM - 3:00 PM, Mar 28

📍 Houston 3

● **30d. Integrating Molecular and Histopathological Imaging Data in Cancer Survival Analysis**

🕒 3:00 PM - 3:25 PM, Mar 28

📍 Houston 3

31. Contributed Papers: Adaptive Design/Adaptive Randomization

🕒 1:45 PM - 3:15 PM, Mar 28

📍 Houston 4

Scientific Progr...

Chair: Scott A. Bruce, Texas A&M University

6 Subsessions

● **31a. Assessing the Effectiveness of a Sampling Algorithm for Just-in-Time Intervention Delivery**

🕒 1:45 PM - 2:00 PM, Mar 28

● **31b. Two-Stage Enrichment Clinical Trial Designs with Survival Outcomes and Adjustment for Misclassification in Predictive Biomarkers**

🕒 2:00 PM - 2:15 PM, Mar 28

● **31c. Evaluation of Adaptive Bioequivalence Testing for Correlated Outcomes**

🕒 2:15 PM - 2:30 PM, Mar 28

● **31d. Bayesian Multi-Arm Adaptive Randomization Schema for Biomarker-Drug Co-Development Subgroup Analysis with Sample Size Re-Estimation**

🕒 2:30 PM - 2:45 PM, Mar 28

● **31e. Two-Stage Screened Selection Designs for Randomized Phase II Trials with Time-to-Event Endpoints**

🕒 2:45 PM - 3:00 PM, Mar 28

● **31f. BOIN12: Bayesian Optimal Interval Phase I/II Trial Design for Utility-Based Dose-Finding in CAR-T Cell Therapy**

🕒 3:00 PM - 3:15 PM, Mar 28

32. Contributed Papers: Cancer Applications

🕒 1:45 PM - 2:45 PM, Mar 28

📍 Houston 5

Scientific Program

Student Award Winner

Chair: Thao Vu, University of Colorado Anschutz Medical Campus

4 Subsessions

● **32a. Prioritizing Candidate Peptides for Cancer Vaccines by PEPPRMINT: A Statistical Model to Predict Peptide Presentation by HLA-I Proteins**

🕒 1:45 PM - 2:00 PM, Mar 28

● **32b. Utilizing Machine Learning Methods to Identify Acute Myeloid Leukemia Patients from a Real-world Data Set**

🕒 2:00 PM - 2:15 PM, Mar 28

● **32c. Joint Inference of Phylogeny and Mutation Order in Cancer**

🕒 2:15 PM - 2:30 PM, Mar 28

● **32d. Machine Learning Methods in Predicting Amyloid Positivity**

🕒 2:30 PM - 2:45 PM, Mar 28

33. Contributed Papers: Causal Inference

🕒 1:45 PM - 3:30 PM, Mar 28

📍 Houston 6

Scientific Progr...

7 Subsessions

● **33a. Time and Causality: Learning Causal Structures from Longitudinal Data**

🕒 1:45 PM - 2:00 PM, Mar 28

● **33b. Covariate-adaptive Randomization Inference in Matched Designs**

🕒 2:00 PM - 2:15 PM, Mar 28

● **33c. Outcome-adjusted Balance Measure for Generalized Propensity Score Model Selection**

🕒 2:15 PM - 2:30 PM, Mar 28

● **33d. The Central Role of Consistently-Estimated Propensity Scores for Double-Robust Estimation of Multi-Level Treatment Effects in Observational Studies**

🕒 2:30 PM - 2:45 PM, Mar 28

● **33e. Causal Inference with Hidden Confounders: A Comparison Between Two Stage Least Squares and the Causal Dantzig with Applications to Mendelian Randomization**

🕒 2:45 PM - 3:00 PM, Mar 28

● **33f. Variable Selection for Automatic Confounder Adjustment in Mendelian Randomization Using Public GWAS Databases**

🕒 3:00 PM - 3:15 PM, Mar 28

● **33g. Combining the Strengths of Inverse-Variance Weighting and Egger Regression in Mendelian Randomization Using a Mixture of Regressions Model**

🕒 3:15 PM - 3:30 PM, Mar 28

34. Contributed Papers: Clustered Data Methods

🕒 1:45 PM - 3:30 PM, Mar 28

📍 Houston 7

Scientific Progr...

Chair: Emily C. Hector, North Carolina State University

7 Subsessions

● **34a. Nonparametric Tests for Multistate Processes with Clustered Data**

🕒 1:45 PM - 2:00 PM, Mar 28

● **34b. Model-based Clustering of Multiple Two-dimensional Functional Data Incorporating Covariates**

🕒 2:00 PM - 2:15 PM, Mar 28

● **34c. Comparison of Clustering Approaches for Determining Immune Subtypes in Prostate Cancer Tumors**

🕒 2:15 PM - 2:30 PM, Mar 28

● **34d. A Comparison of Strategies for Covariate Adjustment in Small Cluster-Randomized Trials with a Rare Binary Outcome**

🕒 2:30 PM - 2:45 PM, Mar 28

● **34e. Bayesian Semiparametric Local Clustering of Functional Time Series Data**

🕒 2:45 PM - 3:00 PM, Mar 28

● **34f. Autoregressive Mixture Models for Serial Correlation Clustering of Time Series Data**

🕒 3:00 PM - 3:15 PM, Mar 28

● **34g. Spatial Dependence Modeling of Susceptibility and Failure Times for Processes Under Intermittent Observation**

🕒 3:15 PM - 3:30 PM, Mar 28

35. Contributed Papers: Functional Data Analysis

🕒 1:45 PM - 3:00 PM, Mar 28

📍 Liberty A

Scientific Progr...

Chair: Salil Koner, North Carolina State University

5 Subsessions

● **35a. Varying-coefficient Mean Residual Life Model with Functional Principal Components Analysis**

🕒 1:45 PM - 2:00 PM, Mar 28

● **35b. Conditional Kaplan-Meier Estimator with Functional Covariates for Survival Data**

🕒 2:00 PM - 2:15 PM, Mar 28

● **35c. Functional Regression with Intensively Measured Longitudinal Outcomes: New Lens through Data Partitioning**

🕒 2:15 PM - 2:30 PM, Mar 28

● **35d. Deep Neural Networks for Functional Data Classification**

🕒 2:30 PM - 2:45 PM, Mar 28

● **35e. Analyzing Accelerometer Data with Probability Magnitude Graphs**

🕒 2:45 PM - 3:00 PM, Mar 28

36. Contributed Papers: High Dimensional Data

🕒 1:45 PM - 3:30 PM, Mar 28

📍 Liberty B

Scientific Progr...

Chair: Boyi Guo, University of Alabama at Birmingham

7 Subsessions

● **36a. Inference for Change Points under High Dimensional Linear Regression Models**

🕒 1:45 PM - 2:00 PM, Mar 28

● **36b. Transfer Learning in High Dimensional Linear Discriminant Analysis**

🕒 2:00 PM - 2:15 PM, Mar 28

● **36c. Spike-and-Slab Generalized Additive Models and Scalable Algorithms for High-Dimensional Data**

🕒 2:15 PM - 2:30 PM, Mar 28

● **36d. Community Detection Within Edge Exchangeable Models for Interaction Processes**

🕒 2:30 PM - 2:45 PM, Mar 28

● **36e. A Bayesian Approach to Simultaneous Factorization and Prediction Using Multi-Omic Data**

🕒 2:45 PM - 3:00 PM, Mar 28

● **36f. Accounting for Data Heterogeneity in Integrative Analysis and Prediction Methods: An Application to Chronic Obstructive Pulmonary Disease (COPD)**

🕒 3:00 PM - 3:15 PM, Mar 28

● **36g. Benchmark Evaluation of Microbiome Differential Abundance Analysis**

🕒 3:15 PM - 3:30 PM, Mar 28

T3 | Data Visualization for Biomedical Research

🕒 1:45 PM - 3:30 PM, Mar 28

📍 Houston 1

Tutorial

There is both an art and science to making impactful graphs. What are the human brain's visual superpowers? How can a graph be more impactful with its audience? The objective of this tutorial is to address some overlooked factors beyond the technical aspects of graphing data, including concepts and examples from *Statistics in Medicine*, 2015, "Seeing is believing: Good graphic design principles for medical research." This tutorial will cover:

- Visual perception, and its relationship with statistical graphics design concepts
- Understanding the graph's purpose – what is the question?
- Examples of sub-optimally designed graphs and recommendations for improvement
- Value of impactful graphs from a regulatory reviewer's perspective
- Impactful use of interactive graphics with RShiny from an ASA Biopharm Safety Working Group Taskforce

🗣️ Speaker



Susan Mayo

Mathematical Statistician, Center for Drug Evaluation
FDA

3:45 PM

37. Environmental Health Meets Causal Inference

🕒 3:45 PM - 5:25 PM, Mar 28

📍 Galveston A&B

Scientific Progr...

Organizer/Chair: Howard Chang, Emory University

4 Subsessions

● **37a. Estimating Causal Effects in Longitudinal Cookstove Intervention Studies Using Principal Stratification**

🕒 3:45 PM - 4:10 PM, Mar 28

● **37b. Estimating Spatially Varying Health Effects of Wildland Fire Smoke Using Mobile Health Data**

🕒 4:10 PM - 4:35 PM, Mar 28

● **37c. Bayesian Kernel Machine Regression for Estimating and Transporting Time-varying Environmental Mixture Effects**

🕒 4:35 PM - 5:00 PM, Mar 28

● **37d. Discussant**

🕒 5:00 PM - 5:25 PM, Mar 28

38. Statistical Methods Using External and Real-World Evidence (RWE) for Clinical Trials

🕒 3:45 PM - 5:25 PM, Mar 28

📍 Montgomery

Scientific Progr...

Organizer/Chair: Yuan Ji, The University of Chicago

4 Subsessions

● **38a. Single Arm Trials with a Synthetic Control Arm Built from RWD**

🕒 3:45 PM - 4:10 PM, Mar 28

● **38b. Evaluation of Hybrid Controlled Trials that Leverage External Control Data and Randomization**

🕒 4:10 PM - 4:35 PM, Mar 28

● **38c. Practical Bayesian Design for Rare Disease Drug Development**

🕒 4:35 PM - 5:00 PM, Mar 28

● **38d. Incorporating External Data Into the Analysis of Clinical Trials via Bayesian Additive Regression Trees**

🕒 5:00 PM - 5:25 PM, Mar 28

39. PANEL: Interdisciplinary Engagement as a Biostatistician: Maximizing Collaboration Skills

🕒 3:45 PM - 5:30 PM, Mar 28

📍 Fort Bend A

Scientific Progr...

Sponsors: ENAR, CENS | Organizer: Karissa Whiting, Memorial Sloan Kettering Cancer Center; Anna Eames Seffernick, Ohio State University | Chair: Julia Wrobel, University of Colorado-Anschutz Medical Campus

🗣️ Speakers



Rebecca Hubbard
Professor of Biostatistics
University of Pennsylvania



Julia Sharp
Associate Professor and Director of the Graybill Statistics & Data Science Laboratory
Colorado State University



Daniel Sjoberg
Memorial Sloan Kettering Cancer Center



Hadley Wickham
RStudio; University of Auckland; Stanford University; Rice University



Dionne Price
FDA

40. Methods for Estimating SARS-CoV-2 Seroprevalence

🕒 3:45 PM - 5:25 PM, Mar 28

📍 Fort Bend B

Scientific Progr...

Organizer: Bonnie Shook-Sa, University of North Carolina at Chapel Hill | Chair: Michael Hudgens, University of North Carolina at Chapel Hill

4 Subsessions

● **40a. Bayesian Analysis of Tests with Unknown Specificity and Sensitivity**

🕒 3:45 PM - 4:10 PM, Mar 28

● **40b. How to Detect and Reduce Potential Sources of Biases in SARS-CoV-2**

Seroprevalence Studies

🕒 4:10 PM - 4:35 PM, Mar 28

● **40c. Estimating Seroprevalence of SARS-CoV-2**

🕒 4:35 PM - 5:00 PM, Mar 28

● **40d. Confidence Intervals for Seroprevalence**

🕒 5:00 PM - 5:25 PM, Mar 28

41. Advanced in Single Cell Data Analysis Using Statistical Methods and Machine Learning

🕒 3:45 PM - 5:25 PM, Mar 28

📍 Houston 2

Scientific Progr...

Organizer/Chair: Ziyi Li, The University of Texas MD Anderson Cancer Center

4 Subsessions

● **41a. Statistical Model for Recovering the Low Rank Structure of Spatial Transcriptomics Data**

🕒 3:45 PM - 4:10 PM, Mar 28

📍 Houston 2

● **41b. On the Strategy for Supervised Cell Type Identification in Single-cell RNA-seq**

🕒 4:10 PM - 4:35 PM, Mar 28

📍 Houston 2

● **41c. Leveraging the Co-occurrence of Dropouts in scRNA-seq Analysis**

🕒 4:35 PM - 5:00 PM, Mar 28

📍 Houston 2

● **41d. Nonparametric Interrogation of Transcriptional Regulation in Single-Cell RNA and Chromatin Accessibility Multiomic Data**

🕒 5:00 PM - 5:25 PM, Mar 28

📍 Houston 2

42. Topics in Functional Data Analysis with Applications in Biosciences

🕒 3:45 PM - 5:25 PM, Mar 28

📍 Houston 3

Scientific Progr...

Organizer: Rahul Ghosal, Johns Hopkins Bloomberg School of Public Health | Chair: Vadim Zipunnikov, Johns Hopkins Bloomberg School of Public Health

4 Subsessions

● **42a. Scalar on Time-by-distribution Regression and Its Application for Modelling Associations Between Daily-living Physical Activity and Cognitive Functions in Alzheimer's Disease**

🕒 3:45 PM - 4:10 PM, Mar 28

📍 Houston 3

● **42b. Semiparametric Bivariate Hierarchical State Space Model with application to Hormone Circadian Relationship**

🕒 4:10 PM - 4:35 PM, Mar 28

📍 Houston 3

● **42c. Ordinal Probit Functional Outcome Regression**

🕒 4:35 PM - 5:00 PM, Mar 28

📍 Houston 3

● **42d. PROLIFIC: Projection-based Test for Lack of Importance of Smooth Functional Effect in Crossover Design**

🕒 5:00 PM - 5:25 PM, Mar 28

📍 Houston 3

43. Contributed Papers: Bayesian Methods

🕒 3:45 PM - 5:15 PM, Mar 28

📍 Houston 4

Scientific Progr...

Chair: Alexander M. Kaizer, University of Colorado Anschutz Medical Campus

6 Subsessions

● **43a. Supervised Bayesian Nonparametric Clustering Techniques for Survey Data**

🕒 3:45 PM - 4:00 PM, Mar 28

● **43b. An Item Similarity-Informed Bayesian Hierarchical Latent Class Model**

🕒 4:00 PM - 4:15 PM, Mar 28

● **43c. Bayesian Markov Renewal Mixed Models for Vocalization Syntax**

🕒 4:15 PM - 4:30 PM, Mar 28

● **43d. Systematic Assessment of Sex Disparities in Mortality in the Population Aged 5-24 Between 1990 and 2020**

🕒 4:30 PM - 4:45 PM, Mar 28

● **43e. Bayesian Approach for Estimation of Sparse Canonical Correlations**

🕒 4:45 PM - 5:00 PM, Mar 28

● **43f. Variable Selection Using Nonlocal Priors in High-dimensional Generalized Linear Models with Application to fMRI Data Analysis**

🕒 5:00 PM - 5:15 PM, Mar 28

44. Contributed Papers: Clinical Trials

🕒 3:45 PM - 5:30 PM, Mar 28

📍 Houston 5

Scientific Progr...

7 Subsessions

- **44a. A Bayesian Phase I/II Design for Selecting Subgroup-Specific Optimal Biologic Dose (OBD)**
⌚ 3:45 PM - 4:00 PM, Mar 28
- **44b. Likelihood Based Inferences for Hybrid Trials Incorporating Patient's Treatment Choice**
⌚ 4:00 PM - 4:15 PM, Mar 28
- **44c. A Combined Superiority and Non-Inferiority Procedure for Comparing Predictive Values of Two Diagnostic Tests**
⌚ 4:15 PM - 4:30 PM, Mar 28
- **44d. Prognostic Covariate Adjustment: A Novel Method to Obtain Robust Inference in Repeated Measures Analyses while Enrolling Fewer Subjects**
⌚ 4:30 PM - 4:45 PM, Mar 28
- **44e. A Novel Confidence Interval for the Ratio of Two Correlated Proportions**
⌚ 4:45 PM - 5:00 PM, Mar 28
- **44f. Two-stage Adaptive Designs of Single arm Clinical Trials Based on Median Event Time Test**
⌚ 5:00 PM - 5:15 PM, Mar 28
- **44g. Analysis of Two-stage Seamless Adaptive Design with Different Endpoints and Different Target Patient Populations**
⌚ 5:15 PM - 5:30 PM, Mar 28

45. Contributed Papers: Hypothesis Testing

⌚ 3:45 PM - 5:15 PM, Mar 28

📍 Houston 6

Scientific Progr...

Chair: Alexander Petersen, Brigham Young University

6 Subsessions

- **45a. Accurate Confidence Interval Estimation for Non-centrality Parameters and Effect Size Indices**
⌚ 3:45 PM - 4:00 PM, Mar 28
- **45b. Jackknife Empirical Likelihood Methods for Testing Distributional Symmetry**
⌚ 4:00 PM - 4:15 PM, Mar 28
- **45c. Hypothesis Tests for Neural Networks**
⌚ 4:15 PM - 4:30 PM, Mar 28
- **45d. Valid P-values in the Presence of Nuisance Parameters - An Extended Berger and Boos Methodology**
⌚ 4:30 PM - 4:45 PM, Mar 28
- **45e. Teaching Collaborators About Best Practices Regarding p-Values and Statistical Significance**
⌚ 4:45 PM - 5:00 PM, Mar 28
- **45f. Overlapping Clusters for Shape-Constrained Multiple Testing on Continuum**
⌚ 5:00 PM - 5:15 PM, Mar 28

46. Contributed Papers: Joint Models for Longitudinal and Survival Data

⌚ 3:45 PM - 5:30 PM, Mar 28

📍 Houston 7

Scientific Progr...

Chair: Ming-Hui Chen, University of Connecticut

7 Subsessions

● **46a. Dynamic Risk Prediction for Cervical Precancer Screening with Continuous and Binary Longitudinal Biomarkers**

🕒 3:45 PM - 4:00 PM, Mar 28

● **46b. Deep Learning for the Dynamic Prediction of Multivariate Longitudinal and Survival Data**

🕒 4:00 PM - 4:15 PM, Mar 28

● **46c. A Joint Longitudinal-Survival Model for Mobile Health Data**

🕒 4:15 PM - 4:30 PM, Mar 28

● **46d. Joint Modeling in Presence of Informative Censoring in Palliative Care Studies**

🕒 4:30 PM - 4:45 PM, Mar 28

● **46e. Partial-linear Single-index Joint Model for Multivariate Longitudinal Measurements and Time-to-event Outcome, with Application to De-identified COVID-19 Data**

🕒 4:45 PM - 5:00 PM, Mar 28

● **46f. Joint Modeling of a Time-to-Event and Partially Observed Biomarker Using Lévy Processes**

🕒 5:00 PM - 5:15 PM, Mar 28

● **46g. Variance as a Predictor of Health Outcomes: Using Subject-level Trajectories and Variability of Sex Hormones to Predict Body Fat Changes in Peri- and Post-menopausal Women**

🕒 5:15 PM - 5:30 PM, Mar 28

47. Contributed Papers: Meta-analysis

🕒 3:45 PM - 5:15 PM, Mar 28

📍 Liberty B

Scientific Progr...

Chair: Xinyue Qi, Incyte Corporation

6 Subsessions

● **47a. Advancing Timely and Reliable Evidence Synthesis in the Era of COVID-19: A Novel Method for Including Preprints in Systematic Reviews**

🕒 3:45 PM - 4:00 PM, Mar 28

● **47b. Collaborative Causal Inference with a Distributed Data-sharing Management**

🕒 4:00 PM - 4:15 PM, Mar 28

● **47c. Safe and Efficient Use of External Control Data under Model Misspecification for the Average Treatment Effect on the Treated with High-Dimensional Confounders**

🕒 4:15 PM - 4:30 PM, Mar 28

● **47d. A Weighted Method for Extending Inferences from a Collection of Randomized Clinical Trials**

🕒 4:30 PM - 4:45 PM, Mar 28

● **47e. Double Negative Cases Matter: A Re-evaluation of Sensitivities for Detecting SARS-CoV-2 Infection Using Saliva Versus Nasopharyngeal Swabs**

🕒 4:45 PM - 5:00 PM, Mar 28

● **47f. Building a Dose Toxo-equivalence Model from a Bayesian Meta-analysis of Published Clinical Trials**

🕒 5:00 PM - 5:15 PM, Mar 28

48. Contributed Papers: Statistical Genetics

🕒 3:45 PM - 5:15 PM, Mar 28

📍 Liberty A

Scientific Progr...

Chair: Tamar Sofer, Harvard Medical School/Brigham and Women's Hospital

5 Subsessions

● **48a. A Two-Stage Kernel Machine Regression Model for Integrative Analysis of Alpha Diversity In Microbiome Studies**

🕒 3:45 PM - 4:00 PM, Mar 28

● **48b. Airport: Interpretable Statistical Models for Analyzing Allelic Imbalance in Single-cell Datasets**

🕒 4:00 PM - 4:15 PM, Mar 28

● **48c. Detecting Isoform-level Allelic Imbalance**

🕒 4:15 PM - 4:30 PM, Mar 28

● **48d. Estimating cell-type-specific gene co-expression networks from bulk gene expression data with an application to Alzheimer's diseases**

🕒 4:30 PM - 4:45 PM, Mar 28

● **48e. Haplotype Disease Association Based on Recombination Disequilibrium**

🕒 4:45 PM - 5:00 PM, Mar 28

T4 | Snakes and Ladders: Strategies for Professional Success

🕒 3:45 PM - 5:30 PM, Mar 28

📍 Montgomery

Tutorial

Everyone wants to climb the ladder, but we all encounter obstacles. The tutorial provides a number of tips for presenting yourself and your work in ways that favor your interests. It also describes some useful habits and strategies to grow one's career. Not all comments are applicable to all people, but as Eisenhower said, "It isn't the plan—it's the planning."

👤 **Speaker**



David Banks

Professor
Duke University

5:30 PM

CENS Networking Mixer (In-Person event only)

🕒 5:30 PM - 6:30 PM, Mar 28

📍 Houston Foyer

Networking Event

Scientific Program

Virtual attendees can join the Zoom meeting to network with other attendees online.

6:30 PM

President's Reception (by Invitation Only)

🕒 6:30 PM - 7:30 PM, Mar 28

📍 Harris

Scientific Progr...

Tue, Mar 29, 2022

8:30 AM

49. Recent Developments in Joint Models of Longitudinal and Time-to-Event Data

🕒 8:30 AM - 10:10 AM, Mar 29

📍 Houston 1

Scientific Progr...

Organizer: Joseph Ibrahim, University of North Carolina at Chapel Hill | Chair: Nate Bean, University of North Carolina at Chapel Hill

👤 **Speaker**



Joseph Ibrahim

UNC

4 Subsessions

● **49a. Bayesian Design of Clinical Trials Using Joint Models for Recurrent and Terminating Events**

🕒 8:30 AM - 8:55 AM, Mar 29

● **49b. New Bayesian C-indices for Assessing Importance of Longitudinal Biomarkers in Fitting Competing Risks Survival Data in the Presence of Partially Masked Causes**

🕒 8:55 AM - 9:20 AM, Mar 29

● **49c. A Joint Model for Multiple Longitudinal Outcomes, Recurrent and Terminal Events using CF Patient Registry Data**

🕒 9:20 AM - 9:45 AM, Mar 29

📍 Houston 1

● **49d. Discussant**

🕒 9:45 AM - 10:10 AM, Mar 29

📍 Houston 1

50. New Developments in Spatially Resolved Cell Imaging Data

🕒 8:30 AM - 10:10 AM, Mar 29

📍 Houston 2

Scientific Progr...

Organizer: Debashis Ghosh, Colorado School of Public Health | Chair: Thao Vu, University of Colorado Anschutz Medical Campus

4 Subsessions

● **50a. Investigating the Tumor Microenvironment in Cancer Using Nonnegative Matrix Factorization and Spatial Analysis**

🕒 8:30 AM - 8:55 AM, Mar 29

📍 Houston 2

● **50b. Metrics of Spatial Cellular Heterogeneity of Protein Expression in Tumor Microenvironment**

🕒 8:55 AM - 9:20 AM, Mar 29

📍 Houston 2

● **50c. SPF: A Spatial and Functional Data Analytic Approach to cell Imaging Data**

🕒 9:20 AM - 9:45 AM, Mar 29

📍 Houston 2

● **50d. Cell Normalization and Phenotyping for Multiplexed Single-Cell Imaging**

🕒 9:45 AM - 10:10 AM, Mar 29

📍 Houston 2

51. Bayesian Methods for Complex High-Dimensional Imaging Data

🕒 8:30 AM - 10:10 AM, Mar 29

📍 Houston 3

Scientific Progr...

Organizer: Suprateek Kundu, The University of Texas MD Anderson Cancer Research Center | Chair: Xin Ma, Emory University

4 Subsessions

● **51a. Random Phase-amplitude Gaussian Processes for Single-trial Analysis of Neural Signals**

🕒 8:30 AM - 8:55 AM, Mar 29

📍 Houston 3

● **51b. Non-parametric Bayesian Modeling for Population of Vector Autoregressions**

🕒 8:55 AM - 9:20 AM, Mar 29

📍 Houston 3

● **51c. Quantile Functional Regression Modeling Distributional Data in Imaging and Data Streams from Wearable Devices**

🕒 9:20 AM - 9:45 AM, Mar 29

📍 Houston 3

● **51d. Optimized Diffusion Imaging for Brain Structural Connectome Analysis**

🕒 9:45 AM - 10:10 AM, Mar 29

📍 Houston 3

52. Recent Advances on Modeling High-dimensional Data

🕒 8:30 AM - 10:10 AM, Mar 29

📍 Houston 4

Scientific Progr...

Organizer/Chair: Runze Li, The Pennsylvania State University

4 Subsessions

● **52a. Asymptotic Properties of High-Dimensional Random Forests**

🕒 8:30 AM - 8:55 AM, Mar 29

● **52b. Variable Selection for High-dimensional Nodal Attributes in Social Networks with Degree Heterogeneity**

🕒 8:55 AM - 9:20 AM, Mar 29

● **52c. RaSE: Random Subspace Ensemble Classification and Screening**

🕒 9:20 AM - 9:45 AM, Mar 29

● **52d. High-dimensional Mediation Inference Using Logic of Boolean Matrices**

🕒 9:45 AM - 10:10 AM, Mar 29

53. The Art of Semiparametrics in the Pursuit of Knowledge Transfer for Investigating Population Heterogeneity

🕒 8:30 AM - 10:10 AM, Mar 29

📍 Houston 5

Scientific Progr...

Organizer: Jiwei Zhao, University of Wisconsin-Madison | Chair: Qinglong Tian, University of Wisconsin-Madison

4 Subsessions

● **53a. Assumption-lean Inference for Effect Modification Parameters**

🕒 8:30 AM - 8:55 AM, Mar 29

● **53b. Optimal Estimation of Average Treatment Effect on the Treated Under Endogeneous Treatment Assignment**

🕒 8:55 AM - 9:20 AM, Mar 29

● **53c. Heterogeneous Causal Effects Estimation via Semiparametric Bayesian Models**

🕒 9:20 AM - 9:45 AM, Mar 29

● **53d. Flexible Inference of Optimal Individualized Treatment Strategy in Covariate Adjusted Randomization with Multiple Covariates**

🕒 9:45 AM - 10:10 AM, Mar 29

54. Innovative Methods to Assess Mixtures of Chemical Toxicants on Health Outcomes

🕒 8:30 AM - 10:10 AM, Mar 29

📍 Houston 6

Scientific Progr...

Organizer/Chair: Rajeshwari Sundaram, National Institute of Child Health and Human Development

4 Subsessions

● **54a. A Latent Functional Approach for Modeling the Effects of Multi-dimensional Biomarker Exposures on Disease Risk Prediction**

🕒 8:30 AM - 8:55 AM, Mar 29

● **54b. Discrete Frailty Modeling with Selection of Main and Interaction Effects of Correlated Covariates: Application to Assessing Mixtures of Chemical Toxicants and Time-to-pregnancy**

🕒 8:55 AM - 9:20 AM, Mar 29

● **54c. Quantifying Latent Exposure Burden to Chemical Mixtures Using Item Response Theory**

🕒 9:20 AM - 9:45 AM, Mar 29

● **54d. Assessing the Effects of Multiple Exposures Subject to Limit of Detection**

🕒 9:45 AM - 10:10 AM, Mar 29

55. Contributed Papers: Cancer Applications

🕒 8:30 AM - 10:00 AM, Mar 29

📍 Houston 7

Scientific Progr...

Chair: Yimei Li, University of Pennsylvania

6 Subsessions

● **55a. Assessment of Bayesian Models for Zero-inflated and Over-dispersed Multiplex Immunofluorescence Data**

🕒 8:30 AM - 8:45 AM, Mar 29

● **55b. Estimating Chemical Mixture Interactions in Risk Assessment: A Shrinkage Prior Approach**

🕒 8:45 AM - 9:00 AM, Mar 29

● **55c. Cancer in World Trade Center Rescue/Recovery Workers: What We Know Twenty Years Later, and Where Do We Go From Here**

🕒 9:00 AM - 9:15 AM, Mar 29

● **55d. Incorporating Lower Grade Toxicity in Time-to-Event Dose Escalation Designs**

🕒 9:15 AM - 9:30 AM, Mar 29

● **55e. Application of Joint Modeling of Longitudinal Patient Reported Outcomes and Survival Times Based on Lung Cancer Patient Electronic Health Records**

🕒 9:30 AM - 9:45 AM, Mar 29

● **55f. Functional Integrative Bayesian Analysis of High-dimensional Multiplatform Genomic Data**

🕒 9:45 AM - 10:00 AM, Mar 29

56. Contributed Papers: Functional Data Analysis

🕒 8:30 AM - 10:00 AM, Mar 29

📍 Galveston A&B

Scientific Progr...

Chair: Jaroslaw Harezlak, Indiana University

3 Subsessions

● **56a. A Sparse Feature Learning Algorithm for Longitudinal High-throughput Sequencing Data via Continuous Relaxation**

🕒 8:30 AM - 8:45 AM, Mar 29

● **56b. Estimation of Sparse Functional Quantile Regression with Measurement Error: A SIMEX Approach**

🕒 8:45 AM - 9:00 AM, Mar 29

● **56c. Extending IPW and AIPW Methods to Handle Missing Functional Data**

🕒 9:00 AM - 9:15 AM, Mar 29

57. Contributed Papers: Meta-analysis

🕒 8:30 AM - 10:00 AM, Mar 29

📍 Fort Bend A

Scientific Program

Student Award Winner

Chair: Andrea B. Troxel, NYU Langone Health

6 Subsessions

● **57a. Quantifying Replicability of Multiple Studies in a Meta-Analysis**

🕒 8:30 AM - 8:45 AM, Mar 29

● **57b. Evidence Synthesis with Reconstructed Survival Data**

🕒 8:45 AM - 9:00 AM, Mar 29

● **57c. A Bayesian Meta-Analysis Approach for Estimation of Penetrance and its Application to ATM Gene for Breast Cancer Risk**

🕒 9:00 AM - 9:15 AM, Mar 29

● **57d. Bayesian Estimation and Testing in Random-Effects Meta-Analysis of Rare Binary Events allowing for Flexible Group Variability**

🕒 9:15 AM - 9:30 AM, Mar 29

● **57e. Bayesian Sparse Modeling to Identify High-risk Subgroups in Meta-analysis of Safety Data**

🕒 9:30 AM - 9:45 AM, Mar 29

● **57f. Bayesian Flexible Hierarchical Skew Heavy-tailed Multivariate Meta Regression Models for Individual Patient Data with Applications**

🕒 9:45 AM - 10:00 AM, Mar 29

58. Contributed Papers: Spatial/Temporal Modeling

🕒 8:30 AM - 10:00 AM, Mar 29

📍 Fort Bend B

Scientific Progr...

Chair: Anarina Murillo, New York University

5 Subsessions

● **58a. Investigating the Relationship Between Redlining and Current Asthma Prevalence in New York City**

🕒 8:30 AM - 8:45 AM, Mar 29

● **58b. Alternative Prior Specification of the Conditional Autoregressive Model**

🕒 8:45 AM - 9:00 AM, Mar 29

● **58c. COVID Vaccination Hesitancy in Louisiana: A Geospatial Analysis**

🕒 9:00 AM - 9:15 AM, Mar 29

● **58d. Covariate-driven Non-stationary Leroux CAR Models**

🕒 9:15 AM - 9:30 AM, Mar 29

● **58e. Gaussian Process Filtering of Low-cost Air-pollution Sensor Networks**

🕒 9:30 AM - 9:45 AM, Mar 29

59. Contributed Papers: Variable Subset Selection/Model Selection

🕒 8:30 AM - 10:00 AM, Mar 29

📍 Liberty A

Scientific Progr...

Chair: Jean V. Morrison, University of Michigan

6 Subsessions

● **59a. Selecting Mixed Effects Models using Penalized Profile REML with Application to the Cohort Study of HIV**

🕒 8:30 AM - 8:45 AM, Mar 29

● **59b. Clustering with Variable Selection for Longitudinal Data**

🕒 8:45 AM - 9:00 AM, Mar 29

● **59c. Prioritize Variables with Joint Variable Importance Plots in Observational Study Design**

🕒 9:00 AM - 9:15 AM, Mar 29

● **59d. Outcome Adaptive Variable Selection Procedure for the Covariate Balancing Propensity Score**

🕒 9:15 AM - 9:30 AM, Mar 29

● **59e. A Hybrid Model-based Recursive Partitioning Method, GEE-tree, for Subgroup Identification in Longitudinal Studies**

🕒 9:30 AM - 9:45 AM, Mar 29

● **59f. Data Integration with Oracle Use of External Information from Heterogeneous Populations**

🕒 9:45 AM - 10:00 AM, Mar 29

60. Contributed Papers: Survival Analysis

🕒 8:30 AM - 10:00 AM, Mar 29

📍 Liberty B

Scientific Progr...

Chair: Harrison Reeder, Harvard TH Chan School of Public Health, Department of Biostatistics

5 Subsessions

● **60a. Empirical Power Comparison of Statistical Tests in Cancer Immunotherapy Trials**

🕒 8:30 AM - 8:45 AM, Mar 29

● **60b. Borrowing External Data to Establish A Hybrid Control Arm in Randomized Clinical Trials**

🕒 8:45 AM - 9:00 AM, Mar 29

● **60c. New Bayesian C-indices for Assessing Importance of Longitudinal Biomarkers in Fitting Competing Risks Survival Data in the Presence of Partially Masked Causes**

🕒 9:00 AM - 9:15 AM, Mar 29

● **60d. A Joint Modeling Approach to Time-to-Disability and Longitudinal MRI biomarkers in Multiple Sclerosis**

🕒 9:15 AM - 9:30 AM, Mar 29

● **60e. Quantile-varying Covariate Effects under the Accelerated Failure Time Model**

🕒 9:30 AM - 9:45 AM, Mar 29

10:30 AM

Presidential Invited Address

🕒 10:30 AM - 12:15 PM, Mar 29

📍 Houston 4

Presidential Invited Address

Scientific Program

🗣️ Speakers



Joel Greenhouse

Carnegie Mellon University



Simone Gray

Mathematical Statistician
Centers for Disease and Control Prevention

12:15 PM

CENS Tuesday Networking Lunch - Virtual Attendees Only

🕒 12:15 PM - 1:30 PM, Mar 29

📍 Virtual Only

Networking Event

Scientific Program

12:30 PM

Regional Committee (RECOM) Luncheon Meeting (by Invitation Only)

🕒 12:30 PM - 4:30 PM, Mar 29

📍 Harris

Committee Meeting

Scientific Program

1:45 PM

61. Statistical Challenges and Advances in Integrative Analysis of Multi-omics Data

🕒 1:45 PM - 3:25 PM, Mar 29

📍 Houston 1

Scientific Progr...

Organizer: Xuelin Huang, University of Texas MD Anderson Cancer Center | Chair: Sunyi Chi, University of Texas MD Anderson Cancer Center

4 Subsessions

● 61a. Spatial IMIX: A Multivariate Mixture Model Approach to Integrating Spatially Correlated Multi-omics Data

🕒 1:45 PM - 2:10 PM, Mar 29

📍 Houston 1

● 61b. Bayesian Methods for Modeling Spatial Transcriptomics Data

🕒 2:10 PM - 2:35 PM, Mar 29

📍 Houston 1

● 61c. Integrative Analysis of Multi-context Multi-omics Data with GWAS Summary Statistics

🕒 2:35 PM - 3:00 PM, Mar 29

📍 Houston 1

● 61d. Spatially Informed Cell Type Deconvolution for Spatial Transcriptomics

🕒 3:00 PM - 3:25 PM, Mar 29

📍 Houston 1

62. Bayesian Innovations in Cancer Drug Development

🕒 1:45 PM - 3:25 PM, Mar 29

📍 Houston 2

Scientific Progr...

Organizer/Chair: Brian Hobbs, The University of Texas

4 Subsessions

● 62a. Predicting Outcomes of Phase III Oncology Trials with Bayesian Mediation Modeling of Tumor Response

🕒 1:45 PM - 2:10 PM, Mar 29

📍 Houston 2

● 62b. BaySize: Bayesian Sample Size Planning for Phase I Dose-Finding Trials

🕒 2:10 PM - 2:35 PM, Mar 29

📍 Houston 2

● 62c. Understanding Basket Trials from Bayesian and Frequentist Perspectives

🕒 2:35 PM - 3:00 PM, Mar 29

📍 Houston 2

● 62d. Optimal Sequential Predictive Probability Designs for Early Phase Expansion Cohorts

🕒 2:35 PM - 3:00 PM, Mar 29

📍 Houston 2

63. Regression Models for Ordinal Response Data

🕒 1:45 PM - 3:25 PM, Mar 29

📍 Houston 3

Scientific Progr...

Organizer/Chair: Jonathan Schildcrout, Vanderbilt University Medical Center

4 Subsessions

● **63a. A Family of Clinically Meaningful Estimands of Treatment Effect Readily Estimated with the Longitudinal, Ordinal Regression Model**

🕒 1:45 PM - 2:10 PM, Mar 29

📍 Houston 3

● **63b. Fitting Semiparametric Linear Transformation Models with Ordinal Regression Models**

🕒 2:10 PM - 2:35 PM, Mar 29

📍 Houston 3

● **63c. Generalized Case-Control Sampling for Generalized Linear Models**

🕒 2:35 PM - 3:00 PM, Mar 29

📍 Houston 3

● **63d. Comparative Performance of a Semi-parametric Generalized Linear Model in Selected Analysis Settings**

🕒 2:35 PM - 3:00 PM, Mar 29

📍 Houston 3

64. New Advances in Causal Inference for Time-to-Event Data

🕒 1:45 PM - 3:25 PM, Mar 29

📍 Houston 4

Scientific Progr...

Organizer: Bo Lu, The Ohio State University | Chair: Xinyi Xu, The Ohio State University

4 Subsessions

● **64a. Evaluating the Treatment Effect via the Duration of Response**

🕒 1:45 PM - 2:10 PM, Mar 29

● **64b. Assumption-lean Inference for Cox Regression Parameters**

🕒 2:10 PM - 2:35 PM, Mar 29

● **64c. Causal Graphs for Continuous Times to Events**

🕒 2:35 PM - 3:00 PM, Mar 29

● **64d. Causal Inference in Observational Survival Data: A Matched Design for Restricted Mean Survival Times Evaluation**

🕒 2:35 PM - 3:00 PM, Mar 29

65. Statistical Innovations for Polygenic Risk Scores

🕒 1:45 PM - 3:25 PM, Mar 29

📍 Houston 5

Scientific Progr...

Organizer/Chair: Ken Rice, University of Washington

4 Subsessions

● **65a. Penalized Regression Framework Modeling Local Ancestry Improves Polygenic Risk Scores in Admixed Populations**

🕒 1:45 PM - 2:10 PM, Mar 29

● **65b. Local Ancestry to Improve Polygenic Risk Predictions for Admixed Individuals**

🕒 2:10 PM - 2:35 PM, Mar 29

● **65c. The Impact of Fine-scale Population Stratification on Polygenic Risk Prediction**

🕒 2:35 PM - 3:00 PM, Mar 29

● **65d. Statistical Innovations for Polygenic Risk scores: Discussion**

🕒 2:35 PM - 3:00 PM, Mar 29

66. Data-Driven Discovery and Decision-Making

🕒 1:45 PM - 3:25 PM, Mar 29

📍 Houston 6

Scientific Progr...

Sponsor: IMS | Organizer/Chair: Xingyuan Fang, Pennsylvania State University

4 Subsessions

● 66a. Optimizing Precision and Power in COVID-19 Trials by Covariate Adjustment

🕒 1:45 PM - 2:10 PM, Mar 29

● 66b. The Highly Adaptive Lasso

🕒 2:10 PM - 2:35 PM, Mar 29

● 65c. Non-Dominated Sequential Experimental Designs

🕒 2:35 PM - 3:00 PM, Mar 29

● 65d. Knowledge Graph Embedding with Electronic Health Records Data

🕒 2:35 PM - 3:00 PM, Mar 29

67. Contributed Papers: Epidemiologic Methods

🕒 1:45 PM - 3:15 PM, Mar 29

📍 Houston 7

Scientific Progr...

Chair: Sarah C. Lottspeich, University of North Carolina at Chapel Hill

6 Subsessions

● 67a. A Multivariate Multiple Change Point Model to Describe Opioid Overdose Deaths Across the United States

🕒 1:45 PM - 2:00 PM, Mar 29

● 67b. Dynamical Spatio-Temporal Modeling for Emerging and Reemerging Epidemics

🕒 2:00 PM - 2:15 PM, Mar 29

● 67c. A Spatiotemporal Analysis of Environmental Markers and Food Consumption Surrogates in Relation to Asthma Deaths

🕒 2:15 PM - 2:30 PM, Mar 29

● 67d. Statistical Methods for Analyzing Spatially-referenced Paired Genetic Relatedness Data

🕒 2:30 PM - 2:45 PM, Mar 29

● 67e. Dynamic COVID Risk Assessment Accounting for Community Virus Exposure from a Spatial-temporal Transmission Model

🕒 2:45 PM - 3:00 PM, Mar 29

● 67f. Reliable Event Rates for Disease Mapping

🕒 3:00 PM - 3:15 PM, Mar 29

T5 | Spatial Disease Modeling and Visualization using INLA and R

🕒 1:45 PM - 3:30 PM, Mar 29

📍 Montgomery

Tutorial

Disease risk models are essential to inform public health and policy. These models can be used to quantify disease burden, understand geographic and temporal patterns, identify risk factors, and measure inequalities. In this tutorial, we will learn how to estimate disease risk and quantify risk factors using areal and geostatistical data. We will learn how to fit and interpret spatial models using the INLA and SPDE approaches (<http://www.r-inla.org/>) in different settings. We will also create interactive maps of disease risk, and introduce presentation options such as interactive maps and dashboards. We will work through two disease mapping examples using data of malaria in The Gambia and cancer in Pennsylvania, USA. We will provide clear descriptions of the R code for data analysis and visualization. The tutorial materials are drawn from the book "Geospatial Health Data: Modeling and Visualization with R-INLA and Shiny" by Paula Moraga (2019, Chapman & Hall/CRC).

68. Contributed Papers: Imaging

🕒 1:45 PM - 3:15 PM, Mar 29

📍 Liberty A

Scientific Program

Student Award Winner

Chair: Dayu Sun, Emory University

5 Subsessions

● **68a. Learning Based Principal Parcellation Analysis for Brain Connectomes**

🕒 1:45 PM - 2:00 PM, Mar 29

● **68b. Pixel-specific Agreement Analyses to Evaluate the Reliability and Reproducibility of Non-invasive Detection of Anemia in Very Low Birth Weight Infants**

🕒 2:00 PM - 2:15 PM, Mar 29

● **68c. Latent Subgroup Identification in Image-on-scalar Regression**

🕒 2:15 PM - 2:30 PM, Mar 29

● **68d. Learning Mean Homogeneity Structures in Image-on-scalar Regression**

🕒 2:30 PM - 2:45 PM, Mar 29

● **68e. CoCoA: A Conditional Correlation Model with Association Size**

🕒 2:45 PM - 3:00 PM, Mar 29

69. Contributed Papers: Diagnostic and Screening Tests

🕒 1:45 PM - 3:15 PM, Mar 29

📍 Liberty B

Scientific Progr...

Chair: Siddharth Roy, NCI/UMBC

5 Subsessions

● **69a. Capturing the Pool Dilution Effect in Group Testing Regression: A Bayesian Approach**

🕒 1:45 PM - 2:00 PM, Mar 29

● **69b. New Post-test Diagnostic Accuracy Measures of a Continuous Test Based on the Average Predictive Values**

🕒 2:00 PM - 2:15 PM, Mar 29

● **69c. Benefit-Risk Measures for Comparing Diagnostic Tests of Multistage Clinical Conditions**

🕒 2:15 PM - 2:30 PM, Mar 29

● **69d. A Classification for Complex Imbalanced Data in Disease Screening and Early Diagnosis**

🕒 2:30 PM - 2:45 PM, Mar 29

● **69e. Determining optimal Cut-points for Conditional ROC Curves under a Paired Case-Control Design**

🕒 2:45 PM - 3:00 PM, Mar 29

70. Contributed Papers: Bayesian Methods

🕒 1:45 PM - 3:30 PM, Mar 29

📍 Galveston A&B

Scientific Program

Student Award Winner

Chair: Bani Mallick, Texas A&M

6 Subsessions

● **70a. Precision Matrix Estimation under the Horseshoe-like Prior-Penalty Dual**

🕒 1:45 PM - 2:00 PM, Mar 29

● **70b. Precision Matrix Estimation under the Horseshoe-like Prior-Penalty Dual**

🕒 2:00 PM - 2:15 PM, Mar 29

● **70c. A Hierarchical Model for Analyzing Multi-Site Individual-Level Disease Surveillance Data from Multiple Systems**

🕒 2:15 PM - 2:30 PM, Mar 29

● **70d. Bayesian Mixed Multidimensional Scaling for Auditory Processing**

🕒 2:30 PM - 2:45 PM, Mar 29

● **70e. A New Class of Skewed Tensor Distributions**

🕒 2:45 PM - 3:00 PM, Mar 29

● **70f. Clustering Adolescent Female Physical Activity Levels with an Infinite Mixture Model on Random Effects**

🕒 3:00 PM - 3:15 PM, Mar 29

71. Contributed Papers: Survival Analysis

🕒 1:45 PM - 3:15 PM, Mar 29

📍 Fort Bend A

Scientific Program

Student Award Winner

Chair: Jiawei Xu, Gilead Sciences, Inc.

6 Subsessions

● **71a. A New Deep Learning Approach for Predicting Survival Processes in the Presence of Semi-Competing Risks**

🕒 1:45 PM - 2:00 PM, Mar 29

● **71b. Two-Sample Survival Probability Curves: A Graphical Approach for the Analysis of Time to Event Data in Clinical Trials**

🕒 2:00 PM - 2:15 PM, Mar 29

● **71c. The Reflected-shifted-truncated Generalized Exponential Distribution with Application to Negatively Skewed Survival Data**

🕒 2:15 PM - 2:30 PM, Mar 29

● **71d. Support Vector Machine for Dynamic Survival Prediction with Time-Dependent Covariates**

🕒 2:30 PM - 2:45 PM, Mar 29

● **71e. Models and Methods for Analyzing Clustered Recurrent Hospitalizations in the Presence of COVID-19 Effects**

🕒 2:45 PM - 3:00 PM, Mar 29

● **71f. Comparison of Three Mediation Methods Using Cox Models via Simulation Study**

🕒 3:00 PM - 3:15 PM, Mar 29

72. Contributed Papers: Next Generation Sequencing

🕒 1:45 PM - 3:15 PM, Mar 29

📍 Fort Bend B

Scientific Progr...

Chair: Anna Plantinga, Williams College

6 Subsessions

● **72a. A Novel Normalization Method for Metagenomics Data**

🕒 1:45 PM - 2:00 PM, Mar 29

● **72b. Leave-one-feature-out Method for Identifying Predictive Microbiome Feature**

🕒 2:00 PM - 2:15 PM, Mar 29

● **72c. Deep Ensemble Learning Over the Microbial Phylogenetic Tree (DeepEnPhy)**

🕒 2:15 PM - 2:30 PM, Mar 29

● **72d. Multi-omics Integrative Analysis for Incomplete Data Using Weighted p-value Adjustment Approaches**

🕒 2:30 PM - 2:45 PM, Mar 29

● **72e. Robust Aggregation of P-values with Unknown Dependency Structure for SNP-set Test**

🕒 2:45 PM - 3:00 PM, Mar 29

● 72f. A Neural Network-Based Method for Exhaustive Cell Label Assignment Using Single Cell RNA-seq Data

🕒 3:00 PM - 3:15 PM, Mar 29

3:45 PM

T6 | A Primer for Meta-analysis with Real-world Applications

🕒 3:45 PM - 5:30 PM, Mar 29

📍 Montgomery

Tutorial

This tutorial will cover the use of meta-analysis (MA) for combining the results of multiple studies such as clinical trials and will demonstrate how to do this using several real-world applications. MA is a statistical technique for combining the results from several similar studies often available in the literature. Some of these studies report inconclusive or even conflicting results. The goal of MA is to provide a unified conclusion or explain why such a conclusion cannot be reached.

The tutorial will use the meta suite in Stata 17 for demonstration, but no prior knowledge of Stata is required. Participants will receive a temporary Stata license in advance, and those who bring their own laptops will be able to interactively follow along provided they have Stata 17 installed and up to date. Interactive participation is not required. The notes will provide sufficient information to reproduce all analyses at the attendees' convenience.

🗣️ Speaker



Houssein Assaad

Statacorp

73. Recent Advances of High-dimensional and Robust Inference for Complex Data

🕒 3:45 PM - 5:25 PM, Mar 29

📍 Houston 1

Scientific Progr...

Sponsor: IMS | Organizer/Chair: Wenxin Zhou, University of California, San Diego

4 Subsessions

● 73a. Dynamic Treatment Effects: High-dimensional Inference Under Model Misspecification

🕒 3:45 PM - 4:10 PM, Mar 29

📍 Houston 1

● 73b. Debiased Inference on Heterogeneous Quantile Treatment Effects with Regression Rank-Scores

🕒 4:10 PM - 4:35 PM, Mar 29

📍 Houston 1

● 73c. Omitted Variable Bias of Lasso-based Inference Methods: A Finite Sample Analysis

🕒 4:35 PM - 5:00 PM, Mar 29

📍 Houston 1

● 73d. Conquer: Convolution-Smoothed Quantile Regression

🕒 5:00 PM - 5:25 PM, Mar 29

📍 Houston 1

74. Trailblazing SMART Design and Statistical Learning for Precision Health

🕒 3:45 PM - 5:25 PM, Mar 29

📍 Houston 2

Scientific Progr...

Organizer/Chair: Kelley Kidwell, University of Michigan

4 Subsessions

● **74a. Using Statistical Learning to Promote Evidence-based Precision Health Care**

🕒 3:45 PM - 4:10 PM, Mar 29

📍 Houston 2

● **74b. SMART Design with Re-randomization Based on a Tailoring Function**

🕒 4:10 PM - 4:35 PM, Mar 29

📍 Houston 2

● **74c. Interim Monitoring in Sequential Multiple Assignment Randomized Trials**

🕒 4:35 PM - 5:00 PM, Mar 29

📍 Houston 2

● **74d. Discussant**

🕒 5:00 PM - 5:25 PM, Mar 29

📍 Houston 2

75. Distributional Data Analysis: Methods and Applications in Wearables and Neuroimaging

🕒 3:45 PM - 5:25 PM, Mar 29

📍 Houston 3

Scientific Progr...

Organizer: Vadim Zipunnikov, Johns Hopkins University | Chair: Ahbirup Datta, Johns Hopkins University

4 Subsessions

● **75a. Distributional Regression with Application on Functional Connectivity**

🕒 3:45 PM - 4:10 PM, Mar 29

📍 Houston 3

● **75b. Scalar on Time-by-distribution Regression and Its Application for Modelling Associations Between Daily-living Physical Activity and Cognitive Functions in Alzheimer's Disease**

🕒 4:10 PM - 4:35 PM, Mar 29

📍 Houston 3

● **75c. Fréchet Regression and Wasserstein Covariance for Random Density Data**

🕒 4:35 PM - 5:00 PM, Mar 29

📍 Houston 3

● **75d. Distributional Regression Models**

🕒 5:00 PM - 5:25 PM, Mar 29

📍 Houston 3

76. Modern Methods for Estimation and Inference

🕒 3:45 PM - 5:25 PM, Mar 29

📍 Houston 4

Scientific Progr...

Sponsor: IMS | Organizer/Chair: Yiyuan She, Florida State University

4 Subsessions

● **76a. L-2 Regularized Maximum Likelihood for Beta-model Estimation in Large and Sparse Networks**

🕒 3:45 PM - 4:10 PM, Mar 29

● **76b. Statistical Inference of Robust Regression with Contaminated Errors**

🕒 4:10 PM - 4:35 PM, Mar 29

● **76c. Envelope-based Partial Partial Least Squares with Application to Cytokine-based Biomarker Analysis for COVID-19**

🕒 4:35 PM - 5:00 PM, Mar 29

● **76d. Slow Kill for Big Data Learning**

🕒 5:00 PM - 5:25 PM, Mar 29

77. Precision Medicine: New Methods and Innovative Applications

🕒 3:45 PM - 5:25 PM, Mar 29

📍 Houston 5

Scientific Progr...

Organizer/Chair: Yichuan Zhao, Georgia State University

4 Subsessions

- **77a. Multi-Scale Analysis of Mucosal Microbiome and Immune Profiling in Inflammatory Bowel Disease**
⌚ 3:45 PM - 4:10 PM, Mar 29
- **77b. Machine Learning Approaches for Optimizing Treatment Strategies for Mental Disorders**
⌚ 4:10 PM - 4:35 PM, Mar 29
- **77c. Constructing Stabilized Dynamic Surveillance Rules for Optimal Monitoring Schedule**
⌚ 4:35 PM - 5:00 PM, Mar 29
- **77d. Knowledge-guided Bayesian Factor Analysis for Integrative Analysis of Multi-Omics Data**
⌚ 5:00 PM - 5:25 PM, Mar 29

78. Analysis of Complex Survival Data

⌚ 3:45 PM - 5:25 PM, Mar 29

📍 Houston 6

Scientific Progr...

Sponsor: IMS | Organizer/Chair: Lan Wang, University of Miami

4 Subsessions

- **78a. Statistical Inference for Cox Proportional Hazards Models with a Diverging Number of Covariates**
⌚ 3:45 PM - 4:10 PM, Mar 29
- **78b. A New Framework for High Dimensional Statistical Inference: Quantifying Joint Impacts of Molecular Biomarkers on Cancer Outcomes**
⌚ 4:10 PM - 4:35 PM, Mar 29
- **78c. On Estimating Optimal Regime for Treatment Initiation Time Based on Restricted Mean Residual Lifetime**
⌚ 4:35 PM - 5:00 PM, Mar 29
- **78d. Recurrent Events Modeling Based on a Reflected Brownian Motion with Application to Hypoglycemia**
⌚ 5:00 PM - 5:25 PM, Mar 29

79. Contributed Papers: Clinical Trials

⌚ 3:45 PM - 5:15 PM, Mar 29

📍 Houston 7

Scientific Progr...

Chair: Andrew J. Spieker, Vanderbilt University Medical Center

6 Subsessions

- **79a. Case Weighted Adaptive Power Priors for Hybrid Analyses with Time-to-Event Data**
⌚ 3:45 PM - 4:00 PM, Mar 29
- **79b. Optimal Priors for the Power Parameter of the Normalized Power Prior**
⌚ 4:00 PM - 4:15 PM, Mar 29
- **79c. A Bayesian Design for Basket Trial with Survival Endpoint**
⌚ 4:15 PM - 4:30 PM, Mar 29
- **79d. Multi-Regional Clinical Trials for Time-to-Event Endpoints with Application to Cardiovascular Outcomes Studies**
⌚ 4:30 PM - 4:45 PM, Mar 29

● **79e. Using Subject Level Covariate Information in Bayesian Mixture Models for Basket Trials**

🕒 4:45 PM - 5:00 PM, Mar 29

● **79f. A Seamless Bayesian Phase I-II Design for Dose Selection in Relapsing Remitting-Multiple Sclerosis (RR-MS)**

🕒 5:00 PM - 5:15 PM, Mar 29

80. Contributed Papers: Causal Inference

🕒 3:45 PM - 5:15 PM, Mar 29

📍 Liberty A

Scientific Progr...

Chair: Yinchu Zhu, Brandeis University

6 Subsessions

● **80a. Mediation Analysis with Multiple Sources of Information**

🕒 3:45 PM - 4:00 PM, Mar 29

● **80b. A More Flexible Bayesian Non-parametric Approach to Causal Mediation**

🕒 4:00 PM - 4:15 PM, Mar 29

● **80c. Mediation Analysis for Zero-inflated Mediators with Count Data**

🕒 4:15 PM - 4:30 PM, Mar 29

● **80d. A Two-Stage Least Squares-Based Sensitivity Analysis Approach for Assessing the Role of Engagement with Text Message-Delivered Interventions**

🕒 4:30 PM - 4:45 PM, Mar 29

● **80e. Combining Covariate Adjustment with Information Monitoring and Group Sequential Designs to Improve Randomized Trial Efficiency**

🕒 4:45 PM - 5:00 PM, Mar 29

● **80f. A Seamless Bayesian Phase I-II Design for Dose Selection in Relapsing Remitting-Multiple Sclerosis (RR-MS)**

🕒 5:00 PM - 5:15 PM, Mar 29

81. Contributed Papers: Genomics

🕒 3:45 PM - 5:30 PM, Mar 29

📍 Liberty B

Scientific Progr...

Chair: Qian Li, St. Jude Children's Research Hospital

5 Subsessions

● **81a. Assisted Clustering of Gene Expression Data Using Regulator Data from Different but Overlapping Samples**

🕒 3:45 PM - 4:00 PM, Mar 29

● **81b. Robust and Accurate Cell Type Fraction Estimation of Bulk Transcriptomics Data via Ensemble Deconvolution**

🕒 4:00 PM - 4:15 PM, Mar 29

● **81d. Adjusting for Covariates in the Visualization of High-dimensional Data**

🕒 4:30 PM - 4:45 PM, Mar 29

● **81e. Association Study Between Gene Expression and Multiple Phenotypes in Omics Applications of Complex Diseases**

🕒 4:45 PM - 5:00 PM, Mar 29

● **81f. Probabilistic Multilevel Canonical Correlation Analysis (CCA) for Integrative Analysis of Multi-Omics Data**

🕒 5:00 PM - 5:15 PM, Mar 29

82. Contributed Papers: High Dimensional Data

🕒 3:45 PM - 5:30 PM, Mar 29

📍 Galveston A&B

Scientific Progr...

7 Subsessions

● **82a. A Univariate Approach to High-Dimensional Linear Mixed Modeling via the EM algorithm**

🕒 3:45 PM - 4:00 PM, Mar 29

● **82b. A Novel Approach to Mediation Analysis of the Microbiome Using the LDM**

🕒 4:00 PM - 4:15 PM, Mar 29

● **82c. Automatic Functional Form Selection for Continuous Covariates**

🕒 4:15 PM - 4:30 PM, Mar 29

● **82d. Deep IDA: A Deep Learning Method for Integrative Discriminant Analysis of Multi-View Data with Feature Ranking with Applications to COVID-19 Disease Severity**

🕒 4:30 PM - 4:45 PM, Mar 29

● **82e. Modeling and Estimating a Threshold Effect: An Application to Improving Cardiac Surgery Practices**

🕒 4:45 PM - 5:00 PM, Mar 29

● **82f. Quantifying Uncertainty of Subsampling-based Ensemble Methods under a U-statistic Framework**

🕒 5:00 PM - 5:15 PM, Mar 29

● **82g. Learning Multimodal Data using Deep Neural Networks in Classification**

🕒 5:15 PM - 5:30 PM, Mar 29

83. Contributed Papers: Missing Data

🕒 3:45 PM - 5:15 PM, Mar 29

📍 Fort Bend A

Scientific Progr...

Chair: Benjamin B. Risk, Emory University

6 Subsessions

● **83a. Data Fusion for Time-to-Event Outcomes**

🕒 3:45 PM - 4:00 PM, Mar 29

● **83b. Missing Data Imputation via State Space Model for Non-stationary Multivariate Time Series in mHealth**

🕒 4:00 PM - 4:15 PM, Mar 29

● **83c. Integrative Nearest Neighbor Classifier for Block-missing Multi-modality Data**

🕒 4:15 PM - 4:30 PM, Mar 29

● **Sparse Functional Boxplots for Multivariate Curves**

🕒 4:30 PM - 4:45 PM, Mar 29

● **83e. Analysis of Intensive Longitudinal Data in Crossover Designs with Ignorable and Nonignorable Dropout**

🕒 4:45 PM - 5:00 PM, Mar 29

● **83f. A Bayesian Causal Inference Approach in Observational Studies with Missingness in Covariates and Outcomes**

🕒 5:00 PM - 5:15 PM, Mar 29

84. Contributed Papers: Prediction/Prognostic Modeling

🕒 3:45 PM - 5:30 PM, Mar 29

📍 Fort Bend B

Scientific Progr...

Chair: TBA

7 Subsessions

● **84a. Novel Machine Learning Methods for Detecting Susceptibility Genetic Signatures and Early Prediction for COVID-19 Contraction, Severity and Related Cognitive Impairments**

🕒 3:45 PM - 4:00 PM, Mar 29

● **84b. Multi-source Federated Transfer Learning for Improved Prediction in Underrepresented Populations**

🕒 4:00 PM - 4:15 PM, Mar 29

● **84c. Deep Neural Network on Interval Censored Data: Application to the Prediction of Alzheimer's Disease using ADNI Genetic Data**

🕒 4:15 PM - 4:30 PM, Mar 29

● **84d. Dynamic Prediction of Alzheimer's Disease by Integrative Analysis of Multi-omics Data and Longitudinal Outcomes**

🕒 4:30 PM - 4:45 PM, Mar 29

● **84e. Tackling Dynamic Prediction of Death in Patients With Recurrent Cardiovascular Events**

🕒 4:45 PM - 5:00 PM, Mar 29

● **84f. Dynamic Prediction of Residual Life with Longitudinal Covariates Using LSTMs**

🕒 5:00 PM - 5:15 PM, Mar 29

● **84g. A Bayesian Learning Model to Predict the Risk for Cannabis Use Disorder**

🕒 5:15 PM - 5:30 PM, Mar 29

5:30 PM

Industry Partner Mixer & Business Meeting (in-person)

🕒 5:30 PM - 6:30 PM, Mar 29

📍 Houston Foyer

Scientific Progr...

Wed, Mar 30, 2022

7:30 AM

Program Committee Breakfast Meeting (by Invitation Only)

🕒 7:30 AM - 9:00 AM, Mar 30

📍 Harris

Committee Meeting

Scientific Program

8:30 AM

85. Statistical Methods for Causal Inference and Personalized Treatment in Big Observational Data

🕒 8:30 AM - 10:15 AM, Mar 30

📍 Houston 1

Scientific Progr...

Sponsor: IMS | Organizer/Chair: Qi Zheng, University of Louisville

4 Subsessions

● **85a. Estimating Optimal Infinite Horizon Dynamic Treatment Regimes via pT-Learning**

🕒 8:30 AM - 8:55 AM, Mar 30

📍 Houston 1

● **85b. Statistical Methods for Assessing Drug Interactions Using Observational Data**

🕒 8:55 AM - 9:20 AM, Mar 30

📍 Houston 1

● **85c. Group Testing in Large-scale Observational Data and Applications in COVID-19 Pandemic**

🕒 9:20 AM - 9:45 AM, Mar 30

📍 Houston 1

● **85d. Estimating Heterogeneous Treatment Effects with Right-censored Data via Causal Survival Forests**

🕒 9:45 AM - 10:10 AM, Mar 30

📍 Houston 1

86. Novel Data Science Approaches to Eliminate Health Disparities

🕒 8:30 AM - 10:15 AM, Mar 30

📍 Houston 2

Scientific Progr...

Organizer: Hilary Aroke, University of Rhode Island | Chair: Ashley Buchanan, University of Rhode Island

4 Subsessions

● 86a. Diet Quality and the Gut Microbiota in Women Living in Alabama

🕒 8:30 AM - 8:55 AM, Mar 30

📍 Houston 2

● 86b. Novel Application of a Multistate Model to Investigate Disparities in Access to Treatment for Opioid Use Disorder in Rhode Island

🕒 8:55 AM - 9:20 AM, Mar 30

📍 Houston 2

● 86c. New Approaches to Model Multi-level Social Networks for Evaluating the Impact of Demographics on Health Disparities of Epidemic Trajectories in the NYC Population

🕒 9:20 AM - 9:45 AM, Mar 30

📍 Houston 2

● 86d. Discussant

🕒 9:45 AM - 10:10 AM, Mar 30

📍 Houston 2

87. Modern Tree-integrative Statistical Methods for Biomedical and Public Health Studies

🕒 8:30 AM - 10:15 AM, Mar 30

📍 Houston 3

Scientific Progr...

Organizer: Zhenke Wu, Department of Biostatistics, University of Michigan, Ann Arbor | Chair: Mengbing Li, Department of Biostatistics, University of Michigan, Ann Arbor

4 Subsessions

● 87a. Identifying Brain Hierarchical Structures Associated with Alzheimer's Disease Using a Regularized Regression Method with Tree Predictors

🕒 8:30 AM - 8:55 AM, Mar 30

📍 Houston 3

● 87b. Visualizing Gene Trees to Investigate Gene and Genome Level Evolutionary Histories

🕒 8:55 AM - 9:20 AM, Mar 30

📍 Houston 3

● 87c. Inferring Phenotypic Trait Evolution on Large Trees with Many Incomplete Measurements

🕒 9:20 AM - 9:45 AM, Mar 30

📍 Houston 3

● 87d. It's All Relative: New Regression Paradigm for Microbiome Compositional Data

🕒 9:45 AM - 10:10 AM, Mar 30

📍 Houston 3

88. Recent Advances in Statistical Methods for Spatially-resolved Transcriptomics Data Analysis

🕒 8:30 AM - 10:15 AM, Mar 30

📍 Houston 4

Scientific Progr...

Organizer/Chair: Stephanie Hicks, Johns Hopkins Bloomberg School of Public Health

4 Subsessions

● **88a. Analyzing Spatial Gene Expression Architecture in Tissue Sections at Increased Resolution**

🕒 8:30 AM - 8:55 AM, Mar 30

● **88b. Spatially Aware Dimension Reduction for Spatial Transcriptomics**

🕒 8:55 AM - 9:20 AM, Mar 30

● **88c. Multi-scale Computational Analysis of Spatially Resolved Transcriptomic Imaging Data**

🕒 9:20 AM - 9:45 AM, Mar 30

● **88d. Scalable Identification of Spatially Variable Genes Within and Between Cell Populations in Spatially Resolved Transcriptomics Data**

🕒 9:45 AM - 10:10 AM, Mar 30

89. Statistical Methods for High Density Neuronal Recordings

🕒 8:30 AM - 10:15 AM, Mar 30

📍 Houston 5

Scientific Progr...

Organizer/Chair: Brian Caffo, Johns Hopkins; Hernando Ombao, KAUST

4 Subsessions

● **89a. Modeling Trial-specific Trends in Eye Tracking Data Using Functional Data Analysis**

🕒 8:30 AM - 8:55 AM, Mar 30

● **89b. Exploring Spectral Dependence in Multivariate Time Series**

🕒 8:55 AM - 9:20 AM, Mar 30

● **89c. Semi-parametric Independent Component Analysis in the Time-frequency Domain**

🕒 9:20 AM - 9:45 AM, Mar 30

● **89d. Comparing Populations of High-density EEG Spectra**

🕒 9:45 AM - 10:10 AM, Mar 30

90. Novel Methods for Spatial Environmental Exposures and Health

🕒 8:30 AM - 10:10 AM, Mar 30

📍 Houston 6

Scientific Progr...

Organizer/Chair: Jenna Krall, George Mason University

4 Subsessions

● **90a. Measurement Error in Built Environment Studies**

🕒 8:30 AM - 8:55 AM, Mar 30

● **90b. Spatial-Temporal Modeling for Public Health Surveillance through Wastewater**

🕒 8:55 AM - 9:20 AM, Mar 30

● **90c. How Close and How Much? Linking Health Outcomes to Spatial Distributions of Built Environment Features**

🕒 9:20 AM - 9:45 AM, Mar 30

● **90d. Health-relevant Calibration of Low-cost Air Pollution Monitoring Data**

🕒 9:45 AM - 10:10 AM, Mar 30

91. Contributed Papers: Clinical Trials

🕒 8:30 AM - 10:15 AM, Mar 30

📍 Houston 7

Scientific Program

Student Award Winner

Chair: Miki Horiguchi, Dana-Farber Cancer Institute

6 Subsessions

● **91a. Power Analysis for Cluster Randomized Trials with Multiple Continuous Co-primary Endpoints**

🕒 8:30 AM - 8:45 AM, Mar 30

● **91b. Methods for Surrogate Endpoint Evaluation with Heterogeneity in Surrogate Quality Across Treatment or Disease Categories**

🕒 8:45 AM - 9:00 AM, Mar 30

● **91c. Bayesian Design of Clinical Trials Using Joint Cure Rate Models for Longitudinal and Time-to-event Data**

🕒 9:00 AM - 9:15 AM, Mar 30

● **91d. A Review of Methods to Evaluate Safety of Response-guided Dose-titrated Drugs**

🕒 9:15 AM - 9:30 AM, Mar 30

● **91f. Learning Optimal Treatment Strategies for Hypotension During Surgery Using Deep Reinforcement Learning**

🕒 9:30 AM - 9:45 AM, Mar 30

● **91g. Prediction-Based Replacement Algorithms for Adaptive Allocation of Distal Outcomes**

🕒 10:00 AM - 10:15 AM, Mar 30

92. Contributed Papers: Longitudinal Data

🕒 8:30 AM - 10:00 AM, Mar 30

📍 Liberty A

Scientific Progr...

Chair: Lihui Zhao, Northwestern University

6 Subsessions

● **92a. Generalized Additive Mixed Models for Assessing the Relationship between Ambulatory Blood Pressure Profiles and Financial Responsibility in African-American Women**

🕒 8:30 AM - 8:45 AM, Mar 30

● **92b. Comparison of Three Group-based Trajectory Modeling Methods Using Simulation**

🕒 8:45 AM - 9:00 AM, Mar 30

● **92c. Efficient Design and Analysis of a Two-Phase Study with Longitudinal Binary Outcomes**

🕒 9:00 AM - 9:15 AM, Mar 30

● **92d. A 'Divide-and-Conquer' EM Algorithm for Large Non-Gaussian Longitudinal Data with Irregular Follow-Ups**

🕒 9:15 AM - 9:30 AM, Mar 30

● **92e. Three-Part Random Effect Models for Longitudinal Skewed Survey Response Data**

🕒 9:30 AM - 9:45 AM, Mar 30

● **92f. Neurocognitive Differences and Mortality Risk Estimation Among HIV and Frail Groups in Multicenter AIDS Cohort Study (MACS)**

🕒 9:45 AM - 10:00 AM, Mar 30

93. Contributed Papers: Multivariate Methods

🕒 8:30 AM - 9:45 AM, Mar 30

📍 Liberty B

Scientific Progr...

Chair: Zhihua Su, University of Florida

5 Subsessions

● **93a. A Kernel-based Multivariate Test of Independence for Cluster-correlated**

Data

🕒 8:30 AM - 8:45 AM, Mar 30

● 93b. Functional-Coefficient Models for Multivariate Time Series in Designed Experiments: With Applications to Brain Signals

🕒 8:45 AM - 9:00 AM, Mar 30

● 93c. Club Exco: Clustering brain extreme communities from multi-channel EEG data

🕒 9:00 AM - 9:15 AM, Mar 30

● 93d. A Bayesian Approach to Multiple Testing, Analysis, and Study Design for Response Variables of Mixed Types

🕒 9:15 AM - 9:30 AM, Mar 30

● 93e. Mixed Effects Spectral Vector Autoregressive Model: With Applications to Brain Connectivity

🕒 9:30 AM - 9:45 AM, Mar 30

94. Contributed Papers: Personalized Medicine

🕒 8:30 AM - 10:15 AM, Mar 30

📍 Montgomery

Scientific Program

Student Award Winner

Chair: Abdus S. Wahed, University of Pittsburgh

7 Subsessions

● 94a. Contrast Weighted Learning for Robust Optimal Treatment Rule Estimation

🕒 8:30 AM - 8:45 AM, Mar 30

● 94b. Learning Optimal Dynamic Treatment Regimes Subject to Stagewise Risk Controls

🕒 8:45 AM - 9:00 AM, Mar 30

● 94c. Individualized Treatment Rules for HER2-Positive Breast Cancer: A Reproducible and Generalizable Pipeline

🕒 9:00 AM - 9:15 AM, Mar 30

● 94d. Identifying Optimally Cost-effective Dynamic Treatment Regimes with a Q-learning Approach

🕒 9:15 AM - 9:30 AM, Mar 30

● 94e. Sensitivity Analysis for Non-ignorable Missing Data in Sequential Multiple Assignment Randomized Trials: A Pattern Mixture Model Approach

🕒 9:30 AM - 9:45 AM, Mar 30

● 94f. Mixed-Response State-Space Model for Analyzing Multi-Dimensional Digital Phenotypes

🕒 9:45 AM - 10:00 AM, Mar 30

● 94g. A Flexible Bayesian Framework for Individualized Inference via Adaptive Borrowing

🕒 10:00 AM - 10:15 AM, Mar 30

95. Contributed Papers: Time Series

🕒 8:30 AM - 10:15 AM, Mar 30

📍 Fort Bend A

Scientific Program

Student Award Winner

Chair: Xiaoxuan Cai, Columbia University

7 Subsessions

● 95a. Adaptive Clustering and Feature Selection for Categorical Time Series Using Interpretable Frequency-Domain Features

🕒 8:30 AM - 8:45 AM, Mar 30

● 95b. Smooth Online Parameter Estimation for Time Varying VAR Models with Application to Rat's LFP Data

🕒 8:45 AM - 9:00 AM, Mar 30

● **95c. Warped Dynamic Linear Models for Time Series of Counts**

🕒 9:00 AM - 9:15 AM, Mar 30

● **95d. Adaptive Bayesian Sum of Trees Model for Covariate Dependent Spectral Analysis**

🕒 9:15 AM - 9:30 AM, Mar 30

● **95e. Bayesian Non-parametric Decomposition of Multivariate Signals via Autoregressive Kernels**

🕒 9:30 AM - 9:45 AM, Mar 30

● **95f. Covariate-Guided Bayesian Mixture of Spline Experts for the Analysis of Multiple Time Series**

🕒 9:45 AM - 10:00 AM, Mar 30

● **95g. Analysis and Summarization Pipeline for High-frequency Predictors with Missing Data and Lower-frequency Binary Outcomes**

🕒 10:00 AM - 10:15 AM, Mar 30

96. Contributed Papers: Translational Research/Science

🕒 8:30 AM - 10:00 AM, Mar 30

📍 Galveston A&B

Scientific Progr...

Chair: James P. Long, University of Texas MD Anderson Cancer Center

5 Subsessions

● **96a. Pulmonary ^{129}Xe Apparent Diffusion Coefficient Estimates Using Voxel Level MRI Data: Comparison of Cystic Fibrosis Patients with Healthy Controls**

🕒 8:30 AM - 8:45 AM, Mar 30

● **96b. Trajectory Analysis of 24-h Ambulatory Blood Pressure Monitoring Data by Obstructive Sleep Apnea Status using SuperImposition by Translation and Rotation (SITAR) Model**

🕒 8:45 AM - 9:00 AM, Mar 30

● **96d. Voxel-wise Intermodal Coupling Using Local Covariance Decompositions**

🕒 9:15 AM - 9:30 AM, Mar 30

● **96e. A Novel Coordinate System for Multiple Sclerosis Lesion Evaluation on MRI**

🕒 9:30 AM - 9:45 AM, Mar 30

● **96f. BOSS: Beta-mixture Unsupervised Oligodendrocytes Segmentation System**

🕒 9:45 AM - 10:00 AM, Mar 30

10:30 AM

97. Recent Advances in Methods for Microbiome Data

🕒 10:30 AM - 12:10 PM, Mar 30

📍 Houston 1

Scientific Progr...

Organizer/Chair: Shulei Wang, University of Illinois at Urbana-Champaign

4 Subsessions

● **97a. Scalable Estimation of Microbial Co-occurrence Networks with Variational Autoencoders**

🕒 10:30 AM - 10:55 AM, Mar 30

📍 Houston 1

● **97b. Scale-Simulation for Non-Compositional Inference of Sequence Count Data**

🕒 10:55 AM - 11:20 AM, Mar 30

📍 Houston 1

● **97c. Joint Matrix Decomposition Regression**

🕒 11:20 AM - 11:45 AM, Mar 30

📍 Houston 1

● **97d. A Phylogeny-based Test of Mediation Effect in Microbiome**

🕒 11:45 AM - 12:10 PM, Mar 30

📍 Houston 1

98. Estimation and Testing of Network Causal Effects: Modern Challenges and Recent Developments

🕒 10:30 AM - 12:10 PM, Mar 30

📍 Houston 2

Scientific Progr...

Organizer/Chair: Hyunseung Kang, University of Wisconsin-Madison

4 Subsessions

● 98a. Optimal Randomization Strategies for Disentangling Peer-influence from Homophily

🕒 10:30 AM - 10:55 AM, Mar 30

📍 Houston 2

● 98b. Social Network Dependence, Unmeasured Confounding, and the Replication Crisis

🕒 10:55 AM - 11:20 AM, Mar 30

📍 Houston 2

● 98c. Optimal Allocation of Water and Sanitation Facilities To Prevent Communicable Diarrheal Diseases in Senegal Under Partial Interference

🕒 11:20 AM - 11:45 AM, Mar 30

📍 Houston 2

● 98d. Assessing Intervention Effects in a Randomized Trial within a Social Network

🕒 11:45 AM - 12:10 PM, Mar 30

📍 Houston 2

99. Three Decades of Bayesian Clinical Trial Designs: From Stopping Rules to Hierarchical Models for Precision Medicine

🕒 10:30 AM - 12:10 PM, Mar 30

📍 Houston 3

Scientific Progr...

Organizer/Chair: Ruitao Lin, The University of Texas MD Anderson Cancer Center

4 Subsessions

● 99a. Historical Borrowing in Clinical Trials

🕒 10:30 AM - 10:55 AM, Mar 30

📍 Houston 3

● 99b. Revisiting Adaptive Designs for Optimizing Immunotherapy Regimens

🕒 10:55 AM - 11:20 AM, Mar 30

📍 Houston 3

● 99c. Propensity-score-based Meta-analytic Predictive Prior for Incorporating Real-world and Historical Data

🕒 11:20 AM - 11:45 AM, Mar 30

📍 Houston 3

● 99d. The Evolution of Bayesian Clinical Trial Design: From Early Stopping Rules to Modern Precision Medicine

🕒 11:45 AM - 12:10 PM, Mar 30

📍 Houston 3

100. Recent Advances in Data Integration in Neuroimaging and Genomics

🕒 10:30 AM - 12:10 PM, Mar 30

📍 Houston 4

Scientific Progr...

Organizer: Jun Young Park, University of Toronto | Chair: Zhengwu Zhang, University of North Carolina

4 Subsessions

● **100a. Similarity-Based Multimodal Regression**

🕒 10:30 AM - 10:55 AM, Mar 30

● **100b. A Multivariate Method Removing Latent Batch Effects from Heterogeneous Brain Imaging Data**

🕒 10:55 AM - 11:20 AM, Mar 30

● **100c. Design and Analysis of High Throughput Cell Imaging Studies**

🕒 11:20 AM - 11:45 AM, Mar 30

● **100d. Harmonizing Structured Data Acquired with Heterogeneous Imaging Equipment**

🕒 11:45 AM - 12:10 PM, Mar 30

101. Recent Developments of Spatio-temporal Models for Environmental Applications

🕒 10:30 AM - 12:10 PM, Mar 30

📍 Houston 5

Scientific Progr...

Organizer/Chair: Mikyoung Jun, University of Houston

4 Subsessions

● **101a. A Nonstationary Soft Partitioned Gaussian Process Model via Random Spanning Trees**

🕒 10:30 AM - 10:55 AM, Mar 30

● **101b. Land-Use Filtering for Nonstationary Spatial Prediction of Collective Efficacy in an Urban Environment**

🕒 10:55 AM - 11:20 AM, Mar 30

● **101c. Does Air Quality Really Impact COVID-19 Clinical Severity: Coupling NASA Satellite Datasets with Geometric Deep Learning**

🕒 11:20 AM - 11:45 AM, Mar 30

● **101d. Crop Yield Prediction using Bayesian Spatially Varying Functional Model**

🕒 11:45 AM - 12:10 PM, Mar 30

102. New Topics in Analysis of Microbiome Data

🕒 10:30 AM - 12:10 PM, Mar 30

📍 Houston 6

Scientific Progr...

Organizer/Chair: Yijuan Hu, Emory University

4 Subsessions

● **102a. Sparse Estimation of Correlations among Microbiomes (SECOM)**

🕒 10:30 AM - 10:55 AM, Mar 30

● **102b. Bias Resistant Modeling of Modeling Microbiome Relative Abundance**

🕒 10:55 AM - 11:20 AM, Mar 30

● **102c. Kernel-based Approaches for Integrating Microbiome and Other-omics Data**

🕒 11:20 AM - 11:45 AM, Mar 30

● **102d. Multi-Scale Analysis of Mucosal Microbiome and Immune Profiling in Inflammatory Bowel Disease**

🕒 11:45 AM - 12:10 PM, Mar 30

103. Contributed Papers: Causal Inference

🕒 10:30 AM - 12:15 PM, Mar 30

📍 Houston 7

Scientific Progr...

Chair: Jingshen Wang, UC Berkeley

7 Subsessions

- **103a. A Novel Estimand to Adjust for Rescue Treatment in Randomized Clinical Trials**
⌚ 10:30 AM - 10:45 AM, Mar 30
- **103b. Causal Joint Modeling of Longitudinal and Survival Data Using the Parametric G-Formula**
⌚ 10:45 AM - 11:00 AM, Mar 30
- **103c. Estimation of the Survival-incorporated Median in Observational Studies: A Summary Measure for Clinical Outcomes in the Presence of Death**
⌚ 11:00 AM - 11:15 AM, Mar 30
- **103d. Adaptive Bayesian Sum of Trees Model for Covariate Dependent Spectral Analysis**
⌚ 11:15 AM - 11:30 AM, Mar 30
- **103e. Distributed Learning for Causal Inference**
⌚ 11:30 AM - 11:45 AM, Mar 30
- **103f. Doubly Robust Methods for Identifying Effect Modifiers and Estimating Optimal Treatment Based on Observational Data**
⌚ 11:45 AM - 12:00 PM, Mar 30
- **103g. Identifying HIV Sequences that Escape Antibody Neutralization Using Random Forests and Collaborative Targeted Learning**
⌚ 12:00 PM - 12:15 PM, Mar 30

104. Contributed Papers: Genomics

⌚ 10:30 AM - 11:30 PM, Mar 30

📍 Galveston A&B

Scientific Progr...

Chair: Hao Feng, Case Western Reserve University

4 Subsessions

- **104a. Transformations and Cell-type Deconvolution**
⌚ 10:30 AM - 10:45 AM, Mar 30
- **104. Microbial Co-Abundance Network with Community Detection**
⌚ 10:45 AM - 11:00 AM, Mar 30
- **104c. Stochastic Dynamics of a Cancer Model with Deleterious Passenger Mutations**
⌚ 11:00 AM - 11:15 AM, Mar 30
- **104d. Testing For Association Between Risk Factors and Mutational Signatures via Bayesian Dirichlet-Multinomial Hierarchical Model**
⌚ 11:15 AM - 11:30 AM, Mar 30

105. Contributed Papers: Statistical Genetics

⌚ 10:30 AM - 12:00 PM, Mar 30

📍 Liberty A

Scientific Program

Student Award Winner

Chair: Nam Nguyen, Rice University

6 Subsessions

- **105a. Gene-environment Interaction Testing Using Machine Learning Approaches and Robust Test Statistics: A Sex-specific Risk Score Component for Lung Function**
⌚ 10:30 AM - 10:45 AM, Mar 30
- **105b. Bayesian LASSO for Population Stratification Correction in Rare**

Haplotype Association Studies

🕒 10:45 AM - 11:00 AM, Mar 30

● 105c. Inference for Temporally Conserved Microbial Interactions Using Mixture Margin Copulas

🕒 11:00 AM - 11:15 AM, Mar 30

● 105d. A Fast Bayesian Screen to Identify Pleiotropic Loci and Describe Pleiotropic Profiles

🕒 11:15 AM - 11:30 AM, Mar 30

● 105e. MASH: Mediation Analysis of Survival Outcome and High-dimensional Omics Mediators with Application to the Framingham Heart Study

🕒 11:30 AM - 11:45 AM, Mar 30

● 105f. Statistical Analysis of Tumor Suppressor Gene Methylation Patterns in Various Breast Cancer Samples

🕒 11:45 AM - 12:00 PM, Mar 30

106. Contributed Papers: Survival Analysis

🕒 10:30 AM - 12:00 PM, Mar 30

📍 Liberty B

Scientific Progr...

Chair: Richard J. Chappell, University of Wisconsin

6 Subsessions

● 106a. An Augmented Likelihood Approach for the Discrete Proportional Hazards Model and a Complex Survey Design, with Regression Calibration

🕒 10:30 AM - 10:45 AM, Mar 30

● 106b. Regression Modeling of Restricted Mean Survival Time for Left-Truncated and Right-Censored Data

🕒 10:45 AM - 11:00 AM, Mar 30

● 106c. High-dimensional Variable Selection for Nonparametric Additive Transformation Models with Interval-censored Data

🕒 11:00 AM - 11:15 AM, Mar 30

● 106d. Empirical Likelihood Inference for the Bivariate Mean Residual Life Function

🕒 11:15 AM - 11:30 AM, Mar 30

● 106e. A Conditional Survival Distribution-based Method for Censored Data Imputation: Overcome the Hurdle in Machine Learning-based Survival Analysis

🕒 11:30 AM - 11:45 AM, Mar 30

● 106f. Kullback-Leibler-Based Discrete Relative Risk Models for Integration of Published Prediction Models with New Time-To-Event Dataset

🕒 11:45 AM - 12:00 PM, Mar 30

107. Contributed Papers: Variable Subset Selection/Model Selection

🕒 10:30 AM - 12:00 PM, Mar 30

📍 Montgomery

Scientific Program

Student Award Winner

Chair: TBA

5 Subsessions

● 107a. Joint Semiparametric Kernel Network Regression

🕒 10:30 AM - 10:45 AM, Mar 30

● 107b. A FDP-oriented FDR Control Approach by Solving Constrained Sorted L1 Optimization

🕒 10:45 AM - 11:00 AM, Mar 30

● 107c. A P-Value Free False Discovery Rate Controlling Approach for High Dimensional Variable Selection

🕒 11:00 AM - 11:15 AM, Mar 30

● 107e. Kullback-Leibler Divergence-based Transfer Learning with Application

to Polygenic Risk Score (PRS) Heterogeneity Adjustment

🕒 11:30 AM - 11:45 AM, Mar 30

● A general framework for identification of permissible variable subsets and development of structured variable selection methods

🕒 11:45 AM - 12:00 PM, Mar 30

108. Contributed Papers: Semi-parametric and non-parametric models

🕒 10:30 AM - 11:45 PM, Mar 30

📍 Fort Bend A

Scientific Progr...

Chair: Yushu Shi, University of Missouri Columbia

5 Subsessions

● 108a. Modeling Considerations for Semi-continuous Dose-response Relationships in Pharmacoepidemiologic Studies

🕒 10:30 AM - 10:45 AM, Mar 30

● 108b. Dynamic Single-index Scalar-on-function Models

🕒 10:45 AM - 11:00 AM, Mar 30

● 108c. A Robust Adaptive Two Sample Test in High Dimensions

🕒 11:00 AM - 11:15 AM, Mar 30

● 108d. Probabilistic Learning of Treatment Trees in Cancer

🕒 11:15 AM - 11:30 AM, Mar 30

● 108e. Double Sampling for Informatively Missing Data in Electronic Health Record-Based Studies

🕒 11:30 AM - 11:45 AM, Mar 30