



The Western North American
Region of The International Biometric Society

2021 Annual Meeting

WNAR / IMS / JR

June 11 – 16, 2021

Program Schedule

Virtual Conference

Statistical learning and inference in online, dynamic settings

Organizer & Chair: Jean Feng, University of California, San Francisco

8:30 **Online non-parametric estimation and the quest for computational efficiency**

Noah Simon, University of Washington

8:55 **Online analysis of high-dimensional Gaussian graphical models**

George Michallidis, University of Florida

9:20 **Online Multiple Hypothesis Testing**

Tijana Zrnica, University of California, Berkeley

9:45 **Bayesian logistic regression for online recalibration and revision of risk prediction models with guarantees**

Jean Feng, University of California, San Francisco

Novel statistical approaches for disease early detection and diagnosis with complex data

Organizer & Chair: Ying Huang, Fred Hutchinson Cancer Research Center

8:30 **Challenges and Opportunities: Evaluation of Biomarkers for Early Risk Prediction, Early Detection and Diagnosis, and Prognosis**

Ziding Feng, Fred Hutchinson Cancer Research Center

8:55 **Estimation of Diagnostic Accuracy Based on Group-Tested Results**

Aiyi Liu, NICHD/NIH

9:20 **A multivariate parametric empirical Bayes screening approach for early detection of hepatocellular carcinoma using multiple longitudinal biomarkers**

Nabihah Tayob, Dana-Farber Cancer Institute

9:45 **Strategies for validating biomarkers using data from a reference set**

Ying Huang, Fred Hutchinson Cancer Research Center

Advancement of Rousst Statistical Methods for Omics Studies

Organizer & Chair: Wen Zhou, Colorado State University

8:30 **AdaPT: An interactive procedure for multiple testing with side information**

Lihua Lei, Stanford University

8:55 **Large-scale inference of multivariate regression for heavy-tailed and asymmetric data**

Wen Zhou, Colorado State University

9:20 **Inference of Robust Regression with Contaminated Errors**

Zhao Ren, University of Pittsburgh

9:45 **Smoothed Quantile Regression**

Wenxin Zhou, University of California, San Diego

Recent developments in meta-analysis and data integration

Organizer & Chair: Lifeng Lin, Florida State University

- 8:30 **A Variance Shrinkage Method Improves Arm-Based Bayesian Network Meta-Analysis**
Haitao Chu, University of Minnesota
- 8:55 **A multivariate to multivariate approach for voxel-wise genome-wide association analysis**
Shuo Chen, University of Maryland School of Medicine
- 9:20 **A model for effect modification using targeted learning with observational data arising from multiple studies**
Mireille Schnitzer, University de Montreal
- 9:45 **Evaluation of various estimators for standardized mean difference in meta-analysis**
Lifeng Lin, Florida State University

Advances in ecological data modelling

Organizer & Chair: Hideyasu Shimadzu, Loughborough University, UK

- 8:30 **Integrating multiple sources of ecological data to estimate species abundance of woody plants at geographic scales**
Keiichi Fukaya, National Institute for Environmental Studies, Japan
- 8:55 **Estimating Abundance from Animal Traces**
Rafael Moral, Maynooth University, Ireland
- 9:20 **Categorical data analysis to investigate spatial and temporal trend for Integrated Ecosystem Assessment in the Norwegian Sea**
Hiroko Solvang, Institute of Marine Research, Norway
- 9:45 **Spatiotemporal modeling of an estuarine decapod using Bayesian inference: environmental drivers of juvenile blue crab abundance**
Grace Chiu, Virginia Institute of Marine Science

Monday, June 14, 2021

10:30-12:15pm PDT

Statistical Challenges in Analysis and Implementation of Results Using Electronic Health Records and Insurance Claims Data

Organizer & Chair: Menggang Yu, University of Wisconsin

- 10:30 **Handling Outcome Misclassification and Selection Bias in Association Studies Using Electronic Health Records**
Bhramar Mukherjee, University of Michigan
- 10:55 **Meeting the mandate of the 21st Century Cures Act: Overcoming the challenges of real world data to improve cancer care and outcomes**
Rebecca Hubbard, University of Pennsylvania
- 11:20 **Using medical insurance claims to measure structural features of both health organizations and the physicians within them to aid the study of variations in health care**
James O'Malley, Dartmouth College
- 11:45 **Improve patient identification for the University of Wisconsin health system's complex case management program**
Menggang Yu, University of Wisconsin

Biomarkers, Prediction, and Clinical Outcomes: Applications in Kidney Transplant and Disease

Organizer & Chair: Kathleen Kerr, University of Washington

10:30 **Quantifying Overall Donor Effects on Transplant Outcomes Using Kidney Pairs from Deceased Donors**

Kathleen Kerr, University of Washington

10:55 **Development and assessment of risk models for interval-censored events post kidney transplant using the variability of a longitudinal biomarker**

Kristen Campbell, University of Colorado

11:20 **Prediction of atrial fibrillation in chronic kidney disease**

Leila Zelnick, University of Washington

11:45 **Assessing the Impacts of Misclassified Case-Mix Factors on Healthcare Provider Profiling: performance of dialysis facilities**

Yi (Lisa) Mu, Actelion Pharmaceuticals

Bayesian methods for incorporating external data in clinical trials

Organizer: Ben Saville, Berry Consultants

Chair: Christina Saunders, Berry Consultants

10:30 **Bayesian methods for incorporating external control data in adaptive clinical trials**

Kristian Thorlund, McMaster University

10:55 **Bayesian borrowing of external treatment effect: A recent FDA device approval in heart failure**

Ben Saville, Berry Consultants

11:20 **Bayesian Sequential Monitoring for Pediatric Clinical Trials with Adult Data Extrapolation**

Matt Psioda, University of North Carolina at Chapel Hill

11:45 **Quantifying the amount of information added to a trial from the incorporation of external data**

Kert Viele, Berry Consultants

New Developments on Statistical Learning and Inference

Organizer & Chair: Linglong Kong, University of Alberta

10:30 **Proximal Temporal Consistent Learning for Estimating Infinite Horizon Dynamic Treatment Regimes**

Ruoqing Zhu, University of Illinois at Urbana-Champaign

10:55 **An integrated model approach to activation signatures and background connectivity for task fMRI data**

Michelle Miranda, University of Victoria

11:20 **Adaptive-to-model hybrid test for regressions**

Lingzhu Li, University of Alberta

11:45 **Causal Inference Using Sufficient Dimension Reduction**

Yeying Zhu, University of Waterloo

Student paper presentation 1

Chair: Laura Saba, University of Colorado

10:30 **Profile Matching for the Generalization, Transportation, and Personalization of Causal Inferences**

Eric Cohn, Harvard University

10:50 **On the implied weights of linear regression for causal inference**

Ambarish Chattopadhyay, Harvard University

11:10 **Nonparametric causal mediation analysis for stochastic interventional (in)direct effects**

Nima Hejazi, University of California, Berkeley

11:30 **Accurate Risk Prediction for Cardiovascular Disease Intervention across Multiple Subpopulations from UK Biobank Data**

Waverly Wei, University of California, Berkeley

Monday, June 14, 2021

12:15-1:15pm PDT

Graduate Student Social Hour

Monday, June 14, 2021

1:45-3:30pm PDT

Innovative Statistical Methodology Development in Precision Medicine

Organizer & Chair: Lei Liu, Washington University in St. Louis

1:45 **Testing a high-dimensional parameter in the presence of high-dimensional nuisance parameters**

Wei Pan, University of Minnesota

2:10 **Causal inference via artificial neural networks: from prediction to causation**

Shujie Ma, UC Riverside

2:35 **New Approaches for Inference on Optimal Treatment Regimes**

Lan Wang, University of Miami

3:00 **Precision Medicine: Interaction survival tree approach for recurrent event data**

Lei Liu, Washington University in St. Louis

Statistical inference in modern, large-scale time series data

Organizer: Shizhe Chen, University of California, Davis

Chair: Xu Shi, University of Michigan

1:45 **An Instrumental Variable Method for Point Processes**

Shizhe Chen, University of California, Davis

2:10 **Time-varying overlapping clustering method via latent factor model**

Kean Ming Tan, University of Michigan

2:35 **Causal Inference on Distribution Functions**

Linbo Wang, University of Toronto

3:00 **On Proximal Causal Inference With Synthetic Controls**

Xu Shi, University of Michigan

The 200th Birth Anniversary of Florence Nightingale: Celebrating Women in Statistics - Past, Present, and Future.

Organizer & Chair: Nusrat Jahan, James Madison University

1:45 **Empowering women in statistics for 50 years: History of the Caucus for Women in Statistics**

Tomi Mori, St. Jude Children's Research Hospital

2:10 **Paving the Way: Women as Mentors and Advocates for Junior Statisticians**

Jessica Minnier, OHSU-PSU School of Public Health

2:35 **Statistics Education in the field of Health Sciences**

Nusrat Jahan, James Madison University

3:00 **Florence Nightingale Day: Inspiring and Passing the 'Lamp' to the Next Generation Statisticians**

Shili Lin, Ohio State University

Recent Advances in Neuroimaging Analysis

Organizer: Lexin Li, University of California, Berkeley

Chair: Jingshen Wang, University of California, Berkeley

1:45 **Brain connectivity-informed regularization methods in multi-modal imaging**

Jaroslav Harezlak, Indiana University

2:10 **A Bayesian approach to joint modeling of matrix-valued imaging data and treatment outcome with applications to depression studies**

Bei Jiang, University of Alberta

2:35 **Time-varying L_0 optimization for Spike Inference from Multi-Trial Calcium Recordings**

Zhaoxia Yu, University of California, Irvine

3:00 **Functional Response Quantile Regression Model**

Linglong Kong, University of Alberta

New directions in radiation epidemiology

Organizer: Munechika Misumi, Radiation Effects Research Foundation

Chair: Richard Sposto, Radiation Effects Research Foundation

1:45 **Radiation risk estimation and statistical methods for the long-term follow-up studies of Japanese Atomic Bomb Survivors**

Munechika Misumi, Radiation Effects Research Foundation

2:10 **An application of multiple indicators, multiple causes measurement error models to adjust for dose error in RERF data**

Carmen Tekwe, Indiana University Bloomington

2:35 **Biologically based models of cancer risk in radiation research**

Jan Christian Kaiser, Helmholtz zentrum münchen Germany

3:00 **Statistical issues in estimating factors affecting the individual response to radiation**
Kyoji Furukawa, Kurume University

Monday, June 14, 2021

3:45-5:30pm PDT

Topics in Causal Inference

Organizer: Lexin Li, University of California, Berkeley

Chair: Kuang-Yao Lee, Temple University

3:45 **Inference for algorithm-agnostic variable importance**

Marco Carone, University of Washington

4:10 **Causal Estimation in Observational Data Subject to Missing by A Machine Learning Approach**

Xiaochun Li, Indiana University

4:35 **Inference on Heterogeneous Quantile Treatment Effects via Rank-Score Balancing**

Jingshen Wang, University of California, Berkeley

5:00 **Floor Discussion**

Design and modeling for complex featured data

Organizer: Zhezhen Jin, Columbia University

Chair: Lu Tian, Stanford University

3:45 **Design and analysis of biomarker-integrated clinical trials with adaptive threshold detection and flexible patient enrichment**

Ting Wang, Biogen

4:10 **Incorporating Imaging in Cure Rate Models**

Zhangsheng Yu, Shanghai Jiaotong University

4:35 **Semi-/non-parametric regression for pooled response data**

Xianzheng Huang, University of South Carolina

5:00 **Dynamic Risk Prediction Triggered by Intermediate Events Using Survival Tree Ensembles**

Yifei Sun, Columbia University

New fronts in survival and longitudinal data analysis in biomedical research

Organizer: Zhigang Li, University of Florida

Chair: Yimei Li, St. Jude Children's research hospital

3:45 **An efficient implementation of a semiparametric joint model for longitudinal and competing risks data**

Gang Li, UCLA

4:10 **Joint Penalized Spline Modeling of Multivariate Longitudinal Data**

Lihui Zhao, Northwestern University

4:35 **Sample Size Estimation for Trials of Recurrent Events with Additive Treatment Effects**

Liang Zhu, University of Texas at Houston

5:00 **Joint modeling in presence of informative censoring in palliative care studies**

Zhigang Li, University of Florida

Modern Methods in Ecological Statistics

Organizer & Chair: Laura Cowen, University of Victoria

- 3:45 **Multi-Year Bayesian Hierarchical Framework to Smoothly Fill Missing Data Gaps in Mark-Recapture Studies**
Audry Beliveau, University of Waterloo
- 4:10 **Mark-recapture and Bayesian State Space Analysis of Fish Movements in the Region of Canadian Arctic**
Saman Muthukumarana, University of Manitoba
- 4:35 **The role of computation in estimating abundance of large carnivores in Scandinavia**
Perry De Valpine, University of California - Berkeley
- 5:00 **Maximum unified fatty acid signature analysis: A novel approach to QFASA**
Holly Steeves, University of Western Ontario

Student paper presentation 2

Chair: Mourad Tighiouart, Cedars-Sinai

- 3:45 **Using decision theory to avoid fallacies of post hoc power**
Chloe Krakauer, University of Washington and Kaiser Permanente Washington Health Research Institute
- 4:05 **The relationship between the Bayes factor and separation of Bayesian credible intervals in within-subject designs**
Zhengxiao Wei, University of Victoria
- 4:15 **Bayesian Variance Estimation and Hypothesis Testing Using Inference Loss Functions**
Kendrick (Qijun) Li, University of Washington
- 4:35 **Quantifying uncertainty in spikes estimated from calcium imaging data**
Yiqun Chen, University of Washington

Tuesday, June 15, 2021

8:30-10:15am PDT

Novel statistical methods for Personalized Treatments

Organizer & Chair: Bibhas Chakraborty, National University of Singapore

- 8:30 **Assessing dynamic treatment regimes embedded in a SMART with an ordinal outcome**
Bibhas Chakraborty, National University of Singapore
- 8:55 **Estimation and inference on high-dimensional individualized treatment rule in observational data using split-and-pooled de-correlated score**
Yingqi Zhao, Fred Hutchinson Cancer Research Center
- 9:20 **Some comparisons between likelihood and surrogate based objective functions for individualized treatment rule estimation**
Michael Kosorok, University of North Carolina at Chapel Hill
- 9:45 **Discussant:** Eric Lafer, Duke University

Analytical Methods for Time to Event Endpoints with Non-proportional Hazards

Organizer: Amarjot Kaur, Merck Research Labs

Chair: Qing Li, Merck Research Labs

8:30 **A Robust Design Approach for Clinical Trials with Potential Non-proportional Hazards: A Straw Man Proposal**

Satrajit Roychoudhury, Pfizer Inc.

8:55 **A user's perspective on the analytical methods under non-proportional hazards**

Amarjot Kaur, Merck Research Labs

9:20 **Weighted Kaplan-Meier statistics and RMST – the better testing and estimating strategy for time to event analysis in study with fixed duration?**

Zhiliang Li, CRISPR Therapeutics

9:45 **Efficiency vs. Interpretability in Clinical Trials Testing**

Richard Chappell, University of Wisconsin, Madison

Complex functional data analysis

Organizer: Kuang-Yao Lee, Temple University

Chair: Bei Jiang, University of Alberta

8:30 **Cross-Component Registration for Multivariate Functional Data, With Application to Growth Curves**

Hans Mueller, University of California at Davis

8:55 **Unified Principal Component Analysis for Sparse and Dense Functional Data under Spatial Dependency**

Yehua Li, University of California at Riverside

9:20 **Hypothesis testing for functional linear models**

Yu-Ru Su, Kaiser Permanente Washington Health Research Institute

9:45 **Functional sufficient dimension reduction through average Fréchet derivatives**

Kuang-Yao Lee, Temple University

Change-point detection, inference, and applications to biological data

Organizer: Ning Hao, University of Arizona

Chair: Yue Niu, University of Arizona

8:30 **A Nonparametric procedure for Frechet Change point detection**

Yichao Wu, University of Illinois at Chicago

8:55 **Change point localization in dependent dynamic nonparametric random dot product graphs**

Oscar Madrid Padilla, University of California at Los Angeles

9:20 **Equivariant Variance Estimation for Multiple Change-point Model**

Han Xiao, Rutgers University

9:45 **A super scalable algorithm for short segment detection**

Yue Niu, University of Arizona

Recent Methods for Analyzing Infectious Disease Data

Organizer & Chair: Peihua Qiu, University of Florida

8:30 **A longitudinal Bayesian mixed effects model with hurdle Conway-Maxwell-Poisson distribution**

Jeremy Gaskins, University of Louisville

8:55 **Statistical Adjustment for Reporting Bias in Outbreak Data of Infectious Diseases**

Yang Yang, University of Florida

9:20 **Effective Spatio-Temporal Surveillance of Infectious Diseases**

Kai Yang, University of Florida

9:45 **Effective Spatio-Temporal Surveillance of Infectious Diseases**

Peihua Qiu, University of Florida

Tuesday, June 15, 2021

10:30-12:15pm PDT

Analysis of wearable devices data in biomedical studies

Organizer & Chair: Ken Wang, Fred Hutchinson Cancer Research Center

10:30 **Eliciting longitudinal physical activity patterns using densely sampled accelerometry**

Loki Natarajan, University of California, San Diego

10:55 **Streamlining the collection and pre-processing of accelerometry data in large cohort studies and clinical trials**

Jacek Urbanek, Johns Hopkins University

11:20 **Graph-based tests on mean and variance components of the repeatedly assessed physical activity density objects**

Haochang Shou, University of Pennsylvania

11:45 **Functional data analysis methods for characterizing physical activity intensity and duration using accelerometry data**

Chongzhi Di, Fred Hutchinson Cancer Research Center

Valid statistical approaches in non-randomized oncology study data analysis

Organizer & Chair: Sunhee Ro, Sierra Oncology

10:30 **Accounting for Patient Selection in the Interpretation of Single Arm Phase 2 trials**

Eric Holmgren, BeiGene Pharmaceuticals USA

10:55 **How to Make a “Relatively Fair” Comparison without a Randomized Controlled Trial**

Zhiyue Huang, Roche

11:20 **A randomized Phase II design which brings in information on the control arm from past studies to reduce the sample size**

Mithat Gonen, Memorial Sloan Kettering Cancer Center

11:45 **Propensity-score based vs regression based approach for adjusting bias in treatment effect estimate from non-randomized, cross-trial comparison**

Sunhee Ro, Sierra Oncology

Recent Statistical Developments in High-Dimensional Omics Sciences

Organizer & Chair: Debmalya Nandy, University of Colorado Anschutz Medical Campus

10:30 **Differential Expression Analysis using Kernel Machines for CyTOF data**

Tusharkanti Ghosh, University of Colorado Anschutz Medical Campus

10:55 **Identifying condition-specific patterns in large-scale genomic data**

Qunhua Li, Penn State University

- 11:20 **Towards Mechanistic Inferences in Radiomics**
Debashis Ghosh, University of Colorado Anschutz Medical Campus
- 11:45 **scClassify: multiscale classification of cells using single and multiple reference**
Jean Yee Hwa Yang, University of Sydney

Contributions to spatio-temporal models with applications to environmental and ecological data

Organizer & Chair: Claudio Fuentes, Oregon State University

- 10:30 **Multivariate spatial analysis of non-negative responses using SF-NNGPs**
Daniel Taylor-Rodriguez, Portland State University
- 10:55 **Spatial Modeling of Zero-Inflated Data with Copula Models**
Lisa Madsen, Oregon State University
- 11:20 **Nonparametric Spatio-Temporal Hawkes Processes: Benefits and Uses**
James Molyneux, Oregon State University
- 11:45 **A linear mixed model formulation for spatio-temporal random processes with computational advances for the product, sum, and product--sum covariance functions**
Michael Dumelle, Pacific Ecological Systems Division - EPA

Student paper presentation 3

- Chair: Jarrett Barber, Northern Arizona University
- 10:30 **Summix: A method for detecting and adjusting for population structure in genetic summary data**
Ian Arriaga-MacKenzie, University of Colorado
- 10:50 **Efficiency and precision for hidden population models**
Matthew Parker, Simon Fraser University
- 11:10 **Doubly robust capture-recapture methods for estimating population size** James Manjari Das, Carnegie Mellon University
- 11:30 **A Tree-based Federated Learning Approach for Personalized Treatment Effect Estimation from Heterogeneous Data Sources.**
Xiaoqing Tan, University of Pittsburgh
- 11:50 **A Tree-based Federated Learning Approach for Personalized Treatment Effect Estimation from Heterogeneous Data Sources.**
Xinyuan Dong, University of Washington

Tuesday, June 15, 2021

12:15-1:30pm PDT

Early Career Panel

Organizer: Ying Lu, Stanford University

Moderator: Ying Lu, Stanford University

12:15 **Discussion**

Panelists: Nebiyou Bekele, Excelis

Brad Biggerstaff, CDC

Chito Hernandez, Biomarin
Joan Hu, Simon Fraise University
Karen Messer, University of California San Diego
Megan Othus, Fred Hutchinson Cancer Research Center

Tuesday, June 15, 2021

1:45-3:30pm PDT

Advances in statistical approaches for handling High-dimensional data

Organizer & Chair: MinJae Lee, University of Texas Southwestern

- 1:45 **ConQuR-ing Batch Effects in Microbiome Profiling Studies using Conditional Quantile Mapping**
Michael Wu, Fred Hutchinson Cancer Research Center
- 2:10 **Extensions of machine learning methods for classification of objects based on high-dimensional measurements of embedded observations within each object**
Jose-Miguel Yamal, University of Texas School of Public Health
- 2:35 **Integrative Analysis of Multi-Omic Data via Sparse Multiple Co-Inertia Analysis**
Qi Long, University of Pennsylvania
- 3:00 **A Landscape of Acquired Allelic Imbalance across the Cancer Continuum**
Paul Scheet, The University of Texas MD Anderson Cancer Center

Recent developments in functional data analysis

Organizer & Chair: Chongzhi Di, Fred Hutchinson Cancer Research Center

- 1:45 **Joint model for survival and multivariate sparse functional data with application to a study of Alzheimer's Disease**
Luo Xiao, North Carolina State University
- 2:10 **Modeling trajectories using functional linear first-order differential equations**
Julia Wrobel, University of Colorado Denver
- 2:35 **Robust functional principal components for sparse longitudinal data**
Matias Salibian-Barrera, University of British Columbia
- 3:00 **Robust Functional Principal Component Analysis via A Functional Pairwise Spatial Sign Operator**
Ken Wang, Fred Hutchinson Cancer Research Center

Novel methods in latent class analysis

Organizer: Sarah Schmiege, University of Colorado Anschutz Medical Campus

Chair: Mary Sammel, University of Colorado Anschutz Medical Campus

- 1:45 **Multilevel Latent Class Analysis for Cross-Classified Data Structures**
Katherine Masyn, University of Illinois at Chicago
- 2:10 **Latent Class Analysis with Time-Varying Covariate Effects: A Simulation Study and Empirical Example of LCA-TVEM**
Bethany C. Bray, University of Colorado Denver

- 2:35 **Confirmatory latent class methods evaluating performance of threshold boundary and equality constraints**
Sarah Schmiege, University of Colorado Anschutz Medical Campus
- 3:00 **Joint latent class modeling approach for predicting clinical outcomes with longitudinal profiles of biomarkers subject to limits of detection**
Lan Kong, Penn State University College of Medicine

Student paper presentation 4

Chair: Holly Steeves, Western University

- 1:45 **Fitting a stochastic model of intensive care occupancy to noisy hospitalization time series**
Achal Awasthi, Duke University
- 2:05 **Effectiveness of Localized Lockdowns in the COVID-19 Pandemic**
Yige Li, Harvard T. H. Chan School of Public Health
- 2:25 **RECeUS: Ratio Estimation of Censored Uncured Subjects, A Different Approach for Studying Sufficient Follow-Up in Studies of Long-Term Survivors**
Subodh Selukar, University of Washington
- 2:45 **Ant Colony System Optimization for spatiotemporal Modelling of Combined EEG and MEG Data**
Eugene Opoku, University of Victoria

Contributed paper presentation 1

Chair: Yingqi Zhao, Fred Hutchinson Cancer Research Center

- 1:45 **(Poster Presentation) New selection method to identify pleiotropic variants associated with both quantitative and qualitative traits**
Kipoong Kim, Pusan National University
- 1:55 **(Poster Presentation) Effectiveness of Localized Lockdowns in the COVID-19 Pandemic**
Xianglong Liang, Pusan National University
- 2:05 **Simulating Bugs Over Time: A User-Friendly Guide to Simulating Longitudinal OTU Counts Using the Dirichlet-Multinomial Distribution**
Nicholas Weaver, University of Colorado
- 2:20 **Extension of the Condition-adaptive Fused Graphical Lasso and Application to Modeling Brain Region Co-Expression Networks**
Souvik Seal, University of Colorado
- 2:35 **The Impact of Continuity Corrections on Rare-Event Meta-Analysis**
Brinley Zabriskie, Brigham Young University
- 2:50 **Extension of the Two-Step Approach for Informative Dropout in Survival Analysis**
Cristina Murray-Krezan, University of New Mexico
- 3:05 **Salmon stock forecasting using remote sensing covariates**
Mehnaz Jahid, University of Victoria

Presidential Invited Address

Organizer & Chair: Laura Cowen, University of Victoria

3:45 **How to count the things you didn't see: the magic and mystery of estimating population size**

Rachel Fewster, The University of Auckland

Wednesday, June 16, 2021

8:30-10:15am PDT

Frontiers of statistical genomics: deep learning and beyond

Organizer & Chair: Wei Sun, Fred Hutchinson Cancer Research Center

8:30 **Knockoff genotypes: value in counterfeit**

Chiara Sabatti, Stanford University

8:55 **Integrating GWAS and multi-omics QTL summary statistics to elucidate disease genetic mechanisms via a hierarchical low-rank model**

Lin Chen, University of Chicago

9:20 **A new clustering algorithm for assigning cells to known cell types according to marker genes**

Jun Li, University of Notre Dame

9:45 **DeepGWAS to Enhance GWAS Signals for Neuropsychiatric Disorders via Deep Neural Network**

Yun Li, UNC Chapel Hill

Statistical Considerations for N-of-1 Clinical Trial Designs

Organizer & Chair: Sonia Jain, University of California, San Diego

8:30 **nof1: an R package for analyzing and presenting n-of-1 trials**

Jiabei Yang, Brown University

8:55 **Modeling Individual Goal Achievement Behavior Using Bayesian Networks**

Christian Pascual, University of California, San Diego

9:20 **Statistical considerations of Bayesian Model Parameters Under Fixed or Random Intercepts**

Kexin Qu, Brown University

9:45 **A Bayesian-bandit adaptive design for N-of-1 clinical trials**

Sama Shrestha, Pharmapace, Inc

Analysis of health outcomes data with complex correlation structures

Organizer: Ann Lazar, University of California San Francisco

Chair: Elizabeth Juarez-Colunga, University of Colorado Denver

8:30 **Use of copulas for analyzing discrete longitudinal and clustered data**

Rao Chaganty, Old Dominican University

8:55 **Correlated gap time analysis with flexible hazards applied to pulmonary exacerbations in the EPIC Observational Study**

Elizabeth Juarez-Colunga, University of Colorado Denver

9:20 **The mixed model for repeated measures for cluster randomized trials**

Melanie Bell, The University of Arizona

9:45 **Discussant:** Ann Lazar, University of California San Francisco

Contributed paper presentation 2

Chair: Xinyuan Dong, University of Washington

8:30 **Improving Random Forest Predictions in Small Datasets from Two-phase Sampling Designs**

Sunwoo Han, Fred Hutchinson Cancer Research Center

8:45 **Random Forests for Time Series Forecasting and Forecast Intervals**

Barbara Bailey, San Diego State University

9:00 **SurvBenchmark: comprehensive benchmarking study of survival analysis methods using both omics data and clinical data**

Yunwei Zhang, The University of Sydney

9:15 **A High-dimensional Mediation Model for a Neuroimaging Mediator: Integrating Clinical, Neuroimaging, and Neurocognitive Data to Mitigate Late Effects in Pediatric Cancer**

Jade Xiaoqing Wang, St. Jude Children's Research Hospital

9:30 **Accurate Source Tracking Using Microbial Samples with Applications in Forensic Study**

Qianwen Luo, The University of Arizona

9:45 **Calibration Coefficient Estimation in Quantitative Fatty Acid Signature Analysis**

Jennifer McNichol, The University of New Brunswick

Student paper presentation 5

Chair: Cindy Feng, Dalhousie University

10:30 **Development of an augmented high-dimensional graphical lasso model to incorporate prior biological knowledge for global network learning**

Yonghua Zhuang, University of Colorado Anschutz Medical Campus

10:50 **Learning network formation patterns with stochastic block models**

Zitong Zhang, University of California Davis

11:10 **Precision Matrix Estimation under the Horseshoe-like Prior-Penalty Dual**

Sagar Ksheera, Purdue University

11:30 **High-dimensional semi-supervised learning: in search of optimal inference of the mean**

Yuqian Zhang, University of California, San Diego

Wednesday, June 16, 2021

10:30-12:15pm PDT

High-dimensional inference with applications to -omics data

Organizer & Chair: Tusharkanti Ghosh, University of Colorado, Anschutz Medical Campus

10:30 **CCmed: Cross-condition mediation analysis for identifying replicable trans-associations mediated by cis-gene expression**

Fan Yang, University of Colorado, Anschutz Medical Campus

- 10:55 **An Exploration of Multiple-Testing Correction Methods in Large-Scale Omics Studies**
 Debmalya Nandy, University of Colorado Anschutz Medical Campus
- 11:20 **Mechanism-Aware Imputation: A two-step approach in handling missing values in metabolomics**
 Elin Shaddox, University of Colorado, Anschutz Medical Campus
- 11:45 **Compositional Data Analysis using Kernels in Mass Cytometry Data**
 Pratyaydipta Rudra, Oklahoma State University

Recent Advancements in Spatio-Temporal Modeling

Organizer & Chair: Ali Arab, Georgetown University

- 10:30 **Multivariate spatio-temporal models for landscape change using aerial imagery**
 Xinyi (Lucy) Lu, Colorado State University
- 10:55 **Conjugate spatio-temporal Bayesian multinomial Polya-gamma regression for the reconstruction of climate using pollen**
 John Tipton, University of Arkansas
- 11:20 **A Bayesian approach for estimating age-adjusted rates for low-prevalence diseases over space and time**
 Melissa Jay, University of Iowa
- 11:45 **Strategies for Modeling Dynamics of Emerging Epidemics**
 Ali Arab, Georgetown University

Recent advances in designs and quantitative analysis in immunological research

Organizer & Chair: Tao He, San Francisco State University

- 10:30 **Characterization of the landscape of repertoire sequencing data with novel statistical approaches and advanced machine learning techniques**
 Li Zhang, University of California, San Francisco
- 10:55 **Alternative Analysis Methods for Non-proportional Hazards in Cancer Immunology Studies**
 Ray Lin, Genetech
- 11:20 **Design for immuno-oncology clinical trials involving non-proportional hazards patterns**
 Zhenzhen Xu, FDA
- 11:45 **Floor Discussion**

Recent Development in Interrupted Time Series Methods

Organizer: Maricela Cruz, Kaiser Permanente Washington Health Research Institute

Chair: Michelle Nuno, University of South California

- 10:30 **Power and sample size calculation for interrupted time series analyses of count outcomes**
 Shangyuan Ye, Harvard Pilgrim Health Care Institute and Harvard Medical School
- 10:55 **A formal test for the existence of a change point in Interrupted Time Series**
 Maricela Cruz, Kaiser Permanente Washington Health Research Institute

- 11:20 **An Improved Method for Analysis of Interrupted Time Series (ITS) Data: Accounting for Patient and Healthcare Heterogeneity Using Weighted Analysis**
Joycelyne Ewusle, University of Ottawa
- 11:45 **Birds of a feather flock together: Comparing controlled pre-post designs** Ali Arab,
Carrie Fry, Vanderbilt University

Student paper presentation 6

- Chair: Camile Moore, National Jewish Health
- 10:30 **Scale mixture of skew-normal linear mixed models with within-subject serial dependence**
Fernanda Lang Schuumacher, University of Campinas
- 10:50 **REHE: Fast Variance Components Estimation for Linear Mixed Models**
Kun Yue, University of Washington
- 11:10 **Exact inference for fixed-effects meta-analysis of proportions**
Spencer Hansen, University of Washington
- 11:30 **Power Analysis for Stepped Wedge Trials with Multiple Interventions**
Phillip Sundin, University of California Los Angeles
- 11:50 **Model misspecification in stepped wedge trials: Random effects for time or treatment**
Emily Voldal, University of Washington