WEDNESDAY, AUGUST 7

Committee/Business Meetings & Other Activities

7:00 a.m.–8:30 a.m. CC-521c
Conference on Statistical Practice Steering Committee Meeting
Chair(s): LeAnna Stork, Monsanto Company

7:00 a.m.–8:30 a.m. I-Saint-Laurent
Brigham Young University Friends and Alumni Open House Breakfast
Organizer(s): H. Dennis Tolley, Brigham Young University Department of Statistics

7:00 a.m.–8:30 a.m. I-Saint-Jean-Baptiste
Q&P Executive Committee Strategic Planning Meeting
Chair(s): Theresa Utlaut, Intel Corporation

7:00 a.m.–8:30 a.m. I-Saint-Paul
Scientific and Public Affairs Advisory Committee Business Meeting
Chair(s): Clyde Tucker, American Institutes for Research

7:00 a.m.–8:30 a.m. I-Saint-Louis
Committee on International Relations in Statistics Committee Meeting
Chair(s): Sonya Vartivarian, GAO

7:00 a.m.–9:00 a.m. I-Les Huitres
ASA 175th Anniversary Steering Committee
Chair(s): Christy J. Chuang-Stein, Pfizer Inc.

7:00 a.m.–6:00 p.m. CC-513c
Speaker Management Room

7:00 a.m.–6:00 p.m. CC-200 Viger Hall
Cyber Center, Sponsored by IBM

7:30 a.m.–4:30 p.m. CC-200 Viger Hall
ASA Membership/Help Desk/Press Desk

7:30 a.m.–4:30 p.m. CC-200 Viger Hall
JSM Main Registration

8:00 a.m.–2:30 p.m. CC-220d
Career Placement Service

8:00 a.m.–2:30 p.m. CC-220bc
Exhibitor Lounge

8:30 a.m.–10:30 a.m. I-Saint-Jacques
JSM Diversity Mentoring Program
Chair(s): Sydeaka Watson, The University of Chicago

9:00 a.m.–2:30 p.m. CC-220bc
EXPO 2013

9:00 a.m.–2:30 p.m. CC-220bc
ASA Marketplace

9:00 a.m.–2:30 p.m.
American Statistical Association Booth #201

10:00 a.m.–11:00 a.m. I-Saint-Jean-Baptiste
ACCE Debriefing Meeting
Chair(s): Amita Manatunga, Emory University

12:00 p.m.–2:30 p.m. I-Saint-Paul
ENAR 2014 Spring Meeting Planning Luncheon
Organizer(s): Dan Heitjan, ENAR; DuBois Bowman, ENAR

12:30 p.m.–2:00 p.m. CC-521c
Committee on Meetings Business Meeting
Chair(s): Xuming He, University of Michigan

12:30 p.m.–2:00 p.m. I-Saint-Francois Xavier
NISS/ASA Writing Workshop for Junior Researchers (Closed)
Chair(s): Keith Crank

12:30 p.m.–2:00 p.m. I-Saint-Louis
Noether Award Committee Luncheon
Chair(s): Pranab K. Sen, The University of North Carolina at Chapel Hill

1:00 p.m.–6:30 p.m. CC-200 Viger Hall
JSM Luggage Storage

2:30 p.m.–9:00 p.m. CC-220bc
Exhibitor Move Out

4:00 p.m.–5:00 p.m. CC-515b
Revised Guidelines for Undergraduate Statistics Programs (Open)
Chair(s): Nicholas J. Horton, Smith College

5:00 p.m.–6:30 p.m. I-Maisonneuve
Section on Statistics in Marketing Meeting
Chair(s): David Schweidel, Goizueta Business School, Emory University

5:30 p.m.–6:30 p.m. W-Fortifications
ICSA Annual Members Meeting
Organizer(s): Shuyen Ho, GlaxoSmithKline

6:00 p.m.–7:00 p.m. I-Saint-Jacques
PStat® Reception
Chair(s): Lynn Palmer, American Statistical Association

6:00 p.m.–7:30 p.m. I-Les Huitres
2013 JSM Program Committee/Committee on Meetings Appreciation Reception (by Invitation Only)
Chair(s): Bhramar Mukherjee, University of Michigan

6:00 p.m.–7:30 p.m. I-Saint-Pierre
Statisticians Working on Complementary and Alternative Medicine (CAM) and Integrative Medicine Studies
Organizer(s): Laura Lee Johnson, National Center for Complementary and Alternative Medicine (NCCAM)

6:00 p.m.–7:30 p.m. I-Saint-Francois Xavier
PSU Statistics Reception
Organizer(s): David Hunter, Penn State University

6:00 p.m.–7:30 p.m. I-Saint-Laurent
Section on Statistical Education Business Meeting
Chair(s): Deborah Nolan, University of California at Berkeley

6:00 p.m.–8:00 p.m. CC-516c
Survey Research Methods Section Business Meeting
Chair(s): Jill Montaquila, Westat

Continuing Education (Fee Events)

CE_27T
Creating Statistical Graphics in SAS
8:00 a.m.–9:45 a.m. W-Fortifications
ASA, SAS
Instructor(s): Warren Kuhfeld, SAS Institute

CE_28T
Efficient Trial Design with the New EastÆ Architect
8:00 a.m.–9:45 a.m. W-Ville-Marie
ASA, Cytel Software Corporation
Instructor(s): Cyrus Mehta, Cytel Inc.; Charles Liu, Cytel Inc.

CE_29T
Introduction to Data Mining with CART Classification and Regression Trees
8:00 a.m.–9:45 a.m. W-St. Antoine
ASA, Salford Systems
Instructor(s): Mikhail Golovnya, Salford Systems

CE_30T
Model Selection with SAS/STAT® Software
10:00 a.m.–11:45 a.m. W-Fortifications
ASA, SAS
Instructor(s): Funda Gunes, North Carolina State University

CE_31T
Compass 2.0: Software for the Design and Execution of Dose-Finding Trials
10:00 a.m.–11:45 a.m. W-Ville-Marie
ASA, Cytel Software Corporation
Instructor(s): James Bolognese, Cytel Inc.; Charles Liu, Cytel Inc.

CE_32T
Data Mining with TreeNet (Stochastic Gradient Boosting) and Random Forests, Including the Latest Refinements and Model Compression Techniques
10:00 a.m.–11:45 a.m. W-St. Antoine
ASA, Salford Systems
Instructor(s): Mikhail Golovnya, Salford Systems

CE_33T
Structural Equation Modeling Using the CALIS Procedure in SAS/STATÆ Software
1:00 p.m.–2:45 p.m. W-Fortifications
ASA, SAS
Instructor(s): Yiu-Fai Yung, SAS Institute

CE_34T
Overview of New Features in StatXact® 10 and LogXact® 10
1:00 p.m.–2:45 p.m. W-Ville-Marie
ASA, Cytel Software Corporation
Instructor(s): Nitin R. Patel, Cytel Software Corporation; Pralay Senchaudhuri, Cytel Software Corporation

CE_35T
Introduction to Modern Regression Analysis Techniques: Linear, Logistic, Nonlinear, Regularized, GPS (Generalized Path Seeker), Lars, Lasso, Elastic Net, and Mars (Multivariate Adaptive Regression Splines)
1:00 p.m.–2:45 p.m. W-St. Antoine
ASA, Salford Systems
Instructor(s): Mikhail Golovnya, Salford Systems

CE_36T
SAS® Procedures for Analyzing Survey Data
3:00 p.m.–4:45 p.m. W-Fortifications
ASA, SAS
Instructor(s): Pushpal Mukhopadhyay, SAS Institute

CE_37T
Using the Bootstrap Feature in JMP
3:00 p.m.–4:45 p.m. W-Ville-Marie
ASA, JMP
Instructor(s): Clayton Barker, SAS Institute; Michael Crotty, SAS Institute

CE_38T

Applied Data Mining Analysis: A Step-by-Step Introduction Using Real-World Data Sets

3:00 p.m.–4:45 p.m. W-St. Antoine

ASA, Salford Systems

Instructor(s): Dan Steinberg, Salford Systems

Roundtables with Coffee 7:00 a.m.–8:15 a.m.

448 CC-517d

Biopharmaceutical Section A.M. Roundtable Discussion (Fee Event)

Biopharmaceutical Section

Organizer(s): Ivan S. F. Chan, Merck Research Laboratories

WL01 **Make Small Clinical Trials/Studies Valuable—** ✦Anna Nevius, FDA/CVM

449 CC-517d

Quality and Productivity Section A.M. Roundtable Discussion (Fee Event)

Quality and Productivity Section

Organizer(s): Ming Li, GE Global Research

WL02 **Outlier Testing—**✦Thomas Bzik, Air Products and Chemicals

450 CC-517d

Section on Physical and Engineering Sciences A.M. Roundtable Discussion (Fee Event)

Section on Physical and Engineering Sciences

Organizer(s): James Wendelberger, Urban Science

WL03 **Solving High-Impact Problems in the 21st Century—** ✦Ronald Snee, Snee Associates, LLC

451 CC-517d

Section on Statistical Education A.M. Roundtable Discussion (Fee Event)

Section on Statistical Education

Organizer(s): Ming-Wen An, Vassar College

WL04 **Using Games to Effectively Teach Statistical Thinking—**✦Shonda Kuiper, Grinnell College

WL05 **Statistical Software in the Introductory Statistics Classroom—**✦Scott Toney, University of Denver

WL06 **Introducing Causal Inference in Statistical Education—**✦Judea Pearl, University of California at Los Angeles

452 CC-517d

Section on Statistics in Epidemiology A.M. Roundtable Discussion (Fee Event)

Section on Statistics in Epidemiology

Organizer(s): Madhuchhanda Mazumdar, Weill Cornell Medical College

WL07 **Nursing Home Research as a Challenge and Opportunity for Gerontologic Biostatisticians—** ✦Terrence Murphy; Peter Van Ness, Yale University School of Medicine

453 CC-517d

Section on Teaching of Statistics in the Health Sciences A.M. Roundtable Discussion (Fee Event)

Section on Teaching of Statistics in the Health Sciences

Organizer(s): Jose-Miguel Yamal, The University of Texas School of Public Health

WL08 **Introducing Bayesian Thinking and Applications to Health Science Researchers—**✦J. Jack Lee, The University of Texas MD Anderson Cancer Center

WL09 **Teaching Statistics Using R and a Flipped Classroom—**✦Megan Neely, Duke University

Special Presentation 8:30 a.m.–10:20 a.m.

454 CC-710a

Introductory Overview Lecture: Next-Generation Bioinformatics and Beyond—Other

ENAR, WNAR, IMS, SSC, International Chinese Statistical Association, International Indian Statistical Association, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA), ASA, Section on Statistics in Epidemiology

Organizer(s): Bhramar Mukherjee, University of Michigan

Chair(s): Debashis Ghosh, Penn State University

8:35 a.m. **Common Themes in Statistical Bioinformatics Analyses**—✦Rebecca W. Doerge, Purdue University

9:20 a.m. **RNAseq: Some Statistical Challenges**—✦Rafa Irizarry, JHSPH

10:05 a.m. **Floor Discussion**

Invited Sessions 8:30 a.m.–10:20 a.m.

455 CC-520a

■ Bayesian Methods for Causal Inference in Complex Settings—Invited

Section on Bayesian Statistical Science, Section on Statistics in Epidemiology, Korean International Statistical Society

Organizer(s): Michael Daniels, The University of Texas at Austin

Chair(s): Peter Thall, The University of Texas MD Anderson Cancer Center

8:35 a.m. **Bayesian Causal Inference for Multiple Mediators**—Chanmin Kim, University of Florida; ✦Michael Daniels, The University of Texas at Austin; Joe Hogan, Brown University

9:05 a.m. **Informative Priors for Unmeasured Confounding**—✦Joe Hogan, Brown University

9:35 a.m. **Causal Inference in Epidemiology Using Bayesian Methods: The Example of Meta-Analysis of Statins and Fracture Risk**—✦Lawrence C. McCandless, Simon Fraser University

10:05 a.m. **Floor Discussion**

456 CC-512ab

Robust Approaches to Handle Model Misspecification in Causal Inference—Invited

ENAR, Mental Health Statistics Section, Biometrics Section, Section on Statistics in Epidemiology

Organizer(s): Lingling Li, Harvard Medical School and Harvard Pilgrim Health Care Institute

Chair(s): Changyu Shen, Indiana University School of Medicine

9:00 a.m. **A Multiply-Robust Method to Handle Missing Confounder in Observational Studies**—✦Lingling Li, Harvard Medical School and Harvard Pilgrim Health Care Institute; Changyu Shen, Indiana University School of Medicine; Xiaochun Li, Indiana University School of Medicine; James Robins, HSPH

9:25 a.m. **A Doubly Robust Adaptation of the Mann-Whitney Test to Adjust for Measured Confounding**—✦Stijn Vansteelandt, Ghent University; Karel Vermeulen, Ghent University

9:50 a.m. **A Unified Approach for Estimation of a Treatment Effect When the Outcome Is Truncated by Death**—✦Eric Tchetgen Tchetgen, Harvard University

10:15 a.m. **Floor Discussion**

457 CC-513b

■ ● Current Statistical Issues in Comparative Effectiveness Research—Invited

Biometrics Section, Mental Health Statistics Section, Health Policy Statistics Section, Section on Statistics in Epidemiology

Organizer(s): Haibo Zhou, The University of North Carolina at Chapel Hill

Chair(s): Baiming Zou, The University of North Carolina at Chapel Hill

8:35 a.m. **Causal Mediation Analysis on Survival Outcomes in Comparative Effectiveness Research**—✦Xiao-Hua Andrew Zhou, University of Washington; Cheng Zheng, University of Washington

9:00 a.m. **Cost-Effectiveness Analysis of Breast Cancer Screening Strategies**—✦Yu Shen, The University of Texas MD Anderson Cancer Center

9:25 a.m. **Health Economic Considerations in the Conduct of CER**—✦Richard J. Willke, Pfizer Primary Care

9:50 a.m. **A Semi-Nonparametric Propensity Score Model for Clustered Observational Data**—✦Haibo Zhou, The University of North Carolina at Chapel Hill; Baiming Zou, The University of North Carolina at Chapel Hill; Fei Zou, The University of North Carolina at Chapel Hill

10:15 a.m. **Floor Discussion**

458 CC-513a

■ ● Microsimulation Models for Health Policy: Advances and Applications—Invited

Health Policy Statistics Section, SSC

Organizer(s): Carolyn M. Rutter, Group Health Research Institute

Chair(s): Carolyn M. Rutter, Group Health Research Institute

8:35 a.m. **Modeling the Roll-Out of a Bowel Cancer Screening Program**—✦Robert A. Dunne, CSIRO; Lawrence LaPointe, Clinical Genomics

9:00 a.m. **Statistical Methods in Micro-Simulation Modeling: Calibration and Predictive Accuracy of an MSM for Lung Cancer**—✦Stavroula Chrysanthopoulou, Brown University

9:25 a.m. **Uncertainty Analysis in Population-Based Disease Simulation Models: A Practical Framework**—✦Behnam Sharif, University of British Columbia

9:50 a.m. **Assessing Uncertainty in Microsimulation Model Projections**—✦Michael Wolfson, University of Ottawa

10:15 a.m. **Floor Discussion**

459 CC-516b

■ ● Quantifying the Overdiagnosis and Mortality Reductions in Cancer Screening Trials and Programs—Invited

SSC, Scientific and Public Affairs Advisory Committee

Organizer(s): James A. Hanley, McGill University

Chair(s): Nandini Dendukuri, McGill University

8:35 a.m. **Over-Diagnosis in Breast and Prostate Cancer Screening Concepts, Methods, and Mistakes**—✦Ruth Etzioni, Fred Hutchinson Cancer Research Center; Roman Gulati, FHCRC; Leslie Mallinger, FHCRC; Jeanne Mandelblatt, Georgetown University

9:00 a.m. **Statistical Method and Design: Identify the Subgroups Who Would Have Nontrivial Overall Benefit in the National Lung Screening Trial (NLST)**—✦Ping Hu, Division of Cancer Prevention, National Cancer Institute

9:25 a.m. **Measuring the Mortality Reductions Produced by Cancer Screening**—✦James A. Hanley, McGill University; Zhihui(Amy) Liu, McGill University; Erin Strumpf, McGill University; Nandini Dendukuri, McGill University

9:50 a.m. Disc: Constantine Gatsonis, Brown University

10:10 a.m. **Floor Discussion**

460 CC-520e

■ Recent Methodological Development in Genomic Studies of the Post-GWAS Era—Invited

IMS, Statistical Learning and Data Mining Section, WNAR, Biometrics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Organizer(s): Jung-Ying Tzeng, North Carolina State University

Chair(s): Jung-Ying Tzeng, North Carolina State University

8:35 a.m. **Association Mapping of Rare Variants in Samples with Related Individuals**—✦Mary Sara McPeek, The University of Chicago; Duo Jiang, The University of Chicago

9:00 a.m. **Hidden Heritability and Risk-Prediction Based on Genome-Wide Association Studies**—✦Nilanjan Chatterjee, National Cancer Institute; JuHyun Park, National Cancer Instutute; Joshua Sampson, DCEG, National Cancer Institute

9:25 a.m. **Identity by Descent in 'Unrelated' Individuals**—✦Sharon Browning, University of Washington

9:50 a.m. **A Gene Network Model for Combining De Novo Mutations and Inherited Variations to Identify Factors for Autism**—✦Kathryn Roeder, Carnegie Mellon University; Xin He, Carnegie Mellon University; Li Liu, Carnegie Mellon University; Jing Lei, Carnegie Mellon University

10:15 a.m. **Floor Discussion**

461 CC-519b

■ ● Spatial Random Effect Modeling for Small Area Environmental Health Data—Invited

Section on Statistics and the Environment, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Organizer(s): Andrew B. Lawson, Medical University of South Carolina

Chair(s): Dipankar Bandyopadhyay, University of Minnesota

8:35 a.m. **A Localized Conditional Autoregressive Model for Residual Spatial Confounding in Air Pollution and Health Studies**—✦Duncan Paul Lee, University of Glasgow

9:00 a.m. **Spatially Dependent Predictor Selection for Small-Area Health Modeling**—✦Andrew B. Lawson, Medical University of South Carolina; Jungsoon Choi, Medical University of South Carolina

9:25 a.m. **Inference for Computationally Intensive Space-Time Disease Models**—✦Murali Haran, Penn State University; Roman Jandarov, University of Washington

9:50 a.m. **Restricted Covariance Priors with Applications in Spatial Statistics**—Adrian Dobra, University of Washington; ✦Theresa Ruth Smith, University of Washington

10:15 a.m. **Floor Discussion**

462 CC-511f

Emerging Methodological Issues in Population-Based Chronic Disease Research—Invited

International Chinese Statistical Association, SSC, WNAR, Biometrics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Charles Kooperberg, Fred Hutchinson Cancer Research Center; Jianwen Cai, The University of North Carolina at Chapel Hill
Chair(s): Jianwen Cai, The University of North Carolina at Chapel Hill

8:35 a.m. **On Monitoring Outcomes of Medical Providers—** ✦John David Kalbfleisch, University of Michigan; Robert A Wolfe, University of Michigan

9:00 a.m. **Measurement Error and Complex Dietary Patterns Research—**✦Raymond J. Carroll, Texas A&M University

9:25 a.m. **Chronic Disease Prevention Trials: Challenges, Lessons, and Opportunities in the Women's Health Initiative—**✦Garnet L. Anderson, Fred Hutchinson Cancer Research Center

9:50 a.m. **The Use of Risk Models in Disease Prevention—** ✦Mitchell Gail, National Cancer Institute

10:15 a.m. **Floor Discussion**

463 CC-516d

■ ● Visualization of Structure in Complex Data—Invited

Section on Statistical Graphics, Statistical Learning and Data Mining Section, Section on Statistical Computing

Organizer(s): David H. Collins, Los Alamos National Laboratory
Chair(s): Peter Marcy, University of Wyoming

8:35 a.m. **Introduction: Statistical Visualization of Data and Process Structure—**✦Aparna V. Huzurbazar, Statistical Sciences Group, Los Alamos National Laboratory

9:00 a.m. **Parameter and Structure Learning in Nested Markov Models of Acyclic Directed Mixed Graphs—** ✦Ilya Shpitser, Harvard School of Public Health; Thomas S. Richardson, University of Washington; James Robins, Harvard School of Public Health; Robin Evans, University of Cambridge

9:25 a.m. **Graph-Theoretic Analysis of Complex Stochastic Networks—**✦David H. Collins, Los Alamos National Laboratory; Aparna V. Huzurbazar, Statistical Sciences Group, Los Alamos National Laboratory

9:50 a.m. **Object-Oriented Data Analysis—** ✦J. S. Marron, The University of North Carolina

10:15 a.m. **Floor Discussion**

464 CC-511a

■ Elicitation of Data Users' Utility Functions and Prior Information in Work with Large-Scale Data Collection for Government Agencies—Invited

Government Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): John Eltinge, Bureau of Labor Statistics
Chair(s): Nell Sedransk, National Institute of Statistical Sciences

8:35 a.m. **Overview of Elicitation Methods and Software—** ✦Paul H. Garthwaite, Open University

9:00 a.m. **Elicitation of Information for Physical Science Problems—**✦Dipak K. Dey, University of Connecticut; Nell Sedransk, National Institute of Statistical Sciences; Gyuhyeong Goh, University of Connecticut; Blaza Toman, National Institute of Standars and Technology

9:25 a.m. **Elicitation of Utility Functions and Prior Information in the Design of Complex Sample Surveys—**✦John Eltinge, Bureau of Labor Statistics

9:50 a.m. Disc: David Banks, Duke University

10:10 a.m. **Floor Discussion**

465 CC-510a

■ ● Highlights of a Special Issue of SBR in Honor of Robert O'Neill's Tenure as Director of the Office of Biostatistics at FDA—Invited

Statistics in Biopharmaceutical Research Journal, Biopharmaceutical Section

Organizer(s): Steven Snapinn, Amgen, Inc.
Chair(s): Steven Snapinn, Amgen, Inc.

8:35 a.m. **The Contributions of Robert T. O'Neill to the Evolution of Regulatory Statistical Science—** ✦Charles Anello, Applied Statistical Concepts, LLC; Suzanne Junod, FDA Office of Public Information and Library Servics, FDA History Office

9:00 a.m. **Advances in Biopharmaceutical Statistical Science Applied to Safety During Dr. O'Neill's Tenure—** ✦Frank W. Rockhold, GlaxoSmithKline

9:25 a.m. **Highlights of a Special Issue of SBR in Honor of Robert O'Neill's Tenure as Director of Office of Biostatistics at FDA—**✦Sue-Jane Wang, FDA

9:50 a.m. Disc: Robert Thomas O'Neill, FDA

10:10 a.m. **Floor Discussion**

466 CC-520d

■ ● Bayesian Methods for Understanding Human Genomes—Invited

International Society for Bayesian Analysis (ISBA), WNAR, Section on Statistics in Epidemiology

Organizer(s): Wenyi Wang, The University of Texas MD Anderson Cancer Center

Chair(s): Ying Yuan, The University of Texas MD Anderson Cancer Center

8:35 a.m. **Bayesian Hierarchical Model of Protein Binding Microarray K-mer Data—** ✦Jun S. Liu, Harvard University

9:00 a.m. **What Sequencing and Bayesian Modeling Tell Us About the Three-Dimensional Organization of Mammalian Genomes—**✦Zhaohui Steve Qin, Emory University

9:25 a.m. **Bayesian Segmentation of Cancer Genomes: A Decision Theoretic Approach—**✦Chris Holmes, Oxford University

9:50 a.m. **Gene Expression Deconvolution in Heterogenous Tumor Samples—**✦Wenyi Wang, The University of Texas MD Anderson Cancer Center

10:15 a.m. **Floor Discussion**

467 CC-710b

Wald Lecture II—Invited

IMS

Chair(s): David Siegmund, Stanford University

8:35 a.m. **Nonparametric Estimation Under Shape Constraints—**✦Piet Groeneboom, Delft University

10:05 a.m. **Floor Discussion**

Topic-Contributed Sessions 8:30 a.m.–10:20 a.m.

468 CC-510b

■ Statistical Innovations Developed for Cancer Clinical Trials—Topic-Contributed

Biopharmaceutical Section, Biometrics Section

Organizer(s): Ying Wan, Janssen Research & Development

Chair(s): Sudhakar Rao, Janssen Research & Development

8:35 a.m. **How to Maximize the Usefulness of Predictive Biomarker Data in Development of Personalized Medicines—**✦Cong Chen, Merck and Company Inc.

8:55 a.m. **Meta-Analytic Evalution of Surrogate Endpoints in Clinical Studies—**✦Geert Molenberghs, Universiteit Hasselt & Katholieke Universiteit Leuven

9:15 a.m. **Joint Analysis of Progression and Survival with Missing Data from a Cancer Clinical Trial—** ✦Dianne Finkelstein, MGH and Harvard University; David A Schoenfeld, MGH and Harvard University

9:35 a.m. **Simulation-Guided Clinical Trial Design: Does It Improve the Final Design?—**✦J. Kyle Wathen, Johnson & Johnson

9:55 a.m. Disc: Lisa Meier McShane, National Institutes of Health

10:15 a.m. **Floor Discussion**

469 CC-514a

■ ● New Methodologies in Individualized Treatment Policies—Topic-Contributed

Mental Health Statistics Section, Biometrics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Min Qian, Columbia University

Chair(s): Min Qian, Columbia University

8:35 a.m. **Designing a Pilot Sequential Multiple Assignment Randomized Trial for Developing a Dynamic Treatment Regime—**✦Daniel Almirall, University of Michigan; Scott N. Compton, Duke University; Meredith Gunlicks-Stoessel, University of Minessota; Naihua Duan, Columbia University; Susan Murphy, University of Michigan

8:55 a.m. **Accounting for Correlated Random and Fixed Effects in Tests of Moderation in Group Therapy Studies—**✦Susan Paddock, RAND Corporation; Thomas Leininger, Duke University; Sarah Hunter, RAND Corporation

9:15 a.m. **Constructing Dynamic Treatment Regimes Using Greedy-GQ Algorithm—**✦Ashkan Ertefaie, University of Michigan; Susan Murphy, University of Michigan

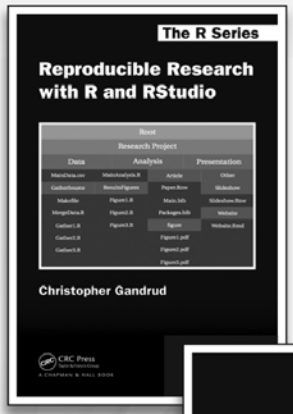
9:35 a.m. **Estimation of Treatment Policies Based on Functional Predictors—**✦Ian McKeague, Columbia University; Min Qian, Columbia University

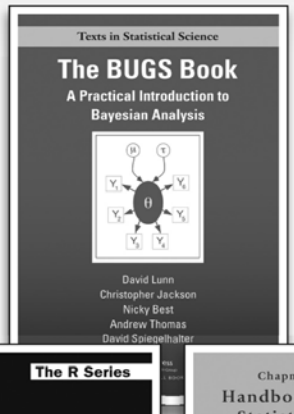
9:55 a.m. **Semiparametric Method for Selecting Optimal Individualized Treatment Strategy—**✦Rui Song, North Carolina State University

10:15 a.m. **Floor Discussion**

Visit Chapman & Hall/CRC for Special Offers!

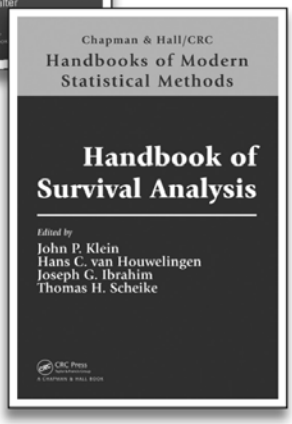
Booths #701, 703, 705, 800, & 802

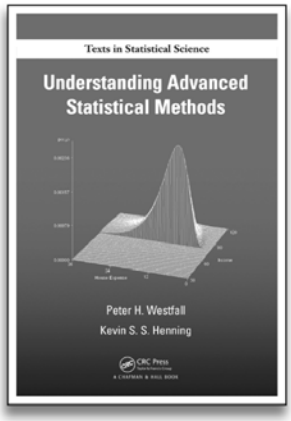




- Get the **newest** statistics books
- **Save up to 50%** on classic statistics texts
- Enter our daily drawings for a chance to **win a Kindle Fire HD**
- Ask about our other promotions

In case we miss you at JSM, use promo code **FZM32** to **SAVE 20%** when ordering at **www.crcpress.com**





Get 14-day Free Online Access to Taylor & Francis Statistics Journals

Did you know that Taylor & Francis now publishes journals of the American Statistical Association?

- Access news, special offers, and announcements through the ASA Journals Portal **http://amstat.tandfonline.com/**.
- For 14-day free online access to all Taylor & Francis statistics journals, complete a short registration process at **www.tandfonline.com/r/stats-probability**. Once you have validated your account, return to **www.tandfonline.com/r/stats-probability** to start making the most of your 14-day free access.

Taylor & Francis
Taylor & Francis Group

CRC Chapman & Hall/CRC
Taylor & Francis Group

470 CC-510d

■ Applications of Random Effects Linear Models to Personalized Medicine—Topic-Contributed

Section on Statistics in Epidemiology, Mental Health Statistics Section, Biometrics Section

Organizer(s): Francisco J. Diaz, University of Kansas Medical Center
Chair(s): Jianghua He, University of Kansas Medical Center

8:35 a.m. **Random Effects Linear Models in Cross-Over Trials**—✦Michael Kenward, University of London

8:55 a.m. **The Phenotypic Squeeze: What Can We Realistically Expect from Genetically Personalized Medicine and What Can Statisticians Do to Help Realize It?**—✦Stephen Senn, CRP-Sante

9:15 a.m. **Online Adjustment for Unwanted Variation in Molecular Assays**—✦Terence Speed, The Walter & Eliza Hall Institute of Medical Research; Johann Gagnon-Bartsch, University of California at Berkeley; Laurent Jacob, University of California at Berkeley

9:35 a.m. **Role of Statistical Random-Effects Linear Models in Personalized Medicine**—✦Francisco J. Diaz, University of Kansas Medical Center

9:55 a.m. Disc: Stella Grosser, FDA

10:15 a.m. **Floor Discussion**

471 CC-516a

■ ● Recent Advances in Likelihood-Based Inference in Mixed Models Using Data Cloning—Topic-Contributed

Section on Statistical Computing, SSC

Organizer(s): Mahmoud Torabi, University of Manitoba
Chair(s): Mahmoud Torabi, University of Manitoba

8:35 a.m. **Statistical Analysis of Serial Dilution Assays Using Estimating Functions and Data Cloning**—✦Subhash Lele, University of Alberta

8:55 a.m. **An ANOVA Test for Parameter Estimability Using Data Cloning**—✦Dave Campbell, Simon Fraser University; Subhash Lele, University of Alberta

9:15 a.m. **Assessing Parameter Identifiability in Phylogenetic Models Using Data Cloning**—✦José Miguel Ponciano, University of Florida

9:35 a.m. **Likelihood Inference in Small-Area Estimation Using P-Spline and Time Series Models**—✦Farhad Shokoohi, University of Manitoba; Mahmoud Torabi, University of Manitoba

9:55 a.m. **Likelihood-Based Population Viability Analysis in the Presence of Observation Error**—✦Khurram Nadeem, University of Alberta; Subhash Lele, University of Alberta

10:15 a.m. **Floor Discussion**

472 CC-519a

■ Statistical Practice: Challenges Encountered in Government and Industrial Applications—Topic-Contributed

Section on Physical and Engineering Sciences, Quality and Productivity Section, Section on Statistical Graphics, Section on Statistics in Defense and National Security, Scientific and Public Affairs Advisory Committee

Organizer(s): Ananda Sen, University of Michigan
Chair(s): Ananda Sen, University of Michigan

8:35 a.m. **Open Problems and Challenges in a Regulated Industry**—✦Willis Jensen, W.L. Gore & Associates

8:55 a.m. **Statistical Practice: Challenges Encountered in U.S. Department of Defense (DoD) Acquisition**—✦Arthur Fries, IDA; Laura June Freeman, Institute for Defense Analyses

9:15 a.m. **Statistical Challenges in National and Global Security**—✦Joanne Wendelberger, Los Alamos National Laboratory

9:35 a.m. **Challenges for Industrial Statisticians and Data Scientists**—✦Winson Taam

9:55 a.m. **Pharmaceutical Industry Statisticians: Moving Forward with Challenges**—✦Vipin Arora, AbbVie

10:15 a.m. **Floor Discussion**

473 CC-520b

■ Practice of Quantitative Decision Analysis in Regulatory Science for Medical Devices—Topic-Contributed

Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), Scientific and Public Affairs Advisory Committee

Organizer(s): Martin P. Ho, FDA/CDRH
Chair(s): Zhiwei Zhang, FDA

8:35 a.m. **Future Uses of Quantitative Decision Analysis in the Regulation of Medical Devices**—✦Telba Irony, CDRH/FDA

8:55 a.m. **Patients' Benefit-Risk Tradeoff Preference for Weight Reduction Devices in Obese Population**—✦Martin P. Ho, FDA/CDRH

9:15 a.m. **Numbers or Noise? The Patients' Voice in Medical Device Regulatory Decisionmaking**—✦Reed Johnson, Research Triangle Institute

9:35 a.m. **Floor Discussion**

474 CC-522bc

Developments in Statistical Methods for Functional and Imaging Data—Topic-Contributed

Section on Nonparametric Statistics, Section on Statistics in Imaging

Organizer(s): R. Todd Ogden, Columbia University

Chair(s): Gina M. D'Angelo, Washington University

8:35 a.m. **Functional Methods for Reaching Trajectory Experiments**—✦Jeff Goldsmith, Columbia University; Tomoko Kitago, Columbia University; John Krakauer, The Johns Hopkins University; Ciprian M. Crainiceanu, The Johns Hopkins University

8:55 a.m. **Functional Interaction Model**—✦Ana-Maria Staicu, North Carolina State University; Joseph Usset, North Carolina State University; Arnab Maity, North Carolina State University

9:15 a.m. **Wavelet-Based Scalar-on-Function Finite Mixture Regression Models**—✦Adam Ciarleglio, Columbia University; R. Todd Ogden, Columbia University

9:35 a.m. **Identifiability in Penalized Function-on-Function Regression Models**—✦Sonja Greven, Ludwig-Maximilians-Universität München; Fabian Scheipl, Ludwig-Maximilians-Universitä München

9:55 a.m. **Statistical Techniques for the Normalization and Segmentation of Structural MRI**—✦Russell Shinohara, Univ of Pennsylvania; Elizabeth Sweeney, Johns Hopkins University; Ciprian M. Crainiceanu, The Johns Hopkins University; Jeff Goldsmith, Columbia University; Daniel Reich, National Institute of Neurological Disorders & Stroke

10:15 a.m. **Floor Discussion**

475 CC-514b

Administrative Records Use for Health Insurance Research—Topic-Contributed

Social Statistics Section, Survey Research Methods Section, Mental Health Statistics Section, Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Sonya Rastogi, U.S. Census Bureau

Chair(s): Amy O'Hara, U.S. Census Bureau

8:35 a.m. **Social Security Numbers in State Medicaid Records: Completeness and Quality**—✦John Czajka, Mathematica Policy Research; Shinu Verghese, Mathematica Policy Research

8:55 a.m. **Linked NCHS-Medicaid Data Files**—✦Jennifer D. Parker, National Center for Health Statistics

9:15 a.m. **Medicaid Undercount in the American Community Survey**—✦Joanna Turner, University of Minnesota, SHADAC; Kathleen Call, University of Minnesota, SHADAC; Brett O'Hara, U.S. Census Bureau; Michel Boudreaux, State Health Access Data Assistance Center; Brett Fried, University of Minnesota, SHADAC

9:35 a.m. **Evaluating Race and Ethnicity of Medicaid Participants Using Census Data**—✦Leticia Fernandez, U.S. Census Bureau; James Noon, U.S. Census Bureau; Sonya Rastogi, U.S. Census Bureau; Sharon Ennis, U.S. Census Bureau

9:55 a.m. Disc: Micheal Davern, NORC

10:15 a.m. **Floor Discussion**

476 CC-511e

■ Statistical Methods and Applications in Next-Generation Sequencing Data—Topic-Contributed

Biometrics Section, Section on Statistics in Epidemiology

Organizer(s): Ronglai Shen, Memorial Sloan-Kettering Cancer Center

Chair(s): Adam B. Olshen, University of California at San Francisco

8:35 a.m. **Somatic Mutation Detection in Cancer Genome Sequencing Studies**—✦Ronglai Shen, Memorial Sloan-Kettering Cancer Center; Arshi Arora, Memorial Sloan-Kettering Cancer Center; Venkatraman E Seshan, Memorial Sloan-Kettering Cancer Center

8:55 a.m. **Statistical Modeling of Differential Splicing with RNA-Seq**—✦Hui Jiang, University of Michigan; Yang Shi, University of Michigan; Julia Salzman, Stanford University

9:15 a.m. **Circular RNA: The Surprising Discovery of a Highly Expressed RNA Species with Statistical Models**—✦Julia Salzman, Stanford University

9:35 a.m. **Statistical Methods and Applications in Next-Generation Sequencing Data**—✦Yun Li, The University of North Carolina; Song Yan, The University of North Carolina

9:55 a.m. **Editing the (Tran)Script: Probabilistic Approach for Identifying RNA Editing Sites in MRNA Sequencing Data**—✦William Johnson, Boston University

10:15 a.m. **Floor Discussion**

477 CC-520f

Recent Advances in Non/Semiparametric Methods—Topic-Contributed

Section on Nonparametric Statistics

Organizer(s): Lily Wang, University of Georgia

Chair(s): Lily Wang, University of Georgia

8:35 a.m. **Spline Estimation of Integral Curves from Noisy Vector Field Data**—✦Guanqun Cao, Auburn University; Lyudmila Sakhanenko, Michigan State University; Lijian Yang, Michigan State University; Owen Carmichael, University of California at Davis

8:55 a.m. **Fast and Efficient Estimation of Generalized Additive Partially Linear Model**—✦Rong Liu, University of Toledo

9:15 a.m. **Proportional Hazards Model with Covariate Measurement Error and Instrumental Variables**—✦Xiao Song, University of Georgia; Ching-Yun Wang, Fred Hutchinson Cancer Research Center

9:35 a.m. **Single-Index Model with Diverging Number of Index Parameters**—✦Guannan Wang, University of Georgia; Lily Wang, University of Georgia

9:55 a.m. **A Single Index Model with Varying Coefficients for Heterogeneous Data**—✦Jianhui Zhou, University of Virginia; Feiyang Niu, University of Virginia

10:15 a.m. **Floor Discussion**

478 CC-511c

■ Disclosure Limitation of Tabular Data—Topic-Contributed

Survey Research Methods Section

Organizer(s): Daniell Toth, Bureau of Labor Statistics

Chair(s): Jeffrey Gonzalez, Bureau of Labor Statistics

8:35 a.m. **Strategies for Processing Tabular Data Using the G-Confid Cell Suppression Software**—✦Jean-Louis Tambay, Statistics Canada; Jean-Marc Fillion, Statistics Canada

8:55 a.m. **Dealing with Negative Contributions in Protecting Tabular Data**—✦Amang Sukasih, Mathematica Policy Research; John Czajka, Mathematica Policy Research

9:15 a.m. **Synthesizing Truncated Count Data for Confidentiality**—✦Sam Hawala, U.S. Census Bureau; Jerry Reiter, Duke University; Quanli Wang, Duke University

9:35 a.m. **Estimation for Cells Suppressed in Tabulation with Application to Output Disclosure Treatment of the NSF Survey of Earned Doctorates**—✦Stephen Cohen, National Science Foundation; Avi Singh, NORC at the University of Chicago; Joshua M. Borton, NORC at the University of Chicago; Vince Welch, Jr., NORC at the University of Chicago; Brianna Groenhout, NORC at the University of Chicago; Yongheng Lin, NORC at the University of Chicago

9:55 a.m. **Analysis of Tables Containing Suppressions**—✦Lawrence Cox, National Institute of Statistical Sciences

10:15 a.m. **Floor Discussion**

Topic-Contributed Panels 8:30 a.m.–10:20 a.m.

479 CC-524a

■ The Future Is Now: Preparing Marketing Analytics Professionals for the New Age of Data—Topic-Contributed

Section on Statistics in Marketing, Section on Statistical Education

Organizer(s): Lynd D. Bacon, Loma Buena Associates

Chair(s): Lynd D. Bacon, Loma Buena Associates

Panelists: ✦David Schweidel, Goizueta Business School, Emory University

✦Slavi Samardzija, KBM/Wonderman

✦Elea Feit, Wharton Customer Analytics Initiative

✦Marianna Dizik, Google

✦Chris Mehrabi, newBrandAnalytics

✦Manila Austin, Communispace Corp.

10:15 a.m. **Floor Discussion**

480 CC-516e

■ ● The New Face of Statistics Education—Topic-Contributed

Section on Statistical Education

Organizer(s): Jennifer Green, University of Nebraska-Lincoln

Chair(s): Sharon Lohr, Westat

Panelists: ✦Jennifer Green, University of Nebraska-Lincoln

✦Erin Blankenship, University of Nebraska-Lincoln

✦Chris J. Malone, Winona State University

✦Walt W Stroup, University of Nebraska-Lincoln

✦Jennifer E. Broatch, Arizona State University

10:15 a.m. **Floor Discussion**

481 CC-515b

Continuing Statistical Education for Clinicians: How to Engage a Busy Bunch of Docs—Topic-Contributed

Section on Teaching of Statistics in the Health Sciences, Section on Statistical Education

Organizer(s): Laila Poisson, Henry Ford Health System
Chair(s): Megan Neely, Duke University

Panelists: ✦Laila Poisson, Henry Ford Health System
✦Rickey E. Carter, Mayo Clinic
✦Alexandra L. Hanlon, University of Pennsylvania School of Nursing
✦Dale W. Steele, Hasbro Children's Hospital/Alpert Medical School of Brown University
✦Feng Dai, Yale Center for Analytical Sciences

10:15 a.m. **Floor Discussion**

Contributed Sessions 8:30 a.m.–10:20 a.m.

482 CC-512e

Longitudinal and Time Series Studies—Contributed

Biometrics Section

Chair(s): Mulugeta Gebregziabher, Medical University of South Carolina

8:35 a.m. **Combination of Longitudinal Biomarkers in Predicting Binary Events with Application to a Fetal Growth Study**—✦Danping Liu, National Institute of Health; Paul Albert, NICHD

8:50 a.m. **GMM Estimator Covariance Structure for Time-Dependent Covariates with Unbalanced Replication**—✦Trent L. Lalonde, University of Northern Colorado

9:05 a.m. **Detection of Attributive Covariates for Heteroscedasticity in Cross-Sectional or Longitudinal Regression Analysis**—✦Qian Zhou, Simon Fraser University; Peter X.K. Song, University of Michigan; Mary E. Thompson, University of Waterloo

9:20 a.m. **Time Series Data with Semi-Reflective Boundaries: Single-Pass and Iterative Methods**—✦Jeffrey D. Dawson, University of Iowa; Amy M. Johnson, University of Iowa

9:35 a.m. **Regression Methodology for Comparing Longitudinal Rates of Change**—✦Matthew Bryan

9:50 a.m. **Matrix Time Series**—✦Lynne Billard, University of Georgia; Yaser Samadi, University of Georgia

10:05 a.m. **Floor Discussion**

483 CC-512f

Categorical Data—Contributed

Biometrics Section

Chair(s): Yian Chen, Moffitt Cancer Center & Research Institute

8:35 a.m. **Effects of Ignoring Truncation in Poisson Count Models**—✦Abdalhalim Suaiee, University of Northern Colorado; Trent L. Lalonde, University of Northern Colorado

8:50 a.m. **Joint Modeling of Time-to-Event Data and Multiple Ratings of a Discrete Diagnostic Test Without Gold Standard**—✦Seunghyun Won, University of Pittsburgh; Gong Tang, University of Pittsburgh; Ruosha Li, University of Pittsburgh

9:05 a.m. **Kernel Machine Collapsing--Based Prediction for Ordinal Outcome**—✦Yuanyuan Shen, Harvard University; Tianxi Cai, Harvard University

9:20 a.m. **Estimating Parameters for Binary Data with Time-Dependent Covariates Using the Generalized Method of Moments**—✦Maryann Shane, University of Northern Colorado

9:35 a.m. **Maximum-Likelihood Estimation of Marginally Specified Joint Models for the Mean and the Correlation for Clustered Binary Outcomes**—✦Bahjat Qaqish, The University of North Carolina at Chapel Hill

9:50 a.m. **A Marginalized Zero-Inflated Poisson Regression Model with Overall Exposure Effects**—✦D. Leann Long, The University of North Carolina at Chapel Hill; John Preisser, The University of North Carolina; Amy Herring, The University of North Carolina at Chapel Hill; Carol Golin, The University of North Carolina at Chapel Hill

10:05 a.m. **Analysis of Multivariate Disease Classification Data in the Presence of Partially Missing Disease Traits**—✦Jingang Miao, Texas A&M University; Samiran Sinha, Texas A&M University; Suojin Wang, Texas A&M University; Ryan Diver, American Cancer Society; Susan Gapstur, American Cancer Society

484 CC-525a

Nonparametric Methods for Functional Data—Contributed

Section on Nonparametric Statistics, Korean International Statistical Society

Chair(s): Haochang Shou, Johns Hopkins Bloomberg School of Public Health

8:35 a.m. **The Spatial Approach to Functional Data Analysis: Quantiles with Confidence Bands**—✦Uditha Wijesuriya, The University of Texas at Dallas; Robert Serfling, The University of Texas at Dallas

8:50 a.m. **Empirical Likelihood Confidence Band for Functional Parameter**—✦Saswata Sahoo, North Carolina State University; Soumendra N. Lahiri, North Carolina State University

9:05 a.m. **Estimation of Linear Functionals with Side Information**—✦Shan Wang, Indiana University-Purdue University; Lingnan Li, Indiana University-Purdue University; Hanxiang Peng, Indiana University-Purdue University

9:20 a.m. **Inferential Procedures for Populations of Images**—✦Maximillian Chen, Cornell University; Martin T. Wells, Cornell University

9:35 a.m. **Empirical Likelihood for Testing Functions Constraint with Functional Data**—✦Honglang Wang, Michigan State University; Ping-Shou Zhong, Michigan State University; Yuehua Cui, Michigan State University

9:50 a.m. **Statistical Downscaling for Bivariate Data in Climate Projections**—✦Yunwen Yang, Drexel University; Xuming He, University of Michigan; Jingfei Zhang, University of Illinois

10:05 a.m. **A Hybrid Omnibus Test for Generalized Partial Linear Single Index Model**—✦Yangyi Xu, Virginia Tech; Inyoung Kim, Virginia Tech; Raymond J. Carroll, Texas A&M University

485 CC-518

■ Astrostatistics—Contributed

Section on Physical and Engineering Sciences

Chair(s): Ethan Berger Anderes, University of California at Davis

8:35 a.m. **Fast Detection of Astronomical Impulses in Radio Interferometer Streams**—✦Scott Vander Wiel, Los Alamos National Laboratory; Earl Lawrence, Los Alamos National Laboratory; Geoff Bower, University of California at Berkeley; Casey Law, University of California at Berkeley

8:50 a.m. **Identifying Solar Thermal Features**—✦Nathan Stein, Harvard University

9:05 a.m. **Detecting Novel Associations in Large Astrophysical Data Sets**—✦Elizabeth Martinez-Gomez, Instituto Tecnologico Autonomo de Mexico; Mercedes Richards, Penn State University; Donald Richards, Penn State University

9:20 a.m. **Overlapping Astronomical Sources**—✦David Jones, Harvard University; Vinay Kashyap, Harvard-Smithsonian Center for Astrophysics; David van Dyk, Imperial College London

9:35 a.m. **Classification via Auxiliary Information: Formalism and Application to Classification of Astronomical Time Series**—✦Beatriz Etchegaray; Chad Schafer, Carnegie Mellon University; Peter Freeman, Carnegie Mellon University

9:50 a.m. **Mapping the Intergalactic Medium Using Lyman-Alpha Data and Persistent Homology**—✦Jessi Cisewski, Carnegie Mellon University; Christopher R. Genovese, Carnegie Mellon University; Larry Wasserman, Carnegie Mellon University; Rupert Croft, Carnegie Mellon University; Peter Freeman, Carnegie Mellon University; Melih Özbek, Carnegie Mellon University

10:05 a.m. **Modeling Prompt Emission of Gamma Ray Bursts Within a Nonparametric Bayesian Framework**—✦Mary Broadbent; Robert L. Wolpert, Duke University

486 CC-510c

Adaptive Designs: Challenges of Design and Analysis—Contributed

Biopharmaceutical Section, Biometrics Section

Chair(s): Grace Liu, Jansen Research & Development

8:35 a.m. **Inference from Blinded Data in Randomized Clinical Trials**—✦Kefei Zhou, Amgen, Inc.; Jeetu Ganju, Gilead

8:50 a.m. **Interim Analysis for the Mean Difference of Two Samples Using Generalized P-Values**—✦Richard McNally, Covance

9:05 a.m. **Sequential Monitoring of Covariate Adaptive Designs**—✦Hongjian Zhu, The University of Texas Health Science Center at Houston; Feifang Hu, University of Virginia

9:20 a.m. **Adaptive Blinded Bayesian Sample Size Re-Determination for Clinical Trials: Extensions and Risk Minimizations**—✦Andrew Hartley, PPD, Inc

9:35 a.m. **Small-Scale Studies and Their Impact on Phase III Trials: Vanguards, Pilot Studies, and Run-Ins**—✦Sarah Baraniuk, The University of Texas School of Public Health

9:50 a.m. **Testing Key Secondary Claims in Adaptive Design Settings**—✦George Kordzakhia, FDA; Eiji Ishida, FDA; John Lawrence, FDA

10:05 a.m. **Testing Multiple Endpoints in Group Sequential Designs**—✦Guohui Liu, Millennium: The Takeda Oncology Company; Yi Liu, Millennium: The Takeda Oncology Company

487 CC-512c

Challenges in the Evaluation of Biologics—Contributed

Biopharmaceutical Section, Biometrics Section

Chair(s): Wasima Rida, Biostatistics Consultant

8:35 a.m. **Determination of Bioassay Cut Point Using Confidence Limit of Percentile**—✦Meiyu Shen, FDA; Xiaoyu Dong, FDA; Youngsook Jeon, FDA; Yi Tsong, FDA

8:50 a.m. **Challenges in the Development of an ATA Cutpoint When the Pre-Existing Antibodies Are Present: A Case Study**—✦Priya Kulkarni, Genentech Inc; Daniel A. Coleman, Genentech

9:05 a.m. **Modeling and Interpretation of Vaccine Cross-Over Clinical Trials Data**—✦Scott Patterson; Byron Jones, Novartis Pharma AG; Michael Kenward, University of London

9:20 a.m. **Two-Threshold Model for Immunological Correlates of Protection**—✦Hongbo Lin; Fabrice Bailleux, Sanofi Pasteur; Xuan Chen, Sanofi Pasteur; Kamal Desai, Imperial College; Andrew Dunning, Sanofi Pasteur

9:35 a.m. **Predicting Vaccine Efficacy Based on Associations Among Disease, Immune Responses, and Treatment**—✦Lihan Yan, FDA

9:50 a.m. **Assessment of Biosimilar Products Using a Biosimilarity Index Based on a Tolerance Interval Approach**—✦Chinfu Hsiao, National Health Research Institutes; Hsiao-Hui Tsou, National Health Research Institutes

10:05 a.m. **Simultaneous Joint and Marginal Models Approach for Testing Multivariate Binomial Data**—Shuling Liu, Emory University; Kerry Go, Sanofi Pasteur; ✦Manoj Thakur, Sanofi Pasteur

488 CC-521ab

Theory of Risk Analysis—Contributed

Section on Risk Analysis

Chair(s): Ugur Alparslan, American University

8:35 a.m. **Asymptotic Consistency and Inconsistency of the Chain Ladder**—✦Michal Pesta, Charles University in Prague; Sarka Hudecova, Charles University in Prague

8:50 a.m. **Reliability Prediction of Systems with Recurrent Failures and a Specified Set of Covariates**—✦Nasser Fard, Northeastern University; Alexandre Mendes, Northeastern University

9:05 a.m. **A Stochastic Model for the Net Present Value of Costs of Equipment Failures**—✦Franck Adekambi, University of the Witwatersrand; Salha Mamane, University of the Witwatersrand

9:20 a.m. **On a Bivariate Risk Process with Dividend Barriers**—✦Luyin Liu, The University of Hong Kong; Eric C.K. Cheung, The University of Hong Kong

9:35 a.m. **Semiparametric Bayesian Joint Modeling of Clustered Binary and Continuous Outcomes with Informative Cluster Size**—✦Beom Seuk Hwang, The Ohio State University; Michael L. Pennell, The Ohio State University

9:50 a.m. **Forecast Combination with Outlier Protection**—✦Gang Cheng, University of Minnesota at Twin Cities

10:05 a.m. **Selection of Optimal Threshold Using Cost and Revenue Matrix**—✦Hui Gong, Valparaiso University; Jingru Chen, Temple University; Jayanta Das, Barclays Bank

489 CC-524b

■ New Modeling Approaches for Time Series Analysis—Contributed

Business and Economic Statistics Section, Korean International Statistical Society

Chair(s): Silvia Goncalves, Université de Montréal

8:35 a.m. **On Mixture Double Autoregressive Models**—✦Zhao Liu, The University of Hong Kong; Guodong Li, The University of Hong Kong

8:50 a.m. **A Unit Root Test Based on the Modified Least Squares Estimator**—✦Wararit Panichkitkosolkul, Thammasat University

9:05 a.m. **Unit Root Testing Using Modified Wild Bootstrap Methods**—✦Jean-Pierre Urbain, Maastricht University; Stephan Smeekes, Maastricht University

9:20 a.m. **A Sieve Bootstrap-Based Test for Multiple Unit Roots**—✦Xiao Zhong, Missouri University of Science and Technology; V. A. Samaranayake, Missouri University of Science and Technology

9:35 a.m. **On Estimation of Multiple-Regime Threshold Autoregressive Model**—✦Chun-Yip Yau, Chinese University of Hong Kong

9:50 a.m. **Consistency of Long Autoregressive Model Parameter Estimates**—✦Sreenivas Konda, University of Waterloo

10:05 a.m. **Temporal Aggregation Effects on Time Series Structural Changes**—✦Bu Hyoung Lee, Temple University; William W. S. Wei, Temple University

490 CC-515a

Advances in Statistical Software—Contributed

Section on Statistical Computing, Section on Statistical Graphics, Section for Statistical Programmers and Analysts

Chair(s): Lasonja Kennedy, The University of Alabama at Birmingham

8:35 a.m. **Automated Univariate Analysis of Variance Methods for Nested Mixed Effects Linear Models—** ✦Timothy Hall, PQI Consulting

8:50 a.m. **Analyzing Length-Biased Survival Data Using the R Package Lbiassurv—**✦Pierre-Jérôme Bergeron, University of Ottawa; Vahid Partovi Nia, École Polytechnique Montréal

9:05 a.m. **On Regression Models for Polytomous Data—** ✦Yiwen Zhang, North Carolina State University; Hua Zhou, North Carolina State University; Wei Sun, The University of North Carolina at Chapel Hill

9:20 a.m. **Design Considerations for Statistical Analysis Support in a Tablet Environment—**✦Paul Velleman, Cornell University; William Sribney, Data Description, Inc.

9:35 a.m. **Reducing Food Waste Through Six Sigma with Minitab's Quality Companion—**✦Diane Evans, Rose Hulman Institute of Technology

9:50 a.m. **Spaced Seed Coverage as a Measure of Pattern Clumping—**✦Donald Martin, North Carolina State University

10:05 a.m. **Floor Discussion**

491 CC-512d

■ Causal Methods and Applications in Variable Selection, Genetics, Mediation, and Survival Analysis—Contributed

Section on Statistics in Epidemiology

Chair(s): Xin Gao, FDA

8:35 a.m. **Data-Driven Algorithms for Dimension Reduction in Causal Inference—**✦Emma Persson; Ingeborg Waernbaum, Umeå University; Jenny Häggström, Umeå University; Xavier de Luna, Umeå University

8:50 a.m. **Semiparametric Estimation of Path-Specific Effects in the Presence of Unmeasured Confounding and Exposure-Induced Confounding—**✦Caleb Miles; Eric Tchetgen Tchetgen, Harvard University; Ilya Shpitser, University of Southampton

9:05 a.m. **Defining and Estimating Causal Direct and Indirect Effects: An Intervention-Based Approach—** ✦Judith J. Lok, Harvard School of Public Health

9:20 a.m. **Quantile Mediation Models: Methods for Assessing Mediation Across the Response Distribution—** ✦Ernest Shen, University of Southern California; Kiros Berhane, University of Southern California; Chih-Ping Chou, University of Southern California; Mary Ann Pentz, University of Southern California

9:35 a.m. **Logrank Tests with the Inverse Probability of Treatment Weighting to Assess the Impact of Beta-Interferon Treatments in Delaying Disability Progression in Multiple Sclerosis—**✦Mohammad Ehsanul Karim, University of British Columbia; Paul Gustafson, University of British Columbia; John Petkau, University of British Columbia; Afsaneh Shirani, University of British Columbia; Yinshan Zhao, University of British Columbia; Elaine Kingwell, University of British Columbia; Mia van der Kop, University of British Columbia; Joel Oger, University of British Columbia; Helen Tremlett, University of British Columbia

9:50 a.m. **Semiparametric Robust Methods for Biomarker Discovery Among Potential Confounders: A Marriage of Targeted Maximum Likelihood Estimation and Limma—**✦Sara Kherad-Pajouh, University of California at Berkeley; Alan Hubbard, University of California at Berkeley; Cliona M. McHale, University of California at Berkeley; Luoping Zhang , University of California at Berkeley; Martyn T. Smith, University of California at Berkeley

10:05 a.m. **M-Bias and Butterfly-Bias in the Gaussian Linear Structural Equation Models—**✦Peng Ding, Harvard University; Luke Miratrix, Harvard University

492 CC-512h

■ Developments in Modeling Infectious Diseases—Contributed

Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Chair(s): Xiaowei Yan, Geisinger Health System

8:35 a.m. **A Potential Outcomes Approach to Estimating Cases of Invasive Pneumococcal Disease Prevented After the Introduction of a New Pneumococcal Vaccine—**✦Tracy Pondo, Centers for Disease Control and Prevention; Elizabeth R. Zell, Centers for Disease Control and Prevention; Matt Moore, Centers for Disease Control and Prevention; Thomas H. Taylor, Centers for Disease Control and Prevention

8:50 a.m. **Designing Sampling Schemes for Population-Level Infectious Disease Studies—**✦Nadia Bifolchi; Rob Deardon, University of Guelph; Zeny Feng, University of Guelph

9:05 a.m. **Nonparametric Effect Decomposition with an Application to Trend Decomposition for HIV Incidence Rate in Rakai Teenagers, Uganda—** ✦Xiaoyu Song, Columbia University; Ying Wei, Columbia University; John Santelli, Columbia University

9:20 a.m. **Supervised Learning and Prediction of Spatial Epidemics—**✦Gyanendra Pokharel, University of Guelph; Rob Deardon, University of Guelph

9:35 a.m. **An Efficient Algorithm for Critical Value Determination in Binomial Maximized Sequential Probability Ratio Testing, with an Application for the Vaccine Safety Datalink**—✦Brock Stewart, Centers for Disease Control and Prevention; Rongxia Li, Chenega Government Consulting; Eric Weintraub, Centers for Disease Control and Prevention; Michael M. McNeil, Centers for Disease Control and Prevention; Frank Destefano, Centers for Disease Control and Prevention

9:50 a.m. **Bayesian Inference for Stochastic Epidemic Models with Underlying Network Structure**—✦Sudeshna Paul, Emory University

10:05 a.m. **Modeling Individual Heterogeneity for Recurrent Infections**—✦Niel Hens, Hasselt University; Steven Abrams, Hasselt University

493 CC-514c

New Approaches Toward the Analysis of Biomedical Imaging Data—Contributed

Section on Statistics in Imaging

Chair(s): Wesley K. Thompson, University of California at San Diego

8:35 a.m. **Homotopic Group ICA for Multi-Subject Brain Imaging Data**—✦Juemin Yang, Johns Hopkins Bloomberg School of Public Health; Ani Eloyan, Johns Hopkins Bloomberg School of Public Health; Anita Barber, Kennedy Krieger Institute; Mary Beth Nebel, Kennedy Krieger Institute; Stewart Mostofsky, Kennedy Krieger Institute; James Pekar, Kennedy Krieger Institute; Ciprian M. Crainiceanu, The Johns Hopkins University; Brian Caffo, The Johns Hopkins University

8:50 a.m. **Bayesian Latent Variable Models for MR Imaging Data with Multiple Outcomes**—✦Xiao Wu, University of Florida; Michael Daniels, The University of Texas at Austin

9:05 a.m. **Case-Control Sampling for Brain Imaging and Enhancement Prediction**—✦Gina-Maria Pomann, North Carolina State University; Russell Shinohara, University of Pennsylvania; Ana-Maria Staicu, North Carolina State University; Elizabeth Sweeney, The Johns Hopkins University; Daniel Reich, National Institute of Neurological Disorders & Stroke

9:20 a.m. **Data Analytical Stability in fMRI Research: An Application to Cluster-Wise Inference in fMRI**—✦Sanne Roels, Ghent University; Han Bossier, Ghent University; Tom Loeys, Ghent University; Beatrijs Moerkerke, Ghent University

9:35 a.m. **Spatially Composite Quantile Regression in Neuroimaging Data Analysis**—✦Linglong Kong, University of Alberta; Hongtu Zhu, The University of North Carolina at Chapel Hill

9:50 a.m. **Causal Inference for fMRI Time Series Data with Systematic Errors of Measurement in a Balanced On/Off Study of Social Evaluative Threat**—✦Michael Sobel, Columbia University; Martin Lindquist, Johns Hopkins Bloomberg School of Public Health

10:05 a.m. **Floor Discussion**

494 CC-525b

■ Applications in Biology and Other Areas—Contributed

IMS, WNAR

Chair(s): Noah Simon, Stanford University

8:35 a.m. **Implementation of a Bivariate Deconvolution Approach to Estimate the Joint Distribution of Two Non-Normal Random Variables Observed with Measurement Error**—✦Eduardo Trujillo Rivera, Iowa State University; Guillermo Basulto-Elias, Iowa State University; Alicia Carriquiry, Iowa State University

8:50 a.m. **Branching Populations in Habitats with a Large Finite Carrying Capacity**—✦Peter Jagers, Chalmers and Gothenburg Universities; Fima C. Klebaner, Monash University

9:05 a.m. **Tracking Intracellular Rapid Movements: A Bayesian Random Set Approach**—✦Vasileios Maroulas, University of Tennessee; Andreas Nebenfuhr, University of Tennessee

9:20 a.m. **A Branching Process Model of Prion Dynamics**—✦Peter Olofsson, Trinity University; Suzanne Sindi, University of California at Merced

9:35 a.m. **An Empirical Bayes Approach for Joint eQTL Analysis in Multiple Tissues**—✦Gen Li, The University of North Carolina at Chapel Hill; Andrey Shabalin, Virginia Commonwealth University; Ivan Rusyn, The University of North Carolina at Chapel Hill School of Public Health; Fred Wright, The University of North Carolina; Andrew Nobel, The University of North Carolina at Chapel Hill

9:50 a.m. **Unifying Amplitude and Phase Analysis: A Functional Multivariate Mixed-Effects Approach**—✦Pantelis Hadjipantelis, University of Warwick; John Aston, University of Warwick; Jonathan P. Evans, Academia Sinica; Hans-Georg G. Müller, University of California at Davis

495 CC-520c

Bayesian Estimation Methods—Contributed

Section on Bayesian Statistical Science, Korean International Statistical Society

Chair(s): Jacopo Soriano, Duke University

8:35 a.m. **Randomization-Based Intervals for Binary Outcomes**—✦David Watson, Harvard University; Joseph Blitzstein, Harvard University

8:50 a.m. **A Robust Bayesian Approach to Multinomial Choice Modeling**—✦Dries Benoit, Ghent University; Stefan Van Aelst, Ghent University; Dirk Van den Poel, Ghent University

9:05 a.m. **Covariance Partition Priors: A Bayesian Approach to Simultaneous Covariance Estimation**—✦Jeremy Gaskins, University of Florida; Michael Daniels, The University of Texas at Austin

9:20 a.m. **Bayes Estimation of Moran-Downton Bivariate Exponential Distribution Based on Censored Samples**—✦Yu-Jau Lin, Chung Yuan Christian University; Yuhlong Lio, University of South Dakota; Hon Keung Tony Ng, Southern Methodist University

9:35 a.m. **Finding the Circadian Clocksin Genes: An Application of Dirichlet Process Mixture Model and Spectral Analysis**—✦Yan Ren, University of Cincinnati; Christian I. Hong, University of Cincinnati; Seongho Song, University of Cincinnati

9:50 a.m. **A Semiparametric Model for Time-to-Event Data with Instrumental Variables**—✦Purushottan Laud, Medical College of Wisconsin; Rodney Sparapani, Medical College of Wisconsin

10:05 a.m. **A Bayesian Approach to an Ocean Circulation Problem**—✦Seo-eun Choi; Fred W. Huffer, Florida State University; Kevin G. Speer, Florida State University

496 CC-511b

Collection and Usage of Process, Motion, and Other Non-Standard Data—Contributed

Survey Research Methods Section, Section on Statistical Computing

Chair(s): Frank Potter, Mathematica

8:35 a.m. **Combining Paradata and Survey Responses to Identify Sources of Measurement Error in Medical Event Reporting**—✦Andrew Mercer, Westat; Weijia Ren, Westat; Virender Kumar, Westat; Frederick Rohde, Agency For Healthcare Research and Quality

8:50 a.m. **Using GPS and Other Data to Assess Errors in Level-of-Effort Data in Field Surveys**—✦James Wagner, University of Michigan; Kristen Olson, University of Nebraska; Minako Edgar, University of Michigan

9:05 a.m. **Impact of the 2012 Computer Audio Recorded Interviewing Application on Survey of Income and Program Participation Event History Calendar Response Rates and Item-Level Responses**—✦Robyn Sirkis, U.S. Census Bureau

9:20 a.m. **Comparisons of CPS Unemployment Estimates by Rotation Panel**—✦Yang Cheng, U.S. Census Bureau; Michael D. Larsen, The George Washington University; Alexander Wakim, University of North Carolina

9:35 a.m. **Measurement Error Properties in an Accelerometer Sample of Elementary School Children**—✦Nicholas Beyler, Mathematica Policy Research; Susanne James-Burdumy, Mathematica Policy Research; Martha Bleeker, Mathematica Policy Research; Jane Fortson, Mathematica Policy Research; Max Benjamin, Mathematica Policy Research; Emily Evans, Mathematica Policy Research

9:50 a.m. **Using Response Time to Investigate Students' Test-Taking Behaviors**—✦Yue Jia, Educational Testing Service; Yi-Hsuan Lee, Educational Testing Service

10:05 a.m. **Floor Discussion**

497 CC-512g

Topics in Biostatistics: Survival Analysis and Clinical Study Design and Methods—Contributed

WNAR

Chair(s): Jeri Forster, Colorado School of Public Health

8:35 a.m. **Efficient Designs for Dose-Response Studies Under Model Uncertainty**—✦Tobias Mielke, Aptiv Solutions

8:50 a.m. **Analyzing Left-Censored Outcomes in the Presence of Nonignorable Dropout**—✦Samantha MaWhinney, Colorado School of Public Health; Xinshuo M Wang, Colorado School of Public Health; Jeri Forster, Colorado School of Public Health; Marci Sontag, Colorado School of Public Health

9:05 a.m. **A Cautionary Note on the Use of a Common ICC in the Analysis of a Two-Arm Cluster Randomized Trial for Cancer Prevention Studies**—✦Sheng Wu, The University of California at Los Angeles; Catherine Crespi, The University of California at Los Angeles; Weng Kee Wong, The University of California at Los Angeles

9:20 a.m. **Testing Individual Hypotheses Marginally at Alpha: Comparisons of Available Methods**—✦David Li, Pfizer Inc.

9:35 a.m. **Estimating Mean Quality Adjusted Lifetime with Continuous Health Status**—✦Xinxin Dong; Abdus Wahed, University of Pittsburgh

9:50 a.m. **Survival Analysis with Longitudinal Covariates Measured with Correlated Error**—✦Qiuju Li, The University of Manchester; Jianxin Pan, The University of Manchester

10:05 a.m. **Long-Term Survival Probabilities and Kaplan-Meier Estimator**—✦Jean-Marie TRICOT, University of South Brittany; Ion Grama, University of South Brittany; Jean-Francois Petiot, University of South Brittany

498 CC-515c

Analysis of High-Dimensional Data—Contributed

Section on Statistical Learning and Data Mining

Chair(s): Qiang Sun, The University of North Carolina at Chapel Hill

8:35 a.m. **Maximum Likelihood Selection Skew-Normal Factor Analysis**—✦Beverly Gaucher, Texas A&M University

8:50 a.m. **Variable Selection in Complex High-Dimensional Data Based on Principal Fitted Components**—✦Moumita Karmakar, University of Maryland, Baltimore County; Kofi Placid Adragni, University of Maryland, Baltimore County

9:05 a.m. **Lasso-Type Penalized Maximum Likelihood Factor Analysis**—✦Kei Hirose, Graduate School of Engineering Science, Osaka University; Michio Yamamoto, Osaka University

9:20 a.m. **Model-Based Clustering for Multivariate Binary Data with Dimension Reduction**—✦Michio Yamamoto, Osaka University; Kenichi Hayashi, Osaka University Graduate School of Medicine

9:35 a.m. **A New Approach to Sparsity Recovery in Linear Regression Model**—✦Haolei Weng, Columbia University

9:50 a.m. **Principal Trend Analysis for Time-Course Data**—✦Yuping Zhang, The Jackson Laboratory for Genomic Medicine

10:05 a.m. **Robust Sparse Estimation of Multi-Response Regression**—✦Xinwei Deng, Virginia Tech; Aurelie Lozano, IBM; Huijing Jiang, IBM T.J. Watson Research Center

499 CC-516c

Statistical Challenges with Measurement, Complex Design, and Missing Data, Part 1—Contributed

Survey Research Methods Section, Biometrics Section, Section on Statistics in Epidemiology, Korean International Statistical Society

Chair(s): Roger Tourangeau, Westat

8:35 a.m. **Efficient Estimation of Partially Observed Clustered Data Using Multiple Imputation**—✦Kathryn Aloisio, Smith College; Nicholas J. Horton, Smith College; Sonja Swanson, Private; Alison E. Field, Boston Children's Hospital; Nadia Micali, UCL Institute of Child Health

8:40 a.m. **Longitudinal Data Analysis with Covariates Missing in Nonmonotone Patterns**—✦Meng Liu

8:45 a.m. **Comparison of Weighting Approaches for Longitudinal Data with Time-Dependent Cluster Sizes**—✦Matthew Stephenson, University of Guelph; Ayesha Ali, University of Guelph; Gerarda Darlington, University of Guelph

8:50 a.m. **Imputation of Family Income and Maximal Utilization of Auxiliary Data: A Case Study of the 2012 Ohio Medicaid Assessment Survey (OMAS)**—✦Jamie Ridenhour, RTI International; Marcus Berzofsky, RTI International; Caroline Blanton, RTI International; G. Lance Couzens, RTI International; Timothy Sahr, Ohio Colleges of Medicine, Government Resource Center, The Ohio State University; Bo Lu, The Ohio State University; Amy Ferketich, The Ohio State University

8:55 a.m. **Applications of Survey Regression Models to Estimate the Degree of Data Agreement**—✦Julia Soulakova, University of Nebraska-Lincoln; Peng Zhao, University of Nebraska-Lincoln

9:00 a.m. **Projected Variance for the Model-Based Classical Ratio Estimator: Estimating Sample Size Requirements**—✦James Knaub, U.S. Energy Information Administration

9:05 a.m. **Bayesian Nonparametric Finite Population Inference**—✦Yajuan Si, Columbia University; Natesh S. Pillai, Harvard University; Andrew Gelman, Columbia University

9:10 a.m. **Estimating Prices from a Natural Gas Monthly Survey**—✦Samson Adeshiyan, U.S. Energy Information Administration

9:15 a.m. **Analysis of Large Survey Data Sets Using Dynamically Generated SQL**—✦Thomas Lumley, University of Auckland

9:25 a.m. **Hot Deck Imputation of Nonignorable Missing Data with Sensitivity Analysis**—✦Danielle Sullivan, The Ohio State University; Rebecca Roberts Andridge, The Ohio State University College of Public Health

9:30 a.m. **Reliability and Stability of the Six-Question Disability Measure in the Survey of Income and Program Participation**—✦Matthew Brault, U.S. Census Bureau

9:35 a.m. **Response Rates Revisited**—✦Barbara Lepidus Carlson, Mathematica Policy Research

9:40 a.m. **Understanding Egypt's Telephone Owning Population**—✦David Peng, D3 Systems; David Rae, D3 Systems; Samuel Solomon, D3 Systems

9:45 a.m. **New Computer-Based Training for National Center for Education Statistics Complex Survey Data Sets**—✦Andrew A. White, National Center for Education Statistics

9:50 a.m. **Modeling Smoking and Heaping Patterns in Self-Reported Cigarette Numbers by a Finite Mixture Approach**—✦Henry Yeh, University of Kansas Medical Center; Byron Gajewski, University of Kansas Medical Center; Won S. Choi, University of Kansas Medical Center, Department of Preventive Medicine and Public Health; Christine M. Daley, University of Kansas Medical Center, Department of Family Medicine

9:55 a.m. **Using the Constrained Ordinal Models for Likert-Based Outcomes**—✦Ana W. Capuano, Rush University Medical Center; R. William Field, University of Iowa; Marizen R. Ramirez, University of Iowa; Jeffrey D. Dawson, University of Iowa

Invited Sessions 10:30 a.m.–12:20 p.m.

500 CC-512c

■ The Affordable Healthcare Act's Statistical Challenges—Invited

Biopharmaceutical Section, Mental Health Statistics Section, Biometrics Section, Health Policy Statistics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Allan R. Sampson, University of Pittsburgh

Chair(s): Pilar Lim, Janssen Research & Development

10:35 a.m. **Comparative Effectiveness Research for Diagnostic Tests and Biomarkers**—✦Constantine Gatsonis, Brown University

10:55 a.m. **Opportunities and Challenges for Using Networks of Observational Health Care Data for Medical Product Safety Surveillance**—✦Jesse Aaron Berlin, Johnson & Johnson; Patrick Ryan, Johson & Johnson; David Madigan, Columbia University; Martijn Schuemie, Erasmus University and Janssen Research & Development

11:15 a.m. **The Affordable Health Care Act's Statistical Challenges**—✦Robert Thomas O'Neill, FDA

11:35 a.m. **Multispecialty Physician Network Coordination and Post-Discharge Care of Chronic Disease Patients**—✦Therese Anne Stukel, ICES

11:55 a.m. Disc: Sally Morton, University of Pittsburgh

12:10 p.m. **Floor Discussion**

501 CC-511b

■ ● Statistics as an Interface Between Tumor Biology and Cancer Epidemiology—Invited

General Methodology, Section on Statistics in Epidemiology

Organizer(s): Jaya M. Satagopan, Memorial Sloan-Kettering Cancer Center

Chair(s): Li-Xuan Qin, Memorial Sloan-Kettering Cancer Center

10:35 a.m. **Using Tumor Mutational Profiles to Infer Etiologic Heterogeneity of Cancers**—✦Colin B. Begg, Memorial Sloan-Kettering Cancer Center

11:05 a.m. **Inferring the Chromosomal Landscape of the First Few Cell Divisions in Colorectal Adenomas**—✦Kimberly D Siegmund, University of Southern California; Paul Marjoram, University of Southern California; Darryl Shibata, University of Southern California

11:35 a.m. Disc: Robert C. Elston, Case Western Reserve University

11:55 a.m. Disc: Sanjay Shete, The University of Texas MD Anderson Cancer Center

12:15 p.m. **Floor Discussion**

502 CC-510c

■ Spatial Statistics for Environmental Health Studies—Invited

ENAR, WNAR, Section on Statistics and the Environment, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Bradley P. Carlin, University of Minnesota

Chair(s): Bradley P. Carlin, University of Minnesota

10:35 a.m. **Bayesian Spatial-Temporal Model for Cardiac Congenital Anomalies and Ambient Air Pollution Risk Assessment**—Montserrat Fuentes, North Carolina State University; Joshua Warren, The University of North Carolina at Chapel Hill; ✦Amy Herring, The University of North Carolina at Chapel Hill

11:00 a.m. **Bayesian Inference for Temporal Gradients from Regionally Aggregated Space-Time Data**—✦Sudipto Banerjee, University of Minnesota; Harrison Quick, University of Minnesota; Bradley P. Carlin, University of Minnesota

11:25 a.m. **Spatially Varying Health Effects of Air Pollution: Understanding the Toxicity of Particulate Matter**—✦Francesca Dominici, Harvard School of Public Health

11:50 a.m. **Spatial Surveillance for Neglected Tropical Diseases**—✦Lance A Waller, Emory University

12:15 p.m. **Floor Discussion**

503 CC-513b

■ Bayesian Inference for Regression Discontinuity Designs—Invited

Business and Economic Statistics Section

Organizer(s): Fan Li, Duke University

Chair(s): Fabrizia Mealli, University of Florence

10:35 a.m. **The Regression Discontinuity Design in Epidemiology: An Application to Statins**—Sara Geneletti, London School of Economics and Political Science; ✦Gianluca Baio, University College London

10:55 a.m. **Bayesian Inference for Regression Discontinuity Designs**—✦Alessandra Mattei, University of Florence; Fan Li, Duke University; Fabrizia Mealli, University of Florence

11:15 a.m. **A Bayesian Nonparametric Approach for Regression Discontinuity Designs**—✦Siddhartha Chib, Washington University in St. Louis; Edward Greenberg, Washington University in St. Louis

11:35 a.m. **Using Local Randomization to Analyze Regression Discontinuity Designs**—✦Adam Sales, University of Michigan; Ben B. Hansen, University of Michigan

11:55 a.m. Disc: Guido Wilhelmus Imbens, Harvard University

12:15 p.m. **Floor Discussion**

504 CC-519a

■ The Bootstrap Method for Variance Estimation of the Complex Survey Data—Invited

Survey Research Methods Section, Section on Statistical Computing, Section on Statistics in Epidemiology, Korean International Statistical Society

Organizer(s): Hyunshik Lee, Westat

Chair(s): Hyunshik Lee, Westat

10:35 a.m. **The Analysis of Survey Data Using the Bootstrap**—✦Jean-Francois Beaumont, Statistics Canada

11:00 a.m. **Parametric Bootstrap Confidence Intervals for Survey-Weighted Small-Area Proportions**—✦Benmei Liu, National Cancer Institute; Mamadou Diallo, Westat

11:25 a.m. **A Simulation Study on Bootstrap Variance Estimation of Sample Quantiles Under Doubly Protected Hot Deck Imputation**—✦Hiroshi Saigo, Waseda University

11:50 a.m. Disc: Dr. J.N.K Rao, Carleton University

12:10 p.m. **Floor Discussion**

505 CC-516d

■ ● Computer-Intensive Methods and Geographically Referenced Data: A Blissful Marriage Against All Odds?—Invited

International Indian Statistical Association, Section on Statistical Computing, Section on Statistics and the Environment

Organizer(s): Dipankar Bandyopadhyay, University of Minnesota

Chair(s): Priya Kohli, Assistant Professor

10:35 a.m. **A Max-Stable Spatial Model for Extreme Precipitation**—✦Brian J. Reich, North Carolina State University; Ben Shaby, University of California at Berkeley

11:00 a.m. **Bayesian Modeling of Multivariate Spatial Discrete Data, with Applications to Dental Caries**—✦Dipankar Bandyopadhyay, University of Minnesota; Ick Hoon Jin, The University of Texas MD Anderson Cancer Center; Ying Yuan, The University of Texas MD Anderson Cancer Center

11:25 a.m. **An Approach for Valid Matern-Like Covariance Functions on the Sphere**—Jaehong Jeong, Texas A&M University; ✦Mikyoung Jun, Texas A&M University

11:50 a.m. **An Adaptive Spatial Model for Precipitation Data from Multiple Satellites Over Large Regions**—✦Bani Mallick, Texas A&M University

12:15 p.m. **Floor Discussion**

506 CC-520c

Special Annals of Statistics Invited Session—Invited

IMS

Organizer(s): Tony Cai, University of Pennsylvania

Chair(s): Tony Cai, University of Pennsylvania

10:35 a.m. **Minimax Bounds for Sparse PCA with Noisy High-Dimensional Data**—✦Iain M. Johnstone, Stanford University

11:20 a.m. **Criteria for Bayesian Model Choice with Application to Variable Selection**—✦Jim Berger, Duke University; Susie Bayarri, University of Valencia; Anabel Forte, Universitat Jaume I; Gonzalo Garcia-Donato, Universidad de Castilla-La Mancha

12:05 p.m. **Floor Discussion**

507 CC-515a

■ ● Analysis of Covariance Matrices as Data Objects—Invited

Section on Statistical Learning and Data Mining, Biometrics Section

Organizer(s): J. S. Marron, The University of North Carolina

Chair(s): Yufeng Liu, The University of North Carolina

10:35 a.m. **Geometric Means of Positive Definite Matrices and the Matrix-Variate Log-Normal Distribution—** ✦Armin Schwartzman, Harvard School of Public Health

11:00 a.m. **Spatial Statistics for Riemannian Data—** ✦Piercesare Secchi, Politecnico di Milano; Davide Pigoli, Politecnico di Milano

11:25 a.m. **Distances and Inference for Covariance Functions—** ✦John Aston, University of Warwick; Davide Pigoli, Politecnico di Milano; Ian L. Dryden, University of Nottingham; Piercesare Secchi, Politecnico di Milano

11:50 a.m. Disc: J. S. Marron, The University of North Carolina

12:10 p.m. **Floor Discussion**

508 CC-710a

■ ● Large-Scale Inference—Invited

Section on Statistical Computing, Statistical Learning and Data Mining Section

Organizer(s): Loki Natarajan, University of California at San Diego

Chair(s): Loki Natarajan, University of California at San Diego

10:35 a.m. **Bayesian and Frequentist Issues in Large-Scale Inference—** ✦Bradley Efron, Stanford University

11:15 a.m. **Large-Scale Inference and Scientific Interpretability—** ✦Laura C. Lazzeroni, Stanford University

11:55 a.m. Disc: Karen Messer, University of California at San Diego

12:15 p.m. **Floor Discussion**

509 CC-520f

● Climate Change Detection and Attribution—Invited

ASA Advisory Committee on Climate Change Policy, Section on Statistics and the Environment, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Richard L. Smith, SAMSI

Chair(s): Richard L. Smith, SAMSI

10:35 a.m. **Observed Records Constitute the Fundamental Evidence Basis: Discuss—** ✦Peter William Thorne, CICS-NC

11:00 a.m. **Identify Human Influences on Atmospheric Temperature: Are Results Robust to Uncertainties?—** ✦Benjamin David Santer, Lawrence Livermore National Laboratory

11:25 a.m. **Reconstructing Past Climate from Natural Proxies and Estimated Climate Forcings Using Long Memory Models—** ✦Bo Li, Purdue University

11:50 a.m. Disc: Peter Guttorp, University of Washington

12:10 p.m. **Floor Discussion**

510 CC-522bc

■ ● Nonparametric Bayesian Predictive Models for Causal Inference—Invited

Section on Nonparametric Statistics, International Chinese Statistical Association

Organizer(s): Surya T. Tokdar, Duke University

Chair(s): John McGready, The Johns Hopkins University

10:35 a.m. **Adaptive-Modal Bayesian Nonparametric Regression for Causal Inference—** ✦George Karabatsos, University of Illinois-Chicago; Stephen G. Walker, University of Kent

10:55 a.m. **Addressing Missing Outcome Data in Randomized Experiments: A Design-Based Approach—** ✦Donald P. Green, Columbia University; Holger L. Kern, University of South Carolina; Peter M. Aronow, Yale University

11:15 a.m. **Robust Sensitivity Analysis Using Bayesian Nonparametric Modeling—**Nicole Carnegie, Harvard University; ✦Jennifer Hill, New York University

11:35 a.m. **Causal Analysis of Observational Data with Gaussian Process Potential Outcome Models—** ✦Surya T. Tokdar, Duke University

11:55 a.m. Disc: Fan Li, Duke University

12:15 p.m. **Floor Discussion**

511 CC-710b

Rietz Lecture—Invited

IMS

Organizer(s): David B. Dunson, Duke University

Chair(s): Edward George, The Wharton School

10:35 a.m. **Topological Inference—** ✦Larry Wasserman, Carnegie Mellon University

12:05 p.m. **Floor Discussion**

512 CC-511a
Noether Award—Invited
Noether Award Committee
Organizer(s): Pranab K. Sen, The University of North Carolina at Chapel Hill
Chair(s): Pranab K. Sen, The University of North Carolina at Chapel Hill

10:35 a.m. **A Personal Survey of the Dirichlet Process and Its Role in Nonparametrics**—✦Jayaram Sethuraman, Florida State University
11:15 a.m. **The Long March Toward Joint Asymptotics: My First Steps**—✦Guang Cheng, Purdue University
11:55 a.m. **Floor Discussion**

Invited Panels
10:30 a.m.–12:20 p.m.

513 CC-516e
■ Is the 'World' Ready for a Simulation Approach to Introductory Topics?—Invited
Section on Statistical Education
Organizer(s): Kim Gilbert, University of Georgia
Chair(s): John P. Holcomb, Cleveland State University

Panelists: ✦Kim Gilbert, University of Georgia
✦Christine Franklin, University of Georgia
✦Nathan Tintle, Dordt College
✦Samuel P. Wilcock, Messiah College
12:05 p.m. **Floor Discussion**

Topic-Contributed Sessions
10:30 a.m.–12:20 p.m.

514 CC-516c
● Big Data Exploration with Amazon—Topic Contributed Papers
Section on Statistical Consulting , International Indian Statistical Association , Section on Statistical Computing
Organizer(s): Li Qin, Amazon.com
Chair(s): Nan Hu, University of Utah

10:35 a.m. **Linear Regression on 1 Terabytes of Data? Some Crazy Observations**—✦Hesen Peng, Amazon.com
10:55 a.m. **A Regularized Regression for Large-Scale Online Advertising**—✦Li Qin, Amazon.com
11:15 a.m. **A Distributed Algorithm for Training Random Forests**—✦Jared Lundell, Amazon.com
11:35 a.m. **Statistics Meets Systems**—✦Ralf Herbrich, Amazon.com
11:55 a.m. Disc: Kang Tu, Amazon.com
12:15 p.m. **Floor Discussion**

515 CC-524a
■ ● New Developments on Combining Information and Meta-Analysis—Topic-Contributed
Health Policy Statistics Section
Organizer(s): Min-ge Xie, Rutgers University
Chair(s): Min-ge Xie, Rutgers University

10:35 a.m. **Network Meta-Analysis of Categorical Outcomes with Incomplete Data**—✦Christopher Schmid, Brown University; Thomas A. Trikalinos, Brown University; Ingram Olkin, Stanford University
10:55 a.m. **Relative Efficiency for Random-Effects Meta-Analysis Using Summary Statistics and Individual-Patient Data**—✦Din Chen, University of Rochester
11:15 a.m. **Nonparametric Inference for Meta-Analysis with Fixed Unknown, Study-Specific Parameters**—✦Brian Claggett, Harvard School of Public Health; Tian Lu, Stanford University School of Medicine; Min-ge Xie, Rutgers University
11:35 a.m. **Combining Single and Two-Group Outcome Risks/Comparisons from Multiple Studies of Safety**—✦Nicholas Jewell, University of California at Berkeley
11:55 a.m. **Exact Inference for Random Effect Model in Meta-Analysis**—✦Lu Tian, Stanford University; Lee-Jen Wei, Harvard University
12:15 p.m. **Floor Discussion**

516 CC-514b
■ Biostatistical Literacy: What Medical and Public Health Professionals Need to Know About Statistics—Topic-Contributed
Section on Teaching of Statistics in the Health Sciences, Section on Statistical Education, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee
Organizer(s): Ann M. Brearley, University of Minnesota
Chair(s): Nicholas J. Horton, Smith College

10:35 a.m. **Top Ten Essential Statistical Concepts for Students in the Health Sciences**—✦Ron Brookmeyer, University of California at Los Angeles
10:55 a.m. **What Your Future Doctor Should Know About Statistics: Must-Include Topics for Introductory Undergraduate Biostatistics Courses**—✦Brigitte Baldi, University of California at Irvine; Jessica Utts, University of California at Irvine

11:15 a.m. **Matching Skills to Needs: Biostatistics for Health Professionals and Other Specialists**—✦Marie Diener-West, John Hopkins University-School of Public Health

11:35 a.m. **In Defense of Art Appreciation: What Your Doctor Does Not Need to Know About Biostatistics**—✦Ann M. Brearley, University of Minnesota

11:55 a.m. **Doctors and Data Analysis: A Dangerous Mix?**—✦Steven Grambow, Duke University-Veteran's Affairs

12:15 p.m. **Floor Discussion**

517 CC-521ab

■ ● Statistical Methods in Disability and Health Research—Topic-Contributed

Committee on Statistics and Disability, Scientific and Public Affairs Advisory Committee, Statistics Without Borders, Korean International Statistical Society

Organizer(s): Long H. Ngo, Harvard Medical School

Chair(s): Long H. Ngo, Harvard Medical School

10:35 a.m. **Applications of Item Response Theory in the Measurement of Physical Disability**—✦Richard Jones, Institute for Aging Research / Hebrew Senior Life; Alden Gross, Johns Hopkins University, School of Public Health

10:55 a.m. **Marginal Structural Modeling in Comparative Effectiveness Research: Illustration in Diabetes Research**—✦Romain Neugebauer, Kaiser Permanente

11:15 a.m. **Restricted Fence Method for Covariate Selection in Longitudinal Data Analysis**—✦Thuan Nguyen, Oregon Health and Science University; Jiming Jiang, University of California at Davis

11:35 a.m. **The Mediating Effect of Leptin on the Relationship Between Increasing Body Mass Index and Knee Osteoarthritis**—✦Angela Fowler-Brown, Beth Israel Deaconess Medical Center; Dae Hyun Kim, Institute for Aging Research; Ling Shi, University of Massachusetts, Boston; Edward Marcantonio, Beth Israel Deaconess Medical Center; Christina Wee, Beth Israel Deaconess Medical Center; Robert Shmerling, Beth Israel Deaconess Medical Center; Lewis Lipsitz, Beth Israel Deaconess Medical Center; Suzanne Leveille, University of Massachusetts, Boston

11:55 a.m. **Novel Point Estimation from a Semiparametric Ratio Estimator (SPRE): Long-Term Health Outcomes from Short-Term Linear Data, with Application to Adults with Developmental Disability**—✦Deborah Weissman-Miller, Brenau University; Catherine Link, The Shepherd Center; Celina Parkman, Cobb County School District

12:15 p.m. **Floor Discussion**

518 CC-510a

■ Blinding and Placebo Effects in Randomized Clinical Trials—Topic-Contributed

Biopharmaceutical Section, ASA Special Interest Group for Medical Devices and Diagnostics, Mental Health Statistics Section, Biometrics Section, Section for Statistical Programmers and Analysts

Organizer(s): Zhiwei Zhang, FDA

Chair(s): Gregory Campbell, FDA

10:35 a.m. **Blinding Assessment and the Placebo Effect: A Causal Inference Perspective**—✦Zhiwei Zhang, FDA; Richard Kotz, FDA; Chenguang Wang, Johns Hopkins University; Shiling Ruan, FDA; Martin P. Ho, FDA/CDRH

10:55 a.m. **Assessing the Success of the Blind in Sham-Controlled Randomized Clinical Trials**—✦Valerie Durkalski, Medical University of South Carolina; Qi Wu, Medical University of South Carolina

11:15 a.m. **Adjusting for Selection Bias in Single-Blinded Randomized Controlled Clinical Trials**—✦Lieven Kennes, RWTH Aachen University

11:35 a.m. **Placebo Effect Assessment in Quality-of-Life Evaluations**—✦Jens Eickhoff, University of Wisconsin-Madison

11:55 a.m. Disc: Chenguang Wang, The Johns Hopkins University

12:15 p.m. **Floor Discussion**

519 CC-510b

■ ● Consistency of Treatment Effects in Multi-Regional Clinical Trials—Topic-Contributed

Biopharmaceutical Section, Mental Health Statistics Section, Biometrics Section

Organizer(s): Gang Li, Johnson & Johnson

Chair(s): Gang Li, Johnson & Johnson

10:35 a.m. **Sample Size Consideration for Treatment Effect Consistency Assessment in Multi-Regional Clinical Trials and Bridging Studies**—✦Hui Quan, Sanofi; Gang Li, Johnson & Johnson; Josh Chen, Merck; Yue Shentu, Merck

10:55 a.m. **Design Consideration for Simultaneous Global Drug Development Program**—✦Gang Chen, Johnson & Johnson

11:15 a.m. **Beauty Can Be in the Eye of the Beholder, but Consistency Should Not**—✦Bruce Binkowitz, Merck

11:35 a.m. **Statistical Considerations for Bridging/ Multi-Regional Trials**—✦Shein-Chung Chow, Duke University

11:55 a.m. Disc: Jen-pei Liu, National Taiwan University

12:15 p.m. **Floor Discussion**

520 CC-512ab

■ Leveraging the American Community Survey as a Sampling Frame for the National Survey of College Graduates—Topic-Contributed

Survey Research Methods Section, Social Statistics Section

Organizer(s): John Finamore, National Science Foundation

Chair(s): Wan-Ying Chang, National Science Foundation

10:35 a.m. **Evaluating the Consistency Between Responses to the 2010 NSCG and the 2009 ACS**—✦Phyllis Singer, U.S. Census Bureau; Robyn Sirkis, U.S. Census Bureau

10:55 a.m. **Leveraging the American Community Survey (ACS) in Current Estimation for the National Survey of College Graduates (NSCG)**—✦Michael D. Larsen, The George Washington University; Benjamin M. Reist, U.S. Census Bureau

11:15 a.m. **Monitoring Methods for Adaptive Design in the National Survey of College Graduates (NSCG): A Retrospective Appraisal**—✦Stephanie Coffey, U.S. Census Bureau; Michael White, U.S. Census Bureau; Benjamin M. Reist, U.S. Census Bureau; Wan-Ying Chang, National Science Foundation

11:35 a.m. **The 2010 National Survey of College Graduates (NSCG) Weighting**—✦Benjamin M. Reist, U.S. Census Bureau; Michael White, U.S. Census Bureau; David Hall, U.S. Census Bureau

11:55 p.m. Disc: Jean Opsomer, Colorado State University

521 CC-511e

■ Statistical Methods in Phylogenetics—Topic-Contributed

Biometrics Section, International Indian Statistical Association, WNAR

Organizer(s): Arindam RoyChoudhury, Columbia University

Chair(s): John A. Bunge, Cornell University

10:35 a.m. **Bayesian Methods to Identify Sequences with Species**—✦G. Brian Golding, McMaster University

10:55 a.m. **A Composite Likelihood Method for Estimating Phylogenetic Tree from Dependent Loci**—✦Arindam RoyChoudhury, Columbia University

11:15 a.m. **Phylogeny-Based Computational Approaches to Comparative Genomics**—✦Xuhua Xia, University of Ottawa

11:35 a.m. **ABC of Infectious Disease Dynamics: How Networks Change Through Time**—✦Stephane Aris-Brosou, University of Ottawa

11:55 a.m. **Gene Order Divergence and Fractionated Gene Loss in Ancient Plant Tetraploids**—✦David Sankoff

12:15 p.m. **Floor Discussion**

522 CC-520b

Bayesian Statistics with Biomedical Applications—Topic-Contributed

Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), WNAR

Organizer(s): Zhaowei Hua, Millennium: The Takeda Oncology Company

Chair(s): Chuanhua Xing, Boston University

10:35 a.m. **Bayesian Design of Noninferiority Clinical Trials via Conditional Borrowing of Historical Data with Applications**—✦Ming-Hui Chen, University of Connecticut

10:55 a.m. **Bayesian Graphical Models for Gene X Environment Interaction**—✦Paola Sebastiani, Boston University

11:15 a.m. **Bayesian Two-Stage Single-to-Double Arm Design in Phase II Clinical Trials**—✦Guosheng Yin, University of Hong Kong

11:35 a.m. **Bayesian Multiple Biomarker Subgroup Selection**—✦Zhaowei Hua, Millennium: The Takeda Oncology Company; Mingxiu Hu, Millennium: The Takeda Oncology Company; Chuanhua Xing, Boston University

11:55 a.m. **Nonparametric Bayes Approaches for High-Dimensional Data in Biomedical Applications**—✦David Kessler, The University of North Carolina, Chapel Hill; David B. Dunson, Duke University

12:15 p.m. **Floor Discussion**

523 CC-513a

■ Advances on Seasonal Adjustment—Topic-Contributed

Business and Economic Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Riccardo Gatto, Eurostat - European Commission

Chair(s): Lars Vilhuber, Cornell University/ILR

10:35 a.m. **Advanced Tools for Time Series Analysis and Seasonal Adjustment in the New Jdemetra+**—✦Sylwia Grudkowska, National Bank of Poland; Dario Buono, European Commission; Jean Palate, National Bank of Belgium; Wojciech Ciebiera, National Bank of Poland

10:55 a.m. **Modeling Recessing Effects and the Consequences on Seasonal Adjustment**—✦Demetra Lytras, U.S. Census Bureau; William R. Bell, U.S. Census Bureau

11:15 a.m. **Instant Trend-Seasonal Decomposition of Time Series with Splines**—✦Luis Francisco Rosales Marticorena, Goettingen University

11:35 a.m. **On Time Aggregation and Seasonal Adjustment: Does the Order Matter?**—✦Anna Ciammola, ISTAT; Claudia Cicconi, ISTAT; Francesca Di Palma, ISTAT

11:55 a.m. **A Large-Scale Comparison of Alternative Seasonal Adjustment Methods**—✦Dominique Ladiray, INSEE

12:15 p.m. **Floor Discussion**

524 CC-518

Administrative Records Quality, Coverage, and Applications for Surveys and Censuses—Topic-Contributed

Social Statistics Section, Survey Research Methods Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Sonya Rastogi, U.S. Census Bureau

Chair(s): Leticia Fernandez, U.S. Census Bureau

10:35 a.m. **Administrative Records and the 2010 U.S. Census Coverage Measurement Estimates: A Comparison—**✦Leah B. Marshall, U.S. Census Bureau

10:55 a.m. **Evaluation of Reporting on Foodstamps in the American Community Survey Over Time: Texas and New York—**✦Benjamin Harris

11:15 a.m. **Deciphering Duplicity: Characterizing Persons with Multiple Protected Identification Keys (PIKs) in the National Change of Address (NCOA) Database to Facilitate Migration Research—**✦Megan Benetsky, US Census Bureau; Alison K. Fields, U.S. Census Bureau; Amy O'Hara, U.S. Census Bureau

11:35 a.m. **Using County Assessor's Records to Improve Data Collection Efforts for the June Area Survey—**✦Denise A. Abreu, USDA/NASS; Wendy Barboza, USDA/NASS; Matt Deaton, USDA/NASS; Linda J Young, USDA/NASS

11:55 a.m. Disc: Jennifer Hasche, NORC at the University of Chicago

12:15 p.m. **Floor Discussion**

525 CC-520d

■ Modeling Spatially Indexed Ecological Data—Topic-Contributed

Section on Statistics and the Environment, Section on Statistics in Epidemiology

Organizer(s): Devin Johnson, National Marine Mammal Laboratory

Chair(s): Mevin Hooten, Colorado State University

10:35 a.m. **Latent Spatial Models for Landscape Genetics—**✦Ephraim Hanks, Colorado State University; Mevin B. Hooten, U. S. Geological Survey, Colorado Cooperative Fish and Wildlife Research Unit

10:55 a.m. **Spatial Prediction Using Multivariate Data Structures—**✦Alix I. Gitelman, Oregon State University; Xuan Che, Oregon State University; Kathryn Irvine, U.S. Geological Survey

11:15 a.m. **Bayes and Emprical Bayes Estimators of Abundance and Density from Spatial Capture-Recapture Data—**✦Robert Dorazio, U.S. Geological Survey

11:35 a.m. **Estimating Abundance from Counts in Large Data Sets of Irregularly Spaced Aerial Images Using Fixed-Rank Spatial Random Effects—**✦Jay Ver Hoef, NOAA National Marine Mammal Lab

11:55 a.m. **Spatial Occupancy Models for Large Data Sets—**✦Devin Johnson, National Marine Mammal Laboratory; Paul Conn, National Marine Fisheries Service; Mevin Hooten, Colorado State University; Justina Ray, Wildlife Conservation Society; Bruce Pond, Ontario Ministry of Natural Resources

12:15 p.m. **Floor Discussion**

526 CC-511c

Causal Inference: Recent Advances—Topic-Contributed

Section on Statistics in Epidemiology, Biometrics Section

Organizer(s): Fan Yang, University of Pennsylvania

Chair(s): Jesse Yenchih Hsu, University of Pennsylvania

10:35 a.m. **Estimation of Causal Effects Using Instrumental Variables with Nonignorable Missing Covariates: Application to Effect of Type of Delivery Hospital on Premature Infants—**✦Fan Yang, University of Pennsylvania; Scott Lorch, Children's Hospital of Philadelphia; Dylan S. Small, University of Pennsylvania

10:55 a.m. **Efficient Estimation of the Attributable Fraction When There Are Monotonicity Constraints and Interactions—**✦Wei Wang; Dylan S. Small, University of Pennsylvania

11:15 a.m. **Instrumental Variable Approach for Mediation Analysis of Zero-Inflated Count Model—**✦Zijian Guo, The Wharton School; Stuart Gansky, University of California at San Francisco; Jing Cheng, University of California at San Francisco

11:35 a.m. **Model-Averaged Double Robust Estimation—**✦Matthew Cefalu, Harvard University; Francesca Dominici, Harvard School of Public Health; Giovanni Parmigiani, Dana-Farber Cancer Institute

11:55 a.m. **Testing for and Characterizing Treatment Effect Heterogeneity Under the Neyman-Rubin Potential Outcomes Framework—**✦Luke Miratrix, Harvard University; Avi Feller, Harvard University; Peng Deng, Harvard University

12:15 p.m. **Floor Discussion**

527 CC-511f

■ Recent Developments of Statistical Methods RNA-seq Data—Topic-Contributed

Biometrics Section, International Indian Statistical Association, Section on Statistics in Epidemiology

Organizer(s): Wei Sun, The University of North Carolina at Chapel Hill
Chair(s): Hui Jiang, University of Michigan

10:35 a.m. **Using RNA-Seq Data to Study the Genetic Basis of Cancer Development**—✦Wei Sun, The University of North Carolina at Chapel Hill; Yun Li, The University of North Carolina; Charles Perou, The University of North Carolina at Chapel Hill

10:55 a.m. **Dissecting Eukaryotic Transcriptomes Through High-Throughput Data**—✦Liang Chen, Molecular and Computational Biology, University of Southern California

11:15 a.m. **Poisson Graphical Models for Inferring Networks from Next-Generation Sequencing Data**—✦Genevera Allen, Rice University; Zhandong Liu, Baylor College of Medicine; Euhno Yang, The University of Texas at Austin; Pradeep Ravikumar, The University of Texas at Austin

11:35 a.m. **A Novel Bayesian Approach for Differential Expression Analysis with RNA-Seq Data**—✦Peng Liu, Iowa State University; Fangfang Liu, Iowa State University; Chong Wang, Iowa State University

11:55 a.m. **Statistical Analysis of RNA-Seq and Methylation-Seq Data**—✦Fei Zou, The University of North Carolina at Chapel Hill

12:15 p.m. **Floor Discussion**

Topic-Contributed Panels 10:30 a.m.–12:20 p.m.

528 CC-516b

■ Statistical Engineering: Making It All Happen—Topic-Contributed

Quality and Productivity Section, Section on Physical and Engineering Sciences

Organizer(s): Jennifer H. Van Mullekom, DuPont Applied Statistics Group
Chair(s): Jennifer H. Van Mullekom, DuPont Applied Statistics Group

Panelists: ✦Stephanie DeHart, Dupont
✦Paul Berg, Eli Lilly and Company
✦Fred Faltin, The Faltin Group
✦Stephanie Palermo, Capital One
✦Robert G. Wilkinson, The Lubrizol Corporation

12:15 p.m. **Floor Discussion**

529 CC-515b

Incorporating Success Skills Such as Communication and Teamwork Into the Statistics Curriculum—Topic-Contributed

Statistics in Business Schools Interest Group

Organizer(s): John McKenzie, Babson College
Chair(s): Keith Ord, Georgetown University

Panelists: ✦Debra K. Stiver, University of Nevada, Reno
✦Billie Anderson, Bryant University
✦John McKenzie, Babson College
✦Mark Berenson, Montclair State University

12:15 p.m. **Floor Discussion**

Contributed Sessions 10:30 a.m.–12:20 p.m.

530 CC-512d

Survival Analysis and Optimal Treatment—Contributed

Biometrics Section

Chair(s): Yi Huang, University of Maryland, Baltimore County

10:35 a.m. **Induced Smoothing Method for Optimal Treatment Learning**—✦Runchao Jiang, North Carolina State University; Wenbin Lu, North Carolina State University; Rui Song, North Carolina State University

10:50 a.m. **Modeling Pathogen Resistance and Exposure to Antimicrobials**—✦Michele Shaffer, Seattle Children's Research Institute; Erika D'Agata, Beth Israel Deaconess Medical Center; Dan Kiely, Hebrew SeniorLife Institute for Aging Research; Tonya Rosenblatt, Hebrew SeniorLife Institute for Aging Research; Susan Mitchell, Hebrew SeniorLife Institute for Aging Research

11:05 a.m. **Statistical Approaches to Analyzing Historical Control Data from Two-Year Rat Carcinogenicity Studies**—✦Lei Shu, AbbVie; Lanju Zhang, AbbVie; Ronnie Yeager, AbbVie

11:20 a.m. **Recursively Imputed Survival Trees for Predicting Colorectal Cancer Survival**—✦Jenny Häggström, Umeå University

11:35 a.m. **Extrapolating Survival Curves in Clinical Trials Beyond Follow-Up Periods**—✦Jerry Cheng, Rutgers University; Javier Cabrera, Rutgers University; John Kostis, Rutgers University; David Madigan, Columbia University

11:50 a.m. **Estimation of the Optimal Regime in Treatment of Prostate Cancer Recurrence from Observational Data Using Flexible Weighting Models**—✦Jincheng Shen, University of Michigan; Lu Wang, Univeristy of Michigan; Jeremy Taylor, University of Michigan

12:05 p.m. **Assessing Quantile Prediction with Censored Quantile Regression Models**—✦Ruosha Li, University of Pittsburgh; Limin Peng, Emory University

531 CC-512h

Competing Risk—Contributed

Biometrics Section, Korean International Statistical Society

Chair(s): Feng-Chang Lin, The University of North Carolina at Chapel Hill

10:35 a.m. **Weighted Estimation of the Accelerated Failure Time Model in the Presence of Dependent Censoring**—✦Youngjoo Cho, Penn State University; Debashis Ghosh, Penn State University

10:50 a.m. **Imputation Methods for Semiparametric Modeling of the Subdistribution Hazard**—✦Ludi Fan, University of Michigan; Douglas Earl Schaubel, University of Michigan

11:05 a.m. **Copulas and Competing Risks: Applications for Mixture Long-Term Survival Models**—✦Ronny Westerman, University of Marburg

11:20 a.m. **Joint Modeling of Multivariate Longitudinal Data and Competing Risks Data**—✦Jeevanantham Rajeswaran, Cleveland Clinic

11:35 a.m. **Mixed Effects Gompertz Model of Clustered Survival Data in Presence of Cure**—✦Chien-Lin Su, Institute of Statistics, National Chiao-Tung University; A. Adam Ding, Northeastern University; Weijing Wang, Institute of Statistics, National Chiao-Tung University

11:50 a.m. **Floor Discussion**

532 CC-525a

Nonparametric Rank-Based Methods—Contributed

Section on Nonparametric Statistics

Chair(s): Damla Senturk, University of California at Los Angeles

10:35 a.m. **Logarithmic Quantile Estimation for Rank Statistics**—✦Lucia Tabacu, Penn State University; Manfred Denker, Penn State University

10:50 a.m. **Rank-Based Estimator in Two-Phase Linear Model**—✦Brice Merlin Nguelifack, Auburn University

11:05 a.m. **Rank Regression in Order-Restricted Randomized Design**—✦Jinguo Gao; Omer Ozturk, The Ohio State University

11:20 a.m. **The Power of a Rank-Based Test for Non-Location Differences in Treatment Distributions in a Randomized Complete Block Design**—✦Roy St. Laurent, Northern Arizona University; Philip Turk, West Virginia University

11:35 a.m. **On Masking and Swamping Robustness of Outlier Identifiers for Univariate Data**—✦Shanshan Wang; Robert Serfling, The University of Texas at Dallas

11:50 a.m. **An Empirical Likelihood Approach to Testing of Uniformity and Symmetries on High-Dimensional Spheres**—✦Lingnan Li, Indiana University-Purdue University; Shan Wang, Indiana University-Purdue University; Hanxiang Peng, Indiana University-Purdue University

12:05 p.m. **Floor Discussion**

533 CC-514a

■ Computer Experiments—Contributed

Section on Physical and Engineering Sciences, Section on Statistical Computing

Chair(s): Timothy Hall, PQI Consulting

10:35 a.m. **Monotone Function Estimation for Computer Experiments**—✦Shirin Golchi, Simon Fraser University; Derek Bingham, Simon Fraser University; Hugh A. Chipman, Acadia University; Dave Campbell, Simon Fraser University

10:50 a.m. **Online Updating and Scheduling of Computer Models with Application to Data Center Thermal Management**—✦Huijing Jiang, IBM T.J. Watson Research Center; Xinwei Deng, Virginia Tech; Vanessa Lopez, IBM T.J. Watson Research Center; Hendrik F. Hamann, IBM T.J. Watson Research Center

11:05 a.m. **Learning About Physical Parameters: The Importance of Model Discrepancy**—✦Jenny Brynjarsdottir, Duke University; Anthony O'Hagan, The University of Sheffield

11:20 a.m. **Upscaling Uncertainty in a Multi-Scale System**—✦K. Sham Bhat, Statistical Sciences Group, Los Alamos National Laboratory; Curtis Storlie, Los Alamos National Laboratory; David Mebane, West Virginia University; Joanne Wendelberger, Los Alamos National Laboratory

11:35 a.m. **Efficient Uncertainty Quantification Using Gradient-Enhanced Kriging, Applied to an Airfoil with Random Shape Deformations**—✦Jouke H.S. de Baar, Delft University of Technology; Thomas P. Scholcz, Delft University of Technology; Richard P. Dwight, Delft University of Technology; Hester Bijl, Delft University of Technology

11:50 a.m. **Addressing Multiple Responses Using Sequential Kriging Optimization**—✦Sayak Roychowdhury, The Ohio State University; Theodore T. Allen, The Ohio State University

12:05 p.m. **Estimating Local Sensitivity Indices for Deterministic Computer Simulator Output with Rectangular and Non-Rectangular Input Regions**—✦Thomas Santner, Ohio State University; Angela M. Dean, University of Southampton; Fangfang Sun, The Ohio State University

534 CC-510d
Adaptive Designs and Analysis Options—Contributed

Biopharmaceutical Section, International Chinese Statistical Association, Biometrics Section

Chair(s): Eva Miller, Quality Data Servises

10:35 a.m. **Evaluation of a Design with Sample Size Re-Estimation Based on Conditional Power**—✦Alison Pedley

10:50 a.m. **A Review of Recent Research on the Type II Error Probability of a Group Sequential Test of Efficacy and Futility with Applications**—✦Thomas Dobbins, Merck

11:05 a.m. **Sample Size Re-Estimation at Interim Analysis for a Time-to-Event Endpoint for Data with Nonproportional Hazards**—✦Liang Chen, Pfizer Inc.

11:20 a.m. **Sample-Size Evaluation in Group-Sequential Designs for Clinical Trials with Two Continuous Endpoints as Co-Primary Contrasts**—✦Koko Asakura, Osaka University Graduate School of Medicine; Kenichi Hayashi, Osaka University Graduate School of Medicine; Tomoyuki Sugimoto, Hirosaki University Graduate School of Science and Technology; Takashi Sozu, Kyoto University School of Public Health; Toshimitsu Hamasaki, Osaka University Graduate School of Medicine

11:35 a.m. **Group-Sequential Procedures for Multiple Endpoints with Adaptive Allocation of Recycled Significance Levels**—✦Dong Xi, Northwestern University; Ajit C. Tamhane, Northwestern University

11:50 a.m. **Sample Size Re-Estimation with Missing Data in Clinical Trials**—✦Ruitao Lin, University of Hong Kong; Guosheng Yin, University of Hong Kong; Huiqiong Li, Yunnan University

12:05 p.m. **Evaluating the Loss of Efficiency for Promising Zone Designs Compared to Group Sequential Designs in the Setting of Time-to-Event Data**—✦Martin King, AbbVie

535 CC-520e
■ Covariance Functions and Spatial Dependence in Environmental Processes—Contributed

Section on Statistics and the Environment

Chair(s): Monica Palma, University of Salento

10:35 a.m. **Nonstationary Process Variance Estimation**—✦Eunice Kim, Iowa State University; Zhengyuan Zhu, Iowa State University

10:50 a.m. **Statistically and Computationally Efficient Estimating Equations for Large Spatial Data Sets**—✦Ying Sun, The University of Chicago; Michael L. Stein, The University of Chicago

11:05 a.m. **Covariance Functions for Mean Square Differentiable Processes on Spheres**—✦Joseph Guinness, North Carolina State University; Montserrat Fuentes, North Carolina State University

11:20 a.m. **Spatial Covariance Function for Teleconnection**—✦Cheng Liu, Purdue University; Hao Zhang, Purdue University; Nelson Villoria, Purdue University

11:35 a.m. **Covariance Functions for a Marked Point Process**—✦Yen-Ning Huang, Purdue University; Hao Zhang, Purdue University

11:50 a.m. **Estimation of Smoothness of a Stationary Gaussian Random Field**—✦Wei-Ying Wu, National Dong Hwa University; Chae Young Lim, Michigan State

12:05 p.m. **Saddlepoint-Based Bootstrap Inference for Spatial Dependence in the Lattice Process**—✦Pratheepa Jeganathan, Texas Tech University; Alexandre Trindade, Texas Tech University; Robert Paige, Missouri University of Science and Technology

536 CC-512g
Design and Analysis Options for Discrete Data—Contributed

Biopharmaceutical Section

Chair(s): Wei Zhong, Genentech Inc.

10:35 a.m. **Sample-Size Calculation for Comparing Two Negative Binomial Rates**—✦Haiyuan Zhu, Forest Research Laboratories; Hassan Lakkis, Forest Research Laboratories

10:50 a.m. **Negative Binomial Models for Two Period Cross-Over Trials Involving Overdispersed Count Data**—✦Mallikarjuna Rettiganti, University of Arkansas for Medical Sciences; Haikady Nagaraja, The Ohio State University

11:05 a.m. **A Hybrid Design for Noninferiority Trials with Binary Outcomes**—✦George Chi, Janssen Research & Development

11:20 a.m. **Bayesian Inference for Meta-Analysis of 2X2 Contingency Tables**—✦Yaqin Wang, AbbVie; Qi Tang, AbbVie; Natalia Kan-Dobrosky, AbbVie; Shihua Wen, AbbVie; Yuzhen Wang, AbbVie

11:35 a.m. **Sample-Size Calculation for Count Data in Comparative Clinical Trials with Nonuniform Patient Accrual and Early Dropout**—✦Huiling Li, Forest Research Institute; Lin Wang, Sanofi; Lynn Wei, Sanofi; Hui Quan, Sanofi

11:50 a.m. **Inclusion of Zero-Event Trials Using Continuity Correction in Meta-Analyses of Rare Events**—✦Tianyue Zhou, Sanofi

12:05 p.m. **Floor Discussion**

537 CC-512f

■ Developments in Genetic Association Studies—Contributed

Section on Statistics in Epidemiology

Chair(s): Sheng Luo, The University of Texas Health Science Center at Houston

10:35 a.m. **Using Ancestral Information to Detect and Localize Quantitative Trait Loci in Genome-Wide Association Studies**—✦Katherine Thompson, The Ohio State University; Laura Kubatko, The Ohio State University

10:50 a.m. **A Genome-Wide Gene-Based Multivariate Phenotype Association Analysis in Families**—✦Saonli Basu, University of Minnesota, Biostatistics SPH

11:05 a.m. **A Generalized Kruskal-Wallis Test Incorporating Group Uncertainty with Application to Genetic Association Studies**—✦Elif Acar, University of Manitoba; Lei Sun, University of Toronto

11:20 a.m. **Response-Dependent Sampling Designs and Analysis in Studies with Rare Variants**—✦Andriy Derkach, University of Toronto; Lei Sun, University of Toronto; Jerald F. Lawless, University of Waterloo

11:35 a.m. **Testing Genetic Effects of Rare and Common Variants Together in Association Studies**—✦Renfang Jiang, Michigan Tech University; Jianping Dong, Michigan Technological University; Yilin Dai, Michigan Technological University

11:50 a.m. **Integrative Modeling of Expression and Methylation Quantitative Trait Loci into Genetic Association Studies of Complex Diseases**—✦Yen-Tsung Huang, Brown University

12:05 p.m. **Control of Population Stratification by Principal Components--Based Genomic Propensity Scores in Genome-Wide Association Studies**—✦Huaqing Zhao, Temple University School of Medicine; Nandita Mitra, University of Pennsylvania; Timonthy R. Rebbeck, University of Pennsylvania

538 CC-525b

Modeling Time: Methods for Longitudinal, Time-Series, and Censored Data—Contributed

IMS

Chair(s): Arend Voorman, University of Washington

10:35 a.m. **Asymptotic Efficiency of Integral Estimators in the Semiparametric Random Censorship Model**—✦Gerhard Dikta, Fachhochschule Aachen

10:50 a.m. **Model-Based Clustering of Gaussian Regression Time Series**—✦Semhar Michael, The University of Alabama; Volodymyr Melnykov, The University of Alabama

11:05 a.m. **Comparative Study of Four Methods in Missing Value Imputations with Dropouts from Longitudinal Studies**—✦Michikazu Nakai, National Cerebral and Cardiovascular Center; Din Chen, University of Rochester; Kunihiro Nishimura, National Cerebral and Cardiovascular Center; Yoshihiro Miyamoto, National Cerebral and Cardiovascular Center

11:20 a.m. **Polynomial Spline Estimation for Partially Linear Single-Index Additive Hazards Models with Current Status Data**—✦Pooneh Pordeli, University of Calgary; Xuewen Lu, University of Calgary; Murray Burke, University of Calgary; Peter X.K. Song, University of Michigan

11:35 a.m. **Wavelet-Based Estimation for Stationary Gaussian Time Series**—✦Wenjun Zheng, The Ohio State University

11:50 a.m. **Tree-Indexed Autoregressive Processes and Related Stochastic Fixed Point Equations**—✦Anand Vidyashankar, George Mason University; Jeffrey F. Collamore, University of Copenhagen

12:05 p.m. **Hazard Rate Functions for Distributions Generated from a Two-Parameter Weibull Distribution by a Generalized Log-Logistic Transformation**—✦James Gleaton, University of North Florida

539 CC-512e

■ Methodology for Applications in Sports—Contributed

Section on Statistics in Sports, Section on Statistical Graphics, Korean International Statistical Society

Chair(s): Andrew Swift, University of Nebraska at Omaha

10:35 a.m. **PitchRx: Tools for Collecting and Visualizing Major League Baseball PITCHf/X Data**—✦Carson Sievert, Iowa State University

10:50 a.m. **An Examination of the Effects of NCAA Aluminum Bat Restrictions on Offensive Team Performance, 2010--2011**—✦Aaron R. Baggett, University of Mary Hardin-Baylor; Grant B. Morgan, Baylor University

11:05 a.m. **Analysis of the NCAA Men's Final Four TV Audience**—✦R. Paul Sabin; Scott D. Grimshaw, Brigham Young University; Keith M Willes, Brigham Young University Broadcasting

11:20 a.m. **A Bayesian Stochastic Model for Batting Performance Evaluation in One-Day Cricket**—✦Theodoro Koulis, University of Manitoba; Saman Muthukumarana, University of Manitoba

11:35 a.m. **Using Random Forests to Estimate Win Probability Before Each Play of an NFL Football Game**—✦Dennis Lock, Iowa State University; Dan Nettleton, Iowa State University

11:50 a.m. **An In-Depth Statistical Approach to Deciphering the Mysterious and Elusive Predictive Power of Third-Down Conversion Percentage in American Football**—Ernest Fokoue, Rochester Institute of Technology; ✦Benjamin Rollins, Rochester Institute of Technology

12:05 p.m. **Antedependence Models for Major League Baseball Batter's Salary to Use the Weighted Offensive Average**—✦Chulmin Kim, Rochester Institute of Technology

540 CC-519b

Sampling Using Indirect and Non-Standard Frame Information—Contributed

Survey Research Methods Section, Korean International Statistical Society

Chair(s): Sahar Zangeneh, Fred Hutchinson Cancer Research Center

10:35 a.m. **Targeting Minorities Using Address-Based Sampling: A Simulation Study**—✦Francine Barrington, ICF International; Pedro Saavedra, ICF International

10:50 a.m. **Using Imputation Procedures to Enhance the DSF Frame**—✦Ashley Amaya, NORC at the University of Chicago; Katie Dekker, NORC at the University of Chicago; Felicia LeClere, NORC at the University of Chicago

11:05 a.m. **Sample Allocation Using Vendor-Provided Demographic Data**—✦Mike Kwanisai; Kelly Dixon, Arbitron; Dan Estersohn, Arbitron; Alan Tupek, Arbitron; Vrinda Nair, Arbitron

11:20 a.m. **Examining Coverage in the 2010 U.S. Census by Census Operations and Other Characteristics**—✦Patrick J. Cantwell, U.S. Census Bureau; Vincent Thomas Mule, U.S. Census Bureau

11:35 a.m. **Using New IT for Area Sampling in a Metropolitan Household Survey**—✦Young-je Woo, Dongguk University; Sun-Woong Kim, Dongguk University; So-Hyung Park, Dongguk University; Sang-Eun Lee, Dongguk University

11:50 a.m. **An Alternative Approach for Dealing with Inaccessible Sampled Persons in Registry-Based Samples**—✦Valerie Hsu, Westat; Leyla Mohadjer, Westat; Tom Krenzke, Westat

12:05 p.m. **Floor Discussion**

541 CC-520a

Bayesian Modeling and Model Selection—Contributed

Section on Bayesian Statistical Science

Chair(s): Lingling Zheng, Duke University

10:35 a.m. **Bayesian Variable Selection in Linear and Semiparametric Models**—✦Hongmei Zhang, University of South Carolina; Xianzheng (Shan) Huang, University of South Carolina-Columbia; Arnab Maity, North Carolina State University; Hasan Arshad, University of Southampton, UK; Tara Sabo-Attwood, University of Florida; Wilfried Karmaus, University of Memphis

10:50 a.m. **High-Dimensional Variable Selection for Logistic Regression**—✦Naveen Naidu Narisetty, University of Michigan; Xuming He, University of Michigan; Juan Shen, University of Michigan

11:05 a.m. **Assessment of Jointly Dependent Markov Processess Through Bayes Factors and Bayesian Variable Selection**—✦David Engler, Brigham Young University; Brian Healy, Harvard Medical School

11:20 a.m. **Bayesian Model Selection of Regular Vine Copulas**—✦Lutz Gruber, Munich University of Technology; Claudia Czado, Munich University of Technology

11:35 a.m. **Challenges with the Use of Cross-Validation for Comparing Structured Models**—✦Wei Wang; Andrew Gelman, Columbia University

11:50 a.m. **An Association Between Ozone Exposure and Chronic Lower Respiratory Disease Mortality in the United States: A Bayesian Hierarchical Approach**—✦Yongping Hao, Centers for Disease Control and Prevention; Heather Strosnider, Centers for Disease Control and Prevention; Lina Balluz, Centers for Disease Control and Prevention

12:05 p.m. **Bayesian Hierarchical Model for Single-Cell Assays**—✦Lynn Lin, Fred Hutchinson Cancer Research Center; Greg Finak, Fred Hutchinson Cancer Research Center; Raphael Gottardo, Fred Hutchinson Cancer Research Center

542 CC-524b

Nonresponse Issues—Contributed

Government Statistics Section, Social Statistics Section, Health Policy Statistics Section

Chair(s): Martey S. Dodoo, Harvey Neiman Health Policy Institute

10:35 a.m. **Who Contributes to the Bias? Identifying Characteristics of Nonrespondents to Better Manage Nonresponse Bias**—✦Morgan Earp, Bureau of Labor Statistics; Daniell Toth, Bureau of Labor Statistics; Polly Phipps, Bureau of Labor Statistics; Charlotte Oslund, Bureau of Labor Statistics

10:50 a.m. **Nonresponse Bias in the Survey of Occupational Injuries and Illnesses**—✦Erin Huband; Patrick Bobbitt, Bureau of Labor Statistics

11:05 a.m. **Nonresponse Mitigation in the Quarterly Summary of State and Local Tax Revenues**—✦Joseph Barth, U.S. Census Bureau; Courtney Hill, U.S. Census Bureau; Bac Tran, U.S. Census Bureau

11:20 a.m. **Producing Control Charts to Monitor Response Rates for Selected Business Surveys of the U.S. Census Bureau**—✦Yarissa Gonzalez, U.S. Census Bureau; Broderick Oliver, U.S. Census Bureau; Katherine Jenny Thompson, U.S. Census Bureau

11:35 a.m. **An Evaluation of Employer Sponsored Health Insurance Contributions in the Current Population Survey**—✦Hubert Janicki, U.S. Census Bureau

11:50 a.m. **The Seasonal Timing of Injuries**—✦Brooks Pierce, Bureau of Labor Statistics

12:05 p.m. **Floor Discussion**

543 CC-515c

■ Topics in Statistical Graphics—Contributed

Section on Statistical Graphics, Section on Statistical Computing

Chair(s): Marie Vendettuoli, Iowa State University

10:35 a.m. **Dimension Reduction in Functional Data Classification**—✦Santiago Velilla, Universidad Carlos III

10:50 a.m. **Signs of the Sine Illusion: Why We Need to Care**—✦Susan VanderPlas, Iowa State University; Heike Hofmann, Iowa State University

11:05 a.m. **Visualization of Regression Models Using Visreg**—Woodrow Burchett, University of Kentucky; ✦Patrick Breheny, University of Kentucky

11:20 a.m. **Maximum Entropy Summary Trees**—✦Kenneth Shirley, AT&T Labs; Howard Karloff, AT&T Labs

11:35 a.m. **Conditioned Micromaps Based on Status and Trend Confidence Intervals**—✦Daniel Carr, George Mason University; Krista Heim, George Mason University

11:50 a.m. **An Asymmetrically Modified Boxplot for Exploratory Data Analysis**—✦Michael Walker, The University of Alabama; Subha Chakraborti, The University of Alabama

12:05 p.m. **Modification to the Lineup Protocol**—✦Lendie Follett, Iowa State University

544 CC-514c

■ Machine Learning and Data Mining for Complex Data—Contributed

Section on Statistical Learning and Data Mining, Section on Statistical Computing, Korean International Statistical Society

Chair(s): Sunyoung Shin, The University of North Carolina at Chapel Hill

10:35 a.m. **Mixed Effects Trees and Random Forests for Clustered Data**—✦Ahlem Hajjem, ESG UQAM; François Bellavance, HEC Montréal; Denis Larocque, HEC Montréal

10:50 a.m. **Structured Learning via Alternating Linearization**—✦Xiaodong Lin, Rutgers University; Minh Pham, Rutgers University; Andrzej Ruszczynski, Rutgers University

11:05 a.m. **Branching Out with Level Set Trees: Generalizing Beyond Densities and Enabling Interactive Data Analysis**—✦Brian P. Kent, Carnegie Mellon University; Alessandro Rinaldo, Carnegie Mellon University; Timothy Verstynen, Carnegie Mellon University

11:20 a.m. **Data Mining Heterogeneity of Treatment Effects on Patients with the Metabolic Syndrome**—✦Hua Fang, University of Massachusetts Medical School; Jin Wang, University of Massachusetts, Dartmouth; Bruce Barton, University of Massachusetts Medical School; Honggang Wang, University of Massachusetts, Dartmouth; Yunsheng Ma, University of Massachusetts Medical School

11:35 a.m. **Predicting Individual Causal Effects (ICE)**—✦Xiaogang Su, The University of Alabama; Joseph Kang, Northwestern University

11:50 a.m. **Predicting Glaucoma Progression Using Random Forest Based on Correlated Binary Outcome and Longitudinal Covariates**—✦Juanjuan Fan, San Diego State University; Lucie Sharpsten, San Diego State University; Xiaogang Su, The University of Alabama; Shaban Demirel, Devers Eye Institute; Richard A. Levine, San Diego State University

12:05 p.m. **Using Distance Correlation and SS-ANOVA to Assess Associations of Familial Relationships, Lifestyle Factors, Diseases, and Mortality**—✦Jing Kong, University of Wisconsin-Madison; Barbara Klein, University of Wisconsin-Madison; Ronald Klein, University of Wisconsin-Madison; Kristine Lee, University of Wisconsin-Madison; Grace Wahba, University of Wisconsin-Madison

We thank the following JSM 2013 Sponsors for their financial support:

Platinum

SAS

IBM

Gold

CRC Press
Taylor & Francis Group

Minitab
QUALITY. ANALYSIS. RESULTS.

REVOLUTION ANALYTICS

Silver

abbvie

astellas
Leading Light for Life

Berry Consultants
Statistical Innovation

CAMBRIDGE UNIVERSITY PRESS

CapitalOne

CHASE

Cytel
STATISTICAL SOFTWARE & SERVICI

Lilly

PEARSON

Pfizer

P&G

RTI INTERNATIONAL

SALFORD SYSTEMS

Springer
the language of science

statgraphics centurion

TRAVELERS
Insurance. In-synch.

WILEY-BLACKWELL

Visit www.amstat.org/jsmsponsors to learn more.

545 CC-516a

Section on Statisticians in Defense and National Security Cpapers 1—Contributed

Section on Statistics in Defense and National Security, Section on Physical and Engineering Sciences, Scientific and Public Affairs Advisory Committee

Chair(s): Barbara Wendelberger, University of Wisconsin-Madison

10:35 a.m. **Statistical Engineering Case Study: Revising Test Protocols for Combat Helmet Testing—** ✦Laura June Freeman, Institute for Defense Analyses

10:50 a.m. **Statistical Methods for Combining Information: Stryker Family of Vehicles Reliability Case Study—**✦Rebecca Dickinson, Virginia Tech; Laura June Freeman, Institute for Defense Analyses; Alyson Wilson, IDA; Bruce Simpson, IDA

11:05 a.m. **Experimental Design Challenges in Operational Testing: Recent Case Studies—**✦Matthew Avery, IDA; Laura June Freeman, Institute for Defense Analyses

11:20 a.m. **Scientific Test and Analysis Techniques in Test and Evaluation—**✦Jennifer Kensler, Riverside Research

11:35 a.m. **A Proposal for an Experiment with Navy Enlistment Contract Lengths—**✦Yevgeniya Pinelis; Jennie Wenger, CNA; Jared Huff, CNA; Gerald Cox, CNA

11:50 a.m. **Floor Discussion**

SPEED Contributed Poster Presentations 10:30 a.m.–12:20 p.m.

546 CC-220bc

Statistical Challenges with Measurement, Complex Design, and Missing Data, Part 2—Contributed Poster Presentations

Biometrics Section, Survey Research Methods Section, Section on Statistics in Epidemiology

Chair(s): Roderick J. Little, University of Michigan

1 **Efficient Estimation of Partially Observed Clustered Data Using Multiple Imputation—**✦Kathryn Aloisio, Smith College ; Nicholas J. Horton, Smith College; Sonja Swanson, Private; Alison E. Field, Boston Children's Hospital; Nadia Micali, UCL Institute of Child Health

2 **Longitudinal Data Analysis with Covariates Missing in Nonmonotone Patterns—**✦Meng Liu

3 **Comparison of Weighting Approaches for Longitudinal Data with Time-Dependent Cluster Sizes—**✦Matthew Stephenson, University of Guelph; Ayesha Ali, University of Guelph; Gerarda Darlington, University of Guelph

4 **Imputation of Family Income and Maximal Utilization of Auxiliary Data: A Case Study of the 2012 Ohio Medicaid Assessment Survey (OMAS—**✦Jamie Ridenhour, RTI International; Marcus Berzofsky, RTI International; Caroline Blanton, RTI International; G. Lance Couzens, RTI International; Timothy Sahr, Ohio Colleges of Medicine, Government Resource Center, The Ohio State University; Bo Lu, The Ohio State University; Amy Ferketich, The Ohio State University

5 **Applications of Survey Regression Models to Estimate the Degree of Data Agreement—**✦Julia Soulakova, University of Nebraska-Lincoln; Peng Zhao, University of Nebraska-Lincoln

6 **Projected Variance for the Model-Based Classical Ratio Estimator: Estimating Sample Size Requirements—** James Knaub, U.S. Energy Information Administration

7 **Bayesian Nonparametric Finite Population Inference—** ✦Yajuan Si, Columbia University; Natesh S. Pillai, Harvard University; Andrew Gelman, Columbia University

8 **Estimating Prices from a Natural Gas Monthly Survey—**✦Samson Adeshiyan, U.S. Energy Information Administration

9 **Analysis of Large Survey Data Sets Using Dynamically Generated SQL—**✦Thomas Lumley, University of Auckland

10 **Hot Deck Imputation of Nonignorable Missing Data with Sensitivity Analysis—**✦Danielle Sullivan; Rebecca Roberts Andridge, The Ohio State University College of Public Health

11 **Reliability and Stability of the Six-Question Disability Measure in the Survey of Income and Program Participation—**✦Matthew Brault, U.S. Census Bureau

12 **Response Rates Revisited—**✦Barbara Lepidus Carlson, Mathematica Policy Research

13 **Understanding Egypt's Telephone Owning Population—** ✦David Peng, D3 Systems; David Rae, D3 Systems; Samuel Solomon, D3 Systems

14 **New Computer-Based Training for National Center for Education Statistics Complex Survey Data Sets—** ✦Andrew A. White, National Center for Education Statistics

15 **Modeling Smoking and Heaping Patterns in Self-Reported Cigarette Numbers by a Finite Mixture Approach—**✦Henry Yeh, University of Kansas Medical Center; Byron Gajewski, University of Kansas Medical Center; Won S. Choi, University of Kansas Medical Center; Christine M. Daley, University of Kansas Medical Center

16 **Using the Constrained Ordinal Models for Likert-Based Outcomes—**✦Ana W. Capuano, Rush University Medical Center; R. William Field, University of Iowa; Marizen R. Ramirez, University of Iowa; Jeffrey D. Dawson, University of Iowa

Contributed Poster Presentations 10:30 a.m.–12:20 p.m.

547 CC-220bc

Contributed Oral Poster Presentations: Biopharmaceutical Section—Contributed Poster Presentations

Biopharmaceutical Section

Chair(s): Joyee Ghosh, University of Iowa

1 **Pairwise-False Discovery Rate Control Using Pairwise Weights**—✦Bhramori Banerjee, Merck; Sanat K. Sarkar, Temple University

2 **The Distribution of the Difference of Two Proportions: An Application of Sample Size Calculations Using Bayesian Approach**—✦Mohammad Sahtout; Wijith Munasinghe, AbbVie

3 **Latent Class Analysis for Asthma Patient Outcome Measures**—✦Wen-Ling Kuo, Merck; Davis Gates, Merck; Ruji Yao, Merck

4 **Practical Options for the Detection and Management of Sample Data Outliers**—✦Alfred Barron, Janssen Research & Development

5 **Statistical Methodology to Develop Robust Dengue qRT-PCR Assays**—✦Lingyi Zheng, GCI, Sanofi Pasteur; Linda Starr-Spires, GCI, Sanofi Pasteur

6 **Point Estimation with Quantal Response Data: Parametric Bootstrap Estimator Beats the MLE on Which It Is Based**—✦Amy Schrader, University of Arkansas for Medical Sciences; Ishwori Dhakal, University of Arkansas for Medical Sciences; Reid D. D. Landes, University of Arkansas for Medical Sciences

7 **Recent Developments in Scaled Average Bioequivalence**—✦Pascal Guibord, Algorithme Pharma

8 **Tipping Point Analyses: A Case Study**—✦Teresa Norris, PPD; Graham Carron, PPD

9 **Area Under the Curve (AUC) Approach Using Last Observation Carried Forward (LOCF) vs. Mixed-Effects Model Repeated Measures (MMRM) in Analyzing Longitudinal Count Data**—✦Rakhi Kilaru, PPD

10 **Impact of Ignoring Correlations in Vision Clinical Trials**—✦Ratna Revankar, Johnson & Johnson; Gary Koch, The University of North Carolina at Chapel Hill; Atsushi Kawaguchi, The University of North Carolina

11 **In-House vs. Out-Source: Operational Models for Data-Monitoring Committees**—✦Denka Markova, Axio Research; William Coar, Axio Research; Lynn Navale, Amgen, Inc.

12 **Calibration Problems with Panel Data Applied to Alzheimer's Disease Biomarkers**—✦Huanli Wang, University of California at Davis

13 **Effects of Randomization Methods on Hypotheses Tests in Some Clinical Trials**—✦Shaocheng Liu, MTDA; June Li, MTDA

14 **Assessing the Cumulative Exposure Response in Alzheimer Disease Studies**—✦Jianing Di, Janssen Research & Development; Xin Zhao, Janssen Research & Development; Daniel Wang, Janssen Research & Development; Ming Lu, Janssen Research & Development; Michael Krams, Janssen Research & Development

15 **Retrospective Assessment of Noninferiority in Rare Disease of Guillian-Barre Syndrome**—✦Chunqin Deng, Grifols Inc.; Junliang Chen, Grifols Inc.; Kim Hanna, Grifols Inc.

16 **Assessing the Actual Treatment Benefit with Non-Adherence to Study Drug in a Large Randomized Trial**—✦Lulu R Sterling, Amgen, Inc.; Yumi Kubo, Amgen, Inc.

17 **Analysis of Two-Period Crossover Design with Binary Response Data**—James Lee, Daiichi Sankyo Pharma Development; ✦John D.S. Hwang, B.R.S.I.; Chyi-Hung Hsu, Janssen Research & Development

18 **Meta-Analysis for All-Cause Death for Apixaban vs. Placebo or Control in SPAF Trials**—✦Li Wang, Bristol Myers Squibb; Weihua Tang, Bristol Myers Squibb

19 **Meta-Analysis of Stem Cell Therapy on Stroke in Pre-Clinical Studies**—✦Qing Wu, Mayo Clinic; Bart Demaerschalk, Mayo Clinic; Kay Wellik, Mayo Clinic; Wenchun Qu, Mayo Clinic

20 **Adaptive Two-Stage Designs in Randomized Phase II Trials**—✦Chia-Min Chen, Graduate Institute of Natural Healing Sciences, Nanhua University; Yunchan Chi, National Cheng-Kung University

21 **A Proposed Modification to Hy's Law and Edish Criteria: Using Aggregated Historical Data of Oncology Clinical Trials/ Generally Healthy Patients' Data**—✦Daniel Parks, GlaxoSmithKline; Xiwu Lin, GlaxoSmithKline; Kwan Lee, GlaxoSmithKline

22 **Probability of Monoclonality**—✦Aili Cheng, GlaxoSmithKline

23 **Bayesian Analysis for Noninferiority Trial**—✦Shu-Chih Su, Merck Research Laboratories; G. Frank Liu, Merck Research Laboratories

24 **Revisit Sample Size Estimation in Phase II Selection Designs**—✦Zuoshun Zhang, Celgene Corporation; Angela Hu, Celgene Corporation

25 **Statistical Quantification of Drug-Related Arrhythmia**—✦Kai-Fen Wang, GlaxoSmithKline; Paul McAllister, GlaxoSmithKline; Eric Rossman, GlaxoSmithKline

26 **Evaluation of Drug Interaction in Combination Therapy: Which Statistical Methods Should Be Applied?**—✦Qin Liu, The Wistar Institute; Xiangfan Yin, The Wistar Institute

27 **Simulation of Safety Data for Clinical Trials**—✦Scott Diegel, University of Wisconsin; John Kloke, University of Wisconsin; Neil Baron, University of Wisconsin

548 CC-220bc

Contributed Oral Poster Presentations: Section on Nonparametric Statistics—Contributed Poster Presentations

Section on Nonparametric Statistics, Korean International Statistical Society

Chair(s): Joyee Ghosh, University of Iowa

28 **Adaptive Density Estimation Based on Real and Artificial Data**—✦Tina Felber, TU Darmstadt; Michael Kohler, TU Darmstadt; Adam Krzyzak, Concordia University

29 **Multichannel Neural Spike Trains Analysis**—✦Ruiwen Zhang, SAS Institute

30 **Semiparametric Modeling of Nonautonomous Nonlinear Dynamical Systems with Application**—✦Siyuan Zhou, University of California at Davis; Debashis Paul, University of California at Davis; Jie Peng, University of California at Davis

31 **Nonparametric Intervention Time Series Modeling**—✦Jin-Hong Park, College of Charleston

32 **A Modified Lilliefors Normality Test**—✦Benjamin Overholt; Jay Schaffer, University of Northern Colorado

33 **Adaptive Model Selection Between Cox Model and Aalen Model**—✦Yu-Mei Chang, Tunghai University

34 **Inference in the Presence of Likelihood Monotonicity for Polytomous and Logistic Regression**—✦John Kolassa, Rutgers University

35 **Kaplan-Meier Method in Tumor Doubling Time Estimation**—✦Yufeng Li, The University of Alabama at Birmingham; Choo Hyung Lee, The University of Alabama at Birmingham; Donald Buchsbaum, The University of Alabama at Birmingham

36 **Biclustering with the EM Algorithm**—✦Prabhani Kuruppumullage Don, Penn State University; Bruce G. Lindsay, Penn State University; Francesca Chiaromonte, Penn State University

37 **A Follow-Up to the Range Disparity Distribution and Its Applications**—✦Lawrence Marinucci, Acorda Therapeutics, Inc.; Paul Lupinacci, Villanova University; Joel Waksman, Brightech International; Tai Xie, Brightech International

38 **Comparing Scale Using Medians and Permutation Tests**—✦Scott Richter, The University of North Carolina at Greensboro; Melinda McCann, Oklahoma State University

39 **Testing Stationarity of a Time Series via the Evolutionary Spectrum**—✦Glen Takahara, Queen's University; Azadeh Moghtaderi, eBay Inc.; Wesley Burr, Queen's University

40 **Representing Derivatives and Inferring Empirical Dynamics for Longitudinal Data**—✦Wenwen Tao, University of California at Davis; Hans-Georg G. Müller, University of California at Davis

549 CC-220bc

Contributed Oral Poster Presentations: Section on Statistics in Defense and National Security—Contributed Poster Presentations

Section on Statistics in Defense and National Security

Chair(s): Joyee Ghosh, University of Iowa

41 **Evaluation of an Integrative PTSD Treatment Program: Who Benefits the Most?**—✦Weimin Zhang, Samueli Institute; Salvatore Libretto, Samueli Institute; Sandi Gordon, Samueli Institute

550 CC-220bc

Contributed Oral Poster Presentations: Section on Statistics in Epidemiology—Contributed Poster Presentations

Section on Statistics in Epidemiology

Chair(s): Joyee Ghosh, University of Iowa

42 **Bayesian Inference for Early Detection of Influenza Epidemics**—✦Xian Yu, University of Arkansas at Little Rock; Didun Peng, University of Arkansas at Little Rock

43 **Simulation Studies for Dengue Transmission and Within-Host Immune Responses**—✦Alexander Kirpich, University of Florida; Yang Yang, University of Florida; Ira Longini, University of Florida

44 **Group-Based Trajectory Modeling of the Estradiol Trajectories During the Menopausal Transition Among Women in the Study of Women's Health Across the Nation (SWAN)**—✦Ping G. Tepper, University of Pittsburgh; Bobby Jones, University of Pittsburgh Medical Center; Sybil Crawford, University of Massachusetts Medical School; Huiyong Zheng, University of Michigan; Kristine Ruppert, University of Pittsburgh; Howard Kravitz, Rush University Medical Center; Yinjuan Lian, University of Pittsburgh; Maria M. Brooks, University of Pittsburgh

45 **Association Study Between Pelvic Inflammatory Diseases and Colorectal Cancer: Bootstrap Approach**—✦Hui-Wen Lin, Soochow University; Ming-I Hsu, Center of Reproductive Medicine, Wan Fang Hospital

46 **From Tissue Culture to Discrepant Analysis to Patient-Infected Status Algorithm to Latent Class Models: The Good, the Bad, and the Ugly**—✦Alula Hadgu, Centers of Disease Control and Prevention

47 **Approaches to Efficient Estimation for Targeted Minimum Loss-Based Estimation (TMLE) in Data Structures with Missing Confounders**—✦Daniel Brown, University of California at Berkeley; Luca Pozzi, University of California at Berkeley; Maya Petersen, University of California at Berkeley; Mark Van der Laan, University of California at Berkeley

48 **Fractional Polynomial Regression with Multilevel Data**—✦G. Kolm, Christiana Care Health System; Daniel Elliot, Christiana Care Health System; Joanne Brice, Christiana Care Health System; Robert Young, Northwestern University

49 **Exploring the Sensitivity of Propensity Score Matching Analyses to Unobserved Covariates in the Context of an Intervention to Reduce Hospitalization Rates**—✦Sitaram Vangala, University of California at Los Angeles Department of Medicine Statistics Core

50 **Prediction and Variable Importance in the Prospective, Observational, Multi-Center Massive Transfusion Study (PROMMTT)**—Ivan Diaz, University of California at Berkeley; ✦Anna Decker, University of California at Berkeley; Alan Hubbard, University of California at Berkeley; Ivan Diaz; Mitch Cohen, University of California at San Francisco

51 **Conditionally Specified Logistic Regression and Multivariate T-Link: Comparison of Two Methods of Modeling Data with Multiple Binary Responses**—✦Curtis Miller, University of New Mexico; Johnnye Lewis, University of New Mexico; Gabriel Huerta, University of New Mexico; Glenn Stark; Chris Shuey, Southwest Research Information Center; Miranda Cajero, University of New Mexico

52 **Compare Meta-Analysis Methods in Diagnostic Test Accuracy Studies**—✦Jin-Hua Chen, China Medical University; Chun-Shu Chen, National Changhua University of Education; Tzeng Sheng-Li, China Medical University

53 **Power and Sample Size Estimation for Genome-Wide Association Studies**—✦Wei-Jiun Lin, Feng Chia University; James Chen, National Center for Toxicological Research, FDA; Kuang-Fu Cheng, China Medical University

54 **Pediatric Osteosarcoma and the Stages of Puberty**—✦Rachel Fonstad, University of Minnesota; Logan Spector, University of Minnesota

55 **Parametric Survival Modeling of Prostate Cancer**—✦Yiu Ming Chan, University of South Florida; Chris Tsokos, University of South Florida

56 **Lifetime Risk Estimators in Epidemiological Studies of Krabbe Disease: Review and Monte Carlo Comparison**—✦Alexander Foss, University at Buffalo; Randy Carter, University at Buffalo

57 **Does IAPB Improve Survival? Uncovering Disease Severity by the Survival Mixture Modeling**—✦Chung-Han Ho, Chi Mei Medical Center; Fu-Wen Liang, National Cheng Kung University, College of Medicine Department of Public Health; Shih-Feng Weng, Chi Mei Medical Center; Ya-Wen Hsu, Chia Nan University of Pharmacy and Science; Chin-Chen Chu, Chi Mei Medical Center; Chun-Yen Chiang, Chi Mei Medical Center

58 **Effect of Smoothing in a Generalized Linear Mixed Model Context on Estimation of Covariance Structures for Clustered or Longitudinal Data**—✦Muhammad Mullah, McGill University; Andrea Benedetti, McGill University

59 **Approaches to Estimate Between-and-Within-Subject Correlation Coefficients in Longitudinal Repeated-Measures Studies**—✦Jennifer Cooper, Center for Surgical Outcomes Research, Nationwide Children's Hospital; Jason P. Sulkowski, Center for Surgical Outcomes Research, Nationwide Children's Hospital; Katherine J. Deans, Center for Surgical Outcomes Research, Nationwide Children's Hospital; Peter C. Minneci, Center for Surgical Outcomes Research, Nationwide Children's Hospital

60 **Systematic Review of Methods for Individual Patient Data Meta-Analysis with Binary Outcomes**—Doneal Thomas, McGill University; ✦Andrea Benedetti, McGill University

61 **Complete, Smoothed Life Tables and Life Expectancy in the Appalachian Population and Subpopulation by Region and Socioeconomic Status**—✦Bin Huang, University of Kentucky; Bernard Rachet, London School of Hygiene and Tropical Medicine; Claudia Allemani, London School of Hygiene and Tropical Medicine; Jing Guo, University of Kentucky; Hannah Weir, Centers for Disease Control and Prevention; Michel Coleman, London School of Hygiene and Tropical Medicine; Thomas Tucker, University of Kentucky

62 **An Improved FWER-Controlling Method in Gene Ontology Graphs**—✦Garrett Saunders, Utah State University; John Stevens, Utah State University; Clay Isom, Utah State University

63 **Genetic Association Test with Multiple Longitudinal Traits**—✦Weiqiang Wang, University of Guelph; Zeny Feng, University of Guelph; Zuoheng Wang, Yale University

64 **Next Generation of Genotype Imputation Methods**—✦Sayantan Das, University of Michigan; Goncalo R. Abecasis, University of Michigan

551 CC-220bc

Contributed Oral Poster Presentations: Section on Statistics in Imaging—Contributed Poster Presentations

Section on Statistics in Imaging

Chair(s): Joyee Ghosh, University of Iowa

65 **A Bayesian Nonparametric Model for Detecting Changes in the Visual Processing System—** ✦Raymond G. Hoffmann, Medical College of Wisconsin; Edgar A. Deyoe, Medical College of Wisconsin

552 CC-220bc

Contributed Oral Poster Presentations: Social Statistics Section—Contributed

Social Statistics Section, Korean International Statistical Society

Chair(s): Joyee Ghosh, The University of Iowa

66 **Advances in Statistical Analysis of a Scripture Episode—** ✦Guillermo Frank, University of Buenos Aires; Luis Frank, University of Buenos Aires

67 **Doubly Inflated and Truncated Models with Application in Self-Reported Drug Usage Among Rural African-American Cocaine Users**—✦Songthip Ounpraseuth, UAMS; Horace J. Spencer, UAMS; Jeff Thostenson, UAMS; Brenda M. Booth, UAMS; Katharine E. Stewart, UAMS

68 **Parametric Tests for Two Population Means: An Empirical Comparison of Type I Error Control and Statistical Power**—✦Patricia Rodriguez de Gil, University of South Florida; Yi-Hsin Chen, University of South Florida; Eun Sook Kim, University of South Florida; Diep Nguyen, University of South Florida; Anh Kellermann, University of South Florida; Aarti Bellara, University of South Florida; Jeffrey D. Kromrey, University of South Florida

69 **Effect Size Indices for Artificially Dichotomized Variables Measured with Error: An Empirical Investigation of Accuracy and Precision**—Jeffrey D. Kromrey, University of South Florida; ✦Isaac Li, University of South Florida; Patricia Rodriguez de Gil, University of South Florida; Patrice Rasmussen, University of South Florida; Jeanine Romano, University of South Florida; Aarti Bellara, University of South Florida; Harold Holmes, University of South Florida; Yi-Hsin Chen, University of South Florida; Rheta E. Lanehart, University of South Florida; George MacDonald, University of South Florida

70 **Covariate Measurement Error in Propensity Score Analysis: An Empirical Investigation of Impacts on Treatment Effect Estimates**—✦Jeffrey D. Kromrey, University of South Florida; Patricia Rodriguez de Gil, University of South Florida; Eun Sook Kim, University of South Florida; Aarti Bellara, University of South Florida; Rheta E. Lanehart, University of South Florida; Tyler Hicks, University of South Florida; Reginald Lee, University of South Florida

71 **Confidence Interval Estimation for the Difference Between Correlated Proportions: An Empirical Investigation of the Accuracy and Precision of Three Methods**—✦Jeanine Romano, University of South Florida; Eun Sook Kim, University of South Florida; Patricia Rodriguez de Gil, University of South Florida; Thanh Pham, University of South Florida; Pei-Chen Wu, University of South Florida; Diep Nguyen, University of South Florida; Jeffrey D. Kromrey, University of South Florida

72 **A Zero-Inflated Ordinal Logistic Regression Model in Examining the Relationship Between Participation in Social Activities and Media Consumption**—✦Jihyung Shin, Korea Infomation Society Development Institute

73 **Bearing Weapons in Children's Arms?**—✦Simone Robers, AIR

74 **Effects of Correlated Covariates on the Efficiency of Propensity Score--Based Estimators Using Estimated Propensity Score**—✦Ronnie Pingel, Uppsala University; Ingeborg Waernbaum, Umeå University

Speaker with Lunch 12:30 p.m.–1:50 p.m.

553 CC-524c

Section on Health Policy Statistics Speaker with Lunch (Fee Event)—Speaker with Lunch

Health Policy Statistics Section, Mental Health Statistics Section, Section for Statistical Programmers and Analysts

Organizer(s): Juned Siddique, Northwestern University

WL10 **A New Generation of Methodologies for Health Services and Policy Research in the Use Of Health Information Technologies**—✦Robyn Tamblyn, Institute of Health Services and Policy Research

Join Us in Celebrating the International Year of Statistics

Recognizing the Contributions of Statistics to Society Worldwide

Through the combined energies of organizations worldwide, Statistics2013 will promote the importance of statistics to:

- The scientific community
- Business and government data users
- The media and policymakers
- Employers
- Students
- The general public

Register* your organization today at *www.statistics2013.org*.

*Registering your organization does not obligate you; it simply indicates you support the goals of the International Year of Statistics.

STATISTICS2013.ORG
INTERNATIONAL YEAR OF
STATISTICS

Roundtables with Lunch 12:30 p.m.–1:50 p.m.

554 CC-517d
Biopharmaceutical Section P.M. Roundtable Discussion (Fee Event)
Biopharmaceutical Section

Organizer(s): Ivan S. F. Chan, Merck Research Laboratories

WL11 **Understanding Extrinsic Factors in Global Trials: What Culture Means to Biostatisticians—** ✦Yoko Adachi, FDA

WL12 **Biostatistical Consulting: How to Become a Better Consultant as a Biostatistician?—**✦Judy Li, FDA

555 CC-517d
Business and Economic Statistics Section P.M. Roundtable Discussion (Fee Event)
Business and Economic Statistics Section

Organizer(s): Kevin L. McKinney, University of California at Los Angeles-CCRDC

WL13 **Teaching Soft Skills in the First Business Statistics Course—**✦Keith Ord, Georgetown University

556 CC-517d
Quality and Productivity Section P.M. Roundtable Discussion (Fee Event)
Quality and Productivity Section

Organizer(s): Ming Li, GE Global Research

WL14 **Perspectives on High-Dimensional Data Analysis—** ✦Ejaz Syed Ahmed, Brock University

WL15 **Multiple Response Process Optimization Using Process Capability—**✦John Peterson, GlaxoSmithKline

557 CC-517d
Section for Statistical Programmers and Analysts P.M. Roundtable Discussion (Fee Event)
Section for Statistical Programmers and Analysts

Organizer(s): Mario A. Morales, Simulmedia Inc.

WL16 **Engineering Scientific Solutions—**✦Yuliya Torosjan, Simulmedia; Krishna Balasubramanian, Simulmedia

558 CC-517d
Section on Bayesian Statistical Science P.M. Roundtable Discussion (Fee Event)
Section on Bayesian Statistical Science

Organizer(s): Sudipto Banerjee, University of Minnesota

WL17 **Charging Up the Hill with Bayes: Bringing Bayesian Concepts to Policymakers—**✦Laura Hatfield, Harvard Medical School

WL18 **Opportunities for Environmental, Ecological, and Climate Change Research in a Data-Rich Era—** ✦Andrew Oliver Finley, Michigan State University; Steve Berukoff, National Ecological Observatory Network

559 CC-517d
Section on Physical and Engineering Sciences P.M. Roundtable Discussion (Fee Event)
Section on Physical and Engineering Sciences

Organizer(s): James Wendelberger, Urban Science

WL19 **Reconciling Simulator and Observational Data—** ✦Thomas Santner, The Ohio State University

560 CC-517d
Section on Statistical Computing P.M. Roundtable Discussion (Fee Event)
Section on Statistical Computing

Organizer(s): Nicholas John I. Lewin-Koh, Genentech

WL20 **Divide and Recombine: Statistical Theory, Methods, and Visualization for Large Complex Data—** ✦Bowei Xi, Purdue University

561 CC-517d
Section on Statistical Consulting P.M. Roundtable Discussion (Fee Event)
Section on Statistical Consulting

Organizer(s): Nicholas Pajewski, Wake Forest University

WL21 **Nurturing a Successful Academic Statistical Consulting Center—**✦Kimberly Love-Myers, University of Georgia; Eric A. Vance, LISA-Virginia Tech

562 CC-517d
Section on Statistical Education P.M. Roundtable Discussion (Fee Event)
Section on Statistical Education, Committee on Minorities in Statistics
Organizer(s): Ming-Wen An, Vassar College

WL22 **Recruiting Under-Represented Minorities to Statistics Programs: The National Alliance for Doctoral Studies in the Mathematical Sciences**—✦Leslie McClure, The University of Alabama at Birmingham; Kathryn Chaloner, University of Iowa

WL23 **What Are We Waiting for?!? Let's Start Mentoring Our Young Statisticians as High-School and Undergraduate Students!**—✦Brenda Osuna, University of Southern California

563 CC-517d
Section on Statistics in Marketing P.M. Roundtable Discussion (Fee Event)
Section on Statistics in Marketing
Organizer(s): Lynd D. Bacon, Loma Buena Associates

WL24 **What Marketing Analytics Skills Do We Want from an MBA Student? An Inquiry to Both Educators and Managers**—✦Xiaojing Dong, Santa Clara University

564 CC-517d
Social Statistics Section P.M. Roundtable Discussion (Fee Event)
Social Statistics Section
Organizer(s): Michael Sinclair, NORC

WL25 **An Attempt to Disentangle the Effects of Variables in Obama's Presidential Election**—✦Walter Hill, St. Mary's College of Maryland

565 CC-517d
Survey Research Methods Section P.M. Roundtable Discussion (Fee Event)
Survey Research Methods Section
Organizer(s): Karol Krotki, RTI International

WL26 **Community Stakeholder Surveys: Asking More with Less**—✦Barbara Robles, Board of Governors of the Federal Reserve System; Kelly Edmiston, Federal Reserve Bank of Kansas City

WL27 **GIS and Survey Research**—✦Karol Krotki, RTI International

Special Presentation 2:00 p.m.–3:50 p.m.

566 CC-710a
Introductory Overview Lecture: Mediation and Confounding—Other
ENAR, WNAR, IMS, SSC, International Chinese Statistical Association, International Indian Statistical Association, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA), ASA, Section on Statistics in Epidemiology
Organizer(s): Yun Li, University of Michigan; Tyler J. VanderWeele, Harvard School of Public Health
Chair(s): Yun Li, University of Michigan

2:05 p.m. **Mediation and Confounding**—✦Tyler J. VanderWeele, Harvard School of Public Health

3:25 p.m. Disc: Jay Kaufman, McGill University

3:45 p.m. **Floor Discussion**

567 CC-710b
Late-Breaking Session: Statisticians, Statistics, and Doping Science: The Case of Andrus Veerpalu—Other
ASA, ENAR, WNAR, IMS, SSC, International Chinese Statistical Association, International Indian Statistical Association, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA)
Organizer(s): Donald Arthur Berry, The University of Texas MD Anderson Cancer Center
Chair(s): Donald Arthur Berry, The University of Texas MD Anderson Cancer Center

2:05 p.m. **Statistics and the Doping Case of Andrus Veerpalu**—✦Sulev Kıks, University of Tartu; Anton Terasmaa, University of Tartu

2:35 p.m. **Statistical Issues in the Doping Case of Andrus Veerpalu**—✦Krista Fischer, University of Tartu; Donald Arthur Berry, The University of Texas MD Anderson Cancer Center

3:05 p.m. Disc: Heather McPhee, NFL Players Association

3:35 p.m. **Floor Discussion Invited Sessions**

Invited Sessions
2:00 p.m.–3:50 p.m.

568 CC-512d
■ ● Mathematical and Statistical Challenges in Imaging Data Analysis—Invited

IMS, Section on Statistics in Imaging, Statistical Learning and Data Mining Section, WNAR

Organizer(s): Hongtu Zhu, The University of North Carolina at Chapel Hill

Chair(s): Linglong Kong, University of Alberta

2:05 p.m. **Analysis of Shape Data Sets in the Brain and in the Heart**—✦Laurent Younes, The Johns Hopkins University

2:30 p.m. **A Framework for Analysis of Manifold-Value Data in Riemannian Symmetric Spaces**—✦Hongtu Zhu, The University of North Carolina at Chapel Hill; Emil Cornea, The University of North Carolina at Chapel Hill; Joseph G. Ibrahim, The University of North Carolina

2:55 p.m. **A Comprehensive Framework for Registration and Shape Analysis of Functional Data**—✦Anuj Srivastava, Florida State University

3:20 p.m. **Bayesian Registration and Shape Analysis of Object Data, with Applications to Proteomics and Medical Imaging**—✦Ian L. Dryden, University of Nottingham

3:45 p.m. **Floor Discussion**

569 CC-519b
■ Computational Statistics in the Atmospheric and Oceanic Sciences—Invited

Section on Statistical Computing, Section on Statistics and the Environment, Scientific and Public Affairs Advisory Committee

Organizer(s): Michael L Stein, The University of Chicago

Chair(s): Montserrat Fuentes, North Carolina State University

2:05 p.m. **Stable and Efficient Computation for Population-Level Integral Projection Models**—✦Alan E. Gelfand, Duke University

2:35 p.m. **Multi-Resolution Gaussian Process Models: Parameter Choices**—✦Dorit Hammerling, Statistical and Applied Mathematics Sciences Institute; Douglas Nychka, National Center for Atmospheric Research

3:05 p.m. **Likelihood Approximation for Large Environmental Data Sets**—✦Michael L Stein, The University of Chicago

3:35 p.m. **Floor Discussion**

570 CC-524b
■ JASA Applications and Case Studies Special Invited Papers—Invited

JASA, Applications and Case Studies

Organizer(s): Joseph G. Ibrahim, The University of North Carolina

Chair(s): Joseph G. Ibrahim, The University of North Carolina

2:05 p.m. **Multinomial Inverse Regression for Text Analysis**—✦Matt A. Taddy, The University of Chicago Booth School of Business

2:30 p.m. **Statistical Learning with Time Series Dependence: An Application to Scoring Sleep in Mice**—✦Blakeley B. McShane, Northwestern University; Shane T. Jensen, The Wharton School; Allan I. Pack, University of Pennsylvania; Abraham J. Wyner, The Wharton School

2:55 p.m. Disc: David M. Blei, Princeton University

3:15 p.m. Disc: Kirby Shedden, University of Michigan

3:35 p.m. **Floor Discussion**

571 CC-511c
Statistical Methods for High-Dimensional Sequence Data—Invited

Section on Statistics in Epidemiology, SSC, Statistical Learning and Data Mining Section, Biometrics Section

Organizer(s): Iuliana Ionita-Laza, Columbia University

Chair(s): Iuliana Ionita-Laza, Columbia University

2:05 p.m. **Linkage Disequilibrium in Sequencing Data: A Blessing or a Curse?**—✦Alkes L. Price, Harvard School of Public Health

2:25 p.m. **Statistical Prioritization of Sequence Variants**—✦Lisa Joanna Strug, The Hospital for Sick Children and University of Toronto; Weili Li, The Hospital for Sick Children and University of Toronto

2:45 p.m. **On Some Statistical Issues in Analyzing Whole-Genome Sequencing Data**—✦Dan Liviu Nicolae, The University of Chicago

3:05 p.m. **Statistical Methods for Studying Rare Variant Effects in Next-Generation Sequencing Association Studies**—✦Xihong Lin, Harvard School of Public Health

3:25 p.m. **Adjustment for Population Stratification in Association Analysis of Rare Variants**—✦Wei Pan, University of Minnesota; Yiwei Zhang, University of Minnesota; Binghui Liu, University of Minnesota; Xiaotong Shen, University of Minnesota

3:45 p.m. **Floor Discussion**

572 CC-520d

■ Would the Real Steve Fienberg Please Stand Up: Getting to Know a Population from Multiple Incomplete Files—Invited

Social Statistics Section

Organizer(s): Rebecca C. Steorts, Carnegie Mellon University

Chair(s): John H. Thompson, NORC at the University of Chicago

2:05 p.m. **Deduplicating Text Records Using Clustering and Aggregation of Conditional Classifiers**—✦Samuel Ventura, Carnegie Mellon University; Rebecca Nugent, Carnegie Mellon University

2:25 p.m. **Will the Real Steve Fienberg Please Stand Up? Getting to Know a Population from Multiple Incomplete Files**—Rob C. Hall, Carnegie Mellon University; ✦Rebecca C. Steorts, Carnegie Mellon University; Stephen E. Fienberg, Department of Statistics, Carnegie Mellon University

2:45 p.m. **Bayesian Record Linkage Models for Census Coverage Measurement Matching**—✦Vincent Thomas Mule, U.S. Census Bureau; Lynn Imel, U.S. Census Bureau

3:05 p.m. **Smooth Post-Stratification in Multiple Capture-Recapture**—✦Zachary T. Kurtz, Carnegie Mellon University

3:25 p.m. Disc: Michael D. Larsen, The George Washington University

3:45 p.m. **Floor Discussion**

573 CC-519a

■ Transitioning to Big Data: What Every Statistical Programmer/Analyst Should Know—Invited

Section for Statistical Programmers and Analysts, Statistical Learning and Data Mining Section, International Indian Statistical Association, Section on Statistical Computing

Organizer(s): Michael Carniello, Takeda Global Research & Development Center, Inc.

Chair(s): Michael Carniello, Takeda Global Research & Development Center, Inc.

2:05 p.m. **Big Programs and the Use of High-Performance Computing**—✦Natalie Cheung Hall, Eli Lilly and Company

2:30 p.m. **Scaling SAS Software from Small to Big Work**—✦Jared L. Dean, SAS Institute

2:55 p.m. **Using Big Data for Practical Work**—✦Nancy J. Petersen, Department of Veterans Affairs

3:20 p.m. Disc: Jay Emerson, Yale University

3:40 p.m. **Floor Discussion**

574 CC-514a

■ ● Statistical Challenges in Cancer Genomics with Next-Generation Sequencing and Microarrays—Invited

WNAR, Statistical Learning and Data Mining Section, Biometrics Section, Section on Statistical Computing, Section on Statistics in Epidemiology

Organizer(s): Henrik Bengtsson, Department of Epidemiology and Biostatistics, University of California at San Francisco

Chair(s): Henrik Bengtsson, Department of Epidemiology and Biostatistics, University of California at San Francisco

2:05 p.m. **Normalization and Differential Expression in RNA-Seq**—✦Sandrine Dudoit, University of California at Berkeley

2:30 p.m. **Timing Chromosomal Abnormalities Using Mutation Data**—✦Elizabeth Purdom, University of California at Berkeley

2:55 p.m. **Improved Performance Evaluation of DNA Copy Number Analysis Methods in Cancer Studies**—✦Pierre Neuvial, CNRS

3:20 p.m. **Analysis of Intratumor Heterogeneity and Clonal Somatic Evolution Using Whole-Exome Sequencing of Bulk Cancer DNA**—✦Scott L. Carter, The Broad Institute and Massachusetts Institute of Technology

3:45 p.m. **Floor Discussion**

575 CC-510c

■ ● Uncertainty Quantification in Complex Computer Models—Invited

IMS, Section on Statistical Computing, Section on Statistics and the Environment

Organizer(s): M.J. Bayarri, University of Valencia

Chair(s): M.J. Bayarri, University of Valencia

2:05 p.m. **Bayesian Approaches to the Analysis of Computer Model Output**—✦Mark Berliner, The Ohio State University

2:35 p.m. **Statistical Postprocessing of Numerical Weather Predictions Using a Stochastic Advection-Diffusion Model**—✦Hans Rudolf Kunsch, Seminar fur Statistik, ETH Zurich; Fabio Sigrist, Seminar fur Statistik, ETH Zurich; Werner A. Stahel, Seminar fur Statistik, ETH Zurich

3:05 p.m. **Toward HPD Regions from MCMC Samples**—✦Robert L Wolpert, Duke University

3:35 p.m. **Floor Discussion**

576 CC-516c

■ Statistics: The Secret Weapon of Successful Web Giants—Invited

Section on Statistics in Marketing, Statistical Learning and Data Mining Section, Section on Statistics in Epidemiology, Korean International Statistical Society

Organizer(s): Marianna Dizik, Google

Chair(s): Marianna Dizik, Google

2:05 p.m. **On the Near Impossibility of Measuring the Returns to Advertising—**✦Randall Aaron Lewis, Google; Justin Rao, Microsoft Research

2:25 p.m. **Incremental Reach Estimation: A Data-Enrichment Method—**✦Minghui Shi, Google; Aiyou Chen, Google

2:45 p.m. **The Optimal Mix of TV and Online Ads to Maximize Reach—**✦Yuxue Jin, Google

3:05 p.m. **From Households to Users: Measuring Individual Users Behavior Based on Household-Level Data—**✦Xiaojing Wang, Google Inc.; Shaun Lysen, Google

3:25 p.m. **Behavioral Targeting—**✦Hyunyoung Choi, Triggit

3:45 p.m. **Floor Discussion**

577 CC-520b

■ Statistical Methods for the Greener Planet—Invited

Section on Physical and Engineering Sciences, SSC, Scientific and Public Affairs Advisory Committee

Organizer(s): Ying Hung, Rutgers University

Chair(s): Ying Hung, Rutgers University

2:05 p.m. **Sequential Optimization of Tidal Power Models in the Bay of Fundy—**✦Pritam Ranjan, Acadia University

2:35 p.m. **Risk-Conscious Building Energy Retrofits—**✦Godfried L. Augenbroe, Georgia Institute of Technology

3:05 p.m. **Technologies and Methods for Energy Management—**✦Hendrik F. Hamann, IBM T. J. Watson Research Center

3:35 p.m. **Floor Discussion**

578 Hyatt Regency Montreal-Grand Salon

Public Lecture to Commemorate the 300th Anniversary of Ars Conjectandi—Invited

IMS, Bernoulli Society, SSC

Organizer(s): David B. Dunson, Duke University

Chair(s): Edward Waymire, Oregon State

2:05 p.m. **From Gambling to Global Catastrophe: Metaphors and Images for Communicating Numerical Risks—**✦David John Spiegelhalter, University of Cambridge

3:35 p.m. **Floor Discussion**

Invited Panels 2:00 p.m.–3:50 p.m.

579 CC-524a

■ ● Survey Methodology: A Tool of Science Diplomacy in North Korea?—Invited

Statistics Without Borders, Section on Statistics in Defense and National Security, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Organizer(s): Asaph Young Chun, U.S. Census Bureau

Chair(s): Asaph Young Chun, U.S. Census Bureau

Panelists: ✦Norman Neureiter, American Association for the Advancement of Science

✦Justin Fisher, Government Accountability Office

✦Rene Paulson, Elite Research, LCC

✦Elena Zafarana, Swiss Federal Statistical Office

✦Yena Lee, Yale University

✦Chan-Mo Park, Pyongyang University of Science and Technology

3:35 p.m. **Floor Discussion**

Topic-Contributed Sessions 2:00 p.m.–3:50 p.m.

580 CC-522bc

■ The Heretical Statisticians—Topic-Contributed

Committee on Applied Statisticians

Organizer(s): Kam Hamidieh, California State University at Fullerton
Chair(s): Kam Hamidieh, California State University at Fullerton

2:05 p.m. **Some Statistical Analyses and Nonanalyses with Historical Consequences**—✦James R. Thompson, Rice University

2:25 p.m. **Guinnessometrics Against the Gold Standard: Randomization, Significance, and the Search for Validity**—✦Stephen Ziliak, Roosevelt University

2:45 p.m. **Frugal Heuristics Instead of Mental Statistics**—✦Peter Todd, Indiana University

3:05 p.m. Disc: Sam Behseta, California State University at Fullerton

3:25 p.m. Disc: Nengfeng Zhou, Bank of America

3:45 p.m. **Floor Discussion**

581 CC-516d

■ ● Joint Modeling and the ROC Analysis of Longitudinal Biomarkers and Clinical Events in Kidney Diseases—Topic-Contributed

Section on Statistical Consulting, Mental Health Statistics Section, Section on Statistics in Epidemiology

Organizer(s): Nan Hu, University of Utah
Chair(s): Li Qin, Amazon

2:05 p.m. **Introduction to Joint Modeling of Longitudinal Biomarkers and Kidney Disease Outcomes**—Tom Greene, University of Utah; ✦Ken Boucher, University of Utah

2:25 p.m. **Some Methodological Issues on Glomerular Filtration Rate Progression Trajectories Among Patients with Chronic Kidney Disease**—✦Liang Li, Cleveland Clinic

2:45 p.m. **Time-Dependent ROC Analysis for Early Detection of End-Stage Renal Disease (ESRD) Using Baseline Glomerular Filtration Rate**—✦Nan Hu, University of Utah

3:05 p.m. **Marginal Structural Models for Multi-State Outcomes**—✦Wei Yang, University of Pennsylvania; Marshall M. Joffe, University of Pennsylvania

3:25 p.m. **Multiple Imputation for Competing Risk and Longitudinal Data with Informative Dropout**—✦Bo Hu, Cleveland Clinic

3:45 p.m. **Floor Discussion**

582 CC-511f

■ Missing Data in Noninferiority Trials—Topic-Contributed

Biopharmaceutical Section, Biometrics Section

Organizer(s): Brian Wiens, Alcon Laboratories
Chair(s): Denka Markova, Axio Research Inc.

2:05 p.m. **Missing Data and Randomization Tests**—✦Rafe Donahue, Biomimetic Therapeutics, Inc; Robert D. Small, Sanofi Pasteur

2:25 p.m. **Sensitivity Analysis Using Enhanced Tipping-Point Displays for Studies with Dichotomous Treatment and Partially Missing Outcomes**—✦Victoria Liublinska, Harvard University; Donald B. Rubin, Harvard University

2:45 p.m. **Ensuring Assay Sensitivity in Analysis of Noninferiority Trials with Missing Data**—✦Brian Wiens, Alcon Laboratories

3:05 p.m. **Effect Estimation Under Treatment Discontinuation in Noninferiority Trials**—✦Gerd Rosenkranz, Novartis

3:25 p.m. **Propensity Score--Based Approaches for Imputation in Time-to-Event Noninferiority Trials**—✦Susan Wang, Boehringer Ingelheim Pharmaceutical Inc.; Carrie Li, Boehringer Ingelheim Pharmaceutical Inc.

3:45 p.m. **Floor Discussion**

583 CC-520c

■ Challenges and Statistical Approaches of Resting-State fMRI—Topic-Contributed

Section on Statistics in Imaging

Organizer(s): Gina M. D'Angelo, Washington University
Chair(s): Tingting Zhang, University of Virginia

2:05 p.m. **Statistical Challenges of Resting-State fMRI**—✦Gina M. D'Angelo, Washington University

2:25 p.m. **Matrix Decomposition Methods for Functional MRI Data**—✦Ani Eloyan, Johns Hopkins Bloomberg School of Public Health; Brian Caffo, Johns Hopkins University; Ciprian M. Crainiceanu, The Johns Hopkins University

2:45 p.m. **A Statistical Method for Predicting Clinical Outcomes Using Resting-State fMRI**—✦Ying Guo, Emory University; Tian Dai, Emory University

3:05 p.m. **Analyzing Resting-State fMRI Brain Networks: Fusing Statistics and Network Science to Understand the Brain**—✦Sean Simpson, Wake Forest School of Medicine

3:25 p.m. Disc: Wenzhu Mowrey, Albert Einstein College of Medicine

3:45 p.m. **Floor Discussion**

584 CC-512ab

Recent Advances in the Analysis of Nonignorable Missing Data—Topic-Contributed

Survey Research Methods Section, Korean International Statistical Society, Section on Statistics in Epidemiology

Organizer(s): Jae-Kwang Kim, Iowa State University

Chair(s): Changbao Wu, University of Waterloo

2:05 p.m. **Identifiability and Estimation in Generalized Linear Models with Nonignorable Missing Data—**✦Jiwei Zhao; Jun Shao, University of Wisconsin

2:25 p.m. **Is It MAR or NMAR?—**✦Michael Sverchkov, Bureau of Labor Statistics; Danny Pfeffermann, Hebrew University of Jerusalem, Israel and University of Southampton, United Kingdom

2:45 p.m. **Propensity Score Adjustment Method for Nonignorable Nonresponse—**✦Minsun Riddles, Iowa State University/Westat; Jae-Kwang Kim, Iowa State University

3:05 p.m. **Maximum Empirical Likelihood Estimation for Nonignorable Missing Data Problems—**✦Jing Qin, National Institutes of Health, BRB; Zhong Guan, Indiana University South Bend

3:25 p.m. Disc: Phil Kott, RTI International

3:45 p.m. **Floor Discussion**

585 CC-521ab

Advances in Statistical Learning Methods for High-Dimensional Inference—Topic-Contributed

Section on Statistical Learning and Data Mining, Biometrics Section

Organizer(s): Z. John Daye, University of Arizona

Chair(s): Z. John Daye, University of Arizona

2:05 p.m. **Two-Sample Test of High-Dimensional Means Under Dependency—**✦Yin Xia, The Wharton School; Tony Cai, University of Pennsylvania; Weidong Liu, Shanghai Jiao Tong University

2:25 p.m. **Identification of Signal, Noise, and Indistinguishable Subsets in High-Dimensional Data Analysis—**✦X. Jessie Jeng, North Carolina State University

2:45 p.m. **Censored Rank Independence Screening for High-Dimensional Survival Data—**✦Wenbin Lu, Department of Statistics, North Carolina State University; Rui Song, North Carolina State University; Shuangge Ma, Yale University

3:05 p.m. **The Control of the False Discovery Rate in Fixed Sequence Multiple Testing—**✦Wenge Guo, New Jersey Institute of Technology; Gavin Lynch, New Jersey Institute of Technology; Sanat K. Sarkar, Temple University

3:25 p.m. **Simultaneous and Sequential Inference of Pattern Recognition—**✦Wenguang Sun, University of Southern California

3:45 p.m. **Floor Discussion**

586 CC-520f

■ ● Record Linkage Research and Applications—Topic-Contributed

Government Statistics Section, Survey Research Methods Section, Social Statistics Section, International Indian Statistical Association, Section on Statistics in Epidemiology, Statistics Without Borders

Organizer(s): Michael D. Larsen, The George Washington University

Chair(s): Jennifer D. Parker, National Center for Health Statistics

2:05 p.m. **The Limit of Linkage: What Happens When Records Lack PII—**✦Amy O'Hara, U.S. Census Bureau; Matthew Bouch, U.S. Census Bureau

2:25 p.m. **Strategies for Enhancing the Linkage of National Center for Health Statistics' Surveys with Death Indices for Mortality Followup—**✦Dean Judson, National Center for Health Statistics; Jennifer D. Parker, National Center for Health Statistics

2:45 p.m. **Transitive Probabilistic Deduplication of Record Systems Using a Stochastic Blockmodel—**✦Mauricio Sadinle, Carnegie Mellon University

3:05 p.m. **Some Advances on Bayesian Record Linkage and Inference for Linked Data—**✦Andrea Tancredi, Sapienza University of Rome; Brunero Liseo, University of La Sapienza

3:25 p.m. **Floor Discussion**

587 CC-515c

■ Assessing the Statistical Understanding and Reasoning in K-12: The LOCUS Project—Topic-Contributed

Section on Statistical Education

Organizer(s): Robert delMas, University of Minnesota

Chair(s): Tim Jacobbe, University of Florida

2:05 p.m. **Locus Assessment Evidence Model and Project Overview—**✦Robert delMas, University of Minnesota

2:25 p.m. **Locus Item-Development Process—**✦Roxy Peck, Cal Poly

2:45 p.m. **Locus Measurement Model—**✦Bradley Hartlaub, Kenyon College

3:05 p.m. **Locus Pilot Study and Preliminary Findings—**✦Douglas Whitaker, University of Florida; Catherine Case, University of Florida

3:25 p.m. Disc: Richard Scheaffer, University of Florida

3:45 p.m. **Floor Discussion**

588 CC-516a

■ Monitoring and Anticipating Short-Term Macroeconomic Movements—Topic-Contributed

Business and Economic Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Gian Luigi Mazzi, Eurostat - European Commission
Chair(s): Simon van Norden, HEC Montréal

2:05 p.m. **Real-Time Detection of Trend-Cycle Turning Points**—✦Estela Dagum, University of Bologna; Silvia Bianconcini, University of Bologna

2:25 p.m. **Multivariate Nonlinear Models for Turning Points Detection: Direct Versus Indirect Indicators**—✦Riccardo Gatto, Eurostat - European Commission; Monica Billio, Università di Venezia; Gian Luigi Mazzi, Eurostat - European Commission; Laurent Ferrara, Universitè Paris 10

2:45 p.m. **Seventy-Five Years Later: Constructing a Coincident Index of Global Economic Activity**—✦Shushanik Papanyan, BBVA Compass; Enrique Martínez-García, Federal Reserve Bank of Dallas

3:05 p.m. **Detecting Asset Price Bubbles with Time-Series Methods**—✦Katja Taipalus, Bank of Finland

3:25 p.m. **The Effect of Alternative Seasonal Adjustment Procedures on Business Cycle Analysis**—✦Gian Luigi Mazzi, Eurostat - European Commission; Dominique Ladiray, INSEE; Dario Buono, European Commission; Gaetana Montana, European Parliament

3:45 p.m. **Floor Discussion**

589 CC-511a

■ Recent Advances in Disease Risk Prediction Methods Using Genetic and Genomic Data—Topic-Contributed

ENAR, International Chinese Statistical Association, Biometrics Section, Section on Statistics in Epidemiology, Korean International Statistical Society

Organizer(s): Peng Wei, Univeristy of Texas School of Public Health
Chair(s): Hongjian Zhu, The University of Texas Health Science Center at Houston

2:05 p.m. **Integrative Analysis and Systems Biology Approaches for Cancer Predictive Signatures**—✦Yang Xie, The University of Texas Southwestern Medical Center; Hao Tang, The University of Texas Southwestern Medical Center; Guanghua Xiao, The University of Texas Southwestern Medical Center; John Minna, The University of Texas Southwestern Medical Center; Ignacio Wistuba, The University of Texas MD Anderson Cancer Center

2:25 p.m. **A Two-Step Feature Selection Strategy for Large-Scale High-Dimensional Genetic Risk Prediction**—✦Zhi Wei, New Jersey Institute of Technology; Wei Wang, New Jersey Institute of Technology

2:45 p.m. **Improving Genetic Risk Prediction by Leveraging Pleiotropy**—✦Cong Li, Yale University; Jia Kang, Merck; Can Yang, Yale University; Hongyu Zhao, Yale University

3:05 p.m. **Penalized Regression and Prediction of Disease Outcomes**—✦Erin Austin, University of Minnesota; Wei Pan, University of Minnesota; Xiaotong Shen, University of Minnesota

3:25 p.m. **Paradigm of Genetic Risk Prediction: Variable Selection or Mixed Model**—✦Peng Wei, Univeristy of Texas School of Public Health

3:45 p.m. **Floor Discussion**

590 CC-514b

■ ● Hard-to-Reach and Less-Than-Total Recall: Evaluating Survey Design Methodologies—Topic-Contributed

Survey Research Methods Section, Social Statistics Section

Organizer(s): Kim P. Huynh, Bank of Canada
Chair(s): Kim P. Huynh, Bank of Canada

2:05 p.m. **Knocking on Respondents Doors: Interviewers and Unit Nonresponse in a Large Wealth Survey**—✦Tobias Schmidt, Deutsche Bundesbank; Julia Le Blanc, Deutsche Bundesbank

2:25 p.m. **Survey Mode Effects on Income Inequality Measurement**—✦Peter Lindner, Oesterreichische Nationalbank; Pirmin Fessler, Oesterreichische Nationalbank; Maximilian Kasy, Harvard University

2:45 p.m. **Estimating Population Size with Link-Tracing Sampling**—✦Kyle Vincent, Bank of Canada

3:05 p.m. **Optimal Recall Period Length in Consumer Payment Surveys**—✦Marcin Hitczenko, Federal Reserve Bank of Boston

3:25 p.m. **Measuring Household Spending and Payment Habits: The Role of 'Typical' and 'Specific' Time Frames in Survey Questions**—✦Marco Angrisani, RAND Corporation; Arie Kapteyn, RAND Corporation; Scott Schuh, Federal Reserve Bank of Boston

591 CC-510a

■ Using Historical Information in Clinical Trials: Synthesis of Truth with Uncertainty—Topic-Contributed

Section on Bayesian Statistical Science, Biopharmaceutical Section, International Society for Bayesian Analysis (ISBA), Mental Health Statistics Section, Biometrics Section

Organizer(s): Satrajit Roychoudhury, Novartis Pharmaceutical Company

Chair(s): Satrajit Roychoudhury, Novartis Pharmaceutical Company

2:05 p.m. **Robust Borrowing from Historical Data with Meta-Analytic-Predictive Mixture Priors**—✦Beat Neuenschwander, Novartis Pharma AG; Sandro Gsteiger, Novartis Pharma; Satrajit Roychoudhury, Novartis Pharmaceuticals Corporation; Heinz Schmidli, Novartis Pharma

2:25 p.m. **Bayesian Indirect and Mixed Treatment Comparisons Across Longitudinal Time Points**—✦Haoda Fu; Ying Ding, University of Pittsburgh

2:45 p.m. **Impact of Borrowing Historical Information in Group Sequential Trials**—✦Soumi Lahiri, GlaxoSmithKline

3:05 p.m. Disc: John Scott, Center for Biologics Evaluation and Research/FDA

3:25 p.m. Disc: Pabak Mukhopadhyay, Novartis Pharmaceutical Company

3:45 p.m. **Floor Discussion**

592 CC-512h

■ Environmental Impacts on Public and Ecological Health—Topic-Contributed

Section on Statistics and the Environment, Section on Statistics in Epidemiology

Organizer(s): Matthew Heaton, National Center for Atmospheric Research

Chair(s): Stephan Sain, National Center for Atmospheric Research

2:05 p.m. **Modeling the Effect of Temperature on Ozone-Related Mortality**—✦Ander Wilson, North Carolina State University; Ana Rappold, U.S. Environmental Protection Agency; Neas Lucas, U.S. Environmental Protection Agency; Brian J. Reich, North Carolina State University

2:25 p.m. **Identifying Risk Factors for Heat-Related Mortality**—✦Matthew Heaton, National Center for Atmospheric Research; Stephan Sain, National Center for Atmospheric Research; Tamara Greasby, National Center for Atmospheric Research; Olga Wilhelmi, National Center for Atmospheric Research; Andrew Monaghan, National Center for Atmospheric Research; Mary Hayden, National Center for Atmospheric Research; Christopher Uejio, Florida State University

2:45 p.m. **Estimating Health Effects of Particulate Matter Sources in the Presence of Censored Air Pollution Concentrations**—✦Jenna Krall, The Johns Hopkins University; Roger D. Peng, The Johns Hopkins University

3:05 p.m. **Using Bayesian State-Space Models to Estimate Parameters for Disease Transmission from Mark-Recapture Data**—✦Jennifer Hoeting, Colorado State University; Nick E. Cummings, Colorado State University; N. Thompson Hobbs, Colorado State University

3:25 p.m. **Examining the Effectiveness of a Pollution-Targeted Environmental Intervention on Improving Health**—✦Amber J. Hackstadt, Johns Hopkins University Bloomberg School of Public Health; Roger D. Peng, The Johns Hopkins University

3:45 p.m. **Floor Discussion**

593 CC-511b

Biometrics Section Student Paper Award Session—Topic-Contributed

Biometrics Section, Korean International Statistical Society

Organizer(s): Wei Sun, The University of North Carolina at Chapel Hill

Chair(s): Guosheng Yin, University of Hong Kong

2:05 p.m. **Identifying Multiple Regulation in Semiparametric Regression Models**—✦Denis Agniel; Tianxi Cai, Harvard University; Katherine P. Liao, Brigham and Women's Hospital; Robert M. Plenge, Brigham and Women's Hospital

2:20 p.m. **Test for Interactions Between a Genetic Marker Set and Environment in Generalized Linear Models**—✦Xinyi Lin, Harvard University; Seunggeun Lee, Harvard School of Public Health; David C. Christiani, Harvard School of Public Health; Xihong Lin, Harvard School of Public Health

2:35 p.m. **Calibrating Sensitivity Analysis to Observed Covariates in Observational Studies**—✦Jesse Yenchih Hsu, University of Pennsylvania; Dylan S. Small, University of Pennsylvania

2:50 p.m. **Graph Estimation with Joint Additive Models**—✦Arend Voorman, University of Washington; Ali Shojaie, University of Washington; Daniela Witten, University of Washington

3:05 p.m. **Bayesian Semiparametric Analysis of Semi-Competing Risks Data**—✦Kyu Ha Lee, Harvard School of Public Health ; Sebastien Haneuse, Harvard School of Public Health; Deborah Schrag, Dana-Farber Cancer Institute; Francesca Dominici, Harvard School of Public Health

3:20 p.m. **Threshold-Dependent Proportional Hazards Model for Current Status Data with Biomarker Subject to Measurement Error**—✦Noorie Hyun, The University of North Carolina; Donglin Zeng, The University of North Carolina; David Couper, The University of North Carolina; James Pankow, University of Minnesota

3:35 p.m. **Floor Discussion**

Topic-Contributed Panels 2:00 p.m.–3:50 p.m.

594 CC-516b

● Guarantee Time Bias: A Discussion About the Analysis of Survival by Tumor Response and Other Comparisons of Time-to-Event by Outcome Variables—Topic-Contributed

Section on Statistics in Epidemiology, Biometrics Section

Organizer(s): Bin Zhang, Millennium Pharmaceuticals, Inc. and Boston University

Chair(s): Bin Zhang, Millennium Pharmaceuticals, Inc. and Boston University

Panelists: ✦James R. Anderson, University of Nebraska Medical Center

✦Robert W. Makuch, Yale School of Public Health

✦Anita Giobbie-Hurder, Department of Biostatistics and Computational Biology, Dana-Farber Cancer Institute

✦Nicholas Jewell, University of California at Berkeley

3:45 p.m. **Floor Discussion**

Contributed Sessions 2:00 p.m.–3:50 p.m.

595 CC-512e

Causal Inference—Contributed

Biometrics Section

Chair(s): David Fardo, University of Kentucky

2:05 p.m. **Sensitivity Analyses for Parametric Causal Mediation Effect Estimation**—✦Jeffrey Albert, Case Western Reserve Univ; Wei Wang, Bausch and Lomb, Inc.

2:20 p.m. **Multiply Robust Estimator for a Population Mean with Incomplete Data**—✦Peisong Han, University of Michigan; Lu Wang, Univeristy of Michigan

2:35 p.m. **Estimation of Treatment Effects in Cluster-Randomized Trials by Calibrating Covariate Imbalances Between Clusters**—✦Zhenke Wu, The Johns Hopkins University; Constantine E. Frangakis, The Johns Hopkins University; Thomas A. Louis, Johns Hopkins Bloomberg School of Public Health; Daniel Scharfstein, Johns Hopkins Bloomberg School of Public Health

2:50 p.m. **Latent Propensity Score for Average Causal Effect Estimation Allowing Covariate Measurement Error**—✦Yi Huang, University of Maryland, Baltimore County; Karen Bandeen-Roche, Johns Hopkins Bloomberg School of Public Health; Xiaoyu Dong, FDA; Andrew Raim, University of Maryland, Baltimore County; Cunlin Wang, OTS/CDER/FDA

3:05 p.m. **New Methods for Improved Estimation of Causal Effects Using an Instrumental Variable**—✦Boriska Toth

3:20 p.m. **Analysis of Data from Case-Control Studies Using Counterfactual Propensity Scores**—✦Irina Bondarenko, University of Michigan; Trivellore E. Raghunathan, University of Michigan

3:35 p.m. **Estimation of a Direct Effect When Considering a Time-to-Event Response**—✦Torben Martinussen

596 CC-512f

Methods and Applications for Survival Analysis—Contributed

Biometrics Section

Chair(s): Xiaoyan Wang, University of California at Los Angeles

2:05 p.m. **Composite Partial Likelihood Estimation Under Length-Biased Sampling, with Application to a Prevalent Cohort Study of Dementia**—✦Chiung-Yu Huang, National Institute of Allergy and Infectious Diseases; Jing Qin, National Institutes of Health, BRB

2:20 p.m. **Inference for Survival Prediction in the High-Dimensional Setting**—✦Jennifer Sinnott, Harvard University; Tianxi Cai, Harvard University

2:35 p.m. **Conditional Power and Enrollment Strategies in a Time-to-Event Study with a Delay in Treatment Effect**—✦Emelita de Leon-Wong, PPDI; Gary Greenfield, PPDI

2:50 p.m. **Analyzing Length-Biased Right-Censored Data with Uncertain Onset Time**—✦Jun Liu, The University of Texas MD Anderson Cancer Center; Jing Ning, The University of Texas MD Anderson Cancer Center; Yu Shen, The University of Texas MD Anderson Cancer Center

3:05 p.m. **A Model-Informed Rank Test for Right-Censored Survival Data with Intermediate States**—✦Ritesh Ramchandani, Harvard University; David A Schoenfeld, MGH and Harvard University; Dianne Finkelstein, MGH and Harvard University

3:20 p.m. **Confidence Interval of the Survival Probability Under the Cox Model**—✦Shihong Zhu, University of Kentucky; Mai Zhou, University of Kentucky

3:35 p.m. **Analysis of Multiple Type Recurrent Event Data in the Presence of Terminal Events and Missing Covariate Information**—✦Shankar Viswanathan, Albert Einstein College of Medicine; Jianwen Cai, The University of North Carolina at Chapel Hill

597 CC-512c

Nonparametric Covariate and Group Testing—Contributed

Section on Nonparametric Statistics

Chair(s): Ana-Maria Staicu, North Carolina State University

2:05 p.m. **Bootstrap Confidence Bands for Regression Curves Using Polynomial Splines**—✦Ella Revzin; Jing Wang, University of Illinois at Chicago; Lijian Yang, Michigan State University

2:20 p.m. **Nonparametric and Semiparametric Regression Analysis of Group Testing Samples**—✦Mingyu Li, Celgene; Min-ge Xie, Rutgers University

2:35 p.m. **A Nonparametric Test to Compare the Autocorrelation Structure of Two Time Series**—✦Lei Jin, McNeese State University; Suojin Wang, Texas A&M University

2:50 p.m. **Hypothesis-Testing for Curves Comparison: Permutation Approach vs. Trigonometric Expansion Methods**—✦Livio Corain, University of Padova; Viatcheslav B. Melas, St. Petersburg State University; Andrey Pepelyshev, RWTH Aachen University; Luigi Salmaso, University of Padova

3:05 p.m. **Inferential Methods for Comparing Socio-Economic Population Diversities**—✦Stefano Bonnini, University of Ferrara

3:20 p.m. **Permutation Tests for ANOVA Designs and Simultaneous Tests in Signal Analysis, with Application to EEG**—✦Olivier Renaud, University of Geneva; Sara Kherad-Pajouh, University of California at Berkeley

3:35 p.m. **Floor Discussion**

598 CC-512g

■ Randomization Schemes and Their Impacts—Contributed

Biopharmaceutical Section

Chair(s): Gosford Sawyerr, Cognizant Corp

2:05 p.m. **Particular Challenges of Sequential Analysis in Cluster-Randomized Trials**—✦Abigail Shoben, The Ohio State University

2:20 p.m. **Hypothesis Testing of Covariate-Adaptive Randomized Clinical Trials Under Generalized Linear Models**—✦Wei Ma, University of Virginia; Feifang Hu, University of Virginia

2:35 p.m. **Expanding Brick Tunnel Randomization to Allow for Larger Imbalance in Treatment Totals in Studies with Unequal Allocation**—✦Olga Kuznetsova, Merck; Yevgen Tymofyeyev, Janssen Research & Development of Johnson & Johnson

2:50 p.m. **Randomization Metrics: Jointly Assessing Predictability and Efficiency Loss in Covariate Adaptive Randomization Designs**—✦Dennis Sweitzer, Medidata Solutions

3:05 p.m. **Response-Adaptive Randomization in the Presence of Mismeasurement**—✦Xuan Li, University of Minnesota Duluth; Xikui Wang, University of Manitoba

3:20 p.m. **Balancing Treatment Allocation and Randomization with Combinatorics**—✦Ruji Yao, Merck; Norman Ying Yao, Harvard University

3:35 p.m. **Simulations on Comparisons Between 4-Factor Model and 3-Factor Model Using Stratified Logrank Test: A Case Study**—✦Shaoyi Li, Celgene

599 CC-511e

Statistical Methods for Multiplicity—Contributed

Biopharmaceutical Section, Section on Statistical Graphics

Chair(s): Alexei Dmitrienko, Quintiles

2:05 p.m. **Comparison Between Tree Gatekeeping Procedure and Graphical Approach in a Pivotal Clinical Trial with Multiple Objectives and Multiple Endpoints**—✦Masakazu Fujiwara, Shionogi & Co., Ltd.; Hideaki Watanabe, Shinogi & Co. Ltd.

2:20 p.m. **A Group Sequential Method Using Hochberg Procedure for Clinical Trials with Multiple Primary Endpoints**—✦Kentaro Sakamaki, Yokohama City University

2:35 p.m. **Multiplicity Adjustment Incorporating Correlation and Fallback**—Lyrica Liu, Amgen, Inc.; Yining Ye, Amgen, Inc.; ✦Bin Yao, Amgen, Inc.; Amy Xia, Amgen, Inc.

2:50 p.m. **Simulations to Evaluate the Impact of Multiplicity Adjustment Procedure Selection in Clinical Trial Design**—✦Bidan Huang, AbbVie; Yaqin Wang, AbbVie

3:05 p.m. **Effect of Misspecified Correlations in Parametric Multiple Testing**—✦Changchun Xie, University of Cincinnati; Xuewen Lu, University of Calgary; Din Chen, University of Rochester; Radhey S. Singh, University of Guelph

3:20 p.m. **A Two-Stage Testing Strategy for Demonstrating Efficacy in Replicate Trials**—✦Chengxing Lu, Novartis; Tony Chen, Novartis

3:35 p.m. **Hochberg Step-Up Multiple Test Procedure Under Negative Dependence**—✦Jiangtao Gou, Northwestern University; Ajit C. Tamhane, Northwestern University

JSM PROCEEDINGS

Don't Forget!

If you presented a paper or poster, you're eligible to publish it in the JSM Proceedings.

Visit *www.amstat.org/meetings/jsm/2013/proceedings* for details.

Submission site opens at noon EDT on August 23

600 CC-520a

■ Measurement Systems and Quality Control—Contributed

Quality and Productivity Section

Chair(s): Jason Gilliken, Spectrum Health

2:05 p.m. **Adaptive Estimators of Process Capability Indices Using Preliminary Test**—✦Chien-Pai Han, University of Texas; Choudur K. Lakshminarayan, HP Labs

2:20 p.m. **Dynamic Calibration Method Using a Dynamic Linear Model Approach**—✦Edward Boone, Virginia Commonwealth University; Derick Rivers, Virginia Commonwealth University

2:35 p.m. **Stochastic Simulation of a Nanoscale Experiment**—✦Martin Lysy, University of Waterloo; Aleks Labuda, Asylum Research

2:50 p.m. **Sorting Machine Correlation Paradox**—✦Emil Bashkansky, ORT Braude College of Engineering; Tamar Gadrich, ORT Braude College of Engineering

3:05 p.m. **Exploring Measurement System Study Sample Size and the Power to Detect Production Process Shifts**—✦Laura Lancaster, SAS Institute; Christopher Gotwalt, SAS Institute

3:20 p.m. **Interactive SPC: A Textile Quality Case Study**—✦Scott Wise, SAS Institute

3:35 p.m. **Floor Discussion**

601 CC-516e

■ Advances in Time Series—Contributed

Business and Economic Statistics Section

Chair(s): Peter Bloomfield, North Carolina State University

2:05 p.m. **Predictor Selection for Non-Negative Autoregressive Processes**—✦Chiao-Yi Yang, Institute of Statistical Science Academia Sinica; Ching-Kang Ing, Institute of Statistical Science Academia Sinica, Taiwan

2:20 p.m. **Characterizing Common Seasonality in Multivariate Time Series**—✦Fabio Nieto, Universidad Nacional de Colombia; Daniel Peña, Universidad Carlos III de Madrid; Dagoberto Saboyá, Universidad Nacional de Colombia

2:35 p.m. **On Smooth Tests of Goodness-of-Fit for Vector ARMA Time Series Models**—✦Joseph Francois Tagne Tatsinkou, Universite de Montréal; Pierre Duchesne, Universite de Montréal; Pierre Lafaye de Micheaux, Universite de Montréal

2:50 p.m. **Markov-Switching Mixed Frequency VAR Models**—✦Pierre Guérin, Bank of Canada; Claudia Foroni, Norges Bank; Massimiliano Marcellino, European University Institute

3:05 p.m. **Some Thoughts on the Estimation of the Autocorrelation Function**—✦Wayne Woodward, Southern Methodist University

3:20 p.m. **Classification of 'Short' Time Series via the Epsilon-Complexity of Continuous Functions**—✦Alexandra Piryatinska, San Francisco State University; Boris Darkhovsky, Institute for Systems Analysis, Russian Academy of Sciences

3:35 p.m. **An Advanced Approach for Forecasting Export-Import Time Series Models**—✦Silvey Shamsi, Jahangirnagar University; Mian Adnan, Jahangirnagar University; M. Shamsuddin, Dhaka

602 CC-510d

■ Studying Climate Change: Statistical Methods for Climate Data and Output of Climate Models—Contributed

Section on Statistics and the Environment, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Chair(s): Jenny Brynjarsdottir, Duke University

2:05 p.m. **Trends in Extreme United States Temperatures**—✦Jaechoul Lee, Boise State University; Shanghong Li, Clemson University; Robert Lund, Clemson University

2:20 p.m. **Fast Dimension-Reduced Climate Model Calibration**—✦Won Chang, Penn State University; Murali Haran, Penn State University; Roman Olson, Penn State University; Klaus Keller, Penn State University

2:35 p.m. **A Variable Selection Technique for Detecting Climate Change Attribution**—✦Siddhartha Nandy, Michigan State University; Chae Young Lim, Michigan State; Tapabrata Maiti, Michigan State University

2:50 p.m. **Global Space-Time Models for Climate Ensembles**—✦Stefano Castruccio, The University of Chicago; Michael L. Stein, The University of Chicago

3:05 p.m. **Using Capture Mark Recapture to Assess the Effects of Climate Change on Marine Invertebrate Evolutionary Patterns**—✦John Handley, Paleontological Research Institution; Jocelyn A. Sessa, American Museum of Natural History

3:20 p.m. **A Conceptual Framework for Strategic Planning with Emphasis on Land Use and Climate Change**—✦Chandra Aleong, Delaware State University; John Aleong, University of Vermont

3:35 p.m. **Floor Discussion**

603 CC-513a

Topics in Time in Event and Spatial Data: To Be Improved—Contributed

ENAR, Section on Statistics and the Environment, Korean International Statistical Society

Chair(s): Xiaoqin Tang, Geisinger Health System

2:05 p.m. **Nonparametric Regression for Event Times in Multistate Models with Clustered Current Status Data with Informative Cluster Size**—✦Ling Lan, Georgia Regents University; Dipankar Bandyopadhyay, University of Minnesota; Somnath Datta, University of Louisville

2:20 p.m. **Model-Based Clustering of Spatial Data wth Time Dependence**—✦Hwa Kyung Lim, University of Michigan, Ann Arbor; Naveen Naidu Narisetty, University of Michigan; Juwon Song, Korea University

2:35 p.m. **Structural Equation Models for Assessing Sediment Contaminant Exposure and Effects**—✦Margaret Nikolov, United States Naval Academy

2:50 p.m. **A Simulation Study of the Effect of Study Duration on Modeling Environmental Risk of Cancer**—✦Kevin Donges, The Ohio State University; Catherine A. Calder, The Ohio State University; David Wheeler, Virginia Commonwealth University

3:05 p.m. **A Statistical Analysis of Effects of Treatment Adherence on Medical End Points**—✦Sayan Dasgupta, The University of North Carolina at Chapel Hill; Denise Esserman, The University of North Carolina at Chapel Hill; Michael R. Kosorok, The University of North Carolina at Chapel Hill; Donna M. Evon, The University of North Carolina at Chapel Hill

3:20 p.m. **Quantile Regression for Discrete Data with Application to Birth Outcomes**—✦Luke Smith, North Carolina State University; Montserrat Fuentes, North Carolina State University; Brian J. Reich, North Carolina State University; Amy Herring, The University of North Carolina at Chapel Hill

3:35 p.m. **Proportional Subdistribution Hazard Regression with Interval-Censored Competing Risks Data**—✦Yi Ren, University of Pittsburgh; Chung-Chou Chang, University of Pittsburgh

604 CC-518

Advances in Bayesian Methods—Contributed

International Society for Bayesian Analysis (ISBA), International Indian Statistical Association

Chair(s): Yajuan Si, Columbia University

2:05 p.m. **A Non-Gaussian Family of State-Space Models with Exact Marginal Likelihood**—✦Dani Gamerman, Instituto De Matematica-UFRJ; Glaura da Conceição Franco, Universidade Federal de Minas Gerais; Thiago Rezende dos Santos, Universidade Federal de Minas Gerais

2:20 p.m. **A Bayesian Extension of the Hypergeometric Test for Functional Enrichment Analysis**—✦Jing Cao, Southern Methodist University; Song Zhang, The University of Texas Southwestern Medical Center

2:35 p.m. **Bias-Corrected Bayesian Classification with Selected Features**—✦Longhai Li

2:50 p.m. **Bayes Factors for Testing Equality-Constrained and Order-Constrained Hypotheses on Correlation Matrices**—✦Joris Mulder, Tilburg University

3:05 p.m. **Bayesian Adaptive Shrinkage Analysis**—✦Xinyi Xu, Ohio State University; Di Cao, The Ohio State University

3:20 p.m. **A New Derivation and New Perspective of Weibayes**—✦Peng Liu, SAS Institute; Peng Wang, Pratt & Whitney AeroPower

3:35 p.m. **Floor Discussion**

605 CC-515a

■ ● Recent Developments in Analysis of Psychiatric and Other Health Outcomes—Contributed

Mental Health Statistics Section

Chair(s): Qixuan Chen, Columbia University

2:05 p.m. **Joint Modeling of Multivariate Longitudinal Profiles: Evaluation of Co-Development of Internalizing and Externalizing Problem Behaviors**—✦Pingfu Fu, Case Western Reserve University; Guang Zeng, Texas A&M University at Corpus Christi

2:20 p.m. **Estimating Mental Illness in the U.S.: SAMHSA's Methodology and the Impact of DSM-5**—✦Joseph Gfroerer, SAMHSA; Sarra Hedden, SAMHSA; Jonaki Bose, Center for Behavioral Health Statistics and Quality, SAMHSA

2:35 p.m. **Robust Latent Class Analysis for Longitudinal Data**—✦Kari Hart, Ursinus College; John J. Hanfelt, Emory University

2:50 p.m. **Inference of ROC Curves in the Presence of Verification Bias for Multiphase Studies—** ✦Hua He, University of Rochester; Wan Tang, University of Rochester

3:05 p.m. **Defining Recovery Stages in Breast Cancer—** ✦Monica Jackson, American University

3:20 p.m. **Semiparametric Network Meta-Analysis of Survival Probabilities in Psychiatric Trials—**✦Samprit Banerjee, Weill Cornell Medical College

3:35 p.m. **Enhancement of AFP-Based Prediction of Onset of HCC by Using Other Laboratory Values—** ✦Peter Richardson, U.S. Veterans Health Admin

606 CC-513b

Data Collection Using Responsive Designs and Mixed Modes—Contributed

Survey Research Methods Section

Chair(s): Angelina KewalRamani, American Institutes for Research

2:05 p.m. **Respondents: Who Art Thou? Comparing Internal, Temporal, and External Validity of Survey Response Propensity Models Based on Random Forests and Logistic Regression Models—**✦Trent Buskirk, Nielsen; Brady West, Institute for Social Research; Anh Thu Burks, Nielsen

2:20 p.m. **Using an Item Response Theory Approach to Measure Survey Mode of Administration Effects: Analysis of Data from a Randomized Mode Experiment—**✦Louis T. Mariano, RAND Corporation; Marc Elliott, RAND Corporation

2:35 p.m. **The Role of Mode Preference Questions in Predicting Mode-Specific Response Propensities—** ✦Peter Lynn, University of Essex; Olena Kaminska, Institute for Social and Economic Research

2:50 p.m. **Investigating the Bias of Alternative Statistical Inference Methods in Sequential Mixed-Mode Surveys—**✦Zeynep Tuba Suzer-Gurtekin, ISR-University of Michigan; Steven G. Heeringa, ISR-University of Michigan; Richard Valliant, University of Michigan and University of Maryland

3:05 p.m. **Mode Effect Analysis and Adjustment in a Split-Sample Mixed-Mode Web/CATI Survey—** ✦Stanislav Kolenikov, Abt SRBI; Courtney Kennedy-Shea, Abt SRBI

3:20 p.m. **Assessing Nonresponse Bias in the Green Technologies and Practices Survey—**✦Brian Meekins, Bureau of Labor Statistics; Michael Sverchkov, Bureau of Labor Statistics; Sharon Stang, Bureau of Labor Statistics

3:35 p.m. **Floor Discussion**

607 CC-514c

Coding, Editing, and Other Post Data Collection Processing—Contributed

Survey Research Methods Section, Social Statistics Section, Section on Statistical Graphics

Chair(s): Craig Hill, RTI International

2:05 p.m. **Evaluation of Selective Editing for the Census Bureau Foreign Trade Data—**✦Maria Garcia, U.S. Census Bureau; Andreana Able, U.S. Census Bureau; Christopher Grieves, U.S. Census Bureau

2:20 p.m. **Semiautomatic Coding of Open-Ended Questions—** ✦Matthias Schonlau, University of Waterloo

2:35 p.m. **A Visual Proof, a Test, and an Extension of a Simple Tool for Comparing Competing Estimates—** ✦Tommy Wright, U.S. Census Bureau/Center for Statistical Research and Methodology

2:50 p.m. **Counting Persons Once and Only Once at the Right Location in the Census: Techniques and Challenges Unduplicating People Experiencing Homelessness—** ✦Diane Barrett, U.S. Census Bureau; Thomas P. McCoy, U.S. Census Bureau

3:05 p.m. **Evaluation of a New Edit Methodology for the Common Core of Data Nonfiscal Surveys—** ✦Elizabeth Goldberg, U.S. Census Bureau; Robert Stillwell, National Center for Education Statistics; Jeffrey Little, U.S. Census Bureau

3:20 p.m. **Simplified Census Edit and Imputation Based on Statistical Principles—**✦Robert Sands, U.S. Census Bureau

3:35 p.m. **Ratio Edits Based on Tolerance Intervals—** ✦Derek Young, U.S. Census Bureau; Thomas Mathew, U.S. Census Bureau; University of Maryland, Baltimore County

608 CC-510b

Bayesian Methods in the Social Sciences—Contributed

Section on Bayesian Statistical Science

Chair(s): Martiniano Flores, University of California at Los Angeles Fielding School of Public Health

2:05 p.m. **A Bayesian Assessment of Distance Learning in Graduate Biostatistics Courses**—✦Jo A. Wick, University of Kansas Medical Center; Henry Yeh, University of Kansas Medical Center; Byron Gajewski, Univ of Kansas-Medical Center

2:20 p.m. **Bilinear Mixed Effects Models for Affiliation Networks**—✦Yanan Jia, The Ohio State University; Catherine A. Calder, The Ohio State University

2:35 p.m. **Bayesian Peer Calibration Based on Network Position with Application to Alcohol Use**—✦Miles Ott, Brown University; Joe Hogan, Brown University; Krista J. Gile, University of Massachusetts, Amherst; Crystal Linkletter, Brown University Biostatistics; Nancy Q. Barnett, Brown University

2:50 p.m. **Enhanced Modeling of Top-Box Performance: Bayesian Binary Quantile Regression Applied to Modeling Customer Feedback**—✦Jorge Alejandro, Market Probe

3:05 p.m. **Bayesian Multistate Models for Recurrent Episode Data of Illicit Drug Use**—✦Adam King, University of California at Los Angeles; Robert E. Weiss, University of California at Los Angeles

3:20 p.m. **A Bayesian Hierarchical Joint Model for Long-Term Multiple Substance Use and Recovery from Substance Abuse**—✦Li-Jung Liang, University of California at Los Angeles; Chi-hong Tseng, University of California at Los Angeles; Yih-Ing Hser, University of California at Los Angeles

3:35 p.m. **Floor Discussion**

609 CC-520e

Applications of Causal Inference Methods—Contributed

Social Statistics Section, Mental Health Statistics Section

Chair(s): Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health

2:05 p.m. **Sensitivity Analysis for an Observational Study on Marriage Dissolution**—✦Bo Lu, The Ohio State University

2:20 p.m. **The Inequality Process Is 'Demonic': Conditional Entropy Maximization and Minimization and Wage Incomes**—✦John Angle, Inequality Process Institute

2:35 p.m. **Causal Mediation Analysis on Failure Time Outcome Without Sequential Ignorability**—✦Cheng Zheng, University of Washington; Xiao-Hua Andrew Zhou, University of Washington; Ross Prentice, University of Washington

2:50 p.m. **Statistical Versus Agent-Based Demography: Bridging the Gap with Gaussian Process Emulators**—Jakub Bijak, University of Southampton; Jason Hilton, University of Southampton; ✦Eric Silverman, University of Southampton

3:05 p.m. **Inclusion/Exclusion Criteria for Bias-Amplifying Covariates: A Sensitivity Analysis Framework**—Marc Scott, New York University; ✦Joel Middleton, Steinhardt School, New York University

3:20 p.m. **Comparison of Three Methods for Dual Sensitivity Analysis**—✦Masataka Harada, New York University; Jennifer Hill, New York University; Nicole Carnegie, Harvard University

3:35 p.m. **Front-Door Versus Back-Door Adjustment with Unmeasured Confounding: Bias Formulas for Front-Door and Hybrid Adjustments**—✦Adam Glynn, Harvard University; Konstantin Kashin, Harvard University

610 CC-515b

■ ● Activities and Projects for Statistics Courses—Contributed

Section on Statistical Education, Statistics Without Borders

Chair(s): Laura Ring Kapitula, Grand Valley State University

2:05 p.m. **How Many Licks to the Tootsie Roll Center of a Tootsie Pop?**—✦Cory Heid, Siena Heights University

2:20 p.m. **Using Statistics to Know and Nurture Our Planet**—✦Nancy Pfenning, University of Pittsburgh

2:35 p.m. **Facebook Friend Data: Analyzing Non-Random Samples in the Intro Course**—✦Aimee Schwab, University of Nebraska-Lincoln

2:50 p.m. **Data Sources for a Proposed Course on Secondary Data Analysis**—✦Stephen Simon, P. Mean Consulting

3:05 p.m. **African Conflict and Climate Data for an Undergraduate Research Project**—✦Darcie Delzell, Wheaton College

3:20 p.m. **Multiple Approaches to Undergraduate Statistical Consulting**—✦William Hunt, North Carolina State University; Kristen Benedict, U.S. Environmental Protection Agency; Brian Eder, U.S. Environmental Protection Agency; David Mintz, U.S. Environmental Protection Agency

3:35 p.m. **Floor Discussion**

611 CC-525a

Machine Learning Algorithms and Methods—Contributed

Section on Statistical Learning and Data Mining, Section on Statistical Computing, Korean International Statistical Society

Chair(s): Xiaoming Huo, Georgia Institute of Technology

2:05 p.m. **Local-Aggregate Model Paths for Massive Data via Distributed Optimization—**✦Yue Hu, Rice University; Genevera Allen, Rice University

2:20 p.m. **Double Least Squares Kernel Machine Score Test for Genetic Pathway Effect—**✦Xiang Zhan, Penn State University; Debashis Ghosh, Penn State University

2:35 p.m. **Regression Trees and Forests for Nonhomogeneous Poisson Process—**✦Walid Mathlouthi; Denis Larocque, HEC Montréal; Marc Fredette, HEC Montréal

2:50 p.m. **Computationally Efficient Confidence Intervals for Cross-Validated AUC Estimates—**✦Erin LeDell; Maya Petersen, University of California at Berkeley; Mark Van der Laan, University of California at Berkeley

3:05 p.m. **Exploiting Feature Information in Matrix Completion—**✦Anran Wang, North Carolina State University; Hua Zhou, North Carolina State University; Lexin Li, North Carolina State University

3:20 p.m. **Recent Developments in Gradient-Enhanced Kriging—**✦Peter Marcy, University of Wyoming

3:35 p.m. **Statistical Consistency of Multipartite Ranking—**✦Yoonkyung Lee, The Ohio State University; Kazuki Uematsu, The Ohio State University

Invited Sessions 4:00 p.m.–5:50 p.m.

612 CC-517ab

COPSS Awards and Fisher Lecture—Invited

ASA, Committee of Presidents of Statistical Societies, International Chinese Statistical Association, SSC, ENAR, WNAR, IMS, International Indian Statistical Association, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA)

Chair(s): Kathryn Roeder, Carnegie Mellon University

4:05 p.m. **From Fisher to Big Data: Continuities and Discontinuities—**✦Peter Bickel, University of California at Berkeley

5:45 p.m. **Floor Discussion**