# MONDAY, MARCH 28, 2022

## 1. Current Developments in Adaptive Designs

| | | |
|---|---|---|
| 8:30-8:55 | Structured Adaptive Sequential Design for Clinical Trials When There is Great Uncertainty About Effect Size | Ping Gao |
| 8:55-9:20 | Optimal Adaptive Promising Zone Designs | Cyrus R. Mehta |
| 9:20-9:45 | Conditional Power in Vaccine Trials with Seasonal Variations | Xinyu Tang |
| 9:45-10:10 | Discussant | Joshua Chen |

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

| | | |
|---|---|---|
| 8:30-8:55 | The COMPILE Consortium: Inception, Development, and Implementation of a Novel, Real-Time Meta-Analysis Framework | Andrea B. Troxel |
| 8:55-9:20 | Bayesian Modeling for Prospective Individual Patient Data Meta-analysis | Danni Wu |
| 9:20-9:45 | The COMPILE Consortium: Statistical Results as the Pandemic Unfolded | Mengling Liu |
| 9:45-10:10 | Developing a Precision Medicine Covid-19 Convalescent Plasma Treatment Benefit Index (CCP-TBI) | Hyung G. Park |

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

| | | |
|---|---|---|
| 8:30-8:55 | Effects of Obstructive Sleep Apnea on Glucose Profiles in Type 2 Diabetes | Irina Gaynanova |
| 8:55-9:20 | Influence of Head Impact Exposure on Sport-related Concussions: Functional Data Analytic Approach | Jaroslaw Harezlak |
| 9:20-9:45 | A Function-Based Approach to Model the Measurement Error in Wearable Devices | Sneha Jadhav |
| 9:45-10:10 | A Bayesian Treatment of Mis-measured Function-valued Covariates in Latent Variable Models | Roger Zoh |

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

| | | |
|---|---|---|
| 8:30-8:55 | Modeling Cortical Brain Network Activity Through Concurrent EEG-fNIRS | Marco A. Pinto |
| 8:55-9:20 | Bayesian Modeling and Model Diagnostics for Structured Functional Data: Nuances and Limitations | Donatello Telesca |
| 9:20-9:45 | Modelling Dynamic Connectivity Using Resting-state fMRI from the Adolescent Brain Cognitive Development Study | Meng Xu |
| 9:45-10:10 | Characterizing Complex, Multi-scale Neural Phenomena Using State-space Models | Uri Eden |

## 5. New Advances on Statistical Methods for Optimal Treatment Regimes

| | | |
|---|---|---|
| 8:30-8:55 | Efficient Learning of Optimal Individualized Treatment Rules | Yufeng Liu |
| 8:55-9:20 | Estimating Optimal Multi-channel Individualized Treatment Rules Under Budget Constraints | Annie Qu |
| 9:20-9:45 | New Developments In Dynamic Treatment Regimes for Multiple Outcomes | Michael R. Kosorok |
| 9:45-10:10 | New Approaches for Inference on Optimal Treatment Regimes | Lan Wang |

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

| | | |
|---|---|---|
| 8:30-8:55 | Fast and efficient Bayesian Functional Predictor for High-dimensional Survival Data | Tanya P. Garcia |
| 8:55-9:20 | Variable Selection in Varying Multi-index Coefficients Model for Synergistic Gene-environment Interactions | Yuehua Cui |
| 9:20-9:45 | Bayesian Variable Selection for Longitudinal Gene-environment Interaction Studies | Cen Wu |
| 9:45-10:10 | A Joint Nested Random Effects Model for Metagenomic Trajectories Associated with Future Disease Status in a Study with Matched Sets | Qian Li |

### 7. Contributed Papers: Biomarkers

| | | |
|---|---|---|
| 8:30-8:45 | Challenges in the Analysis of Biomarker Data and How to Deal With Them | Stephen W. Looney |
| 8:45-9 | Covariate Adjustment in Continuous Biomarker Evaluation | Ziyi Li |
| 9-9:15 | Robust Statistical Method to Identify Optimal Biomarker Combination | Wen Li |
| 9:15-9:30 | Weak Signal and Gene Network Signature Detection, and Lung Cancer Survival Prediction Using TCGA DNA Methylation Profiles | Fengwei Yang |
| 9:30-9:45 | Combining Multiple Biomarkers Linearly to Minimize the Euclidean Distance of the Closest Point on the ROC Surface to the Perfection Corner in Trichotomous Settings | Brian Mosier |
| 9:45-10 | Flexible Lehman Family ROC Curves | Soutik Ghosal |

### 8. Contributed Papers: Epidemiologic Methods

| | | |
|---|---|---|
| 8:30-8:45 | Bias Correction Models for EHR Data in the Presence of Non-random Sampling | Jiyu Kim |
| 8:45-9 | Nonparametric Estimation of the Potential Impact Fraction and the Population Attributable Fraction with Individual-Level and Aggregated Data | Colleen Chan |
| 9-9:15 | Measuring Incremental Risk of Multiple Substance Abuse on Major Depression, Serious Psychological Distress and Any Mental Illness Among US Adults | Shrabanti Mazumder |
| 9:15-9:30 | Casemix Adjustment Using Diagnosis Codes: Impact of Differential Coding Practices | Laura A. Hatfield |
| 9:30-9:45 | Addressing Bias in U.S. Hospital Rankings: Adjusting Standardized Infection Ratios to Account for Nonlinear Associations between Volume and Healthcare-Associated Infections | Laura H. Gunn |
| 9:45-10 | An Inferential Approach for Coefficient Omega in Survey Design | Junyu Nie |

### 9. Contributed Papers: Genomics

| | | |
|---|---|---|
| 8:30-8:45 | Bayesian Semi Parametric Regression Methods for Analysis of Dose Response Single Cell Data | Satabdi Saha |
| 8:45-9 | Leveraging Bayesian Networks to Provide Novel Insights from Microbiome Data | Kellen G. Cresswell |
| 9-9:15 | An Integrated Bayesian Framework for Multi-omics Prediction and Classification | Anupreet Porwal |
| 9:15-9:30 | Multi-Resolution Bayesian Hypothesis Testing for High Dimensional Data | Anirban Samaddar |
| 9:30-9:45 | Testing Microbiome Association Using Integrated Quantile Regression Models | Tianying Wang |

### 10. Contributed Papers: High Dimensional Data

| | | |
|---|---|---|
| 8:30-8:45 | Statistical Inference of Decision Rules under a Non-differentiable Surrogate Loss in a General Classification Framework | Muxuan Liang |
| 8:45-9 | Integrative Dimension Reduction for Functional Dose-Response Toxicity Data | Michael J. O'Connell |
| 9-9:15 | Ridge Penalization in High-Dimensional Testing with Applications to Imaging Genetics | Iris Ivy M. Gauran |
| 9:15-9:30 | Non-linear, Sparse Dimensionality Reduction via Path Lasso Penalized Autoencoders | Oskar Allerbo |
| 9:30-9:45 | PCAN: Principal Component Analysis for Networks | Jihui Lee |
| 9:45-10 | Clustering Compositional Microbiome Data Based on an Ising-Dirichlet Mixture Model | Yang Li* |
| 10-10:15 | A Nonparametric Test of Independence for Cluster-correlated Data | Hoseung Song |

### 11. Contributed Papers: Survival Analysis

| | | |
|---|---|---|
| 8:30-8:45 | Assessing Dynamic Covariate Effects with Survival Data | Ying Cui |
| 8:45-9 | Estimating the Generalized Odds Rate Cure Model with Background Mortality | Shujie Chen |
| 9-9:15 | Flexible Spline Model for Estimating Survival after TEVAR for Thoracic Aortic Aneurysm | Hang Nguyen |
| 9:15-9:30 | Bypassing the Proportional Hazards Assumption in Semiparametric Conditional Survival Modeling | Sarah C. Lotspeich |
| 9:30-9:45 | A Robust Solution to Covariate Censoring | Kyle F. Grosser |
| 9:45-10 | A Flexible-Hazards Cure Model | Can Xie |

### 12. Contributed Papers: Variable Subset Selection/Model Selection

| | | |
|---|---|---|
| 8:30-8:45 | Bayesian Knockoff Generators for Robust Inference under Complex Data Structure | Michael J. Martens |
| 8:45-9 | Bayesian Variable Selection for Time-to-event Data Using the Gaussian and Diffused-gamma Prior | Jiyeon Song |
| 9-9:15 | Bayesian Non-Homogeneous Hidden Markov Model with Variable Selection for Investigating Drivers of Seizure Risk Cycling | Emily Wang* |
| 9:15-9:30 | Feature Selection in High-dimensional Genomic Data Using a Bayesian Stereotype Model | Anna Eames Seffernick |
| 9:30-9:45 | Bayesian Continuous-Time Hidden Markov Models with Covariate Selection for Intensive Longitudinal Data with Measurement Error | Mingrui Liang |
| 9:45-10 | Extending the Spike-and-Slab Lasso for Generalized Linear Models to Accommodate Multinomial Outcomes | Justin Leach |

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

| | | |
|---|---|---|
| 10:30-10:55 | How Well Can We Learn Large Factor Models without Assuming Strong Factors? | Yinchu Zhu |
| 10:55-11:20 | Causal Inference in Radiomics | Debashis Ghosh |
| 11:20-11:45 | Optimal and Safe Estimation for High-Dimensional Semi-Supervised Learning | Yang Ning |
| 11:45-12:10 | Improved Doubly Robust Inference for Treatment Effect Heterogeneity Using Nonparametric and High-dimensional Models | Joseph L. Antonelli |

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

| | | |
|---|---|---|
| 10:30-10:55 | Case Study: Best Practices for Building an Effective Statistical Unit | Jesse Chittams |
| 10:55-11:20 | Developing a Business Model for your Collaborative Unit | Robert Podolsky |
| 11:20-11:45 | Identifying Partnerships to Build a Collaborative Program | Emily H. Griffith |
| 11:45-12:10 | Evolution of a Collaborative Statistics Leader | Cyra Christina Mehta |

### 15. Statistical Methods for Mixtures in Epidemiology

| | | |
|---|---|---|
| 10:30-10:55 | Principal Component Pursuit for Pattern Recognition from Incomplete Environmental Data | Lawrence Chillrud |
| 10:55-11:20 | Bayesian Graph Machine Regression with Applications to Large Multiple-exposure Health Data | Michele Peruzzi |
| 11:20-11:45 | Bayesian Subset Selection and Variable Importance for Interpretable Prediction and Classification | Daniel R. Kowal |
| 11:45-12:10 | Estimating Perinatal Critical Windows of Susceptibility to Environmental Mixtures via Structured Bayesian Regression Tree Pairs | Ander Wilson |

### 16. Advanced Analytical Methods for mHealth Data

| | | |
|---|---|---|
| 10:30-10:55 | Time-Dependent Associations Between Circadian Patterns of Measured Physical Activity and Mortality Modelled using Functional Cox Regression | Andrew Leroux |
| 10:55-11:20 | Safely Learning Optimal Intervention Strategies in High-risk Settings | Eric B. Laber |
| 11:20-11:45 | Bayesian Methods for Intensive Longitudinal Data Collected in MHealth Studies | Matthew D. Koslovsky |
| 11:45-12:10 | Functional Data Methods for Wearable Device Data | Jeff Goldsmith |

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

| | | |
|---|---|---|
| 10:30-10:55 | Dimension Reduction of Longitudinal Microbiome Data by Tensor Functional SVD | Pixu Shi |
| 10:55-11:20 | Differential Microbiome Volatility: Detection and Impact on Longitudinal Association Testing | Anna Plantinga |
| 11:20-11:45 | A Novel Approach to Mediation Analysis of the Microbiome using the LDM | Yijuan Hu |
| 11:45-12:10 | Bayesian Zero-constrained Regression Modeling with Structured Prior for Microbiome Feature Selection | Liangliang Zhang |

### 18. Advanced in High-Dimensional Data Analysis

| | | |
|---|---|---|
| 10:30-10:55 | Why and How to Use Orthogonal Tensor Decompositions in Statistics | Arnab Auddy |
| 10:55-11:20 | Fractal Gaussian Networks: A Sparse Random Graph Model Based on Gaussian Multiplicative Chaos | Krishnakumar Balasubramanian |
| 11:20-11:45 | Two-Sample Hypothesis Testing for Multiple-Network Data | Yinqiu He |
| 11:45-12:10 | Self-Supervised Metric Learning in Multi-View Data: A Downstream Task Perspective | Shulei Wang |

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

| | | |
|---|---|---|
| 10:30-10:55 | Bayesian Structure Learning in Multi-layered Networks | Veerabhadran Baladandayuthapani |
| 10:55-11:20 | A Bayesian Subset Specific Approach to Joint Selection of Multiple Graphical Models | George Michailidis |
| 11:20-11:45 | Scalable Bayesian Models for Inference of Networks and Covariate Effects | Marina Vannucci |
| 11:45-12:10 | Ordinal Causal Discovery | Yang Ni |

### 20. Contributed Papers: Causal Inference

| | | |
|---|---|---|
| 10:30-10:45 | High-dimensional and Nonparametric Bayesian Methodology for Treatment Effect Heterogeneity | Heejun Shin* |
| 10:45-11 | To Determine the Optimal Number of Controls in Matching Studies Dealing with the Presence of Unmeasured Biases | Brenda Vincent |
| 11-11:15 | Causal Inference in Transcriptome-Wide Association Studies with Invalid Instruments and GWAS Summary Data | Haoran Xue* |
| 11:15-11:30 | Causal Mediation Analysis: Selection with Asymptotically Valid Inference | Jeremiah P. Jones* |
| 11:30-11:45 | Solutions for Surrogacy Validation with Longitudinal Outcomes for a Gene Therapy | Emily Roberts |
| 11:45-12 | Causal Mediation Analysis with Mediator Values Below an Assay Limit | Ariel Chernofsky |

### 21. Contributed Papers: Environmental and Ecological Applications

| | | |
|---|---|---|
| 10:30-10:45 | A Joint Bayesian Source Apportionment Model for Personal Air Pollution Exposures | Jenna Krall |
| 10:45-11 | Heterogeneous Distributed Lag Models to Estimate Personalized Effects of Maternal Exposures to Air Pollution | Daniel Mork |
| 11-11:15 | Modeling Correlated Exposure Determinants using Bayesian Model Averaging | Caroline P. Groth |
| 11:15-11:30 | Partial Linear Single Index Distributed Lag Quantile Regression for Modeling Time-dependent Environmental Exposure Mixtures | Yuyan Wang |
| 11:30-11:45 | A Hierarchical Integrative Group Least Absolute Shrinkage and Selection Operator for Analyzing Environmental Mixtures | Jonathan Boss |
| 11:45-12 | Control Chart For Dynamic Process Monitoring With An Application To Air Pollution Surveillance | Xiulin Xie |

### 22. Contributed Papers: Imaging

| | | |
|---|---|---|
| 10:30-10:45 | Faster Estimation for Constrained Gamma Mixture Models Using Closed-form Estimators | Jiangmei Xiong |
| 10:45-11 | A Novel Bayesian Functional Spatial Partitioning Method with Application to Prostate Cancer Lesion Detection Using MRI | Maria Masotti* |
| 11-11:15 | Multi-task Learning with High-dimensional Noisy Images | Xin Ma |
| 11:15-11:30 | Penalized Decomposition Using Residuals for Confounding Control and Enhanced Pattern Extraction in Neuroimaging | Sarah Weinstein |
| 11:30-11:45 | Envelop-based Quantile Tensor Regression Model with Application to Neuroimaging Data | Dayu Sun |
| 11:45-12 | A Novel Network Architecture Combining Central Peripheral Deviation with Image-based Convolutional Neural Networks for Diffusion Tensor Imaging Studies | Soyun Park |

### 23. Contributed Papers: Infectious Disease Models

| | | |
|---|---|---|
| 10:30-10:45 | Bayesian Inference for Continuous-Time Transmission Processes of Infectious Diseases in Close Contact Groups | Hasibul Hasan |
| 10:45-11 | Exploring the Efficiency of Multistage Pooled Testing Models Using R | Warasi S. Sarker |
| 11-11:15 | 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 | Gary Hettinger |
| 11:15-11:30 | Modeling Infectious Disease Dynamics: Integrating Contact Tracing-based Stochastic Compartment and Spatio-temporal Risk Models | Andre Amaral |
| 11:30-11:45 | Estimation of Local Time-Varying Reproduction Numbers in Noisy Surveillance Data | Wenrui Li |

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

| | | |
|---|---|---|
| 10:30-10:45 | Bayesian Semiparametric Hidden Markov Tensor Partition Models for Longitudinal Data with Local Variable Selection | Abhra Sarkar |
| 10:45-11 | Random Change Point Detection | Young Ho Yun |
| 11-11:15 | Horseshoe Processes in Partial Linear Models | Elizabeth C. Chase |
| 11:15-11:30 | Bayesian Jackknife Empirical Likelihood | Yichuan Zhao |
| 11:30-11:45 | Bayesian Dynamic Double-regression Modeling of Multi-type Recurrent Event Data | Yiming Zhang |
| 11:45-12 | A Novel Bayesian Continuous Piecewise Linear Log-hazard Model, with Estimation and Inference via Reversible Jump Markov Chain Monte Carlo | Andrew G. Chapple |
| 12-12:15 | A Semiparametric Risk Score for Physical Activity | Erjia Cui |

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

| | | |
|---|---|---|
| 1:45-2:10 | Restricted Mean Survival Time in the Presence of Competing Risks | Lihui Zhao |
| 2:10-2:35 | RMST and Beyond: Alternative Measures to Cox's Hazard Ratio | Hajime Uno |
| 2:35-3 | On Restricted Mean Time in Favor of Treatment | Lu Mao |
| 3-3:25 | Window Mean Survival Time | Richard J. Chappell |

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

| | | |
|---|---|---|
| 1:45-2:10 | De-confounding Causal Inference via Latent Multiple Mediators | Yubai Yuan |
| 2:10-2:35 | Heterogeneous Mediation Analysis on Epigenomic PTSD and Traumatic Stress in an African American Cohort | Fei Xue |
| 2:35-3 | Generalized Structural Equation Models for Mediation Analysis with Data of Mixed Types | Peter Song |
| 3-3:25 | Mediation Analysis for Survival Data with High-dimensional Mediators | Lei Liu |

### 27. Statistical Methods for Single-Cell Sequencing Data

| | | |
|---|---|---|
| 1:45-2:10 | Quantification Uncertainty in Single-Cell Expression Data | Michael I. Love |
| 2:10-2:35 | A Generalized Errors-in-variables Model for CRISPR Genome Engineering and Single-cell Sequencing | Kathryn Roeder |
| 2:35-3 | Multi-resolution Analysis Enables Accurate Cell Type and Tissue Structure Detection in Spatial Transcriptomics | Xiang Zhou |
| 3-3:25 | DNA Copy Number Profiling from Bulk Tissues to Single Cells | Nancy R. Zhang |

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

| | | |
|---|---|---|
| 1:45-2:10 | Quantile Graphical Models: A Bayesian Approach | Bani Mallick |
| 2:10-2:35 | Identifying Covariate-driven Connections in Directed Networks | Christine B. Peterson |
| 2:35-3 | Covariate-Adjusted Differential Network Analysis | Ali Shojaie |
| 3-3:25 | Bayesian Robust Learning in Chain Graph Models for Integrative Pharmacogenomics | Anindya Bhadra |

### 29. New Data Science Advances in Imaging

| | | |
|---|---|---|
| 1:45-2:10 | A Missing Data Method for Deconfounding in Neuroimaging Studies | Benjamin B. Risk |
| 2:10-2:35 | Topological Noise Curves for Brain Network Analysis | Nicole A. Lazar |
| 2:35-3 | Analytical Tools for Whole-Brain Networks: Fusing Statistics and Network Science to Understand Brain Function | Sean L. Simpson |
| 3-3:25 | A Variational Bayesian Approach to Identifying Whole-Brain Directional Networks with fMRI Data | Tingting Zhang |

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

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|---|---|---|
| 1:45-2:10 | Matching Methods for Evaluating the Effect of a Time-dependent Treatment on the Survival Function | Douglas E. Schaubel |
| 2:10-2:35 | Averaging-based Methods for Building Large Scale Survival Model | Noah Simon |
| 2:35-3 | Approaches to Fitting Hazard Models with Time-varying Coefficients to Large Datasets | Jeremy M.G. Taylor |
| 3-3:25 | Integrating Molecular and Histopathological Imaging Data in Cancer Survival Analysis | Shuangge Ma |

### 31. Contributed Papers: Adaptive Design/Adaptive Randomization

| | | |
|---|---|---|
| 1:45-2 | Assessing the Effectiveness of a Sampling Algorithm for Just-in-Time Intervention Delivery | Xiang Meng |
| 2-2:15 | Two-Stage Enrichment Clinical Trial Designs with Survival Outcomes and Adjustment for Misclassification in Predictive Biomarkers | Shou-En Lu |
| 2:15-2:30 | Evaluation of Adaptive Bioequivalence Testing for Correlated Outcomes | Suhyun Kang |
| 2:30-2:45 | Bayesian Multi-Arm Adaptive Randomization Schema for Biomarker-Drug Co-Development Subgroup Analysis with Sample Size Re-Estimation | Chengxue Zhong |
| 2:45-3 | Two-Stage Screened Selection Designs for Randomized Phase II Trials with Time-to-Event Endpoints | Haitao Pan |
| 3-3:15 | BOIN12: Bayesian Optimal Interval Phase I/II Trial Design for Utility-Based Dose-Finding in CAR-T Cell Therapy | Ruitao Lin |

### 32. Contributed Papers: Cancer Applications

| | | |
|---|---|---|
| 1:45-2 | Prioritizing Candidate Peptides for Cancer Vaccines by PEPPRMINT: A Statistical Model to Predict Peptide Presentation by HLA-I Proteins | Laura Zhou* |
| 2-2:15 | Utilizing Machine Learning Methods to Identify Acute Myeloid Leukemia Patients from a Real-world Data Set | Yimei Li |
| 2:15-2:30 | Joint Inference of Phylogeny and Mutation Order in Cancer | Yuan Gao |
| 2:30-2:45 | Machine Learning Methods in Predicting Amyloid Positivity | Guogen Shan |

### 33. Contributed Papers: Causal Inference

| | | |
|---|---|---|
| 1:45-2 | Time and Causality: Learning Causal Structures from Longitudinal Data | Jiarui Lu |
| 2-2:15 | Covariate-adaptive Randomization Inference in Matched Designs | Samuel Pimentel |
| 2:15-2:30 | Outcome-adjusted Balance Measure for Generalized Propensity Score Model Selection | Honghe Zhao |
| 2:30-2:45 | The Central Role of Consistently-Estimated Propensity Scores for Double-Robust Estimation of Multi-Level Treatment Effects in Observational Studies | Jason Poulos |
| 2:45-3 | Causal Inference with Hidden Confounders: A Comparison Between Two Stage Least Squares and the Causal Dantzig with Applications to Mendelian Randomization | James P. Long |
| 3-3:15 | Variable Selection for Automatic Confounder Adjustment in Mendelian Randomization Using Public GWAS Databases | Jean V. Morrison |
| 3:15-3:30 | Combining the Strengths of Inverse-Variance Weighting and Egger Regression in Mendelian Randomization Using a Mixture of Regressions Model | Zhaotong Lin |

### 34. Contributed Papers: Clustered Data Methods

| | | |
|---|---|---|
| 1:45-2 | Nonparametric Tests for Multistate Processes with Clustered Data | Giorgos Bakoyannis |
| 2-2:15 | Model-based Clustering of Multiple Two-dimensional Functional Data Incorporating Covariates | Jeong Hoon Jang |
| 2:15-2:30 | Comparison of Clustering Approaches for Determining Immune Subtypes in Prostate Cancer Tumors | Alex C. Soupir |
| 2:30-2:45 | A Comparison of Strategies for Covariate Adjustment in Small Cluster-Randomized Trials with a Rare Binary Outcome | Yaqian Zhu |
| 2:45-3 | Bayesian Semiparametric Local Clustering of Functional Time Series Data | Jingjing Fan |
| 3-3:15 | Autoregressive Mixture Models for Serial Correlation Clustering of Time Series Data | Benny Ren |
| 3:15-3:30 | Spatial Dependence Modeling of Susceptibility and Failure Times for Processes Under Intermittent Observation | Fangya Mao |

### 35. Contributed Papers: Functional Data Analysis

| | | |
|---|---|---|
| 1:45-2 | Varying-coefficient Mean Residual Life Model with Functional Principal Components Analysis | Guo Guo |
| 2-2:15 | Conditional Kaplan-Meier Estimator with Functional Covariates for Survival Data | Sudaraka Tholkage |
| 2:15-2:30 | Functional Regression with Intensively Measured Longitudinal Outcomes: New Lens through Data Partitioning | Cole Manschot |
| 2:30-2:45 | Deep Neural Networks for Functional Data Classification | Shuoyang Wang |
| 2:45-3 | Analyzing Accelerometer Data with Probability Magnitude Graphs | Margaret Banker |

### 36. Contributed Papers: High Dimensional Data

| | | |
|---|---|---|
| 1:45-2 | Inference for Change Points under High Dimensional Linear Regression Models | Hongjin Zhang |
| 2-2:15 | Transfer Learning in High Dimensional Linear Discriminant Analysis | Haotian Zheng |
| 2:15-2:30 | Spike-and-Slab Generalized Additive Models and Scalable Algorithms for High-Dimensional Data | Boyi Guo |
| 2:30-2:45 | Community Detection Within Edge Exchangeable Models for Interaction Processes | Yuhua Zhang |

| | | |
|---|---|---|
| 2:45-3 | A Bayesian Approach to Simultaneous Factorization and Prediction Using Multi-Omic Data | Sarah Samorodnitsky |
| 3-3:15 | Accounting for Data Heterogeneity in Integrative Analysis and Prediction Methods: An Application to Chronic Obstructive Pulmonary Disease (COPD) | Jessica Butts |
| 3:15-3:30 | Benchmark Evaluation of Microbiome Differential Abundance Analysis | Jiuyao Lu |

### 37. Environmental Health Meets Causal Inference

| | | |
|---|---|---|
| 3:45-4:10 | Bayesian Kernel Machine Regression for Estimating and Transporting Time-varying Environmental Mixture Effects | Linda Valeri |
| 4:10-4:35 | Estimating Causal Effects in Longitudinal Cookstove Intervention Studies Using Principal Stratification | Joshua Keller |
| 4:35-5 | Estimating Spatially Varying Health Effects of Wildland Fire Smoke Using Mobile Health Data | Shu Yang |
| 5-5:25 | Discussant | Howard Chang |

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

| | | |
|---|---|---|
| 3:45-4:10 | Single Arm Trials with a Synthetic Control Arm Built from RWD | Peter Mueller |
| 4:10-4:35 | Evaluation of Hybrid Controlled Trials that Leverage External Control Data and Randomization | Lorenzo Trippa |
| 4:35-5 | Practical Bayesian Design for Rare Disease Drug Development | Satrajit Roychoudhury |
| 5-5:25 | Incorporating External Data Into the Analysis of Clinical Trials via Bayesian Additive Regression Trees | Tianjian Zhou |

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

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|---|---|---|
| 3:45-5:30 | Panelists: Rebecca Hubbard, Julia Sharp, Daniel Sjoberg, Hadley Wickham, Dionne Price | |

### 40. Methods for Estimating SARS-CoV-2 Seroprevalence

| | | |
|---|---|---|
| 3:45-4:10 | Bayesian Analysis of Tests with Unknown Specificity and Sensitivity | Andrew Gelman |
| 4:10-4:35 | How to Detect and Reduce Potential Sources of Biases in SARS-CoV-2 Seroprevalence Studies | Emma K. Accorsi |
| 4:35-5 | Estimating Seroprevalence of SARS-CoV-2 | Samuel Rosin |
| 5-5:25 | Confidence Intervals for Seroprevalence | David Ritzwoller |

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

| | | |
|---|---|---|
| 3:45-4:10 | Statistical Model for Recovering the Low Rank Structure of Spatial Transcriptomics Data | Sha Cao |
| 4:10-4:35 | On the Strategy for Supervised Cell Type Identification in Single-cell RNA-seq | Hao Wu |
| 4:35-5 | Leveraging the Co-occurrence of Dropouts in scRNA-seq Analysis | Peng Qiu |
| 5-5:25 | Nonparametric Interrogation of Transcriptional Regulation in Single-Cell RNA and Chromatin Accessibility Multiomic Data | Yuchao Jiang |

### 42. Topics in Functional Data Analysis with Applications in Biosciences

| | | |
|---|---|---|
| 3:45-4:10 | Scalar on Time-by-distribution Regression and Its Application for Modelling Associations Between Daily-living Physical Activity and Cognitive Functions in Alzheimer's Disease | Rahul Ghosal |
| 4:10-4:35 | Semiparametric Bivariate Hierarchical State Space Model with application to Hormone Circadian Relationship | Mengying You |
| 4:35-5 | Ordinal Probit Functional Outcome Regression | Mark J. Meyer |
| 5-5:25 | PROLIFIC: Projection-based Test for Lack of Importance of Smooth Functional Effect in Crossover Design | Salil Koner |

### 43. Contributed Papers: Bayesian Methods

| | | |
|---|---|---|
| 3:45-4 | Supervised Bayesian Nonparametric Clustering Techniques for Survey Data | Stephanie M. Wu |
| 4-4:15 | An Item Similarity-Informed Bayesian Hierarchical Latent Class Model | Mengbing Li |
| 4:15-4:30 | Bayesian Markov Renewal Mixed Models for Vocalization Syntax | Yutong Wu |
| 4:30-4:45 | Systematic Assessment of Sex Disparities in Mortality in the Population Aged 5-24 Between 1990 and 2020 | Fengqing Chao |
| 4:45-5 | Bayesian Approach for Estimation of Sparse Canonical Correlations | Siddhesh S. Kulkarni |
| 5-5:15 | Variable Selection Using Nonlocal Priors in High-dimensional Generalized Linear Models with Application to fMRI Data Analysis | Fang Yang |

### 44. Contributed Papers: Clinical Trials

| | | |
|---|---|---|
| 3:45-4 | A Bayesian Phase I/II Design for Selecting Subgroup-Specific Optimal Biologic Dose (OBD) | Sydney Benson |
| 4-4:15 | Likelihood Based Inferences for Hybrid Trials Incorporating Patient's Treatment Choice | Rouba Chahine |
| 4:15-4:30 | A Combined Superiority and Non-Inferiority Procedure for Comparing Predictive Values of Two Diagnostic Tests | Kanae Takahashi |
| 4:30-4:45 | Prognostic Covariate Adjustment: A Novel Method to Obtain Robust Inference in Repeated Measures Analyses while Enrolling Fewer Subjects | David P. Miller |
| 4:45-5 | A Novel Confidence Interval for the Ratio of Two Correlated Proportions | Natalie DelRocco |
| 5-5:15 | Two-stage Adaptive Designs of Single arm Clinical Trials Based on Median Event Time Test | Yeonhee Park |
| 5:15-5:30 | Analysis of Two-stage Seamless Adaptive Design with Different Endpoints and Different Target Patient Populations | Weijia Mai |

### 45. Contributed Papers: Hypothesis Testing

| | | |
|---|---|---|
| 3:45-4 | Accurate Confidence Interval Estimation for Non-centrality Parameters and Effect Size Indices | Kaidi Kang |
| 4-4:15 | Jackknife Empirical Likelihood Methods for Testing Distributional Symmetry | Brian Pidgeon |
| 4:15-4:30 | Hypothesis Tests for Neural Networks | Francesca Mandel |
| 4:30-4:45 | Valid P-values in the Presence of Nuisance Parameters - An Extended Berger and Boos Methodology | Erica Spada/Dror Rom |
| 4:45-5 | Teaching Collaborators About Best Practices Regarding p-Values and Statistical Significance | Craig B. Borkowf |
| 5-5:15 | Overlapping Clusters for Shape-Constrained Multiple Testing on Continuum | Zhengjia Wang |

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

| | | |
|---|---|---|
| 3:45-4 | Dynamic Risk Prediction for Cervical Precancer Screening with Continuous and Binary Longitudinal Biomarkers | Siddharth Roy |
| 4-4:15 | Deep Learning for the Dynamic Prediction of Multivariate Longitudinal and Survival Data | Jeffrey Lin |
| 4:15-4:30 | A Joint Longitudinal-Survival Model for Mobile Health Data | Madeline R. Abbott |
| 4:30-4:45 | Joint Modeling in Presence of Informative Censoring in Palliative Care Studies | Quran Wu |
| 4:45-5 | Partial-linear Single-index Joint Model for Multivariate Longitudinal Measurements and Time-to-event Outcome, with Application to De-identified COVID-19 Data | Myeonggyun Lee |
| 5-5:15 | Joint Modeling of a Time-to-Event and Partially Observed Biomarker Using Lévy Processes | Theresa Devasia |
| 5:15-5:30 | 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 | Irena B. Chen |

## 47. Contributed Papers: Meta-analysis

| | | |
|---|---|---|
| 3:45-4 | Advancing Timely and Reliable Evidence Synthesis in the Era of COVID-19: A Novel Method for Including Preprints in Systematic Reviews | Jiayi Tong |
| 4-4:15 | Collaborative Causal Inference with a Distributed Data-sharing Management | Mengtong Hu* |
| 4:15-4:30 | Safe and Efficient Use of External Control Data under Model Misspecification for the Average Treatment Effect on the Treated with High-Dimensional Confounders | Chi-Shian Dai |
| 4:30-4:45 | A Weighted Method for Extending Inferences from a Collection of Randomized Clinical Trials | Nicole Schnitzler |
| 4:45-5 | Double Negative Cases Matter: A Re-evaluation of Sensitivities for Detecting SARS-CoV-2 Infection Using Saliva Versus Nasopharyngeal Swabs | Zheng Wang |
| 5-5:15 | Building a Dose Toxo-equivalence Model from a Bayesian Meta-analysis of Published Clinical Trials | Elizabeth A. Sigworth |

## 48. Contributed Papers: Statistical Genetics

| | | |
|---|---|---|
| 3:45-4 | A Two-Stage Kernel Machine Regression Model for Integrative Analysis of Alpha Diversity In Microbiome Studies | Runzhe Li |
| 4-4:15 | Airpart: Interpretable Statistical Models for Analyzing Allelic Imbalance in Single-cell Datasets | Wancen Mu |
| 4:15-4:30 | Allele Specific Expression Analysis Addressing Inferential Uncertainty Using Tree Structure | Euphy Wu |
| 4:30-4:45 | Estimating Cell-type-specific Gene Co-expressions from Bulk RNA-seq Data | Chang Su |
| 4:45-5 | Haplotype Disease Association Based on Recombination Disequilibrium | Hongyan Xu |

# TUESDAY, MARCH 29, 2022

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

| | | |
|---|---|---|
| 8:30-8:55 | Bayesian Design of Clinical Trials Using Joint Models for Recurrent and Terminating Events | Joseph G. Ibrahim |
| 8:55-9:20 | New Bayesian C-indices for Assessing Importance of Longitudinal Biomarkers in Fitting Competing Risks Survival Data in the Presence of Partially Masked Causes | Ming-Hui Chen |
| 9:20-9:45 | A Joint Model for Multiple Longitudinal Outcomes, Recurrent and Terminal Events using CF Patient Registry Data | Dimitris Rizopoulos |
| 9:45-10:10 | Discussant | Jeremy Taylor |

## 50. New Developments in Spatially Resolved Cell Imaging Data

| | | |
|---|---|---|
| 8:30-8:55 | Investigating the Tumor Microenvironment in Cancer Using Nonnegative Matrix Factorization and Spatial Analysis | Atul Deshpande |
| 8:55-9:20 | Metrics of Spatial Cellular Heterogeneity of Protein Expression in Tumor Microenvironment | Inna Chervoneva |
| 9:20-9:45 | SPF: A Spatial and Functional Data Analytic Approach to cell Imaging Data | Thao Vu |
| 9:45-10:10 | Cell Normalization and Phenotyping for Multiplexed Single-Cell Imaging | Simon Vandekar |

## 51. Bayesian Methods for Complex High-Dimensional Imaging Data

| | | |
|---|---|---|
| 8:30-8:55 | Random Phase-amplitude Gaussian Processes for Single-trial Analysis of Neural Signals | Dustin Pluta |
| 8:55-9:20 | Non-parametric Bayesian Modeling for Population of Vector Autoregressions | Suprateek Kundu |
| 9:20-9:45 | Quantile Functional Regression Modeling Distributional Data in Imaging and Data Streams from Wearable Devices | Jeffrey S. Morris |
| 9:45-10:10 | Optimized Diffusion Imaging for Brain Structural Connectome Analysis | Zhengwu Zhang |

## 52. Recent Advances on Modeling High-dimensional Data

| | | |
|---|---|---|
| 8:30-8:55 | Asymptotic Properties of High-Dimensional Random Forests | Yingying Fan |
| 8:55-9:20 | Variable Selection for High-dimensional Nodal Attributes in Social Networks with Degree Heterogeneity | Xizhen Cai |
| 9:20-9:45 | RaSE: Random Subspace Ensemble Classification and Screening | Yang Feng |
| 9:45-10:10 | High-dimensional Mediation Inference Using Logic of Boolean Matrices | Lexin Li |

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

| | | |
|---|---|---|
| 8:30-8:55 | Assumption-lean Inference for Effect Modification Parameters | Stijn K. Vansteelandt |
| 8:55-9:20 | Optimal Estimation of Average Treatment Effect on the Treated Under Endogeneous Treatment Assignment | Jiwei Zhao |
| 9:20-9:45 | Heterogeneous Causal Effects Estimation via Semiparametric Bayesian Models | Xinyi Xu |
| 9:45-10:10 | Flexible Inference of Optimal Individualized Treatment Strategy in Covariate Adjusted Randomization with Multiple Covariates | Trinetri Ghosh |

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

| | | |
|---|---|---|
| 8:30-8:55 | A Latent Functional Approach for Modeling the Effects of Multi-dimensional Biomarker Exposures on Disease Risk Prediction | Paul S. Albert |
| 8:55-9:20 | Discrete Frailty Modeling with Selection of Main and Interaction Effects of Correlated Covariates: Application to Assessing Mixtures of Chemical Toxicants and Time-to-pregnancy | Abhisek Saha |
| 9:20-9:45 | Quantifying Latent Exposure Burden to Chemical Mixtures Using Item Response Theory | Shelley Liu |
| 9:45-10:10 | Assessing the Effects of Multiple Exposures Subject to Limit of Detection | Shanshan Zhao |

### 55. Contributed Papers: Cancer Applications

| | | |
|---|---|---|
| 8:30-8:45 | Assessment of Bayesian Models for Zero-inflated and Over-dispersed Multiplex Immunofluorescence Data | Brooke L. Fridley |
| 8:45-9 | Estimating Chemical Mixture Interactions in Risk Assessment: A Shrinkage Prior Approach | Debamita Kundu |
| 9-9:15 | Cancer in World Trade Center Rescue/Recovery Workers: What We Know Twenty Years Later, and Where Do We Go From Here | Charles B. Hall |
| 9:15-9:30 | Incorporating Lower Grade Toxicity in Time-to-Event Dose Escalation Designs | Wei Zhang |
| 9:30-9:45 | Application of Joint Modeling of Longitudinal Patient Reported Outcomes and Survival Times Based on Lung Cancer Patient Electronic Health Records | Naomi C. Brownstein |
| 9:45-10 | Functional Integrative Bayesian Analysis of High-dimensional Multiplatform Genomic Data | Rupam Bhattacharyya |

### 56. Contributed Papers: Functional Data Analysis

| | | |
|---|---|---|
| 8:30-8:45 | A Sparse Feature Learning Algorithm for Longitudinal High-throughput Sequencing Data via Continuous Relaxation | Ruijin Lu |
| 8:45-9 | Estimation of Sparse Functional Quantile Regression with Measurement Error: A SIMEX Approach | Carmen Tekwe |
| 9-9:15 | Extending IPW and AIPW Methods to Handle Missing Functional Data | Yuhao Zhang |

### 57. Contributed Papers: Meta-analysis

| | | |
|---|---|---|
| 8:30-8:45 | Quantifying Replicability of Multiple Studies in a Meta-Analysis | Mengli Xiao* |
| 8:45-9 | Evidence Synthesis with Reconstructed Survival Data | Chenqi Fu* |
| 9-9:15 | A Bayesian Meta-Analysis Approach for Estimation of Penetrance and its Application to ATM Gene for Breast Cancer Risk | Thanthirige Lakshika M. Ruberu |
| 9:15-9:30 | Bayesian Estimation and Testing in Random-Effects Meta-Analysis of Rare Binary Events allowing for Flexible Group Variability | Ming Zhang |
| 9:30-9:45 | Bayesian Sparse Modeling to Identify High-risk Subgroups in Meta-analysis of Safety Data | Xinyue Qi |
| 9:45-10 | Bayesian Flexible Hierarchical Skew Heavy-tailed Multivariate Meta Regression Models for Individual Patient Data with Applications | Sung Duk Kim |

### 58. Contributed Papers: Spatial/Temporal Modeling

| | | |
|---|---|---|
| 8:30-8:45 | Investigating the Relationship Between Redlining and Current Asthma Prevalence in New York City | Anny-Claude Joseph |
| 8:45-9 | Alternative Prior Specification of the Conditional Autoregressive Model | Guangzi Song |
| 9-9:15 | COVID Vaccination Hesitancy in Louisiana: A Geospatial Analysis | Mohammad Alfrad N. Bhuiyan |
| 9:15-9:30 | Covariate-driven Non-stationary Leroux CAR Models | Pavel Chernyavskiy |
| 9:30-9:45 | Gaussian Process Filtering of Low-cost Air-pollution Sensor Networks | Claire M. Heffernan |

### 59. Contributed Papers: Variable Subset Selection/ModelSelection

| | | |
|---|---|---|
| 8:30-8:45 | Selecting Mixed Effects Models using Penalized Profile REML with Application to the Cohort Study of HIV | Juming Pan |
| 8:45-9 | Clustering with Variable Selection for Longitudinal Data | Marie Denis |
| 9-9:15 | Prioritize Variables with Joint Variable Importance Plots in Observational Study Design | Lauren D. Liao |
| 9:15-9:30 | Outcome Adaptive Variable Selection Procedure for the Covariance Balance Propensity Score | Mingyuan Zhang |
| 9:30-9:45 | A Hybrid Model-based Recursive Partitioning Method, GEE-tree, for Subgroup Identification in Longitudinal Studies | Bin Wang |
| 9:45-10 | Data Integration with Oracle Use of External Information from Heterogeneous Populations | Yuqi Zhai |

### 60. Contributed Papers: Survival Analysis

| | | |
|---|---|---|
| 8:30-8:45 | Empirical Power Comparison of Statistical Tests in Cancer Immunotherapy Trials | Miki Horiguchi |
| 8:45-9 | Borrowing External Data to Establish A Hybrid Control Arm in Randomized Clinical Trials | Hongfei Li |
| 9-9:15 | New Bayesian C-indices for Assessing Importance of Longitudinal Biomarkers in Fitting Competing Risks Survival Data in the Presence of Partially Masked Causes | Md. Tuhin Sheikh |
| 9:15-9:30 | A Joint Modeling Approach to Time-to-Disability and Longitudinal MRI biomarkers in Multiple Sclerosis | Sandra Hurtaodo Rua |
| 9:30-9:45 | Quantile-varying Covariate Effects under the Accelerated Failure Time Model | Harrison Reeder |

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

| | | |
|---|---|---|
| 1:45-2:10 | Spatial IMIX: A Multivariate Mixture Model Approach to Integrating Spatially Correlated Multi-omics Data | Peng Wei |
| 2:10-2:35 | Bayesian Methods for Modeling Spatial Transcriptomics Data | Guanghua Xiao |
| 2:35-3 | Integrative Analysis of Multi-context Multi-omics Data with GWAS Summary Statistics | Lin Chen |
| 3-3:25 | Spatially Informed Cell Type Deconvolution for Spatial Transcriptomics | Ying Ma |

### 62. Bayesian Innovations in Cancer Drug Development

| | | |
|---|---|---|
| 1:45-2:10 | Predicting Outcomes of Phase III Oncology Trials with Bayesian Mediation Modeling of Tumor Response | Tony Jiang |
| 2:10-2:35 | BaySize: Bayesian Sample Size Planning for Phase I Dose-Finding Trials | Yuan Ji |
| 2:35-3 | Understanding Basket Trials from Bayesian and Frequentist Perspectives | Alexander M. Kaizer |
| 3-3:25 | Optimal Sequential Predictive Probability Designs for Early Phase Expansion Cohorts | Emily C. Zabor |

### 63. Regression Models for Ordinal Response Data

| | | |
|---|---|---|
| 1:45-2:10 | A Family of Clinically Meaningful Estimands of Treatment Effect Readily Estimated with the Longitudinal, Ordinal Regression Model | Thomas G. Stewart |
| 2:10-2:35 | Fitting Semiparametric Linear Transformation Models with Ordinal Regression Models | Bryan Shepherd |
| 2:35-3 | Generalized Case-Control Sampling for Generalized Linear Models | Jake M. Maronge |
| 3-3:25 | Comparative Performance of a Semi-parametric Generalized Linear Model in Selected Analysis Settings | Paul Rathouz |

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

| | | |
|---|---|---|
| 1:45-2:10 | Evaluating the Treatment Effect via the Duration of Response | Lu Tian |
| 2:10-2:35 | Assumption-lean Inference for Cox Regression Parameters | Oliver Dukes |
| 2:35-3 | Causal Graphs for Continuous Times to Events | Eben Kenah |
| 3-3:25 | Causal Inference in Observational Survival Data: A Matched Design for Restricted Mean Survival Times Evaluation | Bo Lu |

### 65. Statistical Innovations for Polygenic Risk Scores

| | | |
|---|---|---|
| 1:45-2:10 | Penalized Regression Framework Modeling Local Ancestry Improves Polygenic Risk Scores in Admixed Populations | Bryce Rowland |
| 2:10-2:35 | Local Ancestry-Informed Polygenic Risk Scores for Improved Prediction in Diverse Ancestry Populations | Matthew P. Conomos |
| 2:35-3 | The Impact of Fine-scale Population Stratification on Polygenic Risk Prediction | Gillian Belbin |
| 3-3:25 | Statistical Innovations for Polygenic Risk scores: Discussion | Tamar Sofer |

### 66. Data-Driven Discovery and Decision-Making

| | | |
|---|---|---|
| 1:45-2:10 | Optimizing Precision and Power in COVID-19 Trials by Covariate Adjustment | Michael A. Rosenblum |
| 2:10-2:35 | The Highly Adaptive Lasso | Mark J. Van Der Laan |
| 2:35-3 | Non-Dominated Sequential Experimental Designs | Peter P. Norwood |
| 3-3:25 | Knowledge Graph Embedding with Electronic Health Records Data | Junwei Lu |

### 67. Contributed Papers: Epidemiologic Methods

| | | |
|---|---|---|
| 1:45-2 | A Multivariate Multiple Change Point Model to Describe Opioid Overdose Deaths Across the United States | David Kline |
| 2-2:15 | Dynamical Spatio-Temporal Modeling for Emerging and Reemerging Epidemics | Ali Arab |
| 2:15-2:30 | A Spatiotemporal Analysis of Environmental Markers and Food Consumption Surrogates in Relation to Asthma Deaths | Mehmet Kocak |
| 2:30-2:45 | Statistical Methods for Analyzing Spatially-referenced Paired Genetic Relatedness Data | Joshua L. Warren |

| | | |
|---|---|---|
| 2:45-3 | Dynamic COVID Risk Assessment Accounting for Community Virus Exposure from a Spatial-temporal Transmission Model | Yuan Chen |
| 3-3:15 | Reliable Event Rates for Disease Mapping | Harrison Quick |

### 68. Contributed Papers: Imaging

| | | |
|---|---|---|
| 1:45-2 | Learning Based Principal Parcellation Analysis for Brain Connectomes | Rongjie Liu |
| 2-2:15 | Pixel-specific Agreement Analyses to Evaluate the Reliability and Reproducibility of Non-invasive Detection of Anemia in Very Low Birth Weight Infants | Rachel Parker |
| 2:15-2:30 | Latent Subgroup Identification in Image-on-scalar Regression | Zikai Lin* |
| 2:30-2:45 | Learning Mean Homogeneity Structures in Image-on-scalar Regression | Emily C. Hector |
| 2:45-3 | CoCoA: A Conditional Correlation Model with Association Size | Danni Tu |

### 69. Contributed Papers: Diagnostic and Screening Tests

| | | |
|---|---|---|
| 1:45-2 | Measurement Error Models in Multi-Reader Multi-Case Study for Continuous Data | Dandan Xu |
| 2-2:15 | Capturing the Pool Dilution Effect in Group Testing Regression: A Bayesian Approach | Stella Watson |
| 2:15-2:30 | New Post-test Diagnostic Accuracy Measures of a Continuous Test Based on the Average Predictive Values | Hani M. Samawi |
| 2:30-2:45 | Benefit-Risk Measures for Comparing Diagnostic Tests of Multistage Clinical Conditions | Ferdous Ahmed |
| 2:45-3 | A Classification for Complex Imbalanced Data in Disease Screening and Early Diagnosis | Yiming Li |
| 3-3:15 | Determining optimal Cut-points for Conditional ROC Curves under a Paired Case-Control Design | Feng Miao |

### 70. Contributed Papers: Bayesian Methods

| | | |
|---|---|---|
| 1:45-2 | A Bayesian Framework for Generation of Fully Synthetic Mixed Datasets | Joe Feldman |
| 2-2:15 | Precision Matrix Estimation under the Horseshoe-like Prior-Penalty Dual | Ksheera Sagar K N* |
| 2:15-2:30 | Bayesian Scalable Precision Factor Analysis for Massive Sparse Gaussian Graphical Models | Noirrit K. Chandra |
| 2:30-2:45 | A Hierarchical Model for Analyzing Multi-Site Individual-Level Disease Surveillance Data from Multiple Systems | Yuzi Zhang |
| 2:45-3 | Bayesian Mixed Multidimensional Scaling for Auditory Processing | Giovanni Rebaudo |
| 3-3:15 | A New Class of Skewed Tensor Distributions | Inkoo Lee |
| 3:15-3:30 | Clustering Adolescent Female Physical Activity Levels with an Infinite Mixture Model on Random Effects | Tanzy M. Love |

### 71. Contributed Papers: Survival Analysis

| | | |
|---|---|---|
| 1:45-2 | A New Deep Learning Approach for Predicting Survival Processes in the Presence of Semi-Competing Risks | Stephen Salerno, Jr. |
| 2-2:15 | Two-Sample Survival Probability Curves: A Graphical Approach for the Analysis of Time to Event Data in Clinical Trials | Sandra Castro-Pearson |
| 2:15-2:30 | The Reflected-shifted-truncated Generalized Exponential Distribution with Application to Negatively Skewed Survival Data | Sophia D. Waymyers |
| 2:30-2:45 | Support Vector Machine for Dynamic Survival Prediction with Time-Dependent Covariates | Wenyi Xie* |

| | | |
|---|---|---|
| 2:45-3 | Models and Methods for Analyzing Clustered Recurrent Hospitalizations in the Presence of COVID-19 Effects | Xuemei Ding |
| 3-3:15 | Comparison of Three Mediation Methods Using Cox Models via Simulation Study | Jinhong N. Cui |

### 72. Contributed Papers: Next Generation Sequencing

| | | |
|---|---|---|
| 1:45-2 | A Novel Normalization Method for Metagenomics Data | Ziyue Wang |
| 2-2:15 | Leave-one-feature-out Method for Identifying Predictive Microbiome Feature | Yushu Shi |
| 2:15-2:30 | Deep Ensemble Learning Over the Microbial Phylogenetic Tree (DeepEn-Phy) | Wodan Ling |
| 2:30-2:45 | Integrative Genomics Analysis for Incomplete Data Using Weighted p-value Adjustment Approaches | Wenda Zhang |
| 2:45-3 | Robust Aggregation of P-values with Unknown Dependency Structure for SNP-set Test | Yusi Fang |
| 3-3:15 | A Neural Network-Based Method for Exhaustive Cell Label Assignment Using Single Cell RNA-seq Data | Hao Feng |

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

| | | |
|---|---|---|
| 3:45-4:10 | Dynamic Treatment Effects: High-dimensional Inference Under Model Misspecification | Yuqian Zhang |
| 4:10-4:35 | Debiased Inference on Heterogeneous Quantile Treatment Effects with Regression Rank-Scores | Jingshen Wang |
| 4:35-5 | Omitted Variable Bias of Lasso-based Inference Methods: A Finite Sample Analysis | Ying Zhu |
| 5-5:25 | Conquer: Convolution-Smoothed Quantile Regression | Kean Ming Tan |

### 74. Trailblazing SMART Design and Statistical Learning for Precision Health

| | | |
|---|---|---|
| 3:45-4:10 | Using Statistical Learning to Promote Evidence-based Precision Health Care | Lu Wang |
| 4:10-4:35 | SMART Design with Re-randomization Based on a Tailoring Function | Holly E. Hartman |
| 4:35-5 | Interim Monitoring in Sequential Multiple Assignment Randomized Trials | Abdus S. Wahed |
| 5-5:25 | Discussant | Peter Thall |

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

| | | |
|---|---|---|
| 3:45-4:10 | Distributional Regression with Application on Functional Connectivity | Bohao Tang |
| 4:10-4:35 | Scalar on Time-by-distribution Regression and Its Application for Modelling Associations Between Daily-living Physical Activity and Cognitive Functions in Alzheimer's Disease | Vadim Zipunnikov |
| 4:35-5 | Fréchet Regression and Wasserstein Covariance for Random Density Data | Alexander Petersen |
| 5-5:25 | Distributional Regression Models | Hans-Georg Müller |

### 76. Modern Methods for Estimation and Inference

| | | |
|---|---|---|
| 3:45-4:10 | L-2 Regularized Maximum Likelihood for Beta-model Estimation in Large and Sparse Networks | Yuan Zhang |
| 4:10-4:35 | Statistical Inference of Robust Regression with Contaminated Errors | Zhao Ren |

| | | |
|---|---|---|
| 4:35-5 | Envelope-based Partial Partial Least Squares with Application to Cytokine-based Biomarker Analysis for COVID-19 | Zhihua Su |
| 5-5:25 | Slow Kill for Big Data Learning | Yiyuan She |

### 77. Precision Medicine: New Methods and Innovative Applications

| | | |
|---|---|---|
| 3:45-4:10 | Multi-Scale Analysis of Mucosal Microbiome and Immune Profiling in Inflammatory Bowel Disease | Haoda Fu |
| 4:10-4:35 | Machine Learning Approaches for Optimizing Treatment Strategies for Mental Disorders | Yuanjia Wang |
| 4:35-5 | Constructing Stabilized Dynamic Surveillance Rules for Optimal Monitoring Schedule | Yingqi Zhao |
| 5-5:25 | Knowledge-guided Bayesian Factor Analysis for Integrative Analysis of Multi-Omics Data | Qi Long |

### 78. Analysis of Complex Survival Data

| | | |
|---|---|---|
| 3:45-4:10 | Statistical Inference for Cox Proportional Hazards Models with a Diverging Number of Covariates | Bin Nan |
| 4:10-4:35 | A New Framework for High Dimensional Statistical Inference: Quantifying Joint Impacts of Molecular Biomarkers on Cancer Outcomes | Yi Li |
| 4:35-5 | On Estimating Optimal Regime for Treatment Initiation Time Based on Restricted Mean Residual Lifetime | Wenbin Lu |
| 5-5:25 | Recurrent Events Modeling Based on a Reflected Brownian Motion with Application to Hypoglycemia | Jun Yan |

### 79. Contributed Papers: Clinical Trials

| | | |
|---|---|---|
| 3:45-4 | Case Weighted Adaptive Power Priors for Hybrid Analyses with Time-to-Event Data | Evan Kwiatkowski |
| 4-4:15 | Optimal Priors for the Power Parameter of the Normalized Power Prior | Yueqi Shen |
| 4:15-4:30 | A Bayesian Design for Basket Trial with Survival Endpoint | Tian He |
| 4:30-4:45 | Multi-Regional Clinical Trials for Time-to-Event Endpoints with Application to Cardiovascular Outcomes Studies | Nathan W. Bean |
| 4:45-5 | Using Subject Level Covariate Information in Bayesian Mixture Models for Basket Trials | Sneha Govande |
| 5-5:15 | A Seamless Bayesian Phase I-II Design for Dose Selection in Relapsing Remitting-Multiple Sclerosis (RR-MS) | Bradley P. Carlin |

### 80. Contributed Papers: Causal Inference

| | | |
|---|---|---|
| 3:45-4 | Mediation Analysis with Multiple Sources of Information | Andriy Derkach |
| 4-4:15 | A More Flexible Bayesian Non-parametric Approach to Causal Mediation | Woojung Bae |
| 4:15-4:30 | Mediation Analysis for Zero-inflated Mediators with Count Data | Meilin Jiang |
| 4:30-4:45 | A Two-Stage Least Squares-Based Sensitivity Analysis Approach for Assessing the Role of Engagement with Text Message-Delivered Interventions | Jamie Joseph |
| 4:45-5 | Combining Covariate Adjustment with Information Monitoring and Group Sequential Designs to Improve Randomized Trial Efficiency | Kelly Van Lancker |
| 5-5:15 | Causal Mediation Analysis for Difference-in-Difference Design and Panel Data | Pei-Hsuan Hsia |

### 81. Contributed Papers: Genomics

| | | |
|---|---|---|
| 3:45-4 | Assisted Clustering of Gene Expression Data Using Regulator Data from Different but Overlapping Samples | Wenqing Jiang |
| 4-4:15 | A Modeling Strategy for Longitudinal RNASeq Data in Varying Time Frames | Xiaoyu Wei |
| 4:15-4:30 | Robust and Accurate Cell Type Fraction Estimation of Bulk Transcriptomics Datavia Ensemble Deconvolution | Manqi Cai |
| 4:30-4:45 | Adjusting for Covariates in the Visualization of High-dimensional Data | Angela Zhang |
| 4:45-5 | Correlation-Adjusted Simultaneous Testing for High-dimensional Grouped Data in Epigenetics | Patrick Wincy C. Reyes |
| 5-5:15 | Association Study Between Gene Expression and Multiple Phenotypes in Omics Applications of Complex Diseases | Yujia Li |
| 5:15-5:30 | Probabilistic Multilevel Canonical Correlation Analysis (CCA) for Integrative Analysis of Multi-Omics Data | Yuna Kim |

### 82. Contributed Papers: High Dimensional Data

| | | |
|---|---|---|
| 3:45-4 | A Univariate Approach to High-Dimensional Linear Mixed Modeling via the EM algorithm | Anja Zgodic |
| 4-4:15 | A Novel Approach to Mediation Analysis of the Microbiome Using the LDM | Ye Yue |
| 4:15-4:30 | Automatic Functional Form Selection for Continuous Covariates | Jeremy Rubin |
| 4:30-4:45 | Deep IDA: A Deep Learning Method for Integrative Discriminant Analysis of Multi-View Data with Feature Ranking with Applications to COVID-19 Disease Severity | Jiuzhou Wang |
| 4:45-5 | Modeling and Estimating a Threshold Effect: An Application to Improving Cardiac Surgery Practices | Guangyu Yang |
| 5-5:15 | Quantifying Uncertainty of Subsampling-based Ensemble Methods under a U-statistic Framework | Yujie Wei |
| 5:15-5:30 | Learning Multimodal Data using Deep Neural Networks in Classification | Eunsil Seok |

### 83. Contributed Papers: Missing data

| | | |
|---|---|---|
| 3:45-4 | Data Fusion for Time-to-Event Outcomes | Fatema Shafie Khorassani |
| 4-4:15 | Missing Data Imputation via State Space Model for Non-stationary Multi-variate Time Series in mHealth | Xiaoxuan Cai |
| 4:15-4:30 | Integrative Nearest Neighbor Classifier for Block-missing Multi-modality Data | Surui Hou |
| 4:30-4:45 | Sparse Functional Boxplots for Multivariate Curves from Public Health Data | Zhuo Qu |
| 4:45-5 | Analysis of Intensive Longitudinal Data in Crossover Designs with Ignorable and Nonignorable Dropout | Xi Wang |
| 5-5:15 | A Bayesian Causal Inference Approach in Observational Studies with Missingness in Covariates and Outcomes | Huaiyu Zang |

### 84. Contributed Papers: Prediction/Prognostic Modeling

| | | |
|---|---|---|
| 3:45-4 | Novel Machine Learning Methods for Detecting Susceptibility Genetic Signatures and Early Prediction for COVID-19 Contraction, Severity and Related Cognitive Impairments | Yanming Li |
| 4-4:15 | Multi-source Federated Transfer Learning for Improved Prediction in Underrepresented Populations | Tian Gu |

| | | |
|---|---|---|
| 4:15-4:30 | Deep Neural Network on Interval Censored Data: Application to the Prediction of Alzheimer's Disease using ADNI Genetic Data | Tao Sun |
| 4:30-4:45 | Dynamic Prediction of Alzheimer's Disease by Integrative Analysis of Multi-omics Data and Longitudinal Outcomes | Yuanyuan Guo |
| 4:45-5 | Tackling Dynamic Prediction of Death in Patients With Recurrent Cardiovascular Events | Menglu Liang |
| 5-5:15 | Dynamic Prediction of Residual Life with Longitudinal Covariates Using LSTMs | Grace Rhodes |
| 5:15-5:30 | A Bayesian Learning Model to Predict the Risk for Cannabis Use Disorder | Dhanushka Rajapaksha |

# WEDNESDAY, MARCH 30, 2022

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

| | | |
|---|---|---|
| 8:30-8:55 | Estimating Optimal Infinite Horizon Dynamic Treatment Regimes via pT-Learning | Ruoqing Zhu |
| 8:55-9:20 | Statistical Methods for Assessing Drug Interactions Using Observational Data | Maiying Kong |
| 9:20-9:45 | Group Testing in Large-scale Observational Data and Applications in COVID-19 Pandemic | Qi Zheng |
| 9:45-10:10 | Estimating Heterogeneous Treatment Effects with Right-censored Data via Causal Survival Forests | Yifan Cui |

## 86. Novel Data Science Approaches to Eliminate Health Disparities

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|---|---|---|
| 8:30-8:55 | Diet Quality and the Gut Microbiota in Women Living in Alabama | Anarina Murillo |
| 8:55-9:20 | Novel Application of a Multistate Model to Investigate Disparities in Access to Treatment for Opioid Use Disorder in Rhode Island | Hilary Aroke |
| 9:20-9:45 | New Approaches to Model Multi-level Social Networks for Evaluating the Impact of Demographics on Health Disparities of Epidemic Trajectories in the NYC Population | Natallia V. Katenka |
| 9:45-10:10 | Discussant | John W. Jackson |

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

| | | |
|---|---|---|
| 8:30-8:55 | Identifying Brain Hierarchical Structures Associated with Alzheimer's Disease Using a Regularized Regression Method with Tree Predictors | Yi Zhao |
| 8:55-9:20 | Visualizing Gene Trees to Investigate Gene and Genome Level Evolutionary Histories | Sarah V. Teichman |
| 9:20-9:45 | Inferring Phenotypic Trait Evolution on Large Trees with Many Incomplete Measurements | Marc A. Suchard |
| 9:45-10:10 | It's All Relative: New Regression Paradigm for Microbiome Compositional Data | Gen Li |

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

| | | |
|---|---|---|
| 8:30-8:55 | Analyzing Spatial Gene Expression Architecture in Tissue Sections at Increased Resolution | Raphael Gottardo |
| 8:55-9:20 | Spatially Aware Dimension Reduction for Spatial Transcriptomics | Lulu Shang |
| 9:20-9:45 | Multi-scale Computational Analysis of Spatially Resolved Transcriptomic Imaging Data | Jean Fan |
| 9:45-10:10 | Scalable Identification of Spatially Variable Genes Within and Between Cell Populations in Spatially Resolved Transcriptomics Data | Lukas M. Weber |

## 89. Statistical Methods for High Density Neuronal Recordings

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|---|---|---|
| 8:30-8:55 | Modeling Trial-specific Trends in Eye Tracking Data Using Functional Data Analysis | Damla Senturk |
| 8:55-9:20 | Exploring Spectral Dependence in Multivariate Time Series | Hernando Ombao |

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| 9:20-9:45 | Semi-parametric Independent Component Analysis in the Time-frequency Domain | Seonjoo Lee |
| 9:45-10:10 | Comparing Populations of High-density EEG Spectra | Robert Krafty |

### 90. Novel Methods for Spatial Environmental Exposures and Health

| | | |
|---|---|---|
| 8:30-8:55 | Measurement Error in Built Environment Studies | Brisa N. Sánchez |
| 8:55-9:20 | Spatial-Temporal Modeling for Public Health Surveillance through Wastewater | Kathy B. Ensor |
| 9:20-9:45 | How Close and How Much? Linking Health Outcomes to Spatial Distributions of Built Environment Features | Veronica J. Berrocal |
| 9:45-10:10 | Health-relevant Calibration of Low-cost Air Pollution Monitoring Data | Abhirup Datta |

### 91. Contributed Papers: Clinical Trials

| | | |
|---|---|---|
| 8:30-8:45 | Power Analysis for Cluster Randomized Trials with Multiple Continuous Co-primary Endpoints | Siyun Yang* |
| 8:45-9 | Methods for Surrogate Endpoint Evaluation with Heterogeneity in Surrogate Quality Across Treatment or Disease Categories | Willem H. Collier |
| 9-9:15 | Bayesian Design of Clinical Trials Using Joint Cure Rate Models for Longitudinal and Time-to-event Data | Jiawei Xu |
| 9:15-9:30 | A Review of Methods to Evaluate Safety of Response-guided Dose-titrated Drugs | Jaejoon Song |
| 9:30-9:45 | Innovative Approach Using Real-World Data for Drug Development | Peijin Wang |
| 9:45-10 | Learning Optimal Treatment Strategies for Hypotension During Surgery Using Deep Reinforcement Learning | Tezcan Ozrazgat Baslanti |
| 10-10:15 | Prediction-Based Replacement Algorithms for Adaptive Allocation of Distal Outcomes | Salem Rustom |

### 92. Contributed Papers: Longitudinal Data

| | | |
|---|---|---|
| 8:30-8:45 | Generalized Additive Mixed Models for Assessing the Relationship between Ambulatory Blood Pressure Profiles and Financial Responsibility in African-American Women | Raphiel Murden |
| 8:45-9 | Comparison of Three Group-based Trajectory Modeling Methods Using Simulation | Yanzhao Cheng |
| 9-9:15 | Efficient Design and Analysis of a Two-Phase Study with Longitudinal Binary Outcomes | Chiara Di Gravio |
| 9:15-9:30 | A 'Divide-and-Conquer' EM Algorithm for Large Non-Gaussian Longitudinal Data with Irregular Follow-Ups | Reuben P. Retnam |
| 9:30-9:45 | Three-Part Random Effect Models for Longitudinal Skewed Survey Response Data | Eugenia Buta |
| 9:45-10 | Neurocognitive Differences and Mortality Risk Estimation Among HIV and Frail Groups in Multicenter AIDS Cohort Study (MACS) | Jong Hyung Lee |

### 93. Contributed Papers: Multivariate Methods

| | | |
|---|---|---|
| 8:30-8:45 | A Kernel-based Multivariate Test of Independence for Cluster-correlated Data | Hongjiao Liu |
| 8:45-9 | Functional-Coefficient Models for Multivariate Time Series in Designed Experiments: With Applications to Brain Signals | Paolo Victor T. Redondo |
| 9-9:15 | Club Exco: Clustering brain extreme communities from multi-channel EEG data | Matheus B. Guerrero |

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|---|---|---|
| 9:15-9:30 | A Bayesian Approach to Multiple Testing, Analysis, and Study Design for Response Variables of Mixed Types | Ethan M. Alt |
| 9:30-9:45 | Mixed Effects Spectral Vector Autoregressive Model: With Applications to Brain Connectivity | Anastasiia Malinovskaia |

**94. Contributed Papers: Personalized Medicine**

| | | |
|---|---|---|
| 8:30-8:45 | Contrast Weighted Learning for Robust Optimal Treatment Rule Estimation | Xiaohan Guo |
| 8:45-9 | Learning Optimal Dynamic Treatment Regimes Subject to Stagewise Risk Controls | Mochuan Liu* |
| 9-9:15 | Individualized Treatment Rules for HER2-Positive Breast Cancer: A Reproducible and Generalizable Pipeline | Kushal Shah |
| 9:15-9:30 | Identifying Optimally Cost-effective Dynamic Treatment Regimes with a Q-learning Approach | Nicholas Illenberger |
| 9:30-9:45 | Sensitivity Analysis for Non-ignorable Missing Data in Sequential Multiple Assignment Randomized Trials: A Pattern Mixture Model Approach | Aparajita Sur |
| 9:45-10 | Mixed-Response State-Space Model for Analyzing Multi-Dimensional Digital Phenotypes | Tianchen Xu |
| 10-10:15 | A Flexible Bayesian Framework for Individualized Inference via Adaptive Borrowing | Ziyu Ji |

**95. Contributed Papers: Time Series**

| | | |
|---|---|---|
| 8:30-8:45 | Adaptive Clustering and Feature Selection for Categorical Time Series Using Interpretable Frequency-Domain Features | Scott A. Bruce |
| 8:45-9 | Smooth Online Parameter Estimation for Time Varying VAR Models with Application to Rat's LFP Data | Anass El Yaagoubi Bourakna* |
| 9-9:15 | Warped Dynamic Linear Models for Time Series of Counts | Brian King* |
| 9:15-9:30 | Adaptive Bayesian Sum of Trees Model for Covariate Dependent Spectral Analysis | Yakun Wang |
| 9:30-9:45 | Bayesian Non-parametric Decomposition of Multivariate Signals via Autoregressive Kernels | Guillermo Granados |
| 9:45-10 | Covariate-Guided Bayesian Mixture of Spline Experts for the Analysis of Multiple Time Series | Haoyi Fu |
| 10-10:15 | Analysis and Summarization Pipeline for High-frequency Predictors with Missing Data and Lower-frequency Binary Outcomes | Nicole I. Wakim |

**96. Contributed Papers: Translational Research /Science**

| | | |
|---|---|---|
| 8:30-8:45 | Pulmonary 129Xe Apparent Diffusion Coefficient Estimates Using Voxel Level MRI Data: Comparison of Cystic Fibrosis Patients with Healthy Controls | Neelakshi Chatterjee |
| 8:45-9 | Trajectory Analysis of 24-h Ambulatory Blood Pressure Monitoring Data by Obstructive Sleep Apnea Status using SuperImposition by Translation and Rotation (SITAR) Model | Md Tareq Ferdous Khan |
| 9-9:15 | Voxel-wise Intermodal Coupling Using Local Covariance Decompositions | Fengling Hu |
| 9:15-9:30 | A Novel Coordinate System for Multiple Sclerosis Lesion Evaluation on MRI | Carolyn Lou |
| 9:30-9:45 | BOSS: Beta-mixture Unsupervised Oligodendrocytes Segmentation System | Eunchan Bae |

### 97. Recent Advances in Methods for Microbiome Data

| | | |
|---|---|---|
| 10:30-10:55 | Scalable Estimation of Microbial Co-occurrence Networks with Variational Autoencoders | James T. Morton |
| 10:55-11:20 | Scale-Simulation for Non-Compositional Inference of Sequence Count Data | Justin D. Silverman |
| 11:20-11:45 | Joint Matrix Decomposition Regression | Timothy Randolph |
| 11:45-12:10 | A Phylogeny-based Test of Mediation Effect in Microbiome | Zheng-Zheng Tang |

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

| | | |
|---|---|---|
| 10:30-10:55 | Optimal Randomization Strategies for Disentangling Peer-influence from Homophily | Edoardo M. Airoldi |
| 10:55-11:20 | Social Network Dependence, Unmeasured Confounding, and the Replication Crisis | Elizabeth Ogburn |
| 11:20-11:45 | Optimal Allocation of Water and Sanitation Facilities To Prevent Communicable Diarrheal Diseases in Senegal Under Partial Interference | Chan Park |
| 11:45-12:10 | Assessing Intervention Effects in a Randomized Trial within a Social Network | Michael G. Hudgens |

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

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|---|---|---|
| 10:30-10:55 | Historical Borrowing in Clinical Trials | Kert Viele |
| 10:55-11:20 | Revisiting Adaptive Designs for Optimizing Immunotherapy Regimens | Thomas M. Braun |
| 11:20-11:45 | Propensity-score-based Meta-analytic Predictive Prior for Incorporating Real-world and Historical Data | Jianchang Lin |
| 11:45-12:10 | The Evolution of Bayesian Clinical Trial Design: From Early Stopping Rules to Modern Precision Medicine | Peter F. Thall |

### 100. Recent Advances in Data Integration in Neuroimaging and Genomics

| | | |
|---|---|---|
| 10:30-10:55 | Similarity-Based Multimodal Regression | Andrew A. Chen |
| 10:55-11:20 | A Multivariate Method Removing Latent Batch Effects from Heterogeneous Brain Imaging Data | Jun Young Park |
| 11:20-11:45 | Design and Analysis of High Throughput Cell Imaging Studies | Johann Gagnon-Bartsch |
| 11:45-12:10 | Harmonizing Structured Data Acquired with Heterogeneous Imaging Equipment | Russell T. Shinohara |

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

| | | |
|---|---|---|
| 10:30-10:55 | A Nonstationary Soft Partitioned Gaussian Process Model via Random Spanning Trees | Huiyan Sang |
| 10:55-11:20 | Land-Use Filtering for Nonstationary Spatial Prediction of Collective Efficacy in an Urban Environment | Catherine Calder |
| 11:20-11:45 | Does Air Quality Really Impact COVID-19 Clinical Severity: Coupling NASA Satellite Datasets with Geometric Deep Learning | Yulia R. Gel |
| 11:45-12:10 | Crop Yield Prediction using Bayesian Spatially Varying Functional Model | Bo Li |

### 102. New Topics in Analysis of Microbiome Data

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|---|---|---|
| 10:30-10:55 | Sparse Estimation of Correlations among Microbiomes (SECOM) | Huang Lin |
| 10:55-11:20 | Bias Resistant Modeling of Modeling Microbiome Relative Abundance | Ni Zhao |
| 11:20-11:45 | Kernel-based Approaches for Integrating Microbiome and Other-omics Data in Longitudinal Studies | Michael C. Wu |
| 11:45-12:10 | Multi-Scale Analysis of Mucosal Microbiome and Immune Profiling in Inflammatory Bowel Disease | Hongzhe Li |

### 103. Contributed Papers: Causal inference

| | | |
|---|---|---|
| 10:30-10:45 | A Novel Estimand to Adjust for Rescue Treatment in Randomized Clinical Trials | Hege Michiels |
| 10:45-11 | Causal Joint Modeling of Longitudinal and Survival Data Using the Parametric G-Formula | Bryan Blette |
| 11-11:15 | Estimation of the Survival-incorporated Median in Observational Studies: A Summary Measure for Clinical Outcomes in the Presence of Death | Qingyan Xiang |
| 11:15-11:30 | Stratified Restricted Mean Survival Time Model for Marginal Causal Effect in Observational Survival Data | Zihan Lin |
| 11:30-11:45 | Distributed Learning for Causal Inference | Larry Han |
| 11:45-12 | Doubly Robust Methods for Identifying Effect Modifiers and Estimating Optimal Treatment Based on Observational Data | Qian Xu |
| 12-12:15 | Identifying HIV Sequences that Escape Antibody Neutralization Using Random Forests and Collaborative Targeted Learning | Yutong Jin |

### 104. Contributed Papers: Genomics

| | | |
|---|---|---|
| 10:30-10:45 | Transformations and Cell-type Deconvolution | Gregory J. Hunt |
| 10:45-11 | Microbial Co-Abundance Network with Community Detection | Yan Li |
| 11-11:15 | Stochastic Dynamics of Two Cancer Models with Deleterious Passenger Mutations | Ren-Yi Wang |
| 11:15-11:30 | Testing For Association Between Risk Factors and Mutational Signatures via Bayesian Dirichlet-Multinomial Hierarchical Model | Ji-Eun Park |

### 105. Contributed Papers: Statistical Genetics

| | | |
|---|---|---|
| 10:30-10:45 | Gene-environment Interaction Testing Using Machine Learning Approaches and Robust Test Statistics: A Sex-specific Risk Score Component for Lung Function | Julian Hecker |
| 10:45-11 | Bayesian LASSO for Population Stratification Correction in Rare Haplotype Association Studies | Zilu Liu |
| 11-11:15 | Inference for Temporally Conserved Microbial Interactions Using Mixture Margin Copulas | Rebecca A. Deek |
| 11:15-11:30 | A Fast Bayesian Screen to Identify Pleiotropic Loci and Describe Pleiotropic Profiles | Sijia Huo |
| 11:30-11:45 | MASH: Mediation Analysis of Survival Outcome and High-dimensional Omics Mediators with Application to the Framingham Heart Study | Sunyi Chi* |
| 11:45-12 | Statistical Analysis of Tumor Suppressor Gene Methylation Patterns in Various Breast Cancer Samples | Shuying Sun |

### 106. Contributed Papers: Survival Analysis

| | | |
|---|---|---|
| 10:30-10:45 | An Augmented Likelihood Approach for the Discrete Proportional Hazards Model and a Complex Survey Design, with Regression Calibration | Lillian Boe |
| 10:45-11 | Regression Modeling of Restricted Mean Survival Time for Left-Truncated and Right-Censored Data | Rong Rong |
| 11-11:15 | Variable Selection for Nonparametric Additive Transformation Models with Interval-censored Data | Tian Tian |
| 11:15-11:30 | Empirical Likelihood Inference for the Bivariate Mean Residual Life Function | Ali Jinnah |
| 11:30-11:45 | A Conditional Survival Distribution-based Method for Censored Data Imputation: Overcome the Hurdle in Machine Learning-based Survival Analysis | Yizhuo Wang |
| 11:45-12 | Kullback-Leibler-Based Discrete Relative Risk Models for Integration of Published Prediction Models with New Time-To-Event Dataset | Di Wang |

### 107. Contributed Papers: Variable Subset Selection/Model Selection

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|---|---|---|
| 10:30-10:45 | Joint Semiparametric Kernel Network Regression | Byung-Jun Kim |
| 10:45-11 | A FDP-oriented FDR Control Approach by Solving Constrained Sorted L1 Optimization | Huiming Lin* |
| 11-11:15 | A P-Value Free False Discovery Rate Controlling Approach for High Dimensional Variable Selection | Arkaprabha Ganguli |
| 11:15-11:30 | Kullback-Leibler Divergence-based Transfer Learning with Application to Polygenic Risk Score (PRS) Heterogeneity Adjustment | Qinmengge Li |
| 11:30-11:45 | A General Framework for Structured Variable Selection and Grouping Structure Identification for Penalized Regression | Guanbo Wang |

### 108. Contributed Papers: Semi-parametric and Non-parametric Models

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|---|---|---|
| 10:30-10:45 | Modeling Considerations for Semi-continuous Dose-response Relationships in Pharmacoepidemiologic Studies | Andrew J. Spieker |
| 10:45-11 | Dynamic Single-index Scalar-on-function Models | Yiwei Li |
| 11-11:15 | A Robust Adaptive Two Sample Test in High Dimensions | Tianyou Luo |
| 11:15-11:30 | Probabilistic Learning of Treatment Trees in Cancer | Tsung-Hung Yao |
| 11:30-11:45 | Double Sampling for Informatively Missing Data in Electronic Health Record-Based Studies | Alexander Levis |

**Denotes student award winner*