



# JSM 2013 PROGRAM BOOK

MONTRÉAL, CANADA • AUGUST 3–8, 2013

The American Statistical Association\* • Institute of Mathematical Statistics\* • International Biometric Society (ENAR and WNAR)\* • International Chinese Statistical Association  
International Indian Statistical Association • International Society for Bayesian Analysis • Korean International Statistical Society • Statistical Society of Canada\*  
(\*indicates the founding societies of JSM)

# Computer Training Workshops

## JSM 2013 | Wed. August 7th!

\*All workshops will be held in Le Westin Montréal - St. Antoine Room

### 8:00 a.m.- 9:45 a.m.

Introduction to Data Mining with CART Classification & Regression Trees.

### 10:00 a.m.- 11:45 a.m.

Data Mining with TreeNet (Stochastic Gradient Boosting) and RandomForests: including latest refinements and model compression techniques (ISLE Importance Sampled Learning Ensembles and RuleLearner).

### 1:00 p.m.- 2:45 p.m.

Introduction to Modern Regression Analysis  
Techniques: Linear, Logistic, Nonlinear, Regularized, GPS (Generalized Path Seeker), LARS, LASSO, Elastic Net, and MARS (Multivariate Adaptive Regression Splines).

### 3:00 p.m.- 4:45 p.m.

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

### Training Preview

- Data mining with decision trees
- Modern tree ensemble methods
- Hybrid modeling
- Model compression techniques
- Evolution of modern regression
- Real-world data mining examples

### Who Should Attend?

- Data, Business, and Market Analysts
- Functional Managers
- Statisticians
- IT Specialists
- Decision Support System Architects
- Data Engineers

### About Salford Systems

Founded in 1983, Salford Systems specializes in providing new-generation data mining and predictive modeling software and consulting services for industries such as banking, insurance, healthcare, pharmaceutical, telecommunications, transportation, manufacturing, retail and catalog sales, and education. The company's CART, MARS, TreeNet and RandomForests data mining software is currently installed in over 3,500 sites worldwide, including 300 major universities. Salford Systems is headquartered in San Diego, CA.

[info@salford-systems.com](mailto:info@salford-systems.com)

Ph: 619-543-8880

[www.salford-systems.com](http://www.salford-systems.com)

 **SALFORD SYSTEMS**



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University of Maryland, College Park

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Centers for Disease Control  
and Prevention

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American Statistical Association

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Director of Meetings

**Cheryl Behrens**  
Meetings Planner

**Naomi Friedman, CMP**  
Meetings Planner

**Christina Link, CMP**  
Meetings Planner

American Statistical Association  
732 North Washington Street  
Alexandria, VA 22314-1943  
[jsm@amstat.org](mailto:jsm@amstat.org)  
[www.amstat.org](http://www.amstat.org)



2013 JSM Program Chair  
**Bhramar Mukherjee**  
University of Michigan  
[bhramar@umich.edu](mailto:bhramar@umich.edu)



International Biometric Society (ENAR)  
**Melanie Wall**  
Columbia University  
[mmwall@columbia.edu](mailto:mmwall@columbia.edu)



International Biometric Society (WNAR)  
**Katerina Kechris**  
Colorado School of Public Health  
[katerina.kechris@ucdenver.edu](mailto:katerina.kechris@ucdenver.edu)



Institute of Mathematical Statistics (Invited)  
**David Dunson**  
Duke University  
[dunson@stat.duke.edu](mailto:dunson@stat.duke.edu)



Institute of Mathematical Statistics (Invited)  
**Abel Rodriguez**  
Baskin School of Engineering  
[abel@soe.ucsc.edu](mailto:abel@soe.ucsc.edu)



Institute of Mathematical Statistics (Contributed)  
**Daniela Witten**  
University of Washington  
[dwitten@u.washington.edu](mailto:dwitten@u.washington.edu)



Statistical Society of Canada (SSC)  
**Grace Yi**  
University of Waterloo  
[yiyi@uwaterloo.ca](mailto:yiyi@uwaterloo.ca)



International Chinese Statistical Association (ICSA)  
**Lu Tian**  
Stanford University  
[lutian@stanford.edu](mailto:lutian@stanford.edu)



International Indian Statistical Association (IISA)  
**Nanlini Ravishanker**  
University of Connecticut  
[nalini.ravishanker@uconn.edu](mailto:nalini.ravishanker@uconn.edu)



Korean International Statistical Society (KISS)  
**Jae-Kwang Kim**  
Iowa State University  
[kim00020@yahoo.com](mailto:kim00020@yahoo.com)



International Society of Bayesian Analysis (ISBA)  
**C. Shane Reese**  
Brigham Young University  
[reese@stat.byu.edu](mailto:reese@stat.byu.edu)



Council of Chapters, ASA  
**John Watts**  
FTI Consulting  
[john.stuart.watts@gmail.com](mailto:john.stuart.watts@gmail.com)



(Local)  
**Russell Steele**  
McGill University  
[steele@math.mcgill.ca](mailto:steele@math.mcgill.ca)



Leadership Support Council, ASA  
**Demissie Alemayehu**  
Pfizer, Inc.  
[alemad@pfizer.com](mailto:alemad@pfizer.com)



General Methodology, ASA  
**Kenneth M. Rice**  
University of Washington  
[kenrice@u.washington.edu](mailto:kenrice@u.washington.edu)



General Methodology, ASA  
**Ananda Sen**  
University of Michigan  
[anandas@umich.edu](mailto:anandas@umich.edu)



Invited and Contributed Posters  
**Joyee Ghosh**  
The University of Iowa  
[joyee-ghosh@uiowa.edu](mailto:joyee-ghosh@uiowa.edu)



Section on Bayesian Statistical Science, ASA  
**Peter F. Thall**  
MD Anderson Cancer Center  
[rex@mdanderson.org](mailto:rex@mdanderson.org)



Biometrics Section, ASA  
**Wei Sun**  
The University of North Carolina at Chapel Hill  
[weisun@email.unc.edu](mailto:weisun@email.unc.edu)



Biopharmaceutical Section, ASA  
**Estelle Russek-Cohen**  
FDA CBER OBE  
[estelle.russek-cohen@fda.hhs.gov](mailto:estelle.russek-cohen@fda.hhs.gov)



Business & Economic Statistics Section, ASA  
**Alan L. Montgomery**  
Carnegie Mellon University  
[alanmontgomery@cmu.edu](mailto:alanmontgomery@cmu.edu)



Government Statistics Section, ASA  
**Eric Rancourt**  
Statistics Canada  
[eric.rancourt@statcan.gc.ca](mailto:eric.rancourt@statcan.gc.ca)



Health Policy Statistics Section, ASA  
**Ofer Harel**  
University of Connecticut  
[ofer.harel@uconn.edu](mailto:ofer.harel@uconn.edu)



Mental Health Statistics Section, ASA  
**Yuanjia Wang**  
Columbia University  
[yuanjia.wang@columbia.edu](mailto:yuanjia.wang@columbia.edu)



Section on Nonparametric Statistics, ASA  
**Ciprian M. Crainiceanu**  
Johns Hopkins University  
[ccrainic@jhsp.h.edu](mailto:ccrainic@jhsp.h.edu)



Section on Physical & Engineering Sciences, ASA  
**Stephanie Pickle DeHart**  
DuPont  
[stephanie.pickle@gmail.com](mailto:stephanie.pickle@gmail.com)



Quality & Productivity Section, ASA  
**Willis Jensen**  
W.L. Gore & Associates  
[wjensen@wlgore.com](mailto:wjensen@wlgore.com)



Section on Risk Analysis, ASA  
**Michael E. Tarter**  
University of California  
[tarter@berkeley.edu](mailto:tarter@berkeley.edu)



Social Statistics Section, ASA  
**Deborah H. Griffin**  
U.S. Census Bureau  
[deborah.h.griffin@census.gov](mailto:deborah.h.griffin@census.gov)



Section on Statistical Computing, ASA  
**John W. Emerson**  
Yale University  
[jayemerson@gmail.com](mailto:jayemerson@gmail.com)



Section on Statistical Consulting, ASA  
**Nan Hu**  
University of Utah  
[nan.hu@hsc.utah.edu](mailto:nan.hu@hsc.utah.edu)



Section on Statistical Education, ASA  
**Amy Wagaman**  
Amherst College  
[awagaman@amherst.edu](mailto:awagaman@amherst.edu)



Section on Statistical Graphics, ASA  
**Kary Myers**  
Los Alamos National Laboratory  
[karymyers@gmail.com](mailto:karymyers@gmail.com)



Section on Statistics in Imaging, ASA  
**Hernando Ombao**  
University of California at Irvine  
[hombao@uci.edu](mailto:hombao@uci.edu)



Section on Statistical Learning and Data Mining, ASA  
**Yufeng Liu**  
University of North Carolina at Chapel Hill  
[yfliu@email.unc.edu](mailto:yfliu@email.unc.edu)



Section for Statistical Programmers and Analysts, ASA  
**Nancy J. Petersen**  
Department of Veteran Affairs  
[petersen.nancyj@va.gov](mailto:petersen.nancyj@va.gov)



Section on Statistics and the Environment, ASA  
**Veronica J. Berrocal**  
University of Michigan  
[berrocal@umich.edu](mailto:berrocal@umich.edu)



Section on Statistics in Defense and National Security, ASA  
**Aubrey Dale Magoun**  
Applied Research and Analysis, Inc.  
[dmagoun@bayou.com](mailto:dmagoun@bayou.com)



Section on Statistics in Epidemiology, ASA  
**Jing Cheng**  
University of California at San Francisco  
[jing.cheng@ucsf.edu](mailto:jing.cheng@ucsf.edu)



Section on Statistics in Marketing, ASA  
**Michael Braun**  
Massachusetts Institute of Technology  
[braunm@mit.edu](mailto:braunm@mit.edu)



Section on Statistics in Sports, ASA  
**Andrew W. Swift**  
University of Nebraska at Omaha  
[aswift1@unomaha.edu](mailto:aswift1@unomaha.edu)



Survey Research Methods Section, ASA  
**Frauke Kreuter**  
University of Maryland & IAB/LMU  
[frauke.kreuter@survey.umd.edu](mailto:frauke.kreuter@survey.umd.edu)



Section on Teaching of Statistics in the Health Sciences, ASA  
**Felicity Boyd Enders**  
Mayo Clinic Biostatistics Division  
[enders.felicity@mayo.edu](mailto:enders.felicity@mayo.edu)

# Keynote Speakers



## ASA PRESIDENT'S INVITED ADDRESS

**Nate Silver**

Founder, FiveThirtyEight.com  
Monday, August 5, 4:00 p.m.



## IMS PRESIDENTIAL ADDRESS

**Hans Rudolf Kuensch**

Swiss Federal Institute of Technology Zurich  
"Ars conjectandi: 300 Years Later"  
Monday, August 5, 8:00 p.m.



## ASA DEMING LECTURE

**Vijay Nair**

University of Michigan  
"Industrial Statistics: Research vs. Practice"  
Tuesday, August 6, 4:00 p.m.



## WALD LECTURE I

**Piet Groeneboom**

University of Technology, Delft  
"Nonparametric Estimation Under Shape Constraints"  
Tuesday, August 6, 4:00 p.m.

## WALD LECTURE II

Wednesday, August 7, 8:30 a.m.



## ASA PRESIDENTIAL ADDRESS AND FOUNDER & FELLOWS RECOGNITION

**Marie Davidian**

North Carolina State University  
"The International Year of Statistics: A Celebration  
and a Call to Action"  
Tuesday, August 6, 8:00 p.m.



## RIETZ LECTURE

**Larry Wasserman**

Carnegie Mellon University  
"Geometric and Topological Inference"  
Wednesday, August 7, 10:30 a.m.



## PUBLIC LECTURE TO COMMEMORATE THE 300TH ANNIVERSARY OF ARS CONJECTANDI

**David John Spiegelhalter**

University of Cambridge  
"From Gambling to Global Catastrophe: Metaphors  
and Images for Communicating Numerical Risks"  
Wednesday, August 7, 2:00 p.m.



## COPSS FISHER LECTURE

**Peter J. Bickel**

University of California at Berkeley  
"From Fisher to Big Data: Continuities  
and Discontinuities"  
Wednesday, August 7, 4:00 p.m.



## IMS MEDALLION LECTURE I

**Gady Kozma**

Weizmann Institute  
"Linearly Reinforced Random Walk"  
Sunday, August 4, 4:00 p.m.



## IMS MEDALLION LECTURE II

**Jeremy Quastel**

University of Toronto  
"The Kardar-Parisi-Zhang Equation and  
Universality Class"  
Monday, August 5, 8:30 a.m.



## IMS MEDALLION LECTURE III

**Martin Wainwright**

University of California at Berkeley  
"Statistics Meets Computation: Efficiency Trade-Offs in  
High Dimensions"  
Monday, August 5, 2:00 p.m.



## IMS MEDALLION LECTURE IV

**Lutz Duembgen**

University of Bern  
"Multiscale Methods and Shape Constraints"  
Tuesday, August 6, 8:30 a.m.



## IMS MEDALLION LECTURE V

**Peter Guttorp**

University of Washington  
"Pointing in New Directions"  
Tuesday, August 6, 10:30 a.m.



## IMS MEDALLION LECTURE VI

**Judea Pearl**

University of California at Los Angeles  
"The Mathematics of Causal Inference"  
Tuesday, August 6, 2:00 p.m.



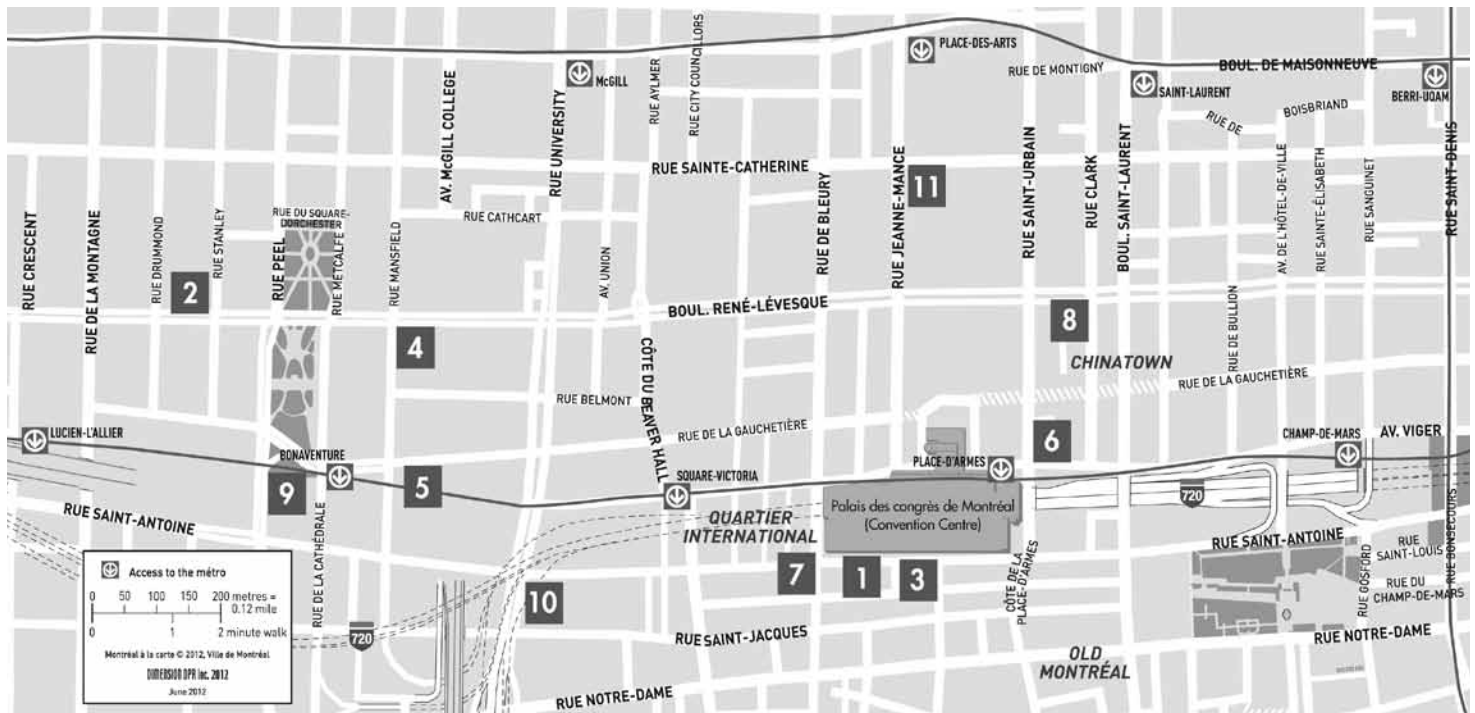
## IMS MEDALLION LECTURE VII

**Ya'acov Ritov**

The Hebrew University of Jerusalem  
"A Priori Analysis of Complex Models"  
Thursday, August 8, 8:30 a.m.

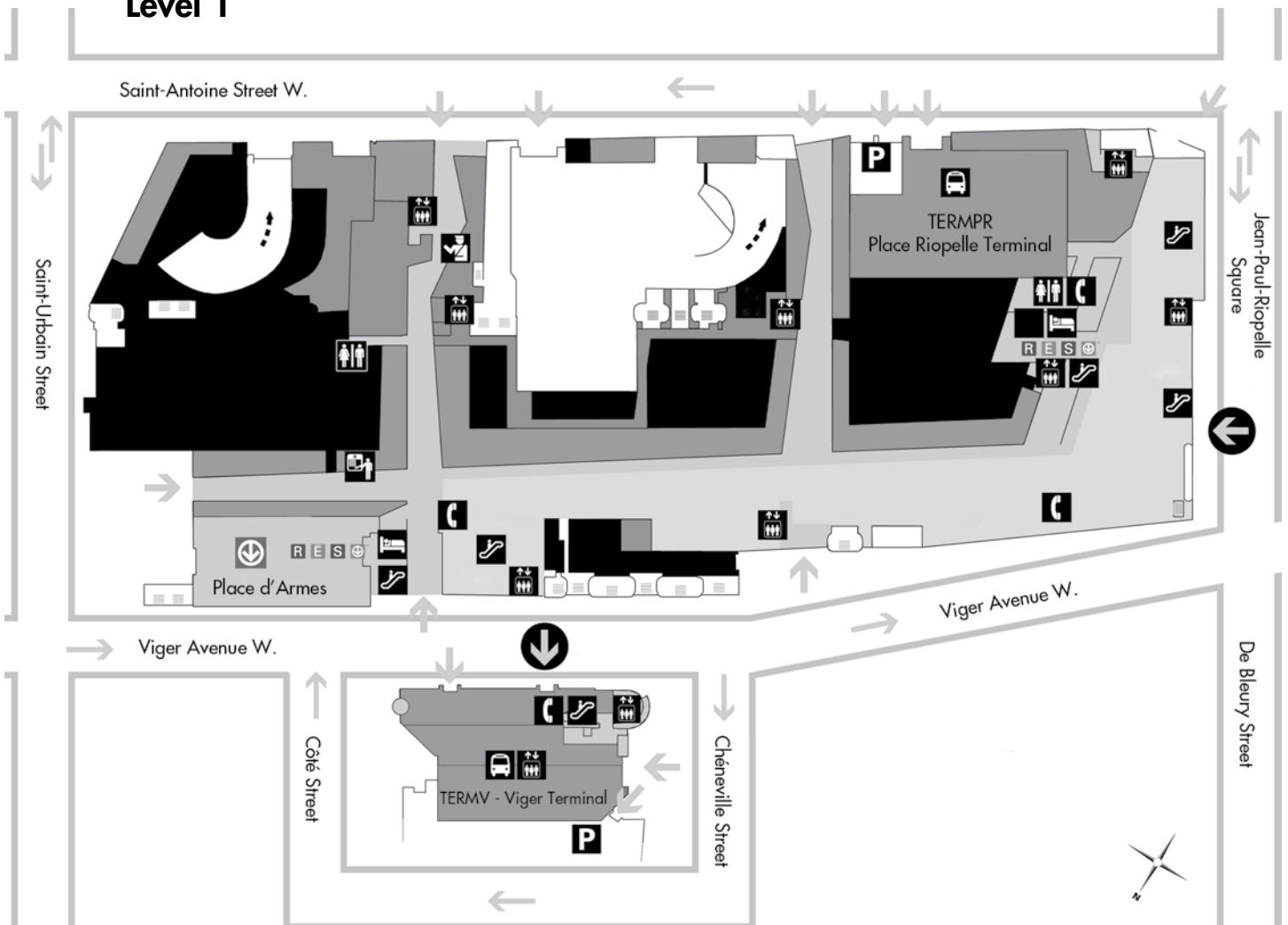
# Hotel Listing

1. Le Westin Montréal (HQ)
2. Le Centre Sheraton
3. Embassy Suites by Hilton Montréal
4. Fairmont Queen Elizabeth
5. Hilton Montréal Bonaventure
6. Holiday Inn Select Montréal Centre-Ville
7. Hotel InterContinental Montréal (HQ)
8. Hotel Travelodge Montréal Centre
9. Montréal Marriott Chateau Champlain
10. Delta Centre-Ville (on University)
11. Hyatt Regency Montréal










# Palais des congrès de Montréal Floor Plans

## Level 1

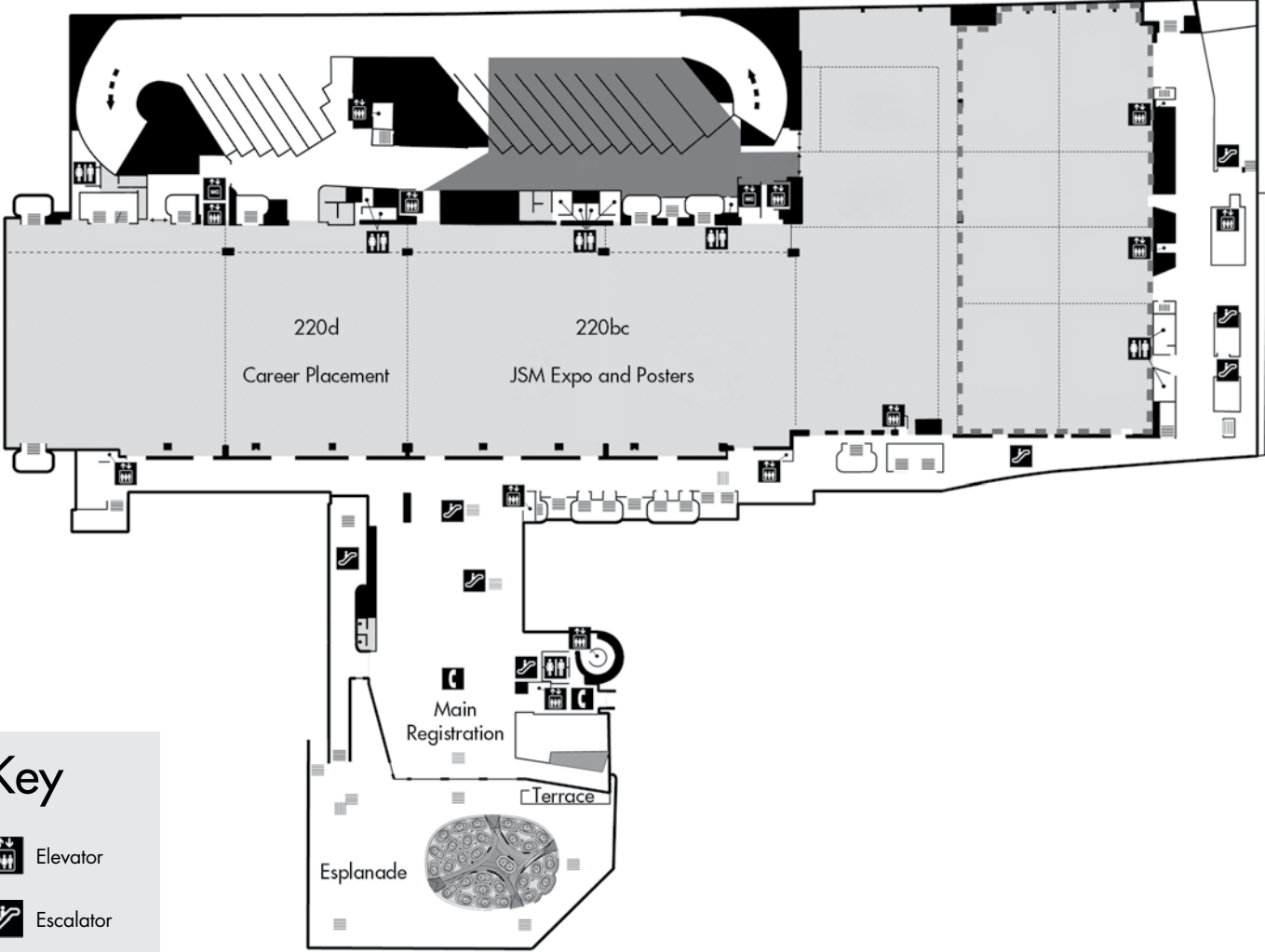


## Key





 ATM	 Parking
 Elevator	 Restrooms
 Escalator	 Security SOC
 Direct Indoor Access to Hotels	 Shuttle Terminal
 Indoor Pedestrian Network	 Telephone
 Metro	

# Palais des congrès de Montréal Floor Plans

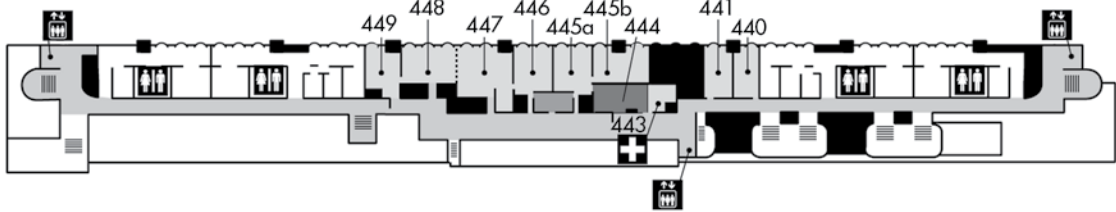
## Level 2



**Key**

-  Elevator
-  Escalator
-  Infirmary
-  Restrooms

## Mezzanine 4



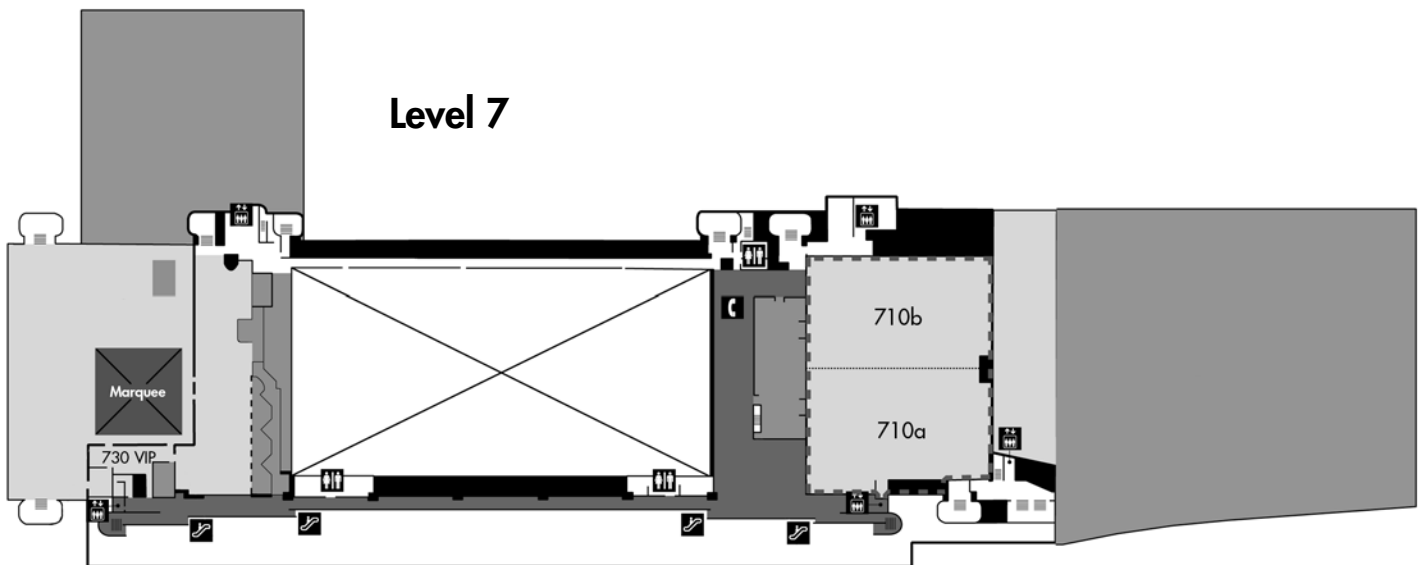


# Palais des congrès de Montréal Floor Plans

## Level 5






## Level 7

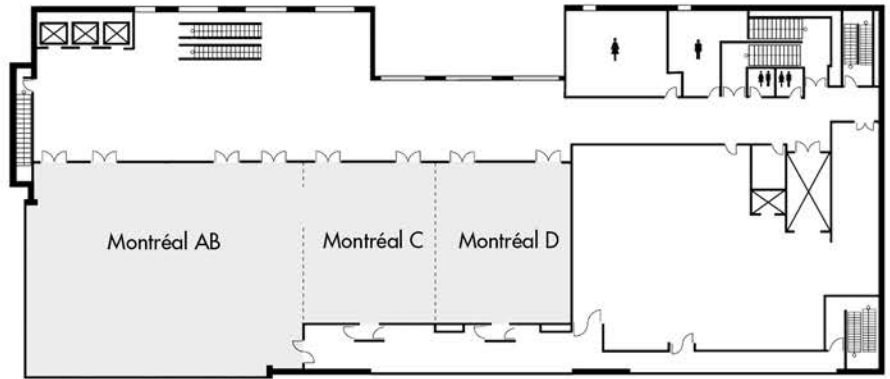


# Le Westin Montréal Floor Plans

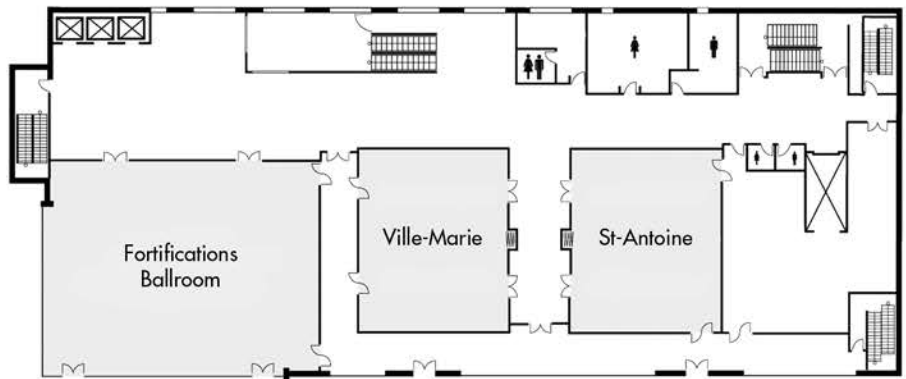
**Key**

-  Elevator
-  Escalator
-  Restrooms

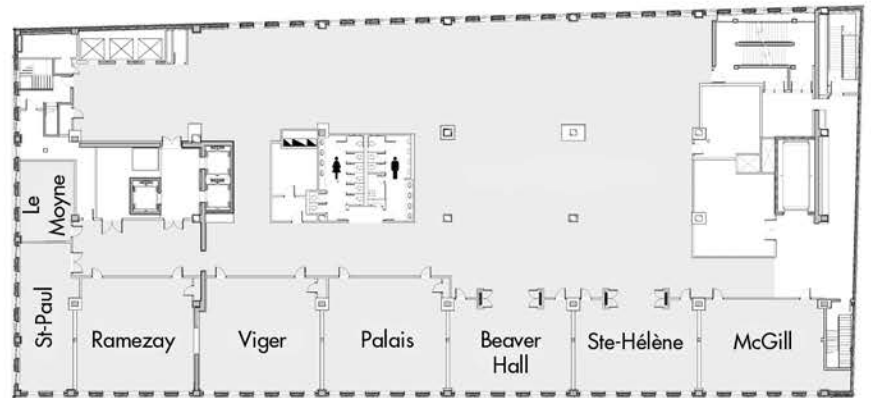
**11th Floor**



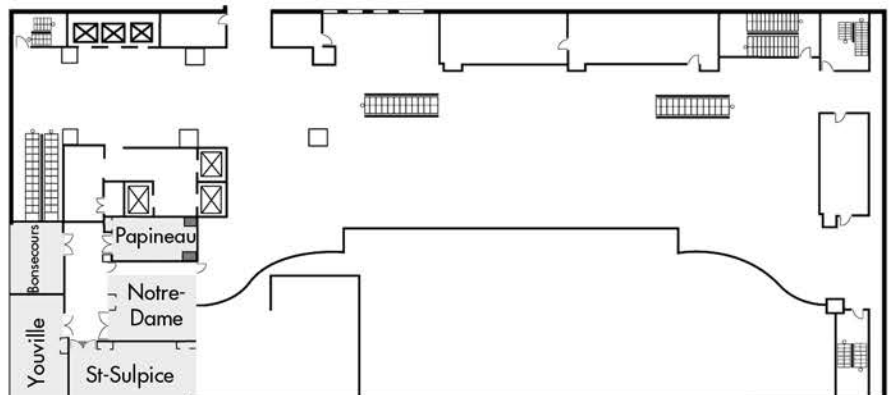
**9th Floor**



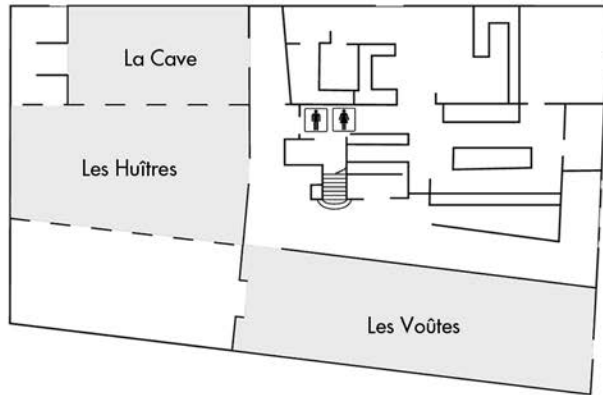
**8th Floor**






**3rd Floor**



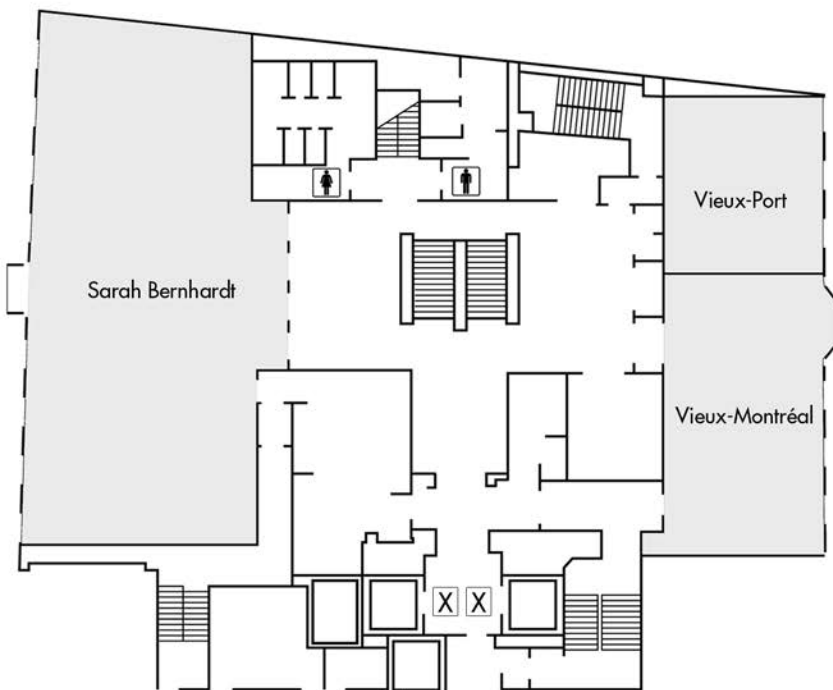
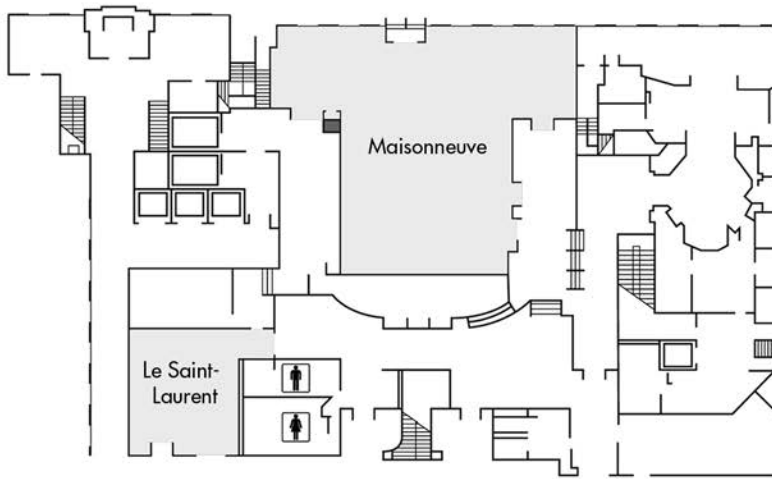
# Hotel InterContinental Montréal Floor Plans



## Key

-  Elevator
-  Stairs
-  Restrooms

## Street Level



## 2nd Floor

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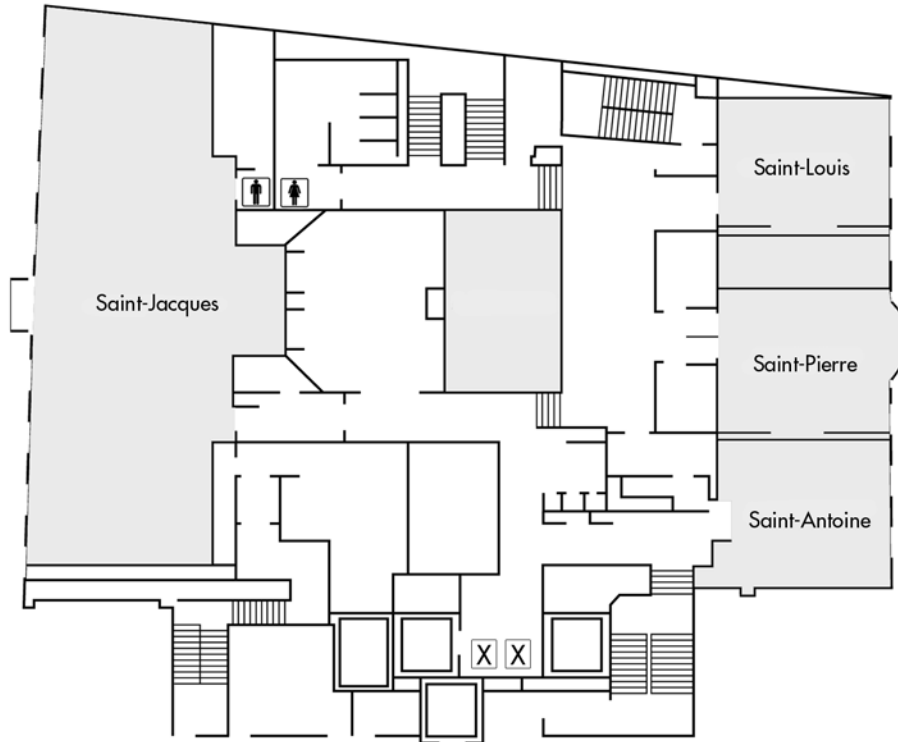


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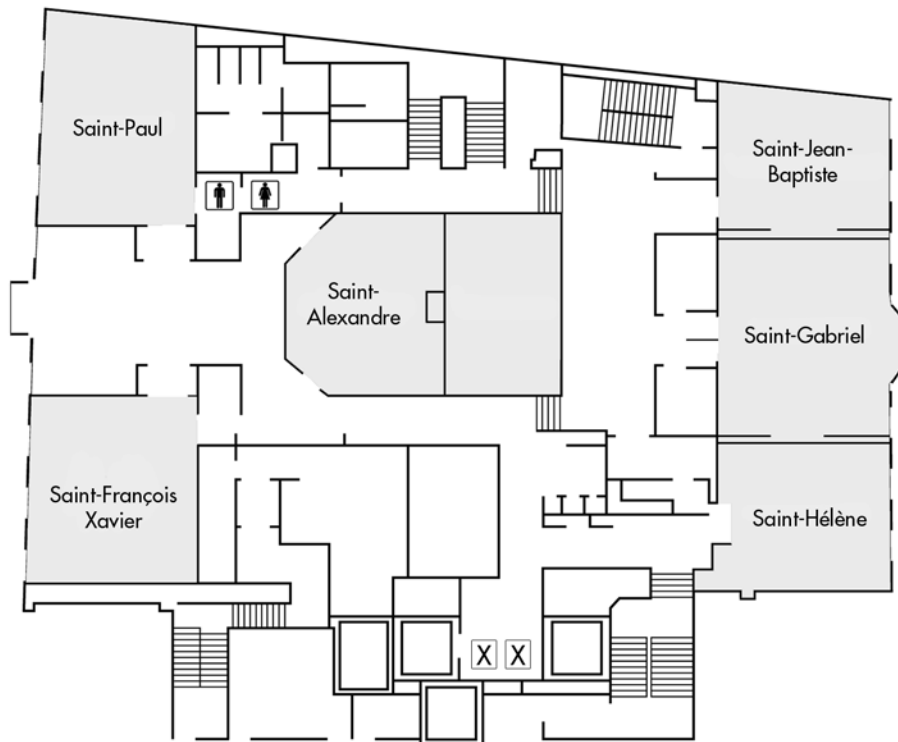
# Hotel InterContinental Montréal Floor Plans



**3rd Floor**

**Key**

- ☒ Elevator
- ▨ Stairs
- ♂ ♀ Restrooms



**4th Floor**

# What You Need to Know

## Emergency Telephone Messages

In case of emergency, messages may be left during registration hours by calling +1 (514) 789-3401. We will attempt to contact the registrant using the contact information given on their registration.

## Convention Housing

Delta Centre-Ville (on University)	+1 514-879-1370
Embassy Suites by Hilton Montréal	+1 514-288-8886
Fairmont Queen Elizabeth	+1 514-861-3511
Hilton Montréal Bonaventure	+1 514-878-2332
Holiday Inn Select Montréal Centre-Ville	+1 514-878-9888
Hotel InterContinental Montréal (HQ)	+1 514-987-9900
Hotel Travelodge Montréal Centre	+1 514-874-9090
Hyatt Regency Montréal	+1 514-982-1234
Le Centre Sheraton Montréal	+1 514-878-2000
Le Westin Montréal (HQ)	+1 514-380-3333
Montréal Marriott Chateau Champlain	+1 514-878-9000

## Assistance for Those with Disabilities

Please contact a staff member at the Help Desk in the registration area of the Palais des congrès de Montréal if you have a disability that may impede your participation.

## Child Care

While JSM will not have organized child care available, services may be organized through your hotel's concierge desk.

## Policies

### *Electronic Devices*

All cell phones, pagers, and other electronic devices should be turned off before attending any session or meeting.

### *Smoking*

Smoking is not permitted at any JSM function, unless the event is held outside.

### *Photographs and Videotaping*

Taking photographs or using video equipment during any JSM session or event is prohibited.

### *Recycling*

Please use the paper, plastic, and aluminum trash containers located throughout the Palais des congrès de Montréal. Also, participating in the towel and linen programs at area hotels makes a significant difference in the amount of energy and water used. You also can change the option from print to not print at the Cyber Center or use the paper recycling containers available. Finally, place the JSM badges and badge holders in one of the designated bins in the registration area.

## SPEED Sessions

New in 2013! A SPEED session consists of 20 oral presentations of approximately five minutes each, with a 10-minute break after the first set of 10 talks. These short oral presentations will be followed by an electronic poster session later the same day. We will conduct a detailed attendee and presenter satisfaction survey for these pilot sessions, so if you have a chance to visit them, please let us know what you think!

### **Monday, August 5, 8:30 a.m. – 10:20 a.m.**

CC-516c

Analytic Challenges in Epidemiological Studies and Public Health  
Sponsors: Biometrics Section, Section on Statistics in Epidemiology

*Poster session from 10:30 a.m. – 12:20 p.m. in CC-220bc*

### **Tuesday, August 6, 8:30 a.m. – 10:20 a.m.**

CC-516c

Methods and Applications in Biomedical Data and Clinical Trials  
Sponsors: Biometrics Section, Biopharmaceutical Section

*Poster session from 10:30 a.m. – 12:20 p.m. in CC-220bc*

### **Tuesday, August 6, 10:30 a.m. – 12:20 p.m.**

CC-516c

Methods and Applications in High-Dimensional Data  
Sponsors: Section on Statistical Learning and Data Mining, Biometrics Section

*Poster session from 2:00 p.m. – 3:50 p.m. in CC-220bc*

### **Wednesday, August 7, 8:30 a.m. – 10:20 a.m.**

CC-516c

Statistical Challenges with Measurement, Complex Design, and Missing Data

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

*Poster session from 10:30 a.m. – 12:20 p.m. in CC-220bc*

## JSM Proceedings

Eligibility guidelines and author instructions for JSM 2013 presenters are available at [www.amstat.org/meetings/jsm/2013/proceedings.cfm](http://www.amstat.org/meetings/jsm/2013/proceedings.cfm). The submission site will open on August 23, 2013, and close on September 26, 2013.

## JSM 2014

The 2014 Joint Statistical Meetings will be held in Boston, Massachusetts, from August 2–7 at the Boston Convention & Exhibition Center. Check out the details at Booth # 208 in the exhibit hall.

# What You Need to Know

## Membership

Information about the ASA, ENAR, WNAR, IMS, SSC, ICOSA, IISA, and KISS is available at the society booths in the registration area and exhibit hall. Each society provides a variety of publications and activities to anyone interested in applied and or theoretical statistics, and student membership is offered at substantially reduced rates.

## Hours of Operation

### Registration and ASA Membership/Help Desk/Press Desk

CC-200 Viger Hall

JSM registration includes the Program Book; access to the exhibit hall; and admission to the Opening Mixer, Student Mixer (students only), and the JSM Dance Party & Lounge.

Saturday	7:30 a.m. – 6:00 p.m.
Sunday	7:30 a.m. – 8:30 p.m.
Monday	7:30 a.m. – 6:00 p.m.
Tuesday – Wednesday	7:30 a.m. – 4:30 p.m.
Thursday	7:30 a.m. – 10:30 a.m.

### Satellite Registration (with limited services)

W-Fortifications Foyer

Saturday	7:30 a.m. – 10:00 a.m.
Sunday	7:30 a.m. – 1:00 p.m.

## Speaker Management Room

CC-513cd

Speakers are required to check in 24 hours prior to their presentations to upload their materials to the speaker management system or confirm their materials were uploaded correctly. Session chairs also should check in to confirm all speakers have uploaded their materials.

Sunday	9:00 a.m. – 7:00 p.m.
Monday – Wednesday	7:00 a.m. – 6:00 p.m.
Thursday	7:00 a.m. – 10:30 a.m.

## Career Placement Service

CC-220d

Saturday	9:00 a.m. – 5:00 p.m. (job posting and résumé submission only)
Sunday	1:00 p.m. – 6:00 p.m.
Monday – Tuesday	8:00 a.m. – 5:30 p.m.
Wednesday	8:00 a.m. – 2:30 p.m. (onsite registration closes at noon)

## Introductory Overview Lectures

Sunday, August 4, 4:00 p.m. – 5:50 p.m.

CC-710a

Session 47 – Celebrating the History of Statistics

Monday, August 5, 8:30 a.m. – 10:20 a.m.

CC-710a

Session 99 – Twenty Years of Gibbs Sampling/MCMC

Tuesday, August 6, 8:30 a.m. – 10:20 a.m.

CC-710a

Session 275 – Personalized Medicine: Tailoring Treatment to the Right Patient

Tuesday, August 6, 10:30 a.m. – 12:20 p.m.

CC-710a

Session 322 – Inference from Complex Sample Surveys: Past Controversies, Current Orthodoxies, Future Paradigms

Tuesday, August 6, 2:00 p.m. – 3:50 p.m.

CC-710a

Session 392 – Big Data

Wednesday, August 7, 8:30 a.m. – 10:20 a.m.

CC-710a

Session 454 – Next-Generation Bioinformatics and Beyond

Wednesday, August 7, 2:00 p.m. – 3:50 p.m.

CC-710a

Session 566 – Mediation and Confounding

## Late-Breaking Sessions

Sunday, August 4, 2:00 p.m. – 3:50 p.m.

CC-710a

Session 1 – A Tribute to George Box

Wednesday, August 7, 2:00 p.m. – 3:50 p.m.

CC-710b

Session 567 – Statisticians, Statistics, and Doping Science: The Case of Andrus Veerpalu



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# What You Need to Know

## EXPO 2013

CC-220bc

Visit publishers, software companies, and recruiters. See state-of-the-art products designed for the statistical community. WIFI is available throughout the exhibit hall with support from Revolution Analytics. Food also will be for sale.

Sunday	1:00 p.m. – 6:00 p.m.
Monday – Tuesday	9:00 a.m. – 5:30 p.m.
Wednesday	9:00 a.m. – 2:30 p.m.

## Cyber Center

CC-200 Viger Hall

There are 15 terminals with Internet access available for your emailing needs, as well as three printers. The cyber center is available with support from IBM.

Saturday	7:30 a.m. – 6:00 p.m.
Sunday	7:30 a.m. – 10:30 p.m.
Monday – Tuesday	7:30 a.m. – 10:00 p.m.
Wednesday	7:30 a.m. – 6:00 p.m.
Thursday	7:30 a.m. – 10:30 a.m.

## ASA Marketplace (inside EXPO 2013)

CC-220bc

The ASA Marketplace is your store for the official JSM 2013 T-shirt and other JSM and ASA souvenirs.

Sunday	1:00 p.m. – 6:00 p.m.
Monday – Tuesday	9:00 a.m. – 5:30 p.m.
Wednesday	9:00 a.m. – 2:30 p.m.

## Montréal Restaurant & Tourism Information Center

CC-Foyer 517

Operated by Tourisme Montréal, this center provides extensive information and referrals for restaurants and sightseeing. Stop by the desk for help with reservations and travel information.

Saturday – Wednesday	12:00 p.m. – 6:00 p.m.
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# BREAKTHROUGH RESEARCH

**Work with the world's top scientists and staff in our state-of-the-art facilities.**

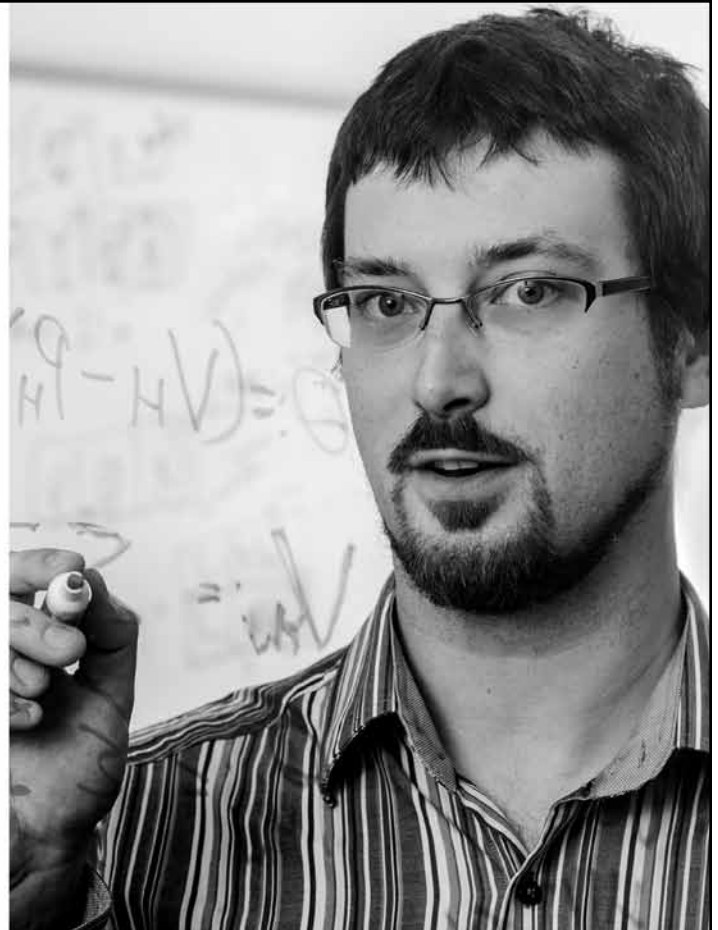
**Fred Hutch conducts breakthrough research in:**

- Basic Sciences
- Public Health Sciences
- Clinical Research
- Vaccine and Infectious Disease
- Human Biology
- Cancer Outcomes and Evaluation

Stop by our booth to meet one of our recruiters to see how you can join us in our research efforts!

View our current positions and post-doc opportunities at [fredhutch.org/careers](http://fredhutch.org/careers)

SEATTLE, WASHINGTON **FRED HUTCHINSON**  
CANCER RESEARCH CENTER





# Career Placement Service

## Executive Suite Employers

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AMGEN®  
Pioneering science delivers  
vital medicines™

Bank of America 

Boehringer  
Ingelheim

Capital One

CHASE 

Lilly

FDA

Center for Devices and  
Radiological Health  
CDRH

sas

STATA®

TRAVELERS   
Insurance. In-synch.™

  
Creative Technologies  
Worldwide

## Virtual Message Center Access

Access the JSM Career Placement Service Message Center from anywhere! Employers and applicants will be able to communicate and arrange interviews anywhere there is Internet access. No need to come to the onsite placement service to check or send messages; just come for your scheduled interviews!

## Registered Employers

Analysis Group, Inc.

BioStat Solutions, Inc.

Bucknell University, Department of Mathematics

Bureau of Labor Statistics

CNA

DuPont

Food and Drug Administration/Center for  
Biologics Evaluation and Research

Food and Drug Administration/Center for  
Veterinary Medicine

Georgetown University

IBM T. J. Watson Research Center

Lawrence Livermore National Laboratory

Lawrence University

MaxPoint

Monsanto Company

National Security Agency

The EMMES Corporation

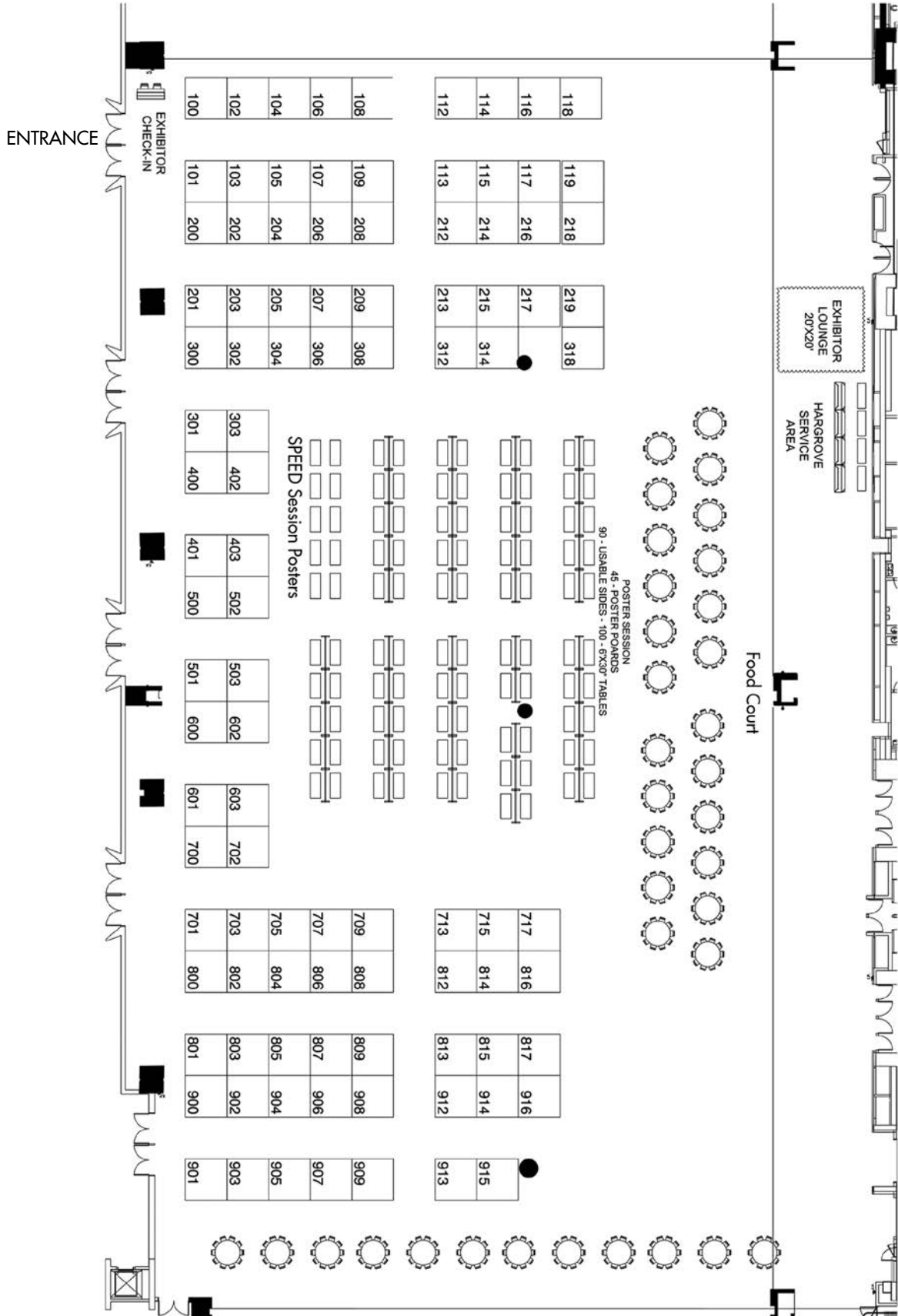
University of Central Oklahoma

University of Mississippi, Medical Center

Villanova University, Department of Mathematics  
and Statistics

Westat

# EXPO 2013 Floor Plan



# Who's Who at EXPO 2013

<b>Booth</b>	<b>Exhibitor Name</b>	<b>Booth</b>	<b>Exhibitor Name</b>
100, 102, 104	SAS Institute Inc., JMP Division	318	BioStat Solutions, Inc.
101, 103, 105	SAS Institute Inc.	400	MacMillan
106, 108	SAS Institute Inc., PUBS	401, 500	Minitab
107, 109	SAS Institute Inc., EDU	402	Salford Systems
112	RStudio Inc.	403	Project Euclid
113	Oxford University Press	501, 503	IBM
114	Frontline Systems, Inc.	502	Johnson & Johnson
115	Provalis Research	600	Green Key Resources
116, 118	Procter & Gamble	601, 603	Cengage Learning
117	U.S. Census Bureau	602	National Science Foundation
119	Barrington James Limited	700, 702	Pearson
200	Institute of Mathematical Statistics (IMS)	701, 703, 705, 800, 802	CRC Press-Taylor & Francis
201, 203	American Statistical Association	707	InVentiv Health Clinical
202	Statistical Society of Canada	709	Fred Hutchinson Cancer Research Center
205, 207, 209	MarketPlace	709	U of WA Biost & FHCRC
204	American Association for Public Opinion Research (AAPOR)	713, 715	National Science Foundation
206	SIAM	717	Berry Consultants
208	JSM 2014	801, 803, 805	Springer
212, 214	Cambridge University Press	804, 806	StatPoint Technologies Inc.
213, 312	Cytel, Inc.	807	Systat Software
215	McGraw-Hill Education	808	Penn State World Campus
216	Statistics.com	809	National Center for Health Statistics
217	De Gruyter	812	Aptiv Solutions
218	Elsevier BV	813	ProQuest
219	STAT-HAWKERS (Sarjinder)	816	Monsanto
300, 302	NCSS	817	Mango Business Solutions LTD
301, 303	W.H. Freeman	900	Automatic Forecasting Systems, Inc.
304, 306, 308	Wiley	908	K & L Consulting Services, Inc.
314	SAGE	912	Gilead Sciences



# Join the Conversation

It is now easier than ever to become engaged in the ASA and its members through social media.



**ASA Community**—Join this online setting for ASA members to communicate, collaborate, and share.



**Twitter**—Follow *Amstat News* on Twitter @AmstatNews and keep up to date on the profession.



**Facebook**—Check out the ASA's page on Facebook to keep up with the latest deadlines, news, and activities and to share your tips and comments with colleagues worldwide.

Engage your fellow statisticians and enhance your mind, education, and career at [www.amstat.org](http://www.amstat.org).



# Who's Who at EXPO 2013

## **American Statistical Association (201)**

Stop by the ASA booth to learn about the exciting activities going on at the ASA, including the International Year of Statistics! Pick up materials about upcoming events and conferences and find out how to get the most out of your membership.

## **American Statistical Association 175 Anniversary Booth (203)**

2014 marks the ASA's 175th anniversary. To help you get in the celebratory spirit, come to the 175th Anniversary Steering Committee's Exhibit Hall booth where you'll learn about the committee's plans for jump-starting the celebration of this milestone anniversary here and the big plans for Boston next year.

## **Aptiv Solutions (812)**

Aptiv Solutions is a global biopharmaceutical and medical device services company that provides a portfolio of innovative solutions, including adaptive trial design, translational sciences, regulatory services, pharmacovigilance, and clinical resourcing.

## **Automatic Forecasting Systems, Inc. (900)**

Launched in 1976 as the first-to-market forecasting and time series analysis software, it automatically builds the model where others use a "pick-best approach" and adjusts for four types of outliers.

## **Barrington James Limited (119)**

Barrington James is a global pharmaceutical specialist in recruitment. With offices worldwide, we have built an extensive network across all functional areas while delivering quality results to our clients.

## **Berry Consultants (717)**

Berry Consultants is a statistical consulting group specializing in the Bayesian approach that is radically changing the way research is done throughout the medical industry in both device and drug development.

## **BioStat Solutions, Inc. (318)**

BioStat Solutions, Inc. (BSSI) is a statistical consulting corporation specializing in the development and implementation of analytical strategies for biomarker studies, medical countermeasures, and medical devices.

## **Cambridge University Press (212, 214)**

Cambridge's publishing in books and journals combines state-of-the-art content with the highest standards of scholarship, writing, and production. Visit our stand to browse new titles, available at a 20% discount, and to pick up sample issues of our journals.

## **Cengage Learning (601, 603)**

Cengage Learning publishes innovative texts and creative e-learning solutions in emergent and current technologies, helping educators teach and students learn. The company's products and services are designed to foster academic excellence.

## **CRC Press-Taylor & Francis (701, 703, 705, 800, 802)**

Chapman & Hall/CRC - Taylor & Francis Group is a premier books and journals publisher, as well as a publishing partner with the ASA for its journals. Stop by our booth to browse our newest books at a discount of up to 50% or to pick up a journal sample.

## **Cytel, Inc. (213, 312)**

Cytel celebrates the International Year of Statistics with new versions of East® for adaptive and group sequential trials, Compass® for adaptive dose-finding, and SiZ® for fixed and multiple comparison designs.

## **De Gruyter (217)**

De Gruyter, the independent academic publishing house, can look back on a history spanning more than 260 years. The publishing group with headquarters in Berlin and Boston annually publishes more than 800 new titles in the humanities, medicine, science, and more.

## **Elsevier BV (218)**

Elsevier publishes world-class statistics content, from journals and books to online media. Stop by our booth to find out about our activities for the International Year of Statistics and publications and to meet and interact with our publishers.

## **Fred Hutchinson Cancer Research Center (709)**

Fred Hutchinson Cancer Research Center, home to three Nobel laureates, is an independent, nonprofit research institution dedicated to the development and advancement of biomedical research to eliminate cancer and other potentially fatal diseases.

## **Frontline Systems, Inc. (114)**

See and try out Analytic Solver Platform—deeply integrated Excel-based software for data mining and predictive analytics, Monte Carlo simulation, and conventional and stochastic optimization—from Excel Solver developer Frontline Systems.

## **Gilead Sciences (912)**

Gilead Sciences, Inc. is a research-based biopharmaceutical company that discovers, develops, and commercializes innovative medicines in areas of unmet medical need.

## **Green Key Resources (600)**

Green Key Resources is one of the fastest-growing professional recruitment firms offering a complete portfolio of staffing solutions—including temporary and contract staffing, executive search, and payroll services—to leading pharmaceutical and biotechnology companies.

## **IBM (501, 503)**

IBM SPSS predictive analytics software is a recognized leader in helping organizations predict what will happen next to drive better business outcomes. IBM SPSS Predictive Analytics Solutions enable organizations to align structured and unstructured data.

# Who's Who at EXPO 2013

## **Institute of Mathematical Statistics (IMS) (200)**

The Institute of Mathematical Statistics (IMS) is a nonprofit scholarly society. The purpose of the IMS is to foster the development and dissemination of the theory and applications of statistics and probability.

## **InVentiv Health Clinical (707)**

inVentiv Health Clinical, formerly PharmaNet/i3, is a leading provider of global drug development services to pharmaceutical, biotechnology, generic drug, and medical device companies.

## **Johnson & Johnson (502)**

Johnson & Johnson, through its operating companies, is the world's most comprehensive and broadly based manufacturer of health care products and provider of related services for the consumer, pharmaceutical, and medical devices and diagnostics industries.

## **JSM 2014 (208)**

Perhaps Boston can be best described as a welcome contradiction: hip alongside historic. Skyscrapers surround parks. Gourmet meets pizza. Visit the booth to find out more about Boston's history, neighborhoods, restaurants, and attractions.

## **MacMillan (400)**

Publisher of the new cartoon "Introduction to Statistics" by Grady Klein and Alan Dabney (Texas A&M), as well as other trade titles in mathematics and statistics.

## **Mango Business Solutions LTD (817)**

Mango Solutions is a statistical data analysis company specializing in providing software services and support around R and other softwares. We deliver application development, training, consultancy, validation and support to many of the world's largest.

## **MarketPlace (205, 207, 209)**

Don't miss the onsite ASA Store. Located in the JSM Expo this year! Look for T-shirts and souvenirs to take home after the meeting, including the official JSM T-shirt.

## **McGraw-Hill Education (215)**

McGraw-Hill Education is a digital learning company that draws on its more than 100 years of educational expertise to offer personalized solutions that improve learning outcomes around the world. For additional information, visit [www.mheducation.com](http://www.mheducation.com).

## **Minitab (401, 500)**

Minitab® 16 is the leading software for statistics education worldwide and can be purchased via affordable semester rentals. It provides a comprehensive set of tools and powerful graphics capabilities for stunning and informative graphs. More than 4,000 colleges and universities trust Minitab for education. Visit [www.minitab.com/academic](http://www.minitab.com/academic).

## **National Science Foundation (602)**

The Division of Mathematical Sciences (DMS) supports innovative research in all areas of mathematical and statistical sciences. Most of these projects are awarded to individual or small groups of investigators working with students and postdoctoral research.

## **National Science Foundation (713, 715)**

The National Security Agency is a federal government agency that provides foreign signals intelligence to decisionmakers and protects U.S. national security information systems.

## **National Center for Health Statistics (809)**

The National Center for Health Statistics is the nation's principal health statistics agency. A unique public resource for health information, we compile statistical information to guide actions and policies that improve the health of our people.

## **NCSS (300, 302)**

NCSS is demonstrating NCSS 9, a brand new edition of our statistical software program, and PASS 12, our leading power analysis and sample size program. Drop by our booth and take a look.

## **Oxford University Press (113)**

Oxford University Press is the publisher of some of the most respected and prestigious books and journals in the world. They include Bayesian Theory and Applications by Damien and Analysis of Longitudinal Data by Diggle. Visit our stand or visit us online.

## **Pearson (700, 702)**

As the premier publisher in statistics, Pearson offers innovative content, robust online teaching tools, and powerful statistical software. Browse our booth to find the perfect solution for your classes, your students, and you.

## **Penn State World Campus (808)**

Penn State World Campus offers a graduate certificate and master's in applied statistics, both entirely online. The programs help develop data analysis skills by exploring core areas of applied statistics (e.g., DOE, ANOVA, analysis of discrete data, MANOVA).

## **Procter & Gamble (116, 118)**

P&G is the world's largest, most profitable consumer packaged goods company, with nearly \$84 billion in sales and more than \$10 billion in net earnings. We have built a portfolio of 25 leadership brands.

## **Project Euclid (403)**

Project Euclid is an online publishing platform committed to advancing scholarly communication in theoretical and applied mathematics and statistics. It is designed to meet the unique needs of low-cost independent and society publishers.

## **ProQuest (813)**

ProQuest connects people with vetted, reliable information. Key to serious research, the company plays an essential role for libraries and other organizations whose missions depend on the management and delivery of complete, trustworthy information.

## **Provalis Research (115)**

Provalis Research is a world's leading developer of text analysis software, with ground-breaking qualitative and quantitative analysis programs such as QDA Miner, an innovative mixed-methods qualitative data analysis software.

# Who's Who at EXPO 2013

## **RStudio Inc. (112)**

RStudio is dedicated to providing organizations with tools and services for the R statistical computing environment. We develop the popular RStudio Integrated Development Environment and the Shiny product suite.

## **SAGE (314)**

SAGE is a leading international publisher of journals, books, and electronic media for academic, educational, and professional markets. Since 1965, SAGE has helped educate a global community spanning a wide range of subject areas.

## **Salford Systems (402)**

Salford Systems offers accurate, ultra-fast data mining for statisticians who want to add to classical statistical methods. Are you working with larger data sets? Does your data include missing values, nonlinear relationships, local patterns, interactions?

## **SAS Institute Inc., JMP Division (100, 102, 104)**

JMP® is the SAS® software designed for dynamic data visualization on the desktop. Interactive, comprehensive, and highly visual, JMP enables you to interact with your data to explore relationships, see hidden trends, dig into areas that interest you, and more.

## **SAS Institute Inc. (101, 103, 105)**

SAS Institute provides analytical software for a variety of application areas: statistics, econometrics, data mining, quality improvement, and optimization. Come by the exhibition area to learn about recent and upcoming developments in SAS software.

## **SAS Institute Inc., EDU (107, 109)**

SAS is the leader in business intelligence and analytical software and services. The SAS® Global Academic Program works with professors, students, and researchers to support industry partnerships with academia and deliver technology and resources for teaching.

## **SAS Institute Inc., PUBS (106, 108)**

Visit us on your journey to knowledge:  
SAS Books: Empowering SAS® users worldwide  
eBooks: Read selected books on your favorite device  
Author Recruitment: Present your ideas to us onsite  
Social Media: Follow us @SABook

## **SIAM (206)**

The mission of SIAM's book program is to make relevant research results accessible to industry and science and to promote the interaction between mathematics and other disciplines such as statistics, engineering, science, and computing.

## **Springer (801, 803, 805)**

Visit the Springer booths to get further acquainted with an abundant selection of top-notch titles by award-winning authors. Plus, we have book signings, giveaways, contests, and more this year! Follow us on Twitter @SpringerStats to stay up to date.

## **STAT-HAWKERS (Sarjinder) (219)**

STAT-HAWKERS: Come and learn how to teach elementary statistics through Sarjinder's own parables. Do not forget to ask for a desk copy of today's prestigious journal: Model Assisted Statistics and Applications. Come and have fun with us.

## **Statistical Society of Canada (202)**

The Statistical Society of Canada is devoted to the development of the professional interests of statisticians and probabilists. It has six sections: Actuarial Science, Biostatistics, Business and Industrial Statistics, Probability, Statistical Education, and Survey Methods.

## **Statistics.com (216)**

The Institute for Statistics Education at Statistics.com is the leading provider of online education in statistics, with 100+ courses in introductory and advanced analytics and statistics, including certificate programs.

## **StatPoint Technologies Inc. (804, 806)**

Take control of your business with statistical data analysis software created by Statpoint Technologies. Make sense of it all and make your projects successful with Statgraphics Centurion, the longtime choice of leading companies worldwide.

## **Systat Software (807)**

Systat Software is the developer of the SYSTAT statistics and graphics package. Simplify your research and enhance your publications with SYSTAT's comprehensive suite of statistical functions and brilliant 2D and 3D charts and graphs. Visit [www.systat.com](http://www.systat.com).

## **U of WA Biost & FHCRC (709)**

The Departments of Biostatistics at the University of Washington is a recognized leader in the statistical sciences. It offers MS and PhD training in biostatistics on campus and has online programs and summer short courses.

## **U.S. Census Bureau (117)**

The Census Bureau's collections include socioeconomic information—2010 Census and American Community Survey—and information about topics such as population, housing, and income and business and industry statistics.

## **W.H. Freeman (301, 303)**

W.H. Freeman publishes high-quality textbooks and media. Visit booth 301 to learn about our innovative titles, including Introductory Statistics, Second Course in Statistics, Business Statistics, and Statistics for the Life Sciences.

## **Wiley (304, 306, 308)**

Wiley publishes a vast array of leading book, journal, and electronic content in statistics across a wide range of disciplines. Our international portfolio provides applications for statisticians and researchers. We publish more than 20 journals.

Open the door to your students' future.



 Minitab 16 Statistical Software

[www.minitab16.com](http://www.minitab16.com)

# Continuing Education at a Glance

TIME	COURSE	INSTRUCTOR(S)	COURSE TITLE
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## Saturday, August 3

8:30 a.m.–5:00 p.m.	CE_01C	Geert Molenberghs/Geert Verbeke/ Dimitris Rizopoulos	Foundations and Recent Advances in Longitudinal and Incomplete Data (part 1 of two-day course)
8:30 a.m.–5:00 p.m.	CE_02C	Brian Wiens	Design and Analysis of Noninferiority Trials
8:30 a.m.–5:00 p.m.	CE_03C	Wei-Yin Loh	Classification and Regression Trees
8:30 a.m.–5:00 p.m.	CE_04C	David Draper	Bayesian Model Specification: Toward a Theory of Applied Statistics
8:30 a.m.–5:00 p.m.	CE_05C	Daniel Cooley	Introduction to Analysis of Extremes: Univariate and Multivariate Cases
8:30 a.m.–5:00 p.m.	CE_06C	Jae-Kwang Kim/Wayne Fuller	Advanced Topics in Survey Sampling

## Sunday, August 4

8:30 a.m.–5:00 p.m.	CE_01C	Geert Molenberghs/Geert Verbeke/ Dimitris Rizopoulos	Foundations and Recent Advances in Longitudinal and Incomplete Data (part 2 of two-day course)
8:30 a.m.–5:00 p.m.	CE_07C	Liang Zhang/Deepak Agarwal	Statistical Computing for Big Data
8:30 a.m.–5:00 p.m.	CE_08C	Fang Chen	Practical Bayesian Computation
8:30 a.m.–5:00 p.m.	CE_09C	Peter Thall/Brian Hobbs	Recent Advances in Bayesian Adaptive Clinical Trial Design
8:30 a.m.–5:00 p.m.	CE_10C	Stef van Buuren	Applied Multiple Imputation in R
8:30 a.m.–5:00 p.m.	CE_11C	Patrick Heagerty/Paramita Saha-Chaudhuri	Statistical Evaluation of Prognostic Biomarkers

## Monday, August 5

8:00 a.m.–noon	CE_12C	Lyle Ungarand/Adam Kapelner	Crowdsourcing for Statisticians
8:00 a.m.–noon	CE_13C	Rick Wicklin	Techniques for Simulating Data in SAS
8:30 a.m.–5:00 p.m.	CE_14C	Alex Dmitrienko/Devan Mehrotra/ Jeff Maca	Analysis of Clinical Trials: Theory and Applications
8:30 a.m.–5:00 p.m.	CE_15C	Richard De Veaux	Successful Data Mining in Practice
8:30 a.m.–5:00 p.m.	CE_16C	Jim Albertand/Maria Rizzo	Monte Carlo and Bayesian Computation with R
8:30 a.m.–5:00 p.m.	CE_17C	Richard Valliant/Frauke Kreuter/ Jill Dever	Practical Tools for Designing and Weighting Survey Samples
1:00 p.m.–5:00 p.m.	CE_18C	Christopher Schmid/Ingram Olkin	Meta-Analysis: Combining the Results of Multiple Studies
1:00 p.m.–5:00 p.m.	CE_19C	Murray Stokely	Practical Software Engineering for Statisticians

## Tuesday, August 6

8:00 a.m.–noon	CE_20C	Michael Kosorok/Eric Lafer	Personalized Medicine and Dynamic Treatment Regimes
8:30 a.m.–5:00 p.m.	CE_21C	Dylan Smal/Miguel Hernan	Causal Inference and Its Application in Health Sciences
8:30 a.m.–5:00 p.m.	CE_22C	Daniela Witten	Introduction to Statistical Learning
8:30 a.m.–5:00 p.m.	CE_23C	Philip Hougaard	Analysis of Interval-Censored Survival Data
8:30 a.m.–5:00 p.m.	CE_24C	Athanasios Kottas/Abel Rodriguez	Applied Bayesian Nonparametric Mixture Modeling
8:30 a.m.–5:00 p.m.	CE_25C	Hongtu Zhu/Haipeng Shen/ Linglong Kong	Statistical Methods for Neuroimaging Data Analysis
1:00 p.m.–5:00 p.m.	CE_26C	Danyu Lin	Statistical Methods in Genetic Association Studies

## Wednesday, August 7

8:00 a.m.–9:45 a.m.	CE_27T	Warren Kuhfeld	Creating Statistical Graphics in SAS®
8:00 a.m.–9:45 a.m.	CE_28T	Cyrus Mehta/Charles Liu	Efficient Trial Design with the New East® Architect
8:00 a.m.–9:45 a.m.	CE_29T	Mikhail Golovnya	Introduction to Data Mining with CART Classification and Regression Trees
10:00 a.m.–11:45 a.m.	CE_30T	Funda Gunes	Model Selection with SAS/STAT® Software
10:00 a.m.–11:45 a.m.	CE_31T	Jim Bolognese/Charles Liu	Compass 2.0: Software for the Design & Execution of Dose-Finding Trials
10:00 a.m.–11:45 a.m.	CE_32T	Mikhail Golovnya	Data Mining with TreeNet (Stochastic Gradient Boosting) and Random Forests: Including the Latest Refinements and Model Compression Techniques (ISLE Importance Sampled Learning Ensembles and RuleLearner)
1:00 p.m.–2:45 p.m.	CE_33T	Yiu-Fai Yung	Structural Equation Modeling Using the CALIS Procedure in SAS/STAT® Software
1:00 p.m.–2:45 p.m.	CE_34T	Nitin R. Patel/Pralay Senchaudhuri	Overview of New Features in StatXact® 10 and LogXact® 10
1:00 p.m.–2:45 p.m.	CE_35T	Mikhail Golovnya	Introduction to Modern Regression Analysis Techniques: Linear, Logistic, Nonlinear, Regularized, GPS (Generalized Path Seeker), LARS, LASSO, Elastic Net, and MARS (Multivariate Adaptive Regression Splines)
3:00 p.m.–4:45 p.m.	CE_36T	Pushapal K. Mukhopadhyay	SAS® Procedures for Analyzing Survey Data
3:00 p.m.–4:45 p.m.	CE_37T	Michael Crotty/Clayton Barker	Using the Bootstrap Feature in JMP
3:00 p.m.–4:45 p.m.	CE_38T	Dan Steinberg	Applied Data Mining Analysis: A Step-by-Step Introduction Using Real-World Data Sets



# Technical Sessions at a Glance

## SUNDAY, AUGUST 4

### Key

**15**  
Session Number

**CC**  
Palais des congrès  
de Montréal

**23**  
**(a/b/c/d/e)**  
Room Number

**W**  
Le Westin Montréal

**I**  
Hotel  
InterContinental  
Montréal

**Grand Salon**  
Room Number

SPONSOR	2:00 P.M.	4:00 P.M.	8:30 P.M.
ASA	1 CC-710a	47 CC-710a / 59 CC-516b	
B&E	9 CC-511f / 24 CC-511e	83 CC-514b	
BIOM	5 CC-710b / 22 CC-512ab 30 CC-512c / 46 CC-512d	63 CC-512f / 64 CC-512g 76 CC-512h / 77 CC-513b	92 CC-517cd
BIOP	16 CC-511b / 17 CC-511a 31 CC-512g / 32 CC-512h	53 CC-511c / 67 CC-512e 69 CC-512ab / 80 CC-513a	
CNSL	19 CC-511d		92 CC-517cd
COMPUTING	18 CC-520a / 33 CC-520d	51 CC-519b / 82 CC-522bc	
EDUC	43 CC-515a	75 CC-524a	
ENAR	1 CC-710a / 2 CC-511c	47 CC-710a / 71 CC-516a	
ENVR	6 CC-520e	72 CC-512c / 81 CC-511d	92 CC-517cd
EPI	8 CC-514b / 25 CC-512f 34 CC-512e / 35 CC-514a	50 CC-511b / 84 CC-514a	92 CC-517cd
ETHICS		55 CC-516c	
GM	13 CC-516c		
GOVT	39 CC-516a	74 CC-520a / 89 CC-520b	92 CC-517cd
HPSS	40 CC-513a	62 CC-519a	
ICSA	1 CC-710a	47 CC-710a / 85 CC-516e	
IISA	1 CC-710a	47 CC-710a / 86 CC-515c	
IMS	1 CC-710a / 3 CC-520b 4 CC-520c / 36 CC-525a	47 CC-710a / 48 CC-511e 52 CC-510d / 57 CC-710b	92 CC-517cd
ISI	12 CC-510d		
MHR	20 CC-516d		
NIH/NCI		58 CC-510a	
NPAR	15 CC-522bc / 41 CC-525b	90 CC-512d	92 CC-517cd
RISK		79 CC-514c	
SBS	21 CC-521ab / 38 CC-520f	49 CC-510c / 61 CC-510b / 88 CC-511f	92 CC-517cd
SDM	28 CC-519b / 44 CC-519a / 45 CC-518	60 CC-524b / 73 CC-525a / 91 CC-525b	92 CC-517cd
SOC	7 CC-516b / 42 CC-514c	70 CC-520c	92 CC-517cd
SPEs	14 CC-524a	78 CC-515a	
SRMS	23 CC-516e / 37 CC-515c	54 CC-520f / 66 CC-520e / 87 CC-520d	
SSC	1 CC-710a	47 CC-710a / 65 CC-516d	
SSPA	27 CC-524b		92 CC-517cd
STAT BORD	29 CC-510a		
STATIMAGE	26 CC-513b		
TSHS		68 CC-521ab	
WNAR	1 CC-710a	47 CC-710a / 56 CC-511a	
WOMEN	10 CC-510b		

# Technical Sessions at a Glance

## MONDAY, AUGUST 5

SPONSOR	8:30 A.M.	10:30 A.M.	2:00 P.M.	4:00 P.M.	8:00 P.M.
ASA	99 CC-710a / 111 CC-516d		222 CC-516b	267 CC-517ab	
B&E	119 CC-524b 132 CC-518	167 CC-524b 181 CC-525a	216 CC-511b 234 CC-512d		
BIOM	103 CC-511c / 122 CC-511b 127 CC-512e / 128 CC-512f 145 CC-516c	165 CC-512e / 173 CC-511a 175 CC-512f / 176 CC-512g 193 CC-220bc 194 CC-220bc	226 CC-511f / 235 CC-710a 239 CC-513a / 240 CC-513b		
BIOP	117 CC-516a / 133 CC-513a 130 CC-513b	163 CC-511b / 170 CC-514a 177 CC-514b / 178 CC-512ab 179 CC-514c	208 CC-516d / 228 CC-516c 229 CC-516a / 242 CC-512ab 244 CC-515c		
CNSL	124 CC-524a	159 CC-524a	259 CC-220bc		
COMPUTING	99 CC-710a / 109 CC-520f 134 CC-520e	172 CC-520b / 180 CC-520a	223 CC-510d / 245 CC-511e		
EDUC	135 CC-521ab	168 CC-519a / 189 CC-518	210 CC-510c / 260 CC-220bc		
ENAR	99 CC-710a / 104 CC-511a	147 CC-511c / 183 CC-513a	221 CC-516e / 237 CC-515b	267 CC-517ab	
ENVR	101 CC-520d	164 CC-510d / 182 CC-511e 195 CC-220bc	233 CC-520a / 241 CC-520b		
EPI	115 CC-512g / 137 CC-512h 145 CC-516c	149 CC-511f / 193 CC-220bc	214 CC-511c / 246 CC-512e 255 CC-512f		
GOVT	142 CC-511d	171 CC-515a	213 CC-524a		
GRPH			217 CC-510b / 238 CC-220bc 261 CC-220bc		
HPSS	114 CC-510b	150 CC-516b	236 CC-525a / 251 CC-525b		
ICSA	99 CC-710a	154 CC-511d		267 CC-517ab	
IISA	99 CC-710a		211 CC-515a	267 CC-517ab	
IMS	99 CC-710a / 106 CC-514a 110 CC-710b / 106 CC-514a 136 CC-514b	151 CC-710b / 155 CC-510c 184 CC-512h		218 CC-520f 220 CC-710b	267 CC-517ab
JASA		157 CC-710a			
MEM	112 CC-516b				
MHR	113 CC-510d		224 CC-520c / 256 CC-220bc		
MKTG	129 CC-525b	192 CC-525b	219 CC-512h / 262 CC-220bc		
NPAR	108 CC-519b / 143 CC-514c	161 CC-512c / 188 CC-512d		227 CC-514a 252 CC-514b	
Q&P		169 CC-522bc	212 CC-511a		
RISK		160 CC-521ab	258 CC-220bc		
SBS	118 CC-520a / 140 CC-520b	146 CC-510a / 187 CC-510b		230 CC-520d 248 CC-520e	
SDM	120 CC-522bc / 144 CC-515a	166 CC-520c / 190 CC-520d 191 CC-520e	209 CC-510a / 225 CC-511d 254 CC-512g		
SIS	107 CC-519a		263 CC-220bc		
SOC	125 CC-510a / 141 CC-510c	152 CC-516a		250 CC-524b	
SPES	131 CC-525a	153 CC-519b	243 CC-512c		
SRMS	105 CC-511f / 121 CC-511e 138 CC-512c / 139 CC-512d	162 CC-515c / 186 CC-516d	231 CC-519a / 232 CC-519b 247 CC-521ab / 249 CC-518		
SSC	99 CC-710a	148 CC-516c	253 CC-514c	265 CC-220bc	267 CC-517ab
SSPA	100 CC-520c		257 CC-220bc		
STAT BORD	126 CC-516e		266 CC-220bc		
STATIMAGE	116 CC-512ab		215 CC-522bc		
TSHS		174 CC-515b / 158 CC-516e	264 CC-220bc		
WNAR	99 CC-710a	156 CC-513b		267 CC-517ab	

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# Technical Sessions at a Glance

## TUESDAY, AUGUST 6

### Key

**15**  
Session Number

**CC**  
Palais des congrès  
de Montréal

**23**  
(a/b/c/d/e)  
Room Number

**W**  
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SPONSOR	8:30 A.M.	10:30 A.M.	2:00 P.M.	4:00 P.M.	8:00 P.M.
ASA	275 CC-710a / 287 CC-520e	322 CC-710a	392 CC-710a	445 CC-517ab	447 CC-517ab
B&E	285 CC-519b 310 CC-522bc	347 CC-524a / 356 CC-524b	412 CC-511b / 429 CC-511a 441 CC-220bc		
BIOM	299 CC-513a / 304 CC-514c 303 CC-514b / 321 CC-516c	349 CC-512c / 350 CC-512d 368 CC-516c / 369 CC-220bc	422 CC-514c / 405 CC-516b 406 CC-515a / 410 CC-516d 423 CC-515c / 440 CC-220bc		
BIOP	302 CC-511a / 307 CC-511b 308 CC-512ab / 321 CC-516c	326 CC-513b / 339 CC-510d 353 CC-512e / 355 CC-510b 369 CC-220bc	407 CC-516a / 411 CC-513b 427 CC-514a / 428 CC-514b		
CAS	283 CC-524a				
CAUWOM		333 CC-516b			
CNSL	284 CC-519a	357 CC-519a	402 CC-510d		
COMPUTING	292 CC-520f / 309 CC-518	328 CC-516d 376 CC-220bc	392 CC-710a / 417 CC-518 430 CC-521ab		
DEF		331 CC-516e			
DEM				445 CC-517ab	
EDUC	277 CC-520d	342 CC-511c / 358 CC-512ab	414 CC-524b		
ENAR	275 CC-710a / 296 CC-511e	322 CC-710a / 323 CC-510c 370 CC-220bc	392 CC-710a / 393 CC-512ab	445 CC-517ab	447 CC-517ab
ENVR	306 CC-510d / 293 CC-510c	351 CC-520f	396 CC-520d		
EPI	290 CC-513b / 311 CC-512f 320 CC-515a	322 CC-710a / 338 CC-512f 359 CC-512g / 360 CC-512h	392 CC-710a / 394 CC-511c 416 CC-512c		
GOVT	316 CC-511c	334 CC-515b	437 CC-512f / 442 CC-220bc		
GRPH			392 CC-710a / 401 CC-510a		
HPSS	281 CC-516b	335 CC-511d	438 CC-512g / 443 CC-220bc		
ICSA	275 CC-710a	322 CC-710a / 343 CC-515c	392 CC-710a / 432 CC-511d	445 CC-517ab	447 CC-517ab
IISA	275 CC-710a	322 CC-710a	392 CC-710a / 409 CC-510b	445 CC-517ab	447 CC-517ab
IMS	275 CC-710a / 280 CC-510a 286 CC-710b	322 CC-710a / 324 CC-519b 325 CC-520b / 332 CC-710b 361 CC-522bc / 371 CC-220bc	392 CC-710a / 400 CC-520c 403 CC-710b / 431 CC-525a	445 CC-517ab 446 CC-710b	447 CC-517ab
JBES	276 CC-524b				
MEM	287 CC-520e				
MHR	294 CC-514a	340 CC-514c			
MKTG	312 CC-521ab	336 CC-525b			
NPAR	295 CC-512g / 305 CC-512h	352 CC-521ab	398 CC-520b / 424 CC-520a		
PUB			421 CC-220bc		
Q&P		354 CC-525a / 373 CC-220bc	426 CC-512h		
RISK		330 CC-511a			
SBS	278 CC-512c / 297 CC-512d 314 CC-510b	345 CC-520d / 364 CC-520e 374 CC-220bc	433 CC-520f / 408 CC-520e		
SDM	318 CC-525a / 319 CC-525b 291 CC-520a	366 CC-514a / 367 CC-514b 368 CC-516c / 377 CC-220bc	399 CC-519b / 413 CC-519a 439 CC-522bc / 440 CC-220bc		
SIS		327 CC-520c			
SOC	282 CC-511f / 298 CC-512e		436 CC-511e		
SPEs	289 CC-520c	329 CC-518 / 375 CC-220bc	425 CC-512d		
SRMS	300 CC-516d / 301 CC-516a 315 CC-516e	341 CC-513a / 363 CC-511f 365 CC-511e	397 CC-516c / 418 CC-512e 434 CC-511f / 444 CC-220bc		
SSC	275 CC-710a / 317 CC-515c	322 CC-710a	392 CC-710a / 395 CC-510c	445 CC-517ab	47 CC-517ab
SSPA	313 CC-520b	344 CC-516a			
STATIMAGE		362 CC-515a	415 CC-513a		
TECH			404 CC-524a		
TSHS		348 CC-510a	435 CC-525b		
WNAR	275 CC-710a / 279 CC-511d	322 CC-710a	392 CC-710a / 420 CC-516e	445 CC-517ab	447 CC-517ab

# Technical Sessions at a Glance

## WEDNESDAY, AUGUST 7

SPONSOR	8:30 A.M.	10:30 A.M.	2:00 P.M.	4:00 P.M.
ASA	454 CC-710a		566 CC-710a / 567 CC-710b	612 CC-517ab
B&E	489 CC-524b	503 CC-513b / 523 CC-513a	588 CC-516a / 601 CC-516e	
BIOM	457 CC-513b / 476 CC-511e 482 CC-512e / 483 CC-512f 499 CC-516c	521 CC-511e / 527 CC-511f 530 CC-512d / 531 CC-512h 546 CC-220bc / 547 CC-220bc	593 CC-511b / 595 CC-512e 596 CC-512f	
BIOP	468 CC-510b / 487 CC-512c 486 CC-510c	500 CC-512c / 518 CC-510a 519 CC-510b / 534 CC-510d 536 CC-512g	582 CC-511f / 598 CC-512g 599 CC-511e	
CAS			580 CC-522bc	
CNSL		514 CC-516c	581 CC-516d	
COPSS				612 CC-517ab
CSD		517 CC-521ab		
COMPUTING	471 CC-516a / 490 CC-515a	508 CC-710a	569 CC-519b	
DEF		545 CC-516a / 549 CC-220bc		
EDUC	480 CC-516e	513 CC-516e	587 CC-515c / 610 CC-515b	
ENAR	454 CC-710a / 456 CC-512ab	502 CC-510c	566 CC-710a / 567 CC-710b 589 CC-511a / 603 CC-513a	612 CC-517ab
ENVR	461 CC-519b	525 CC-520d / 535 CC-520e	592 CC-512h / 602 CC-510d	
EPI	454 CC-710a / 470 CC-510d 491 CC-512d / 492 CC-512h 499 CC-516c	526 CC-511c / 537 CC-512f 546 CC-220bc / 550 CC-220bc 566 CC-710a / 571 CC-511c 594 CC-516b		
GM		501 CC-511b		
GOVT	464 CC-511a	542 CC-524b	586 CC-520f	
GRPH	463 CC-516d	543 CC-515c		
HPSS	458 CC-513a	515 CC-524a		
ICSA	454 CC-710a / 462 CC-511f	566 CC-710a / 567 CC-710b	612 CC-517ab	
IISA	454 CC-710a	505 CC-516d	566 CC-710a / 567 CC-710b	612 CC-517ab
IMS	454 CC-710a / 460 CC-520e 467 CC-710b / 494 CC-525b	506 CC-520c / 511 CC-710b 538 CC-525b	575 CC-510c / 578 HQ-Grand Salon / 566 CC-710a 567 CC-710b 568 CC-512d	612 CC-517ab
JASAAPP			570 CC-524b	
MHR	469 CC-514a		605 CC-515a	
MKTG	479 CC-524a		576 CC-516c	
NOETHER		512 CC-511a		
NPAR	474 CC-522bc / 477 CC-520f 484 CC-525a	510 CC-522bc / 532 CC-525a 548 CC-220bc	597 CC-512c	
Q&P		528 CC-516b	600 CC-520a	
RISK	488 CC-521ab			
SBS	455 CC-520a / 473 CC-520b 495 CC-520c	522 CC-520b / 541 CC-520a	591 CC-510a / 608 CC-510b	
SDM	498 CC-515c	507 CC-515a / 544 CC-514c	585 CC-521ab / 611 CC-525a	
SIS		539 CC-512e		
SOC	475 CC-514b	524 CC-518 / 552 CC-220bc	572 CC-520d / 609 CC-520e	
SPES	472 CC-519a / 485 CC-518	533 CC-514a	577 CC-520b	
SRMS	478 CC-511c / 496 CC-511b 499 CC-516c	504 CC-519a / 520 CC-512ab 540 CC-519b / 546 CC-220bc	584 CC-512ab / 590 CC-514b 606 CC-513b / 607 CC-514c	
SSC	454 CC-710a / 459 CC-516b		566 CC-710a / 567 CC-710b	612 CC-517ab
SSPA			573 CC-519a	
STAT BORD			579 CC-524a	
STAT BUS		529 CC-515b		
STATIMAGE	493 CC-514c	551 CC-220bc	583 CC-520c	
TSHS	481 CC-515b	516 CC-514b		
WNAR	454 CC-710a / 497 CC-512g		566 CC-710a / 567 CC-710b 574 CC-514a	612 CC-517ab

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# Technical Sessions at a Glance

## THURSDAY, AUGUST 8

### Key

**15**  
Session Number

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Palais des congrès  
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SPONSOR	8:30 A.M.	10:30 A.M.
ASA	623 CC-710a	
B&E	616 CC-520d	675 CC-520c / 689 CC-525b
BIOM	626 CC-511c / 639 CC-512e / 642 CC-512f / 643 CC-513b	684 CC-512e / 683 CC-513a / 674 CC-516a / 669 CC-513b 663 CC-512ab / 660 CC-511f
BIOP	624 CC-516b / 631 CC-511d / 634 CC-511e / 646 CC-513a 647 CC-514a	673 CC-514c / 686 CC-511c / 687 CC-514b / 688 CC-514a
CAS		667 CC-516b
CNSL		677 CC-520b
COMPUTING	621 CC-516d	690 CC-520f
EDUC	625 CC-516e	699 CC-520a
ENAR	649 CC-511b / 614 CC-511a	658 CC-516d
ENVR	645 CC-512ab	666 CC-519b
EPI	620 CC-511f / 648 CC-514b / 650 CC-514c	659 CC-516c / 680 CC-515b / 692 CC-515c
GOVT	641 CC-515b	697 CC-510d
HPSS	654 CC-521ab	679 CC-512g
ICSA		668 CC-511e
IISA	637 CC-520e	
IMS	617 CC-510a / 622 CC-710b / 651 CC-512h	657 CC-710a / 661 CC-710b / 691 CC-525a
JCGS	615 CC-519a	
MHR	629 CC-520f	
NPAR	613 CC-510c / 640 CC-512c / 644 CC-512d	681 CC-522bc / 685 CC-521ab
PUB	618 CC-519b	
Q&P	627 CC-518	
SAMSI	619 CC-516c	
SBS	630 CC-512g / 652 CC-510b / 653 CC-510d	676 CC-518 / 694 CC-519a
SDM	628 CC-516a / 655 CC-515c	656 CC-520d / 678 CC-520e
SOC	633 CC-520b	672 CC-512c / 696 CC-510c
SPES		670 CC-512f
SRMS	623 CC-710a / 632 CC-520c / 636 CC-522bc / 638 CC-525a	662 CC-510a / 671 CC-510b / 695 CC-511d
SSC		698 CC-512h
SSPA	635 CC-515a	
STATIMAGE		693 CC-512d
TSHS		682 CC-516e





## DESCRIPTIONS

### Session Tag Descriptions

*We expect both theme and applied sessions to draw a diverse audience.*

#### THEME ●

JSM theme sessions are directly relevant to the 2013 JSM theme, "Celebrating the International Year of Statistics." Theme sessions are designed to expand the frontiers of statistical thought, emphasize new directions, and promote interdisciplinary collaboration.

#### APPLIED ■

JSM applied sessions have applications at the heart of the presentations. Because these sessions are grounded in applications across many areas of science and engineering, they may involve interdisciplinary work and include presentations by nonstatisticians. Applied sessions vary in scope, ranging from presentations on state-of-the-art statistical methodology applied to real-world problems to those that are tutorial in nature.

### Late-Breaking Session

Sunday, August 4, 2:00 p.m. – 3:50 p.m.  
CC-710a  
Session 1 – A Tribute to George Box

## SATURDAY, AUGUST 3

### Committee/Business Meetings & Other Activities

- |  |                         |
|--|-------------------------|
| 7:00 a.m.–3:00 p.m.  | W-Ramezay               |
| <b>ASA Board of Directors Meeting (Closed)</b>   |                         |
| Chair(s): Marie Davidian, North Carolina State University                                    |                         |
| 7:30 a.m.–6:00 p.m.  | CC-200 Viger Hall       |
| <b>ASA Membership/Help Desk/Press Desk</b>   |                         |
| 7:30 a.m.–6:00 p.m.  | CC-200 Viger Hall       |
| <b>JSM Main Registration</b>   |                         |
| 7:30 a.m.–6:00 p.m.  | CC-200 Viger Hall       |
| <b>Cyber Center, Sponsored by IBM</b>  |                         |
| 7:30 a.m.–10:00 a.m.   | W- Fortifications Foyer |
| <b>JSM Registration (satellite location)</b>   |                         |
| 8:00 a.m.–5:00 p.m.  | CC-220bc                |
| <b>Exhibitor Move In and Lounge</b>  |                         |
| 9:00 a.m.–5:00 p.m.  | CC-220d                 |
| <b>Career Placement Service<br/>(job posting and resume submission only)</b>                 |                         |
| 11:30 a.m.–12:30 p.m.  | I-Saint-Pierre          |
| <b>Association of Clinical Translational Statisticians (Lunch)</b>                           |                         |
| Organizer(s): Brad Pollock, The University of Texas at San Antonio                           |                         |
| 12:30 p.m.–5:30 p.m.   | I-Saint-Jacques         |
| <b>Association of Clinical Translational Statisticians<br/>(Saturday Scientific Meeting)</b> |                         |
| Organizer(s): Brad Pollock, The University of Texas at San Antonio                           |                         |
| 3:00 p.m.–4:30 p.m.  | CC-524c                 |
| <b>Career Planning Panel</b>   |                         |
| Chair(s): Robert Starbuck, Career Success Factors Workgroup                                  |                         |

## FRIDAY, AUGUST 2

### Committee/Business Meetings & Other Activities

- |   |           |
|---|-----------|
| 7:00 a.m.–3:00 p.m.                                       | W-Ramezay |
| <b>ASA Board of Directors Meeting (Closed)</b>            |           |
| Chair(s): Marie Davidian, North Carolina State University |           |

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

## SATURDAY, AUGUST 3

### Continuing Education (Fee Events)

CE\_01C

#### Foundations and Recent Advances in Longitudinal and Incomplete Data and in Joint Modeling

8:30 a.m.–5:00 p.m.

W-Fortifications

ASA

Instructor(s): Geert Molenberghs, Universiteit Hasselt & Katholieke Universiteit Leuven; Geert Verbeke, I-BioStat, Hasselt University; Dimitris Rizopoulos, Erasmus MC

CE\_02C

#### Design and Analysis of Noninferiority Trials

8:30 a.m.–5:00 p.m.

W-Ville-Marie

ASA, Biopharmaceutical Section

Instructor(s): Brian Wiens, Alcon Laboratories

CE\_03C

#### Classification and Regression Trees

8:30 a.m.–5:00 p.m.

W-Palais

ASA

Instructor(s): Wei-Yin Loh, University of Wisconsin

CE\_04C

#### Bayesian Model Specification: Toward a Theory of Applied Statistics

8:30 a.m.–5:00 p.m.

W-St. Antoine

ASA, Section on Bayesian Statistical Science

Instructor(s): David Draper, University of California at Santa Cruz

CE\_05C

#### Introduction to Analysis of Extremes: Univariate and Multivariate Cases

8:30 a.m.–5:00 p.m.

W-Saint-Helene

ASA, Section on Statistics and the Environment

Instructor(s): Dan Cooley, Colorado State University

CE\_06C

#### Advanced Topics in Survey Sampling

8:30 a.m.–5:00 p.m.

W-McGill

ASA, Korean International Statistical Society

Instructor(s): Jae-Kwang Kim, Iowa State University; Wayne Fuller, Iowa State University

## SUNDAY, AUGUST 4

### Committee/Business Meetings & Other Activities

7:00 a.m.–8:30 a.m.

W-Youville

#### Committee on Women in Statistics Business Meeting

Chair(s): Dalene K. Stangl, Duke University

7:30 a.m.–10:00 a.m.

I-Maisonneuve

#### Joint Committee on Publications/Editors Meeting

Chair(s): Leonard A. Stefanski, North Carolina State University

7:30 a.m.–1:00 p.m.

W- Fortifications Foyer

#### JSM Registration (satellite location)

7:30 a.m.–8:30 p.m.

CC-200 Viger Hall

#### ASA Membership/Help Desk/Press Desk

7:30 a.m.–8:30 p.m.

CC-200 Viger Hall

#### JSM Main Registration

7:30 a.m.–10:30 p.m.

CC-200 Viger Hall

#### Cyber Center, Sponsored by IBM

8:00 a.m.–11:00 a.m.

CC-220bc

#### Exhibitor Move In

8:00 a.m.–11:00 a.m.

W-Papineau

#### Council of Sections Governing Board Meeting (Closed)

Chair(s): Katherine Halvorsen, Smith College

8:30 a.m.–1:30 p.m.

I-Saint-Gabriel

#### Seventh Annual Workshop for Chairs of Programs in Statistics and Biostatistics (Closed)

Chair(s): Kathy Ensor, Rice University

9:00 a.m.–10:30 a.m.

W-Youville

#### Caucus for Women in Statistics Executive Committee Meeting

Organizer(s): Susmita Datta, University of Louisville

9:00 a.m.–11:30 a.m. <b>COPSS Junior Researcher Panel</b> Organizer(s): Jane Pendergast, University of Iowa	CC-517d	12:30 p.m.–2:00 p.m. <b>JSM First-Time Attendee Orientation and Reception</b>	CC-517d
9:00 a.m.–12:00 p.m. <b>Association of Clinical Translational Statisticians (Sunday Scientific Session)</b> Organizer(s): Brad Pollock, The University of Texas at San Antonio	I-Saint-Jacques	1:00 p.m.–5:00 p.m. <b>IMS Executive Committee Meeting</b> Organizer(s): Elyse Gustafson, IMS Executive Director	I-Saint-Helene
9:00 a.m.–5:00 p.m. <b>NISS/ASA Writing Workshop for Junior Researchers (Closed)</b> Chair(s): Keith Crank	I-Le Cave	1:00 p.m.–6:00 p.m. <b>Career Placement Service (full placement service open)</b>	CC-220d
9:00 a.m.–7:00 p.m. <b>Speaker Management Room</b>	CC-513c	1:00 p.m.–6:00 p.m. <b>ASA Marketplace</b>	CC-220bc
10:00 a.m.–11:00 a.m. <b>Rutgers University Bringing Statistics to the Black Community</b> Organizer(s): Immanuel Williams, Graduate Student	I-Saint-Laurent	1:00 p.m.–6:00 p.m. <b>EXPO 2013</b>	CC-220bc
10:30 a.m.–12:30 p.m. <b>JSM Presentation Skills Workshop (Open to JSM Speakers)</b> Chair(s): Brian Wiens, Alcon Laboratories	CC-515b	1:00 p.m.–6:00 p.m. <b>American Statistical Association Booth #201</b>	
11:00 a.m.–12:30 p.m. <b>Accreditation Committee Meeting</b> Chair(s): Theresa Utlaut, Intel Corporation	I-Saint-Paul	2:00 p.m.–4:00 p.m. <b>Council of Sections Business Meeting</b> Chair(s): Katherine Halvorsen, Smith College	I-Saint-Laurent
11:30 a.m.–1:00 p.m. <b>Statistica Sinica Editorial Board Meeting</b> Organizer(s): Jeng-Min Chiou, Academia Sinica	I-Saint-Alexandre	4:00 p.m.–5:30 p.m. <b>Awards Council Meeting (Closed)</b> Chair(s): Robert Rodriguez, SAS Institute	CC-522a
11:30 a.m.–1:00 p.m. <b>Journal of Statistics Education Editorial Board Meeting</b> Chair(s): Michelle G. Everson, University of Minnesota	I-Maisonneuve	4:00 p.m.–5:30 p.m. <b>Education Council Meeting (Closed)</b> Chair(s): Mary Mulry, Federal Employee	CC-448
11:30 a.m.–2:30 p.m. <b>Membership Retention and Recruitment Business Meeting</b> Chair(s): Laine Thomas, ASA Committee Chair	I-Saint-Jean-Baptiste	4:00 p.m.–5:30 p.m. <b>Membership Council Meeting (Closed)</b> Chair(s): James Rosenberger, Penn State University	CC-449
12:00 p.m.–1:00 p.m. <b>Association of Clinical Translational Statisticians (Sunday Lunch)</b> Organizer(s): Brad Pollock, The University of Texas at San Antonio	I-Saint-Pierre	4:00 p.m.–5:30 p.m. <b>Professional Issues and Visibility Council Meeting</b> Chair(s): David Morganstein, Westat	CC-521c
12:00 p.m.–2:00 p.m. <b>Leadership Support Council Business Meeting</b> Chair(s): Nat Schenker, President-Elect, American Statistical Association	W-Papineau	4:00 p.m.–6:00 p.m. <b>Section for Statistical Programmers and Analysts Executive Meeting</b> Chair(s): Jyoti Rayamajhi, Eli Lilly and Company	W-Youville
12:30 p.m.–1:45 p.m. <b>Revised Guidelines for Undergraduate Statistics Programs (Closed)</b> Chair(s): Nicholas J. Horton, Smith College	CC-522a	4:30 p.m.–6:00 p.m. <b>Committee on Scientific Freedom and Human Rights Business Meeting</b> Chair(s): Joseph B. Kadane, Carnegie Mellon University	I-Les Huitres
12:30 p.m.–2:00 p.m. <b>Electronic Journal of Statistics Editorial Board Meeting</b> Organizer(s): Elyse Gustafson, IMS Executive Director	I-Saint-Francois Xavier	4:30 p.m.–8:30 p.m. <b>ENAR Executive Committee Meeting</b> Organizer(s): Dan Heitjan, ENAR; DuBois Bowman, ENAR	W-Bonsecours
		5:00 p.m.–6:30 p.m. <b>Korean International Statistical Society Board Meeting</b> Organizer(s): Dongseok Choi, Oregon Health & Science University	I-Saint-Jean-Baptiste

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

5:00 p.m.–6:30 p.m. I-Saint-Louis

## Help Us Help You

Chair(s): Karla Ballman, Mayo Clinic

5:30 p.m.–8:00 p.m. I-Saint-Jacques

## NISS/SAMSI Affiliates Meeting

Organizer(s): Alan F. Karr, National Institute of Statistical Sciences

6:00 p.m.–7:30 p.m. W-Papineau

## Quality and Productivity Executive Committee Planning Meeting

Chair(s): Theresa Utlaut, Intel Corporation

6:00 p.m.–7:30 p.m. I-Saint-Pierre

## University of Minnesota Alumni and Friends Reception

Organizer(s): Sally Olander, University of Minnesota

6:00 p.m.–7:30 p.m. I-Saint-Francois Xavier

## Cancer Center Biostatistics Directors Annual Meeting

Organizer(s): Terry Hyslop, Thomas Jefferson University

6:00 p.m.–7:30 p.m. I-Saint-Alexandre

## Project Euclid Publishers and Friends Appreciation Reception

Organizer(s): Mira Waller, Project Euclid

6:00 p.m.–8:00 p.m. I-Saint-Gabriel

## Purdue University Alumni and Friends Reception

Organizer(s): Julie Paolillo, Director of Development for Purdue Statistics

6:00 p.m.–8:30 p.m. I-Le Cave

## ICSA Board Meeting

Organizer(s): Shuyen Ho, GlaxoSmithKline

6:30 p.m.–8:30 p.m. W-Fortifications

## JMP Reception for Friends and Users

Organizer(s): Katie Taylor, SAS Institute, JMP Division

6:30 p.m.–8:30 p.m. I-Maisonneuve

## Google Annual Faculty Reception

Organizer(s): Nilma Rubin, Google

7:30 p.m.–8:30 p.m. CC-518

## ASA Awards Celebration and Editor Appreciation

Chair(s): Robert Rodriguez, SAS Institute

8:30 p.m.–10:30 p.m. CC-517cd

## JSM Opening Mixer

## Continuing Education (Fee Events)

CE\_01C

### Foundations and Recent Advances in Longitudinal and Incomplete Data and in Joint Modeling

8:30 a.m.–5:00 p.m.

W-Fortifications

ASA

Instructor(s): Geert Molenberghs, Universiteit Hasselt & Katholieke Universiteit Leuven; Geert Verbeke, I-BioStat, Hasselt University; Dimitris Rizopoulos, Erasmus MC

CE\_07C

### Statistical Computing for Big Data

8:30 a.m.–5:00 p.m.

W-Ville-Marie

ASA, Section on Statistical Learning and Data Mining

Instructor(s): Liang Zhang, LinkedIn; Deepak Agarwal, LinkedIn

CE\_08C

### Practical Bayesian Computation

8:30 a.m.–5:00 p.m.

W-Palais

ASA, Section for Statistical Programmers and Analysts

Instructor(s): Fang Chen, SAS Institute

CE\_09C

### Recent Advances in Bayesian Adaptive Clinical Trial Design

8:30 a.m.–5:00 p.m.

W-St. Antoine

ASA, Section on Bayesian Statistical Science

Instructor(s): Peter Thall, The University of Texas MD Anderson Cancer Center; Brian Hobbs, The University of Texas MD Anderson Cancer Center

CE\_10C

### Applied Multiple Imputation in R

8:30 a.m.–5:00 p.m.

W-Beaver Hall

ASA

Instructor(s): Stef van Buuren, Netherlands Organization for Applied Scientific Research

CE\_11C

### Statistical Evaluation of Prognostic Biomarkers

8:30 a.m.–5:00 p.m.

W-Ramezay

Biometrics Section, ASA

Instructor(s): Patrick Heagerty, University of Washington; Paramita Saha-Chaudhuri, Duke University

## Special Presentation 2:00 p.m.–3:50 p.m.

1 CC-710a

### Late-Breaking Session: A Tribute to George Box—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): Bovas Abraham, University of Waterloo; David Steinberg, Tel Aviv University

Chair(s): Bovas Abraham, University of Waterloo

- 2:10 p.m. **George Box at Raleigh and at Princeton—**  
◆ J. Stuart Hunter, Princeton University
- 2:25 p.m. **George Box and Bayesian Statistics—**  
◆ George C. Tiao, The University of Chicago
- 2:40 p.m. **George Box and Design of Experiments: Statistics and Discovery—**  
◆ David Steinberg, Tel Aviv University
- 2:55 p.m. **George Box's Contributions to Time Series Analysis and Forecasting—**  
◆ Greta M. Ljung, AIR Worldwide
- 3:10 p.m. **George Box, Quality, and Improving Almost Anything—**  
◆ Conrad A. Fung, Independent Consultant
- 3:25 p.m. **Floor Discussion**

## Invited Sessions 2:00 p.m.–3:50 p.m.

2 CC-511c

### Biometrics Showcase Session—Invited

ENAR, Scientific and Public Affairs Advisory Committee

Organizer(s): Marie Davidian, North Carolina State University

Chair(s): Marie Davidian, North Carolina State University

- 2:05 p.m. **Bayesian Effect Estimation Accounting for Adjustment Uncertainty—**  
◆ Giovanni Parmigiani, Dana-Farber Cancer Institute; Francesca Dominici, Harvard School of Public Health; Chi Wang, University of Kentucky
- 2:35 p.m. **Analyses That Inform Policy Decisions Are, De Facto, Causal—**  
◆ Roee Gutman, Brown University; Donald B. Rubin, Harvard University

- 3:05 p.m. **Detecting Disease Outbreaks Using Local Spatiotemporal Methods—**  
◆ Yingqi Zhao, University of Wisconsin-Madison; Donglin Zeng, The University of North Carolina; Amy Herring, The University of North Carolina at Chapel Hill; Anna Waller, The University of North Carolina at Chapel Hill; David Richardson, The University of North Carolina; Michael R. Kosorok, The University of North Carolina at Chapel Hill

3:35 p.m. **Floor Discussion**

3 CC-520b

### Stochastic Aspects of Topology—Invited

IMS, International Indian Statistical Association

Organizer(s): Sayan Mukherjee, Duke University

Chair(s): Sayan Mukherjee, Duke University

- 2:05 p.m. **Persistence Test and Maltose-Binding Protein Complex—**  
◆ Giseon Heo, University of Alberta; Violeta Kovacev-Nikolic, University of Alberta; Peter Bubenik, Cleveland State University; Dragan Nikolic, University of Alberta
- 2:35 p.m. **On the Persistent Homology of Time-Delay Embeddings—**  
◆ Jose Andres Perea, Duke University; John Harer, Duke University
- 3:05 p.m. **The Topology of Noise—**  
◆ Omer Bobrowski, Duke University
- 3:35 p.m. **Floor Discussion**

4 CC-520c

### New Methodologies in Statistical Inverse Problems and Their Applications to Biomedical Sciences—Invited

IMS, Biometrics Section

Organizer(s): Marianna Pensky, University of Central Florida

Chair(s): Jiayang Sun, Case Western Reserve University

- 2:05 p.m. **Multiscale Methods for Shape Constraints in Deconvolution: Confidence Statements for Qualitative Features—**  
◆ Axel E. Munk, University of Goettingen; Johannes Anselm Schmidt-Hieber, ENSAE, Paris; Lutz Dümbgen, Institute of Mathematical Statistics and Actuarial Science, University of Bern
- 2:30 p.m. **Spatially Inhomogeneous Linear Inverse Problems with Possible Singularities—**  
◆ Marianna Pensky, University of Central Florida
- 2:55 p.m. **Inverse Problems with Missing Data—**  
◆ Sam Efromovich, The University of Texas at Dallas



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

3:20 p.m. **Bayesian Semiparametric Density Deconvolution in the Presence of Conditionally Heteroscedastic Measurement Errors**—Raymond J. Carroll, Texas A&M University; Abhra Sarkar, Texas A&M University; Bani Mallick, Texas A&M University; ◆John Staudenmayer, University of Massachusetts; Debdeep Pati, Florida State University

3:45 p.m. **Floor Discussion**

## 5 **Emerging Statistical Methods for Big Data—Invited** CC-710b

Biometrics Section, Statistical Learning and Data Mining Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Ping Ma, University of Illinois at Urbana-Champaign

Chair(s): Ping Ma, University of Illinois at Urbana-Champaign

2:05 p.m. **An Integrated Approach to Identify Clinically Relevant Long Non-Coding RNAs (lncRNAs) in Cancer**—◆Xiaole Shirley Liu, Dana-Farber and Harvard University

2:30 p.m. **Modeling Repeatedly Observed Functional Data**—◆Hans-Georg G. Müller, University of California at Davis; Kehui Chen, University of Pittsburgh

2:55 p.m. **Tensor Dimension Reduction for Chemical Sensing**—◆Wenxuan Zhong, University of Illinois at Urbana-Champaign

3:20 p.m. **Leveraging as a Paradigm for Statistically Informed Large-Scale Computation**—◆Michael W. Mahoney, Stanford University

3:45 p.m. **Floor Discussion**

## 6 **Spatial Statistics for Big Environmental Data Sets—Invited** CC-520e

Section on Statistics and the Environment, Statistical Learning and Data Mining Section, Section on Statistics in Epidemiology

Organizer(s): Matthias Katzfuss, Universität Heidelberg

Chair(s): Ying Sun, The University of Chicago

2:05 p.m. **Low-Rank Spatial Models for Big Global Data Sets**—◆Matthias Katzfuss, Universität Heidelberg

2:30 p.m. **Computational Methods for Large Spatial Temporal Data Sets**—◆Huiyan Sang, Texas A&M University; Bohai Zhang, Texas A&M University; Jianhua Z. Huang, Texas A&M University

2:55 p.m. **Estimation and Prediction in Spatial Models with Block Composite Likelihoods**—◆Ryan J. Parker, North Carolina State University; Jo Eidsvik, Norwegian University of Science and Technology; Ben Shaby, University of California at Berkeley; Brian J. Reich, North Carolina State University; Matthew Wheeler, University of California at Santa Barbara; Jarad Niemi, Iowa State University

3:20 p.m. **Spatial Matérn Fields Driven by Non-Gaussian Noise**—◆David Bolin, Lund University

3:45 p.m. **Floor Discussion**

## 7 **The Undercount of Young Children in Official Statistics—Invited** CC-516b

Social Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): William P. O'Hare, National Science Foundation/American Statistical Association/U.S. Census Bureau

Chair(s): Deborah H. Griffin, U.S. Census Bureau

2:05 p.m. **Data on the Undercount of Young Children in the U.S. Decennial Census**—◆William P. O'Hare, National Science Foundation/American Statistical Association/U.S. Census Bureau

2:25 p.m. **Improving the Coverage of Children in the 2010 U.S. Census**—◆Daniel Weinberg, U.S. Census Bureau

2:45 p.m. **Looking Ahead: Early Thinking on 2020 Census Plans to Reduce Differential Undercoverage of Young Children**—◆Frank Anthony Vitano, U.S. Census Bureau

3:05 p.m. **Differential Coverage Error for Young Children in the Canadian Census**—◆David Dolson, Statistics Canada

3:25 p.m. Disc: Howard R. Hogan, U.S. Census Bureau

3:45 p.m. **Floor Discussion**

## 8 **Data Integration: Combining Multiple Data Sources to Gain Statistical Efficiency—Invited** CC-514b

Section on Statistics in Epidemiology, International Chinese Statistical Association, SSC, Statistical Learning and Data Mining Section, Biometrics Section, Section for Statistical Programmers and Analysts

Organizer(s): Jeanine Houwing-Duistermaat, Leiden University Medical Center

Chair(s): Jeanine Houwing-Duistermaat, Leiden University Medical Center

2:05 p.m. **Analyzing Age-Specific Genetic Effects on Human Extreme Age Survival in Cohort-Based Longitudinal Studies**—◆Qihua Tan, University of Southern Denmark

2:30 p.m. **Challenges in Estimation of Genetic Effects from Multiple Cases Family Studies**—◆Roula Tsonaka, Leiden University Medical Center; Jeanine Houwing-Duistermaat, Leiden University Medical Center

2:55 p.m. **Using Family Members to Augment Genetic Case-Control Studies of a Life-Threatening Disease**—◆Jinbo Chen, University of Pennsylvania School of Medicine; Lu Chen, University of Pennsylvania; Clarice R. Weinberg, National Institute of Environmental Health

3:20 p.m. **Statistical Methods for Integrative Genomics—**  
◆ Joseph Beyene, McMaster University

3:45 p.m. **Floor Discussion**

9

CC-511f

## ■ ● When Politics and Official Economic Statistics Collide: Argentina, China, Greece—Invited

Business and Economic Statistics Section, Scientific and Public Affairs Advisory Committee, Statistics Without Borders

Organizer(s): Joseph B. Kadane, Carnegie Mellon University

Chair(s): Ed Gracely, Drexel University

2:05 p.m. **The Simplest Solution: Assume Chinese Data Are Misleading—**◆ Derek Michael Scissors, The Heritage Foundation

2:30 p.m. **Online and Official Price Indexes: Measuring Argentina's Inflation—**◆ Alberto F. Cavallo, Massachusetts Institute of Technology

2:55 p.m. **When Politics and Official Economic Statistics Collide: Greece—**◆ Andreas Georgiou, Hellenic Statistical Authority

3:20 p.m. Disc: Joseph B. Kadane, Carnegie Mellon University

3:40 p.m. **Floor Discussion**

10

CC-510b

## ■ ● Innovations in Propensity Score Methods for Addressing New Causal Questions in Observational Studies—Invited

Committee on Women in Statistics, Mental Health Statistics Section, International Chinese Statistical Association, Section on Statistics in Epidemiology

Organizer(s): Booil Jo, Stanford University

Chair(s): Jennifer Hill, New York University

2:05 p.m. **Understanding Causal Effects in Observational Studies with Instrumental Propensity Score—**◆ Jing Cheng, University of California at San Francisco; Winston Lin, University of California at Berkeley

2:25 p.m. **Marginal Mean Weighting Through Stratification for Identifying Subpopulation-Specific Optimal Treatment Sequences—**◆ Guanglei Hong, The University of Chicago

2:45 p.m. **Competing Versions of Ignorability Assumptions in Causal Mediation Analysis—**◆ Booil Jo, Stanford University; Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health

3:05 p.m. Disc: Michael Elliott, University of Michigan

3:25 p.m. Disc: Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health

3:45 p.m. **Floor Discussion**

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CC-510c

## ■ ● Session in Honor of 70th Birthday of Stephen E. Fienberg and His Nearly 50 Years of Statistical Practice—Invited

CHANCE, Statistics Without Borders

Organizer(s): Aleksandra Slavkovic, Penn State University; Elena Erosheva, University of Washington; Alicia Carriquiry, Iowa State University

Chair(s): Elena Erosheva, University of Washington

2:05 p.m. **Steve's Contributions to Categorical Data Analysis and Beyond—**Alessandro Rinaldo, Carnegie Mellon University; ◆ Edo Airoldi, Harvard University

2:25 p.m. **Steve's Contributions to Sample Surveys, Censuses, and Federal Statistics—**◆ Judith M. Tanur, Stony Brook University

2:45 p.m. **Steve the Matchmaker: Marriage of Statistics and Computer Sciences in the World of Data Privacy—**◆ Aleksandra Slavkovic, Penn State University

3:05 p.m. **Steve the Bayesian—**◆ Edward George, The Wharton School

3:25 p.m. Disc: Stephen M. Stigler, The University of Chicago

3:35 p.m. Disc: Jim Berger, Duke University

3:45 p.m. **Floor Discussion**

12

CC-510d

## International Efforts in Statistical Capacity Building: How You Can Help—Invited

International Statistical Institute, International Indian Statistical Association, Scientific and Public Affairs Advisory Committee, Statistics Without Borders

Organizer(s): Vijay Nair, University of Michigan

Chair(s): Vijay Nair, University of Michigan

2:05 p.m. **Capacity-Building in the Era of Big Data—**◆ Sastry G. Pantula, National Science Foundation

2:35 p.m. **Challenges in Statistical Capacity-Building: Some First Experience in Africa—**◆ Jozef Lodewijk Teugels, Katholieke Universiteit Leuven

3:05 p.m. **Acting Locally: A Perspective for Statistics Training in South Asia—**◆ Anil P. Gore, Cytel Statistical Software and Services Pvt. Ltd.

3:35 p.m. **Floor Discussion**

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## Need to Check Your Email? Visit the Cyber Center

There are terminals with Internet access available for your emailing needs, as well as three printers. The Cyber Center is available with support from IBM. There will be no internal message center this year, so make sure to take advantage of this Internet option.

### Hours:

Saturday  
7:30 a.m. — 6:00 p.m.

Sunday  
7:30 a.m. — 10:30 p.m.

Monday — Tuesday  
7:00 a.m. — 10:00 p.m.

Wednesday  
7:00 a.m. — 6:00 p.m.



Located in the Palais des congrès de Montréal.

Sponsored by



## 13 CC-516c

### Seeing in and Beyond R—Invited

General Methodology, Statistical Learning and Data Mining Section, Section on Statistical Graphics, Section on Statistical Computing, Statistics Without Borders

Organizer(s): Thomas Lumley, University of Auckland

Chair(s): Marlena Maziarz, University of Washington

- 2:05 p.m. **Analyzing Large Data with R and MonetDB—**  
◆ Thomas Lumley, The University of Auckland
- 2:30 p.m. **Seeing Through Grid Graphics—**  
◆ Paul Murrell, The University of Auckland
- 2:55 p.m. **BigVis: Visualizing Large Data in R—**  
◆ Hadley Wickham, RStudio
- 3:20 p.m. Disc: Dianne H. Cook, Iowa State University
- 3:45 p.m. **Floor Discussion**

## Topic-Contributed Sessions 2:00 p.m.–3:50 p.m.

### 14 CC-524a

#### ● Computer Models in Environmental Research—Topic-Contributed

Section on Physical and Engineering Sciences, Section on Statistics and the Environment

Organizer(s): Pritam Ranjan, Acadia University

Chair(s): Pritam Ranjan, Acadia University

- 2:05 p.m. **Uncertainty, Spatial Statistics, and Climate Model Ensembles—**◆ Stephan Sain, National Center for Atmospheric Research
- 2:25 p.m. **Prediction and Computer Model Calibration with Multiple Simulators—**◆ Joslin Goh, Simon Fraser University
- 2:45 p.m. **Estimating Parameters in Biological Ocean Models Using an Emulator Approach—**◆ Michael Dowd, Dalhousie University
- 3:05 p.m. **Quantifying Uncertainty in CO2 Emissions with a Restricted Number of Remote Sensors: A Comparison of Model Calibration and Kalman Filtering Techniques—**◆ Matthew Pratola; Jon Reisner, Los Alamos National Laboratory; M.K. Dubey, Los Alamos National Laboratory; Dave Higdon, Los Alamos National Laboratory
- 3:25 p.m. Disc: William Welch, University of British Columbia
- 3:45 p.m. **Floor Discussion**

### 15 CC-522bc

#### ■ Shape-Constrained Inference—Topic-Contributed

Section on Nonparametric Statistics, International Chinese Statistical Association, Statistical Learning and Data Mining Section, International Indian Statistical Association, Korean International Statistical Society

Organizer(s): Woncheol Jang, Seoul National University

Chair(s): Woncheol Jang, Seoul National University

- 2:05 p.m. **The Grenander Estimator Under Model Misspecification—**◆ Hanna Jankowski, York University; Jon Wellner, University of Washington
- 2:25 p.m. **On Bayesian Inference for Regression with Constraints—**◆ Taeryon Choi, Korea University; Sooyeon Lee, Korea University
- 2:45 p.m. **Fast Computation for Inference About Shape Restrictions—**◆ Guenther Walther, Stanford University
- 3:05 p.m. **Convex Regression for Dependent Data—**  
◆ Dragi Anevski, Lund University
- 3:25 p.m. **Global Minimax Bounds for Estimating Log-Concave Densities—**◆ Arlene K.H. Kim, University of Cambridge; Richard Samworth, University of Cambridge
- 3:45 p.m. **Floor Discussion**

## 16 CC-511b **■ Censoring Issues in Survival Analysis— Topic-Contributed**

Biopharmaceutical Section, International Chinese Statistical Association, Biometrics Section

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

Chair(s): Annpey Pong, Merck Research Laboratories

- 2:05 p.m. **Semiparametric Estimation of Treatment Effect with Time-Lagged Response in the Presence of Informative Censoring**—◆ Xiaomin Lu, University of Florida; Anastasios (Butch) Tsiatis, North Carolina State University
- 2:25 p.m. **Model Correction for Informative Censoring**—◆ Steven Sun, Johnson & Johnson; Sudhakar Rao, Janssen Research & Development
- 2:45 p.m. **Adjusting for Discordance Rates**—◆ Vijay Chauhan, Alpha Stats Inc; Grace Liu, Jansen Research & Development; Sudhakar Rao, Janssen Research & Development
- 3:05 p.m. **Correlations of Patient-Reported Outcomes with PSA and Survival Endpoints in Prostate Cancer Trials**—◆ Xuemei Li, Janssen Research & Development
- 3:25 p.m. **Floor Discussion**

## 17 CC-511a **■ Clinical Trials: Recent Advances in Evidence-Based Designs and Challenges— Topic-Contributed**

Biopharmaceutical Section, Mental Health Statistics Section, Biometrics Section

Organizer(s): Bin Zhang, Millennium Pharmaceuticals, Inc. and Boston University

Chair(s): Jing Xu, Millennium Pharmaceuticals, Inc.

- 2:05 p.m. **Enrichment Design of Clinical Trials Using Group-Based Trajectory Method**—◆ Bin Zhang, Millennium Pharmaceuticals, Inc. and Boston University
- 2:25 p.m. **Smart Design for Comparing Adaptive Interventions**—◆ Min Qian, Columbia University; Inbal Nahum-Shani, University of Michigan; Daniel Almirall, University of Michigan; Susan Murphy, University of Michigan
- 2:45 p.m. **Longitudinal Modeling of Dynamic Treatment Regimes in the Analysis of Sequentially Randomized Trials**—◆ Xi Lu, University of Michigan; Daniel Almirall, University of Michigan

- 3:05 p.m. **Bayesian Approach for Evaluating Regional Treatment Effect in a Multiregional Global Trial**—◆ Jianchang Lin, Millennium: The Takeda Oncology Company; Guohui Liu, Millennium: The Takeda Oncology Company
- 3:25 p.m. **Role of Exploratory Biomarker and Exposure-Response Analyses in Evidence-Based Designs**—◆ Li Chen, Amgen, Inc.
- 3:45 p.m. **Floor Discussion**

## 18 CC-520a **■ New Robust Methods in Biostatistics— Topic-Contributed**

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

Organizer(s): Inna Chervoneva, Thomas Jefferson University

Chair(s): George Luta, Georgetown University

- 2:05 p.m. **Robust Model Selection via Weighted Cross-Validation**—◆ Marianthi Markatou, State University of New York Buffalo; Claudio Agostinelli, Ca' Foscari University
- 2:25 p.m. **Robust Estimation of Distributional Mixed-Effects Model with Application to Tendon Fibrillogenesis Data**—◆ Tingting Zhan, Thomas Jefferson University; Inna Chervoneva, Thomas Jefferson University; Boris Iglewicz, Temple University
- 2:45 p.m. **Integrative Analysis of Disparate Contaminated Data Sets**—◆ Junrui Di, Georgetown University; Valeriy Korostyshevskiy, Georgetown University
- 3:05 p.m. **Joint Estimation of Multiple High-Dimensional Precision Matrices with an Application in Genomics Data**—◆ Jichun Xie, Temple University; Weidong Liu, Shanghai Jiao Tong University; Hongzhe Li, University of Pennsylvania; Tony Cai, University of Pennsylvania
- 3:25 p.m. **Generalized S-Estimators for Linear Mixed-Effects Models**—◆ Inna Chervoneva, Thomas Jefferson University; Mark Vishnyakov, Thomas Jefferson University
- 3:45 p.m. **Floor Discussion**



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## ■ ● Statistical Consulting in Mass Spectrometry-Based Proteomics: New Strategies and Methods—Topic-Contributed

Section on Statistical Consulting, WNAR

Organizer(s): Laura Bond, Biomolecular Research Center

Chair(s): Laura Bond, Biomolecular Research Center

- 2:05 p.m. **LC-MRM-MS Data Analysis Strategy—**  
◆Ming Li, VICC-Cancer Biostatistics Division
- 2:25 p.m. **Inferring Protein-Level Abundance from Peptide Peak Intensity Data to Facilitate Biological Interpretation—**◆Bobbie-Jo Webb-Robertson, Pacific Northwest National Laboratory
- 2:45 p.m. **Statistical Inference of Protein Identification Using Tandem Mass Spectrometry Data—**◆Susmita Datta, University of Louisville
- 3:05 p.m. **Multivariate Survival Approaches to Detect Differential Expressions in LC-MS/MS Proteomics Data—**◆Carmen Tekwe, Texas A&M Health Science Center; Raymond J. Carroll, Texas A&M University; Alan R. Dabney, Texas A&M University
- 3:25 p.m. **Prediction of Clinical Outcome Using Proteomic Mass Spectrometry Data—**◆Bart Mertens, Leiden University Medical Centre
- 3:45 p.m. **Floor Discussion**

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## ■ Attrition in Mental Health Studies, an Eternal Problem with Multiple Implications: Some Recent Issues and Solutions—Topic-Contributed

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

Organizer(s): Samiran Ghosh, Wayne State University School of Medicine

Chair(s): Samiran Ghosh, Wayne State University School of Medicine

- 2:05 p.m. **A Hidden Markov Model for Nonignorable Nonmonotone Missing Longitudinal Data for Medical Studies of Quality of Life—**◆Andrea Troxel, University of Pennsylvania School of Medicine; Kaijun Liao, University of Pennsylvania School of Medicine
- 2:25 p.m. **Handling Attrition in Intensive Longitudinal Mental Health Studies: Challenges and Solutions—**◆Hui Xie
- 2:45 p.m. **Analysis of Longitudinal Data with Attrition and Mortality—**◆Ofer Harel, University of Connecticut
- 3:05 p.m. **Alternative Methods for Bayesian Variable Selection in Binomial Regression Models with Missing Covariates—**◆Xiaowei Yang, CUNY-Hunter College; Gang Liu, Google; Thomas R. Belin, University of California at Los Angeles

CC-511d

3:25 p.m. Disc: Roderick J. Little, University of Michigan

3:45 p.m. **Floor Discussion**

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## ■ Bayesian Modeling, Inference, and Applications: In Honor of 60th Birthday of Dipak K. Dey—Topic-Contributed

Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), International Indian Statistical Association, Section on Statistics and the Environment, Korean International Statistical Society

Organizer(s): Xia Wang, University of Cincinnati; Seongho Song, University of Cincinnati

Chair(s): Jian Zou, Indiana University-Purdue University Indianapolis

- 2:05 p.m. **Hierarchical Bayesian Model for Technical Efficiency Using Stochastic Frontier Production Function—**◆Seongho Song, University of Cincinnati; Chansoo Kim, Kongju National University; Younshik Chung, Pusan National University; Myoungjin Jung, Pusan National University
- 2:25 p.m. **On the Poisson-Type Arrival of Order Statistics—**◆Karthik Bharath, The Ohio State University; Haikady Nagaraja, The Ohio State University
- 2:45 p.m. **Bayesian Inference in Censored Mixed-Effects Models Using Heavy-Tailed Distributions—**◆Victor Lachos, University of Campinas; Dipak K. Dey, University of Connecticut; Dipankar Bandyopadhyay, University of Minnesota
- 3:05 p.m. **Bayesian Spatial-Temporal Modeling of Atlantic Cod Abundance in the Gulf of Maine—**◆Xia Wang, University of Cincinnati; Ming-Hui Chen, University of Connecticut; Dipak K. Dey, University of Connecticut; Chiu-Yen Kou, University of Connecticut
- 3:25 p.m. **Floor Discussion**

CC-521ab

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## ■ ● New Frontiers in Survival Analysis and Empirical Likelihood—Topic-Contributed

Biometrics Section, Section on Statistics in Epidemiology, Korean International Statistical Society

Organizer(s): Yichuan Zhao, Georgia State University

Chair(s): Xuewen Lu, University of Calgary

- 2:05 p.m. **Empirical Likelihood Ratio Confidence Intervals for Conditional Survival Probabilities with Right-Censored Data—**◆Tonya Riddlesworth, Tennessee Technological University; Jian-Jian Ren, University of Maryland
- 2:25 p.m. **Empirical Likelihood and U-Statistics in Survival Analysis—**◆Zhigang Zhang, Memorial Sloan-Kettering Cancer Center; Yichuan Zhao, Georgia State University

CC-512ab



- 2:45 p.m. **Joint Inference of Baseline Hazard and Regression Coefficients in Cox-Like Models via Empirical Likelihood**—◆Mai Zhou, University of Kentucky; Song Yang, NIH/NHLBI; Mi-Ok Kim, Cincinnati Children's Hospital
- 3:05 p.m. **Confidence Bands for the Treatment Effect with Survival Data**—◆Song Yang, NIH/NHLBI; Ross Prentice, Fred Hutchinson Cancer Research Center
- 3:25 p.m. **Nonparametric Regression on Correlated Failure Time Data**—◆Zhezhen Jin, Columbia University
- 3:45 p.m. **Floor Discussion**

## 23 CC-516e Applications and Overviews of Record Linkage—Topic-Contributed

Survey Research Methods Section, Scientific and Public Affairs Advisory Committee

Organizer(s): William Winkler, U.S. Census Bureau

Chair(s): Maria Garcia, U.S. Census Bureau

- 2:05 p.m. **Methods for Adjusting Statistical Analyses for Record Linkage Error**—◆William Winkler, U.S. Census Bureau
- 2:25 p.m. **Methods of Computing Optimal Record-Linkage Parameters**—◆William Yancey, U.S. Census Bureau
- 2:45 p.m. **Two-Step Imputation of Linked National Health Interview Survey and Medicare Data Files**—◆Guangyu Zhang, National Center for Health Statistics; Jennifer D. Parker, National Center for Health Statistics; Nathaniel Schenker, National Center for Health Statistics
- 3:05 p.m. **Layne, M.: Estimating Record Linkage Error Rates Using Administrative Records Data**—◆Mary Layne, U.S. Census Bureau; Deborah Wagner, U.S. Census Bureau; Cynthia Rothhaas, U.S. Census Bureau
- 3:25 p.m. **Parameter Estimation for Record Linkage**—◆Joshua Tokle, U.S. Census Bureau
- 3:45 p.m. **Floor Discussion**

## 24 CC-511e ■ ● Seasonal Adjustment at Statistical Agencies—Topic-Contributed

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

Organizer(s): Tucker S. McElroy, U.S. Census Bureau

Chair(s): Tucker S. McElroy, U.S. Census Bureau

- 2:05 p.m. **Comparing Automatic Modeling Procedures for TRAMO+ and X-13ARIMA-SEATS**—◆Brian C. Monsell, U.S. Census Bureau
- 2:25 p.m. **Data-Driven Selection Criteria for X-13ARIMA-SEATS Seasonal Adjustment Algorithms: Conceptual Considerations and Empirical Findings Based on German Time Series**—◆Karsten Webel, Deutsche Bundesbank

- 2:45 p.m. **Seasonal Adjustment in Volatile Economic Situations: Statistics Canada's Experience**—Michel Ferland, Statistics Canada; Susie Fortier, Statistics Canada; Zdenek Patak, Statistics Canada; ◆Steve Matthews, Statistics Canada
- 3:05 p.m. **The End Point of Time Series: Reporting Informatively on Trends**—◆Richard Penny, Statistics New Zealand; John Crequer, Statistics New Zealand; Sonya McGlone, Statistics New Zealand; Giles Reid, Statistics New Zealand
- 3:25 p.m. **Comparing Maximum Likelihood Estimation with Generalized Prediction Problem Mean-Square Minimization Estimation on Time Series Data**—◆Kevin Tolliver, U.S. Census Bureau; Tucker S. McElroy, U.S. Census Bureau
- 3:45 p.m. **Floor Discussion**

## 25 CC-512f ■ Statistical Issues in Assessing Performance of Diagnostic Devices—Topic-Contributed

Section on Statistics in Epidemiology, Biopharmaceutical Section, ASA Special Interest Group for Medical Devices and Diagnostics

Organizer(s): Lakshmi Vishnuvajjala, FDA/CDRH Division of Biostatistics

Chair(s): Jeffrey L. Joseph, Theorem Clinical Research

- 2:05 p.m. **Analytical and Clinical Validation of Diagnostic Devices with Underlying High-Dimensional Input Data**—◆Zhiheng Xu, FDA; Tinghui Yu, FDA/CDRH; Meijuan Li, FDA/CDRH; Lakshmi Vishnuvajjala, FDA/CDRH Division of Biostatistics
- 2:25 p.m. **Noninferiority of Diagnostic Tests**—◆Lakshmi Vishnuvajjala, FDA/CDRH Division of Biostatistics
- 2:45 p.m. **Adjusting for Measurement Error in the Performance Evaluation of Diagnostic Medical Tests**—◆Gene Pennello, FDA
- 3:05 p.m. **The Effect of Precision at the Decision Point on Diagnostics Accuracy of a Biomarker Assay**—◆Jeng Mah, Beckman Coulter, Inc.
- 3:25 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

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CC-513b 2:25 p.m.

## Recent Development of Statistical Methods in Radiological Research—Topic-Contributed

Section on Statistics in Imaging, Statistical Learning and Data Mining Section, WNAR, Korean International Statistical Society

Organizer(s): Zheng Zhang, Brown University

Chair(s): Xiaofeng Wang, Cleveland Clinic Lerner Research Institute

2:05 p.m. **An AUC-Like Index for Agreement Assessment—**  
◆ Zheng Zhang, Brown University; Youdan Wang, Brown University; Fenghai Duan, Brown University

2:25 p.m. **Comparing Diagnostic Accuracies in a Multi-Reader, Multi-Test Design—**◆ Eunhee Kim, Brown University; Donglin Zeng, The University of North Carolina; Zheng Zhang, Brown University

2:45 p.m. **Assessing Agreement with Relative Area Under the Coverage Probability Curve—**◆ Huiman Barnhart, Duke University

3:05 p.m. **A Simulation Study to Evaluate Accuracy and Precision of Blinded Independent Central Reviews (BICR) on Progression-Free Survival in Cancer Clinical Trials—**◆ Fenghai Duan, Brown University; Richard Walovitch, WorldCare Clinical, LLC; Vincent Girardi, WorldCare Clinical, LLC

3:25 p.m. **Quantitative Imaging Biomarker and Noise Characteristics in CT—**◆ Hyun (Grace) Kim, University of California at Los Angeles; David Gjertson, University of California at Los Angeles School of Public Health; Matthew Brown, University of California at Los Angeles Computer Vision and Imaging Biomarker; Jonathan Goldin, University of California at Los Angeles Radiology

3:45 p.m. **Floor Discussion**

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CC-524b

## ■ Hitting the Target in Hospital Profiling: The AHRQ Quality Indicators—Topic-Contributed

Section for Statistical Programmers and Analysts, Health Policy Statistics Section, Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Frank B Yoon, Mathematica Policy Research

Chair(s): Corwin Zigler, Harvard University

2:05 p.m. **Development of the AHRQ QIs and Current Methodological Investigations—**◆ Dale Rhoda; Jeffrey J. Geppert, Battelle Memorial Institute; Christopher J. Sroka, Battelle Memorial Institute; Michele Morara, Battelle Memorial Institute; Warren J. Strauss, Battelle Memorial Institute

**Variation in Quality by Hospital Characteristics: True or False?—**◆ David Jones, Mathematica Policy Research; Sam Stalley, Mathematica Policy Research; Alex Bohl, Mathematica Policy Research; Frank B. Yoon, Mathematica Policy Research; Eric Schone, Mathematica Policy Research; Joe Zickafoose, Mathematica Policy Research; Jessica Ross, Mathematica Policy Research

2:45 p.m. **The Role of Hospital Characteristics in Setting Appropriate Yardsticks for Quality Measurement—**◆ Frank B. Yoon, Mathematica Policy Research; Alex Bohl, Mathematica Policy Research; David Jones, Mathematica Policy Research; Dmitriy Poznyak, Mathematica Policy Research; Jessica Ross, Mathematica Policy Research; Eric Schone, Mathematica Policy Research; Joe Zickafoose, Mathematica Policy Research; Dejene Ayele, Mathematica Policy Research

3:05 p.m. **Hospital Peer Groups, Reliability, and Stabilization: Shrinking to the Right Mean—**◆ Alex Bohl, Mathematica Policy Research; David Jones, Mathematica Policy Research; Dmitriy Poznyak, Mathematica Policy Research; Jessica Ross, Mathematica Policy Research; Eric Schone, Mathematica Policy Research; Frank B. Yoon, Mathematica Policy Research; Joe Zickafoose, Mathematica Policy Research; Sam Stalley, Mathematica Policy Research

3:25 p.m. **Alternative Weighting Schemes for the AHRQ QI Composites—**◆ Eric Schone, Mathematica Policy Research; Alex Bohl, Mathematica Policy Research; David Jones, Mathematica Policy Research; Dmitriy Poznyak, Mathematica Policy Research; Jessica Ross, Mathematica Policy Research; Frank B. Yoon, Mathematica Policy Research; Joe Zickafoose, Mathematica Policy Research

3:45 p.m. **Floor Discussion**

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CC-519b

## ■ Statistical Research in Industrial Research Labs—Topic-Contributed

Section on Statistical Learning and Data Mining

Organizer(s): Sining Chen, Bell Labs, Alcatel-Lucent

Chair(s): Samuel Gardner, SAS Institute

2:05 p.m. **YouTube Viewing Experience Modeling—**  
◆ Jin Cao, Bell Labs

2:25 p.m. **Randomized Experiments for Measuring Brand Effectiveness of Online Video Ads—**◆ Lu Zhang, Google; Tim Hesterberg, Google; Philip Clarkson, Google; Sheng Ma, Google; Taylan Yildiz, Google

2:45 p.m. **Electricity Load Forecasting on Smart Grid—**  
◆ Sining Chen, Bell Labs, Alcatel-Lucent

3:25 p.m. Disc: Haipeng Shen, The University of North Carolina at Chapel Hill

3:45 p.m. **Floor Discussion**

## Topic-Contributed Panels 2:00 p.m.–3:50 p.m.

### 29 CC-510a **Statistical Practice Tailored to Protecting Children's Rights in Developing Countries—Topic-Contributed**

Statistics Without Borders, Scientific and Public Affairs Advisory Committee

Organizer(s): Asaph Young Chun, U.S. Census Bureau

Chair(s): Cathy Furlong, Caucus for Women

- Panelists:** ◆ Alison Cartwright, Statistics Without Borders  
 ◆ Minh Tran, Statistics Without Borders  
 ◆ M.B. Gil, Pyongyang Summer Institute in Survey Science and Quantitative Methodology  
 ◆ JS Jang, Pyongyang Summer Institute in Survey Science and Quantitative Methodology

3:45 p.m. **Floor Discussion**

## Contributed Sessions 2:00 p.m.–3:50 p.m.

### 30 CC-512c **Longitudinal Studies—Contributed**

Biometrics Section, SSC

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

- 2:05 p.m. **Partial Antecorrelation Models with Independent Asymmetric Laplace Innovations**—◆ Shu-Ching Chang; Dale Zimmerman, University of Iowa
- 2:20 p.m. **A New Modeling Approach for Quantifying Expert Opinion in the Drug Discovery Process**—Ariel Alonso, Maastricht University; ◆ Elasma Milanzi, I-Biostat, Hasselt University, Belgium; Geert Molenberghs, Universiteit Hasselt & Katholieke Universiteit Leuven; Christophe Buyck, Janssen Pharmaceutica; Luc Bijmens, Janssen Pharmaceutica
- 2:35 p.m. **Residuals in the Growth Curve Model and Their Application in the Analysis of Longitudinal Data**—◆ Jemila Hamid, McMaster University; WeiLiang Huang, McMaster University
- 2:50 p.m. **A Bayesian Pattern-Mixture Model for Longitudinal Data with Informative Dropouts**—◆ Niko Kaciroti, University of Michigan

3:05 p.m. **Design Issues in Longitudinal Studies**—◆ Christopher Morrell, Loyola University Maryland; Veena Shetty, Medstar Health Research Institute; Edward Lakatta, Laboratory of Cardiovascular Sciences, NIA

3:20 p.m. **Generalized Likelihood Ratio Test for Semiparametric Analysis of Covariance Models in Longitudinal Data**—◆ Jin Tang, University of Georgia; Yehua Li, Iowa State University

3:35 p.m. **Floor Discussion**

### 31 CC-512g **Methodology for Early-Stage Oncology Trials—Contributed**

Biopharmaceutical Section, Biometrics Section, Korean International Statistical Society

Chair(s): Chunyan Cai, The University of Texas Health Science Center at Houston

2:05 p.m. **Evaluating Probability of Success in Oncology Drug Development**—◆ Di Li, Eisai, Inc.

2:20 p.m. **Bivariate Continual Reassessment Method (BCRM) Applied to Oncology Dose Escalation Study**—◆ Yinghua (Grace) Zhang, GlaxoSmithKline; Jie Ding, GlaxoSmithKline

2:35 p.m. **An 'Early-Go' Design for Single-Arm, Two-Stage, Phase II Clinical Trials**—◆ William E. Brady, Roswell Park Cancer Institute; Gregory Wilding, Roswell Park Cancer Institute

2:50 p.m. **Probability-Guided 3+3 Design in Phase I Dose-Escalation Study**—◆ Yung-Seop Lee, Dongguk University; Jung Wook Park, Astellas Pharma Global Development, Inc.

3:05 p.m. **Enrollment and Stopping Rules for Managing Toxicity in Phase II Oncology Trials with Delayed Outcome**—◆ Guochen Song, Quintiles; Anastasia Ivanova, The University of North Carolina at Chapel Hill

3:20 p.m. **Using the Facts Recommender in Oncology Dose Escalation Trials: A Comparison of Dose Escalation Decisions Suggested by the Recommender with Actual Decisions Made by Project Teams**—◆ Sharon Murray, GlaxoSmithKline; Tom Parke, Tessella plc; Allison Florance, GlaxoSmithKline; Alun Bedding, GlaxoSmithKline

3:35 p.m. **Alternative Designs for Phase II Clinical Trials When Attained Sample Sizes Are Different from Planned Sample Sizes**—◆ Myron Chang, University of Florida

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

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## ■ Analysis of Safety Data and Rare Events—Contributed

Biopharmaceutical Section, Korean International Statistical Society  
Chair(s): Mary Bartholomew, FDA Center for Veterinary Medicine

2:05 p.m. **Statistical Methods Used in Safety Evaluation for NDA Submissions**—◆ Linyun Zhou, Takeda Global Research & Development

2:20 p.m. **A Single-Arm Sequential Monitoring Design for Claiming Positive or Negative Safety Signals in Patients from Multiple Baseline Risk Groups**—◆ Jung Wook Park, Astellas Pharma Global Development, Inc.; Xiaosha Sherman Zhang, Astellas Pharma Global Development, Inc.; Jay Yang, Astellas Pharma Global Development Inc.; Stephen Eck, Astellas Pharma Global Development, Inc.

2:35 p.m. **A Second Source of Conservatism in Fisher's Exact Test for Rare Events**—◆ Mark Von Tress, Alcon Laboratories

2:50 p.m. **Performance of Various Propensity Score Estimation Techniques for Estimating Relative Risks: A Simulation Study**—◆ Jiaxiao Shi, Kaiser Permanente; Wansu Chen, Kaiser Permanente

3:05 p.m. **Large-Scale Penalized Regression for Propensity Score Estimation in Observational Health Care Data**—◆ Ivan Zorych, Columbia University; Patrick Ryan, Janssen Research & Development; David Madigan, Columbia University

3:20 p.m. **Signal Detections in Drug Safety Research**—◆ Li Zhu, Amgen, Inc.; Padmaja Chiruvolu, Amgen Inc; Maggie Chen, Assent Consulting; Liying Zhang, Assent Consulting; Jinyu Yuan, Kforce; Qi Jiang, Amgen, Inc.

3:35 p.m. **A Further Look Into Meta-Analysis of Rare Event Data for Drug Safety Assessment**—◆ Yujun Wu, Sanofi; Hui Quan, Sanofi; Peng-liang Zhao, Sanofi

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## Statistical Software, Modeling, Graphics, and Hardware—Contributed

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

Chair(s): Bethany Wolf, Medical University of South Carolina

2:05 p.m. **APL and Data Analysis: Still Friends After All of These Years**—◆ Neil Polhemus, Statgraphics Software

2:20 p.m. **Multiple Choice from Competing Regression Models Under Multicollinearity Based on Standardized Update**—◆ Yoshinori Kawasaki, The Institute of Statistical Mathematics; Masao Ueki, Faculty of Medicine, Yamagata University

2:35 p.m. **Generalized Least Angle Regression**—◆ George Terrell, Virginia Tech

CC-512h 2:50 p.m.

**Automating Data Exploration Through Interestingness and Insights**—◆ Jing Shyr, IBM; Damir Spisic, IBM

3:05 p.m. **Computing and Graphing Probability Values of Pearson Distributions: A SAS/IML Macro**—◆ Wei Pan, Duke University; John C. Boling, Duke University

3:20 p.m. **Creating an Executive Summary Dashboard of Statistical Results Using SAS**—◆ Alan Elliott, Southern Methodist University; Linda S. Hynan, The University of Texas Southwestern Medical Center

3:35 p.m. **Collaborative Hardware Design for Real-Time Processing**—◆ Sarah Michalak, Los Alamos National Laboratory; Andrew DuBois, Los Alamos National Laboratory; David DuBois, Los Alamos National Laboratory; Christine Anderson-Cook, Los Alamos National Laboratory; Stephen Poole, Oak Ridge National Laboratory

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## ■ Statistics in Spatial and Environmental Epidemiology—Contributed

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

Chair(s): Pierre-Jérôme Bergeron, University of Ottawa

2:05 p.m. **Bayesian Spatial Hierarchical Modeling of Geographic Disparities in COPD Mortality in U.S. (2000–2007)**—◆ Xingyou Zhang, Centers for Disease Control and Prevention; James B. Holt, Centers for Disease Control and Prevention; Anne Wheaton, Centers for Disease Control and Prevention; Earl Ford, Centers for Disease Control and Prevention; Janet B. Croft, Centers for Disease Control and Prevention

2:20 p.m. **Bayesian Kernel Machine Regression for Estimating the Health Effects of Air Pollution Mixtures**—◆ Jennifer Bobb, Harvard School of Public Health; Brent A. Coull, Harvard School of Public Health

2:35 p.m. **Improved Temporal Smoothing for Estimating Population Health Risk**—◆ Wesley Burr, Queen's University; Glen Takahara, Queen's University; Hwashin H. Shin, Health Canada, Population Studies Division

2:50 p.m. **Investigating Risk Factors Associated with the Geographical Distribution of Disease Using Aggregate and Individual-Level Data**—◆ Michelle Ross, University of Washington

3:05 p.m. **Optimal Penalty Parameter Selection to Minimize the Impact of Exposure Measurement Error in 2-Stage Air Pollution Epidemiology Analyses**—◆ Silas Bergen, University of Washington; Adam Szpiro, University of Washington

CC-512e



- 3:20 p.m. **Skin Cancer and the Solar Cycle: An Application of Kolmogorov-Zurbenko Filters**—◆Edward Valachovic, State University of New York at Albany; Igor Zurbenko, State University of New York at Albany
- 3:35 p.m. **Approaches to Calculation of Average Exposure in Analysis of Epidemiologic Cohorts**—◆Leonid Kopylev, U.S. Environmental Protection Agency

## 35 CC-514a **Statistical Analysis with Biomarkers and Genetics—Contributed**

Section on Statistics in Epidemiology, SSC, International Chinese Statistical Association

Chair(s): Yen-Tsung Huang, Brown University

- 2:05 p.m. **A Simulation Study to Compare Modeling Methods for Analyzing Biomarker Data Subject to a Limit of Detection (LOD)**—◆Charles Rose, Centers for Disease Control and Prevention; Ryan E. Wiegand, Centers for Disease Control and Prevention
- 2:20 p.m. **A Comparison of Group Sequential Approach and MaxSPRT Approach in a Rapid Cycle Analysis of 13-Valent Pneumococcal Conjugate Vaccine Safety**—◆Lei Qian, Kaiser Permanente Southern California; Hung Fu Tseng, Kaiser Permanente Southern California; Steve J. Jacobsen, Southern California Permanente Medical Group; Lina Somsouk Sy, Kaiser Permanente Southern California; Eric Weintraub, Centers for Disease Control and Prevention; Jennifer Nelson, Group Health Cooperative
- 2:35 p.m. **Estimation of Weighted Log Partial Area Under the ROC Curve and Its Application to Micro-RNA Data**—◆Ahmed Hossain, McMaster University; Joseph Beyene, McMaster University
- 2:50 p.m. **Efficient Pooling Methods for Skewed Biomarker Data Subject to Regression Analysis**—◆Emily Mitchell, Emory University; Robert H. Lyles, Emory University; Michelle Danaher, Eunice Kennedy Shriver National Institute of Child Health and Development; Neil J. Perkins, Eunice Kennedy Shriver National Institute of Child Health and Development; Enrique F. Schisterman, Eunice Kennedy Shriver National Institute of Child Health and Development
- 3:05 p.m. **Comparison of Dependent Deattenuated Correlation Coefficients**—◆Bernard Rosner, Harvard Medical School; Wei Wang, Brigham & Women's Hospital; Eileen Hibert, Brigham & Women's Hospital
- 3:20 p.m. **Testing Multiple Biological Mediators Simultaneously**—◆Simina Boca, National Cancer Institute; Rashmi Sinha, National Cancer Institute; Amanda J. Cross, National Cancer Institute; Steven C. Moore, National Cancer Institute; Joshua Sampson, DCEG, National Cancer Institute
- 3:35 p.m. **Adjusting Odds Ratios for Misdiagnosis of Cases in Case Control Studies Using Optimal Classifiers**—◆Dat Huynh, University of California at Los Angeles; Ron Brookmeyer, University of California at Los Angeles

## 36 CC-525a **Assorted Topics in Mathematical Statistics II—Contributed**

IMS

Chair(s): Layla Parast, RAND Corporation

- 2:05 p.m. **Affine Invariant Divergence with Empirical Estimability**—◆Hironori Fujisawa, The Institute of Statistical Mathematics; Takafumi Kanamori, Nagoya University
- 2:20 p.m. **Risk Inflation of Sequential Testing**—◆Robert Stine, University of Pennsylvania
- 2:35 p.m. **Polynomially Adjusted Saddlepoint Density Approximations**—◆Serge Provost, University of Western Ontario
- 2:50 p.m. **Joint Unified Confidence Region for the Parameters of Branching Processes with Immigration**—◆Pin Ren; Anand Vidyashankar, George Mason University
- 3:05 p.m. **A New Strategy for Predicting, Coding, and Gambling on Decaying Large Alphabets**—◆Xiao Yang, Yale University; Andrew Barron, Yale University
- 3:20 p.m. **Partition-Valued Markov Chains: The Cut-and-Paste Representation Theorem**—◆Harry Crane
- 3:35 p.m. **Detection of Local Signals in Genomics**—◆David Siegmund, Stanford University; Benjamin Yakir Yakir, Hebrew University of Jerusalem; Nancy Zhang, University of Pennsylvania

## 37 CC-515c **Small-Area Estimation: Theory and Applications—Contributed**

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

Chair(s): Stas Kolenikov, SRBI

- 2:05 p.m. **A Procedure for Evaluating and Comparing Small-Area Variability of Binary Outcomes**—◆Pavlina Rumcheva, National Center for Health Statistics; Donald Malec, National Center for Health Statistics; Peter Meyer, National Center for Health Statistics; Nathaniel Schenker, National Center for Health Statistics
- 2:20 p.m. **Small-Area Prediction of the Mean of a Binomial Random Variable**—◆Andreea Erciulescu, Iowa State University; Wayne Fuller, Iowa State University
- 2:35 p.m. **Validity Testing for Coverage Properties of Small-Area Models for Cell Proportions**—◆Aaron Gilary, U.S. Census Bureau; Jerry Maples, U.S. Census Bureau; Eric Victor Slud, U.S. Census Bureau
- 2:50 p.m. **Small-Area Estimates from the National Crime Victimization Survey**—◆Robert Fay, Westat; Mamadou Diallo, Westat; Michael Planty, Bureau of Justice Statistics



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

- 3:05 p.m. **An Empirical Artificial Population and Sampling Design for Small-Area Model Evaluation**—  
◆ Jerzy Wieczorek, U.S. Census Bureau;  
Carolina Franco, U.S. Census Bureau
- 3:20 p.m. **Applying Bivariate Binomial - Logit Normal Models for Small-Area Estimation**—◆ Carolina Franco, U.S. Census Bureau; William R. Bell, U.S. Census Bureau
- 3:35 p.m. **Standard Regression Model-Based Small-Area Domain Estimation in Household Surveys**—  
◆ Prabhakar Ghangurde

## 38 CC-520f Bayesian Regression and Modeling— Contributed

Section on Bayesian Statistical Science, Section on Statistics in Marketing  
Chair(s): Serge Sverdllov, University of Washington

- 2:05 p.m. **Nonparametric Gaussian Process Models for Censored Longitudinal Data**—◆ Sujit Ghosh, North Carolina State University; Liwei Wang, North Carolina State University
- 2:20 p.m. **A Bayesian Nonparametric Approach to the Analysis of fMRI Data**—◆ Linlin Zhang, Rice University; Michele Guindani, The University of Texas MD Anderson Cancer Center; Marina Vannucci, Rice University
- 2:35 p.m. **A Powerful Bayesian Meta-Analysis Method to Integrate Multiple Gene Set Enrichment Studies**—  
◆ Min Chen, The University of Texas Southwestern Medical Center at Dallas; Miao Zang, PPD; Xinlei Wang, Southern Methodist University; Guanghua Xiao, The University of Texas Southwestern Medical Center
- 2:50 p.m. **For Better or for Worse: A Hierarchical Bayes Model for Partial Preference Rankings from Discrete Choice Experiments**—◆ Anna Liza Antonio, University of California at Los Angeles; Catherine Crespi, University of California at Los Angeles; Robert E. Weiss, University of California at Los Angeles; Christopher Saigal, University of California at Los Angeles
- 3:05 p.m. **Bayesian Approach to Age-Adjusted Joinpoint Regression Model**—◆ Ram C. Kafle, University of South Florida; Netra Khanal, University of Tampa; Chris Tsokos, University of South Florida
- 3:20 p.m. **Bayesian Analysis of Spatial Transformation Models with Applications in Neuroimaging Data**—  
◆ Michelle Miranda; Hongtu Zhu, The University of North Carolina at Chapel Hill; Joseph G. Ibrahim, The University of North Carolina
- 3:35 p.m. **Bayesian Regression with Errors from ESDIW Distribution**—◆ Ahmad Flaih, Al-Qadisiya University; Jose Guardiola, Texas A&M University at Corpus Christi; Hassan Elsalloukh, University of Arkansas at Little Rock

## 39 CC-516a Modeling and Modeling Error—Contributed

Government Statistics Section, Social Statistics Section

Chair(s): Michael Sinclair, NORC

- 2:05 p.m. **Two-Factor Interaction Effect Detection for the Generalized Linear Models**—◆ Sier Han, IBM SPSS Predictive Analytics; Jing Shyr, IBM; Jane Chu, IBM
- 2:20 p.m. **The Performance of the Linear Logistic Test Model When the Q-Matrix Is Misspecified: A Simulation Study**—◆ George MacDonald, University of South Florida; Jeffrey D. Kromrey, University of South Florida; Yi-Hsin Chen, University of South Florida
- 2:35 p.m. **A Two-Step Approach to the Study of Changes Over Time in Right-Censored and Grouped Count Data**—  
◆ Kenneth Land, Duke University; Qiang Fu, Duke University
- 2:50 p.m. **Missing Observations in Paired Comparisons: Assessing the Impact of Argumentative Threat in Written Opinions at the Supreme Court**—◆ William Christensen, Brigham Young University; Lance Long, Stetson University College of Law
- 3:05 p.m. **A New Approach to Modeling Roll Call Data**—Abel Rodriguez, University of California at Santa Cruz; ◆ Kaushik Ghosh, University of Nevada-Las Vegas
- 3:20 p.m. **Generalized Residuals for Item Response Theory Models with an Application to the National Assessment of Educational Progress**—◆ Sandip Sinharay, CTB/McGraw-Hill; Shelby Haberman, Educational Testing Service
- 3:35 p.m. **Improving Small-Area Estimates of Disability: Combining the American Community Survey with the Survey of Income and Program Participation**—  
◆ Jerry Maples, U.S. Census Bureau; Matthew Brault, U.S. Census Bureau

## 40 CC-513a Causal Inference in Health Policy Statistics— Contributed

Health Policy Statistics Section, International Indian Statistical Association, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Chair(s): Ashok Chaurasia, University of Connecticut

- 2:05 p.m. **Two-Layer Propensity Score Weighting: Multiple Treatments, Heterogeneous Treatment Effects, and a Causality Fallback Position**—◆ Amelia Haviland, Carnegie Mellon University; David Choi, Carnegie Mellon University
- 2:20 p.m. **Avoiding Errors: Causal Effect Estimates for the Evaluation of Quality of Care Over Many Centers**—◆ Els Goetghebeur, Ghent University; Bart Van Rompaye, Ghent University; Machteld Varewyck, Ghent University; Stijn Vansteelandt, Ghent University

- 2:35 p.m. **Confounding of a Public School Health Intervention in a Nonrandomized Experiment**—◆ Terrence Murphy
- 2:50 p.m. **Boosting and Double Robust Estimation**—◆ Daniela Golinelli, Bureau of Justice Statistics; Greg Ridgeway, National Institute of Justice
- 3:05 p.m. **Individual Mediating Effects**—◆ Roshan Serasinghe, Kansas State University; Gary L. Gadbury, Kansas State University
- 3:20 p.m. **Is Utilization of Outpatient Health Care Services a Mediating Factor in the Relationship Between Full Adoption of the MyHealthVet and Prior Comorbidity Burden in the VHA?**—◆ Sowmya R. Rao, Bedford Veterans Administration Medical Center; Stephanie Shimada, Bedford Veterans Administration Medical Center; Hua Feng, Bedford Veterans Administration Medical Center; Amy Rosen, Center for Organization, Leadership and Management Research; Jeroan K. Allison, University of Massachusetts Medical School; Thomas Houston, Bedford Veterans Administration Medical Center
- 3:35 p.m. **Examining Socioeconomic Health Disparities Using the Rényi Index**—◆ Makram Talih, National Center for Health Statistics

## 41 CC-525b Nonparametric Modeling—Contributed

Section on Nonparametric Statistics, SSC, Korean International Statistical Society

Chair(s): Russell Shinohara, University of Pennsylvania

- 2:05 p.m. **How Stable Are Top Choices Over Time? An Investigation into Preferences Among Popular Baby Names in the United States**—◆ Srinath Sampath, The Ohio State University; Joseph S. Verducci, The Ohio State University
- 2:20 p.m. **Smooth Simultaneous Confidence Bands for the Autoregressive Error Distribution Functions**—◆ Jiangyan Wang, Soochow University; Rong Liu, University of Toledo; Fuxia Cheng, Illinois State University; Lijian Yang, Michigan State University
- 2:35 p.m. **Are These Two Variables Related?**—◆ Michael Anderson, The University of Texas at San Antonio; Anuradha Roy, The University of Texas at San Antonio
- 2:50 p.m. **Estimation and Inference for Conditional Distribution Models with Response-Dependent Index Coefficients**—◆ Ming-Yueh Huang, National Taiwan University
- 3:05 p.m. **Time-Varying Additive Models for Longitudinal Data**—◆ Xiaoke Zhang, University of California at Davis; Byeong U. Park, Seoul National University; Jane-Ling Wang, University of California at Davis

- 3:20 p.m. **Semiparametrically Modified OLS and IV Estimators for Linear Cointegrating Models**—◆ Yiguo Sun, University of Guelph
- 3:35 p.m. **Is the LSE Locally Asymptotic Minimax?**—◆ Eric Cator, Radboud University Nijmegen

## 42 CC-514c Evaluating Teachers and Teaching Methods—Contributed

Social Statistics Section, International Indian Statistical Association, Scientific and Public Affairs Advisory Committee, Statistics Without Borders

Chair(s): Lisa Blumerman, U.S. Census Bureau

- 2:05 p.m. **An Inquiry-Based Approach to Teaching Science: A Multilevel Mediation Model**—◆ Luke Fostvedt, Iowa State University; Mack Shelley, Iowa State University; Brian Hand, University of Iowa; William Therrien, University of Iowa; Marcia Laugerman, University of Iowa; Dai-trang Le, Iowa State University; Christopher Gonwa-Reeves, Iowa State University
- 2:20 p.m. **A Longitudinal Study of the Effect of a New Approach to Teaching Science Based on Multivariate Mixed Effects Models**—◆ Mack Shelley, Iowa State University; Luke Fostvedt, Iowa State University; Dai-trang Le, Iowa State University; Marcia Laugerman, University of Iowa; Brian Hand, University of Iowa; William Therrien, University of Iowa; Christopher Gonwa-Reeves, Iowa State University
- 2:35 p.m. **Teacher Effectiveness Index as an Aid to Determine Performing Teachers for Promoting Excellence in Education**—◆ Avi Singh, NORC at the University of Chicago; Eric C. Hedberg, NORC at the University of Chicago; Tom B. Hoffer, NORC at the University of Chicago; Arend M. Kuyper, Northwestern University
- 2:50 p.m. **A Case for Testing the Missing Data Mechanism: Can We Identify Teacher Cheating?**—◆ Johnny Lin, University of California at Los Angeles; Peter M. Bentler, University of California at Los Angeles
- 3:05 p.m. **An Appraisal of Appropriate Analytical Approaches for Data on Evaluation of Quality in Higher Education and Related Policy Implications**—◆ Sada Nand Dwivedi, All India Institute of Medical Sciences
- 3:20 p.m. **Survey Research Challenges for an International Multi-Country Education Survey**—◆ Karol Krotki, RTI International
- 3:35 p.m. **Matching for Balance, Pairing for Heterogeneity in an Observational Study of the Effectiveness of for-Profit and Not-for-Profit High Schools in Chile**—◆ Jose Zubizarreta, The Wharton School; Ricardo Paredes, Departamento de Ingenieria Industrial y Sistemas, Pontificia Universidad Catolica de Chile; Paul Rosenbaum, The Wharton School

# 2013

## *Plenary Awards and Sessions*

You are invited to attend the

### **ASA Awards Celebration and Editor Appreciation**

Sunday, August 4, 2013, 7:30 p.m. - 8:30 p.m.  
Palais des congrès de Montréal, Room CC-518

AND

### **ASA President's Address and Founders & Fellows Recognition**

Tuesday, August 6, 2013, 8:00 p.m. - 9:30 p.m.  
Palais des congrès de Montréal, Room CC-517ab

for the recognition of the ASA's most distinguished members.

Sponsored by



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and Institute of Mathematical Statistics

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## 43 CC-515a Various Topics in Statistics Education— Contributed

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

Chair(s): Zenaida Mateo, University of Manitoba

- 2:05 p.m. **Academic Fraud: The Case of Diederik Stapel—**  
◆Ruud Koning, University of Groningen
- 2:20 p.m. **Asking the Right Questions: Some Help for Referees—**  
◆Marijtje van Duijn, University of Groningen; Don van Ravenzwaaij, University of New South Wales
- 2:35 p.m. **Preventing Fraud: Education in Research Practice—**  
◆Wendy Post, University of Groningen
- 2:50 p.m. **The Wilcoxon-Mann-Whitney Procedure: What Does It Really Test?—**  
◆George Divine, Henry Ford Health System; Anna Baron, University of Colorado-Denver; Elizabeth Juarez-Colunga, University of Colorado-Denver; Harry James Norton, Carolines
- 3:05 p.m. **Statistical Whistleblower: Am I Brave Enough? Am I Dumb Enough?—**  
◆Laurence D. Robinson, Ohio Northern University
- 3:20 p.m. **EnvStats: An R Package for Environmental Statistics—**  
◆Steven Millard, Probability, Statistics & Information
- 3:35 p.m. **Floor Discussion**

## 44 CC-519a Topics on Dimension Reduction—Contributed

Section on Statistical Learning and Data Mining, SSC, International Chinese Statistical Association

Chair(s): Vince Vu, The Ohio State University

- 2:05 p.m. **Cluster Pruning: Finding a Better Cluster Representative Object by Dimension Reduction—**  
◆Amy Wagaman, Amherst College
- 2:20 p.m. **Robustness in Dimensionality Reduction—**  
◆Jiaxi Liang; Christopher Small, University of Waterloo; Shoja'eddin Chenouri, University of Waterloo
- 2:35 p.m. **On Efficient Dimension Reduction with Respect to a Statistical Functional of Interest—**  
◆Wei Luo, Penn State University; Bing Li, Penn State University; Xiangrong Yin, University of Georgia
- 2:50 p.m. **Tensor Sliced Inverse Regression and Its Asymptotics—**  
◆Shanshan Ding, University of Minnesota; Dennis Cook, University of Minnesota
- 3:05 p.m. **Dimension Reduction for Sparse Functional Data—**  
◆Edwin Kam Fai Lei, University of Toronto; Fang Yao, University of Toronto; Yichao Wu, North Carolina State University
- 3:20 p.m. **Floor Discussion**

## 45 CC-518 High-Dimensional Statistical Learning— Contributed

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

Chair(s): Guanhua Chen, The University of North Carolina at Chapel Hill

- 2:05 p.m. **Rank Theory: Shrinkage and Selection—**  
◆A. K. Md. Ehsanes Saleh, Carleton University; Radim Navratil, Charles University
- 2:20 p.m. **Large Covariance Estimation by Thresholding Principal Orthogonal Complements—**  
◆Martina Mincheva, Princeton University; Jianqing Fan, Princeton University; Yuan Liao, University of Maryland
- 2:35 p.m. **High-Dimensional Factor Analysis with Sparse Procrustean Rotation for Gene Discovery and Genetic Risk Assessment—**  
◆Randy Carter, University at Buffalo; Netsanet Imam, Virginia Bioinformatics Institute
- 2:50 p.m. **Factor Analysis Regression for Predictive Modeling with High-Dimensional Data—**  
◆Netsanet Imam, Virginia Bioinformatics Institute; Randy Carter, University at Buffalo
- 3:05 p.m. **Optimal Feature Selection by Higher Criticism in High-Dimensional Spectral Clustering—**  
◆Wanjie Wang; Jiashun Jin, Carnegie Mellon University
- 3:20 p.m. **High-Dimensional Forecasting for Web Data—**  
◆Souvik Ghosh, LinkedIn; Deepak Agarwal, LinkedIn
- 3:35 p.m. **Floor Discussion**

## 46 CC-512d Reproducibility and Statistical Computation— Contributed

Biometrics Section, SSC, Section on Statistical Computing

Chair(s): Timothy Green, Centers for Disease Control and Prevention

- 2:05 p.m. **Reproducibility of the Statistical Literature: Is Fooling Our Deans Enough?—**  
◆Scott Emerson, University of Washington
- 2:20 p.m. **A Model-Based Approach for Modeling Agreement in Ordered Classification Scales—**  
◆Kerrie Nelson, Boston University; Don Edwards, University of South Carolina
- 2:35 p.m. **Subset Analyses of Prostate Data Examining Weight Gain and Recurrence—**  
◆Irene Helenowski, Northwestern University; Jennifer A. Doll, University of Wisconsin-Milwaukee; Timothy M. Kuzel, Northwestern University; Borko Jovanovic, Northwestern University-Feinberg School of Medicine; Alfred Rademaker, Northwestern University; Michael J. Gurley, Northwestern University



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

- 2:50 p.m. **Predicting Polyhedral Shapes for Bacterial Micro-Compartments**—◆Sukantadev Bag, Duke University; Kingshuk Roy Choudhury, Duke University; Mingzhi Liang, University College Cork; Michael Prentice, University College Cork
- 3:05 p.m. **Quality Assessment of Label-Free Multiple Reaction Monitoring Experiment**—◆Lisa Chung; Christopher Colangelo, Yale University; Hongyu Zhao, Yale University
- 3:20 p.m. **A Novel Statistical Method for Transference of Pediatric Reference Intervals Using Hospital-Based Data**—◆Caitlin Daly, McMaster University; Jemila Hamid, McMaster University; Vijay Grey, McMaster University; Xiaofeng Liu, McMaster University; Angela Rutledge, McMaster University; Kristin Hauff, McMaster University
- 3:35 p.m. **Inference for the Broken-Stick Model: A Computationally Faster Approach**—◆Ritabrata Das; Moulinath Banerjee, University of Michigan; Bin Nan, University of Michigan

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## Special Presentation 4:00 p.m.–5:50 p.m.

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### 47 CC-710a **Introductory Overview Lecture: Celebrating the History of Statistics—Other**

ASA, SSC, ENAR, WNAR, IMS, International Chinese Statistical Association, International Indian Statistical Association, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA)

Organizer(s): Ananda Sen, University of Michigan

Chair(s): Ananda Sen, University of Michigan

- 4:05 p.m. **A Time Travel with 40 Statistics Departments: Stories You Want to Hear (or Forget)**—Alan Agresti, University of Florida; ◆Xiao-Li Meng, Harvard University
- 4:55 p.m. **How Statistics Saved the Human Race**—◆Stephen M. Stigler, The University of Chicago
- 5:45 p.m. **Floor Discussion**

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## Invited Sessions 4:00 p.m.–5:50 p.m.

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### 48 CC-511e **Recent Advances in Statistical Learning—Invited**

IMS, SSC, Statistical Learning and Data Mining Section, Biometrics Section, Section on Statistical Computing

Organizer(s): Wenxuan Zhong, University of Illinois at Urbana-Champaign

Chair(s): Wenxuan Zhong, University of Illinois at Urbana-Champaign

- 4:05 p.m. **Ensemble Learning for Big Data**—◆Hugh A. Chipman, Acadia University; Robert E. McCulloch, The University of Chicago Booth School of Business; Matthew Pratola, Simon Fraser University; Dave Higdon, Los Alamos National Laboratory; James Gattiker, Los Alamos National Laboratory; Steven L. Scott, Google
- 4:30 p.m. **Computational Strategies in Regression of Big Data**—◆Ping Ma, University of Illinois at Urbana-Champaign
- 4:55 p.m. **On an Additive Semi-Graphoid Model for Statistical Networks with Application to Pathway Analysis**—◆Bing Li, The Pennsylvania State University; Hyonho Chun, Purdue University; Hongyu Zhao, Yale University
- 5:20 p.m. **Sparse Mixture of Experts Learning: Algorithms and Properties**—◆Yu Zhu, Purdue University; Han Wu, Purdue University
- 5:45 p.m. **Floor Discussion**
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- ### 49 CC-510c **Bayesian Inference from Realistic Network Data—Invited**
- Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), SSC, International Chinese Statistical Association, Statistical Learning and Data Mining Section
- Organizer(s): Krista J. Gile, University of Massachusetts, Amherst
- Chair(s): Krista J. Gile, University of Massachusetts, Amherst
- 4:05 p.m. **A Network-Based Analysis of the 1861 Hagelloch Measles Data**—Chris Groendyke, Robert Morris University; David Welch, University of Auckland; ◆David Hunter, Penn State University
- 4:30 p.m. **Likelihoods for Fixed-Rank Nomination Networks**—◆Peter David Hoff, University of Washington
- 4:55 p.m. **Joint Modeling of Multiple Network Views**—◆Thomas Brendan Murphy, University College Dublin; Isabella Gollini, National University of Ireland Maynooth



5:20 p.m. **Some Open Challenges in the Analysis of Network Data**—◆ Stephen E. Fienberg, Carnegie Mellon University

5:45 p.m. **Floor Discussion**

## 50 CC-511b New Techniques for Big High-Dimensional Data—Invited

Section on Statistics in Epidemiology, International Chinese Statistical Association, Statistical Learning and Data Mining Section, Biometrics Section, Section for Statistical Programmers and Analysts, Scientific and Public Affairs Advisory Committee

Organizer(s): Yichao Wu, North Carolina State University

Chair(s): Yichao Wu, North Carolina State University

4:05 p.m. **Joint Estimation of Multiple Dependent Gaussian Graphical Models**—Yuying Xie, The University of North Carolina at Chapel Hill; ◆ Yufeng Liu, The University of North Carolina; William Valdar, The University of North Carolina at Chapel Hill

4:30 p.m. **High-Dimensional Multiple Testing in a Two-Stage Adaptive Design Setting**—◆ Sanat K. Sarkar, Temple University

4:55 p.m. **Two-Dimensional Solution Surface for Weighted Support Vector Machines**—◆ Hao Helen Zhang, University of Arizona; Seung Jun Shin, North Carolina State University; Yichao Wu, North Carolina State University

5:20 p.m. **Inference and Optimalities in Estimation of Gaussian Graphical Model**—◆ Harrison Zhou, Yale University

5:45 p.m. **Floor Discussion**

## 51 CC-519b Strategies for Large-Scale Numerical and Statistical Computing—Invited

Section on Statistical Computing, International Chinese Statistical Association, Statistical Learning and Data Mining Section

Organizer(s): Michael J. Kane, Yale University

Chair(s): Michael J. Kane, Yale University

4:05 p.m. **Long Live (Big Data-Fied) Statistics!**—◆ Norman S. Matloff, University of California at Davis

4:30 p.m. **SciDB and R**—◆ Bryan W. Lewis, SciDB

4:55 p.m. **Programming with Big Data in R**—◆ George Ostrouchov, Oak Ridge National Laboratory; Wei-Chen Chen, Oak Ridge National Laboratory; Drew Schmidt, University of Tennessee; Pragneshkumar Patel, University of Tennessee

5:20 p.m. **Adding Large Vector Support to R**—◆ Luke Tierney, The University of Iowa

5:45 p.m. **Floor Discussion**

## 52 CC-510d The Intersection of Tensor Analysis and Statistics—Invited

IMS, Statistical Learning and Data Mining Section

Organizer(s): Eric Chi, The University of California at Los Angeles; Tamara Kolda, Sandia National Laboratories

Chair(s): Forrest Crawford, Yale University

4:05 p.m. **Bayesian Approaches to Decomposing Tensors**—◆ Morten Mørup, DTU Informatics

4:30 p.m. **Sparse Non-Negative Tensor Factorizations for Large Contingency Tables**—◆ Anirban Bhattacharya, Duke University

4:55 p.m. **Non-Negative Tensor Factorization: Algorithms and Applications**—◆ Eric Chi, University of California at Los Angeles

5:20 p.m. **Tensor Regression with Applications in Neuroimaging Data Analysis**—◆ Hua Zhou, North Carolina State University; Lexin Li, North Carolina State University; Hongtu Zhu, The University of North Carolina at Chapel Hill

5:45 p.m. **Floor Discussion**

## 53 CC-511c Regulatory Considerations on Design and Analysis of Observational Studies—Invited

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

Organizer(s): Lilly Yue, FDA

Chair(s): Donald B. Rubin, Harvard University

4:05 p.m. **FDA/CBER Biologic Product Evaluation Using Observational Studies**—◆ Yun Lu, FDA

4:20 p.m. **Safety Assessment with Observational Studies: Experiences at FDA/CDER**—◆ Mark Steven Levenson, FDA

4:35 p.m. **Challenges and Opportunities with Observational Studies: A CDRH's Perspective**—◆ Lilly Yue, FDA

4:50 p.m. Disc: Gregory Campbell, FDA

5:05 p.m. Disc: Ralph Horwitz, GlaxoSmithKline and Yale University

5:20 p.m. Disc: Allen Heller, Bayer HealthCare Pharmaceuticals

5:35 p.m. Disc: Estelle Russek-Cohen, FDA

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

## 54 CC-520f ■ ● Privacy Preserving Record Linkage—Invited

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

Organizer(s): Stefan Bender, IAB (Institute for Employment Research)

Chair(s): Stefan Bender, IAB (Institute for Employment Research)

4:05 p.m. **Overview and Taxonomy of Technique for Privacy-Preserving Record Linkage**—◆Peter Christen, The Australian National University

4:30 p.m. **Privacy-Preserving Record Linkage and Privacy-Preserving Blocking with Cryptographic Keys**—◆Rainer Schnell, University of Duisburg-Essen

4:55 p.m. **Encrypted Versus Plain: Comparison of Record Linkages Using Privacy Preserving Probabilistic Record Linkage (P3RL): Results from a Simulation Study**—Adrian Spoerri, University of Bern; Kurt Schmidlin, University of Bern; ◆Marcel Zwahlen, University of Bern; Kerri Clough-Gorr, Institute of Social and Preventive Medicine, University of Bern

5:20 p.m. Disc: Alan F. Karr, National Institute of Statistical Sciences

5:45 p.m. **Floor Discussion**

## 55 CC-516c ■ Teaching Ethics in Statistics and Biostatistics: What Works, What Doesn't Work, and Lessons Learned—Invited

Committee on Professional Ethics, Section on Statistical Education, Section on Teaching of Statistics in the Health Sciences, Korean International Statistical Society

Organizer(s): Shelley Hurwitz, Harvard Medical School/Brigham & Women's Hospital

Chair(s): Shelley Hurwitz, Harvard Medical School/Brigham & Women's Hospital

4:05 p.m. **Integrating Ethics with the Teaching of Introductory Statistics: Rationale and Resources**—◆Lawrence M. Lesser, The University of Texas at El Paso

4:25 p.m. **The Ethical Practice of Statistics for the Perplexed: A Graduate and Undergraduate Course in the Social and Behavioral Sciences**—◆Lawrence James Hubert, University of Illinois

4:45 p.m. **Professional Ethics to FDA Statisticians: Fundamentals and Branching Out to Other Professional Settings**—◆Jeongsook (Jessica) Kim, FDA/CBER

5:05 p.m. **Development of a Course for Graduate Students on the Ethics in Biostatistical Practice**—◆Howard Cabral, Boston University School of Public Health

5:25 p.m. Disc: Margie Nemeth, Statistical Consultants Plus (SC+)

5:45 p.m. **Floor Discussion**

## 56 CC-511a ■ Statistical Inference for Networks—Invited

WNAR, Statistical Learning and Data Mining Section, Biometrics Section, Section on Statistics in Epidemiology, Korean International Statistical Society

Organizer(s): Liza Levina, University of Michigan

Chair(s): Arash Amini, University of Michigan

4:05 p.m. **Statistical Detection of Network-Level Outliers**—◆Jennifer Neville, Purdue University

4:30 p.m. **Studying the Context-Specificity of Network Structure**—◆Karl Rohe, University of Wisconsin-Madison; Juhee Cho, University of Wisconsin-Madison; Sushmita Roy, University of Wisconsin-Madison

4:55 p.m. **Fast Community Detection by Pseudo-Likelihood**—◆Liza Levina, University of Michigan

5:20 p.m. Disc: Peter Bickel, University of California at Berkeley

5:40 p.m. **Floor Discussion**

## 57 CC-710b Medallion Lecture I—Invited

IMS

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

Chair(s): Robert L. Wolpert, Duke University

4:05 p.m. **Linearly Reinforced Random Walk**—◆Gady Kozma, Weizmann Institute of Science

5:35 p.m. **Floor Discussion**

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## Invited Panels 4:00 p.m.–5:50 p.m.

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## 58 CC-510a ■ Recent Activity in Big Data: Curriculum Development and Funding Opportunities—Invited

National Institute of Health/National Cancer Institute, International Indian Statistical Association, Section on Teaching of Statistics in the Health Sciences, Section on Statistics in Epidemiology

Organizer(s): Michelle Christine Dunn, National Cancer Institute

Chair(s): Constantine Gatsonis, Brown University

**Panelists:** ◆Nandini Kannan, National Science Foundation  
◆Michael Rappa, North Carolina State University  
◆Bill Howe, University of Washington  
◆Michelle Christine Dunn, National Cancer Institute

5:35 p.m. **Floor Discussion**

## 59 Memorial Session: George Casella—Invited

ASA

Organizer(s): Edward George, The Wharton School

Chair(s): Edward George, The Wharton School

- Panelists:** ◆ Martin T. Wells, Cornell University  
 ◆ William E. Strawderman, Rutgers University  
 ◆ Roger L. Berger, Arizona State University  
 ◆ Jim Berger, Duke University

5:45 p.m. **Floor Discussion**

## Topic-Contributed Sessions 4:00 p.m.–5:50 p.m.

### 60 ■ Subgroup Identification for Patients with Enhanced Treatment Response—Topic-Contributed

Section on Statistical Learning and Data Mining, International Chinese Statistical Association, Biometrics Section, Section on Statistics in Epidemiology

Organizer(s): Richard C. Zink, JMP Life Sciences, SAS Institute

Chair(s): Richard C. Zink, JMP Life Sciences, SAS Institute

- 4:05 p.m. **Recent Development in Biomarker and Subgroup Identification for Tailored Therapeutics**—◆ Russell Wolfinger, SAS Institute; Richard C. Zink, JMP Life Sciences, SAS Institute
- 4:25 p.m. **Recursive Partitioning Method to Identify Predictive Biomarkers in Clinical Trials**—◆ Chakib Battioui, Eli Lilly and Company; Lei Shen, Eli Lilly and Company; Stephen J. Ruberg, Eli Lilly and Company
- 4:45 p.m. **A Regression Tree Approach to Subgroup Identification for Censored Data**—◆ Wei-Yin Loh, University of Wisconsin; Michael Man, Eli Lilly and Company; Xu He, Chinese Academy of Sciences
- 5:05 p.m. **Subgroup Identification in Randomized Clinical Trial Data Using Random Forests and Regression Trees**—◆ Jared Foster, University of Michigan; Jeremy Taylor, University of Michigan; Bin Nan, University of Michigan
- 5:25 p.m. **Evaluating Decision Tree Splitting Criteria for Differential Treatment Effect**—◆ Padraic Neville, SAS Institute
- 5:45 p.m. **Floor Discussion**

CC-516b

### 61 ■ Recent Developments in Bayesian Nonparametric Methods—Topic-Contributed

Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), International Chinese Statistical Association, Statistical Learning and Data Mining Section

Organizer(s): John W. Paisley, University of California at Berkeley

Chair(s): John W. Paisley, University of California at Berkeley

- 4:05 p.m. **Robust Inference with Nonparametric Bayesian Models**—◆ Steven MacEachern, The Ohio State University
- 4:25 p.m. **Parallel Markov Chain Monte Carlo for Nonparametric Mixture Models**—◆ Sinead Williamson, Carnegie Mellon University
- 4:45 p.m. **Nonparametric Priors for Exchangeable Graphs and Arrays**—◆ Peter Orbanz, Columbia University
- 5:05 p.m. **Multivariate Bayesian Convex Regression**—◆ Lauren Hannah, Columbia University; David B. Dunson, Duke University
- 5:25 p.m. **Posteriors and Conjugacy for General Nonparametric Bayesian Priors**—◆ Tamara Broderick; Michael I. Jordan, University of California at Berkeley
- 5:45 p.m. **Floor Discussion**

CC-510b

### 62 ■ Statistical Modeling and Systems Science in the Study of Childhood Obesity—Topic-Contributed

Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Patricia L. Mabry, National Institutes of Health

Chair(s): Jon Kettenring, Drew University - RISE

- 4:05 p.m. **Novel Statistical Modeling Advances for Obesity Research**—◆ Edward H. Ip, Wake Forest University School of Medicine; Kiros Berhane, University of Southern California
- 4:25 p.m. **Estimating Dynamic Health Systems Models from Cross-Sectional Data**—◆ Hazhir Rahmandad
- 4:45 p.m. **Agent-Based Modeling and Statistical Approaches for Obesity and Public Health**—◆ Ross Hammond, The Brookings Institution
- 5:05 p.m. Disc: Patricia L. Mabry, National Institutes of Health
- 5:25 p.m. Disc: Joseph Lee Rodgers, Vanderbilt University
- 5:45 p.m. **Floor Discussion**

CC-519a

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

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## ■ ● Modern Pooled Testing Methods— Topic-Contributed

Biometrics Section, Statistical Learning and Data Mining Section

Organizer(s): Christopher R. Bilder, University of Nebraska-Lincoln

Chair(s): Christopher R. Bilder, University of Nebraska-Lincoln

4:05 p.m. **Group Testing for Multiple Infections with Application to the Infertility Prevention Project—**  
◆ Joshua Tebbs, University of South Carolina;  
Christopher S. McMahan, Clemson University;  
Christopher R. Bilder, University of Nebraska-Lincoln

4:25 p.m. **Dorfman Testing with Correlated Responses—**  
◆ Elena Bordonali; Michael G. Hudgens, The  
University of North Carolina at Chapel Hill; Bahjat  
Qaqish, The University of North Carolina at Chapel Hill

4:45 p.m. **Optimal Retesting Configurations for Hierarchical  
Group Testing—**◆ Michael Black, University of  
Nebraska Lincoln; Christopher R. Bilder, University  
of Nebraska-Lincoln; Joshua Tebbs, University of  
South Carolina

5:05 p.m. **Bayesian Regression Models for Group Testing  
Data—**◆ Christopher S. McMahan, Clemson  
University; Joshua Tebbs, University of South Carolina;  
Timothy Hanson, University of South Carolina;  
Christopher R. Bilder, University of Nebraska-Lincoln

5:25 p.m. **A Semi-Local Likelihood Regression Method  
for Group Testing Data—**Dewei Wang, Clemson  
University; ◆ Haiming Zhou, University of South  
Carolina; Karunarathna B. Kulasekera, University  
of Louisville

5:45 p.m. **Floor Discussion**

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## Recent Development of the Induced Smoothing Method—Topic-Contributed

Biometrics Section, Statistical Learning and Data Mining Section,  
Korean International Statistical Society

Organizer(s): Sangwook Kang, University of Connecticut

Chair(s): Sy Han Chiou, University of Connecticut

4:05 p.m. **Rank Regression for Accelerated Failure Time  
Model with Clustered and Censored Data—**◆ Liya  
Fu, Xi'an Jiaotong University; You-Gan Wang, The  
University of Queensland

4:25 p.m. **Induced Smoothing for the Semiparametric  
Accelerated Failure Time Model with Clustered  
Data: Marginal Methods and Frailty Models—**  
◆ Lynn Johnson, Cornell University

4:45 p.m. **Semiparametric Accelerated Failure Time Modeling  
for Clustered Failure Times from Stratified  
Sampling—**◆ Sangwook Kang, University of  
Connecticut; Sy Han Chiou, University of  
Connecticut; Jun Yan, University of Connecticut

CC-512f 5:05 p.m.

**Induced Smoothing for Rank-Based Accelerated  
Failure Time Models with General Weight  
Functions—**◆ Jun Yan, University of Connecticut;  
Sy Han Chiou, University of Connecticut; Sangwook  
Kang, University of Connecticut

5:25 p.m. **Induced Smoothing for the Semiparametric-  
Accelerated Hazards Model—**◆ Jiajia Zhang,  
University of South Carolina, Arnold School of  
Public Health

5:45 p.m. **Floor Discussion**

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## ■ Advances in Statistics for Brain Imaging— Topic-Contributed

SSC, Section on Statistics in Imaging, Mental Health Statistics Section,  
Statistical Learning and Data Mining Section

Organizer(s): Farouk S. Nathoo, University of Victoria; Timothy  
Johnson, University of Michigan

Chair(s): Charmaine Dean, University of Western Ontario

4:05 p.m. **A Spatial GLMM and the Estimation of Spatially  
Varying Coefficients with Application to Multiple  
Sclerosis MRI Data—**◆ Timothy Johnson, University  
of Michigan; Thomas Nichols, University of Warwick;  
Tian Ge, University of Warwick

4:25 p.m. **Functional Data Analysis for fMRI—**  
◆ Martin Lindquist, Johns Hopkins Bloomberg  
School of Public Health

4:45 p.m. **Variational Bayes Spatial Analysis of Combined  
MEG, EEG, and fMRI Data—**◆ Farouk S. Nathoo,  
University of Victoria; Arif Babul, Physics and  
Astronomy, University of Victoria; Alexander Moiseev,  
Down Syndrome Research Foundation; Naznin Virji-  
Babul, Physical Therapy, British Columbia; Faisal Beg,  
Engineering Science, Simon Fraser

5:05 p.m. **Determining Multimodal Biomarkers for  
Neurodegenerative Diseases—**◆ DuBois Bowman,  
Emory University; Wenqiong Xue, Emory University

5:25 p.m. **Linking Brain Networks to Behavior with  
Subsampled Prediction and Stability Metrics—**  
◆ Stephen Strother, Rortman Research Institute, Baycrest

5:45 p.m. **Floor Discussion**

CC-516d



## 66 CC-520e **■ Innovative Statistical Methods of Macro-Review of Economic or Establishment Data—Topic-Contributed**

Survey Research Methods Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Katherine Jenny Thompson, U.S. Census Bureau  
 Chair(s): Katherine Jenny Thompson, U.S. Census Bureau

- 4:05 p.m. **Revisions Revisited: Data-Driven Approaches for Detection in Quarterly Financial Report Macro-Level Data**—◆ Gregory Cepluch, U.S. Census Bureau; Melissa McDaniel, U.S. Census Bureau; Laura Bechtel, U.S. Census Bureau
- 4:25 p.m. **Dynamic Multivariate Selective Editing in the Integrated Business Statistics Program**—◆ Fraser William Mills, Statistics Canada; Serge Godbout, Statistics Canada; Claude Turmelle, Statistics Canada
- 4:45 p.m. **Applicability of the Outlier Review Tool to Manufacturing, Mining, and Construction Sectors of the Economic Census**—◆ Nicole Czaplicki, U.S. Census Bureau; Katherine Jenny Thompson, U.S. Census Bureau
- 5:05 p.m. **Setting Thresholds for Selective Edit: A Methodological Approach Using Process History from Establishment Surveys**—◆ Joseph Kosler, USDA NASS RDD
- 5:25 p.m. Disc: Richard Sigman, Westat
- 5:45 p.m. **Floor Discussion**

## 67 CC-512e **■ ● Enhanced Design, Analysis, Modeling, and Interpretation of QT Studies—Topic-Contributed**

Biopharmaceutical Section, Biometrics Section

Organizer(s): Donna Kowalski, Astellas Pharma Global Development, Inc.  
 Chair(s): Donna Kowalski, Astellas Pharma Global Development, Inc.

- 4:05 p.m. **Can Pooled SAD/MAD Studies Give Early Indication of Possible QTc Signal?**—◆ Kimberly Crimin, Novartis
- 4:25 p.m. **Sensitivity Analyses for PK-QTc Modeling: Nonlinearity and Hysteresis**—◆ Matthew Hutmacher, Ann Arbor Pharmacometrics Group
- 4:45 p.m. **Notably More Powerful Analyses of Thorough QT Crossover Trials**—◆ Devan Mehrotra, Merck; Li Fan, Merck Research Laboratories; Xiaodong Li, Bristol Myers Squibb
- 5:05 p.m. **Baseline Adjustment in Thorough QT Studies**—◆ Kaifeng Lu, Forest Laboratories
- 5:25 p.m. **Floor Discussion**

## 68 CC-521ab **■ The Interplay Between Consulting and Teaching—Topic-Contributed**

Section on Teaching of Statistics in the Health Sciences, SSC, Section on Statistical Education, Statistics Without Borders

Organizer(s): Ann M. Brearley, University of Minnesota  
 Chair(s): Ann M. Brearley, University of Minnesota

- 4:05 p.m. **Confessing Our Sins: How Research Informs Teaching**—◆ Deborah Dawson, University of Iowa
- 4:25 p.m. **Wins, Losses, and Lessons as an Early-Career Statistician Collaborating and Teaching in University, Research Institute, and Medical School Settings**—◆ Christopher Franck, Virginia Tech
- 4:45 p.m. **Some Key Assumptions You Need to Avoid in Collaborating with Medical Researchers**—◆ Eleanor Pullenayegum, McMaster University; Lehana Thabane, St Joseph's Healthcare Hamilton
- 5:05 p.m. **The Power of Pictures for Understanding Power**—◆ Eileen King, Cincinnati Children's Hospital Medical Center
- 5:25 p.m. **Establishing Partnerships with University Faculty Development Groups to Increase Statistical Training and General Consulting in the Academic Health Setting**—◆ Jason Brinkley, East Carolina University
- 5:45 p.m. **Floor Discussion**

## 69 CC-512ab **■ Statistical Analysis Methods with Application to Comparative Effectiveness Research—Topic-Contributed**

Biopharmaceutical Section, Biometrics Section, Health Policy Statistics Section, Section for Statistical Programmers and Analysts, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Isaac Nuamah, Janssen Research and Development  
 Chair(s): Rosanne Lane, Janssen Research & Development

- 4:05 p.m. **Statistical Assessment of Comparative Efficacy in Adolescent Psychiatry Clinical Trials**—◆ Isaac Nuamah, Janssen Research & Development
- 4:25 p.m. **Use of Patient-Reported Outcomes in Comparative Effectiveness Research**—◆ Joseph C. Cappelleri, Pfizer Inc.; Demissie Alemayehu, Pfizer Inc.
- 4:45 p.m. **The Use of Propensity Score Methods with Survival or Time-to-Event Outcomes**—◆ Peter Austin, ICES
- 5:05 p.m. **The Role of Pragmatic Trials in Comparative Effectiveness Research**—◆ Lehana Thabane, St Joseph's Healthcare Hamilton; Janusz Kaczorowski, Université de Montréal; Lisa Dolovich, McMaster University; Larry Chambers, University of Ottawa; On behalf of the CHAP Investigators, McMaster University
- 5:25 p.m. Disc: Matthew D. Rotelli, Eli Lilly and Company
- 5:45 p.m. **Floor Discussion**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

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## ■ Robust Inference in Social Science with Wrong but Useful Models—Topic-Contributed

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

Organizer(s): David Ross Judkins, Abt Associates

Chair(s): Vivian Zhuang, Creighton University School of Medicine

4:05 p.m. **When Is It Safe to Use the Wrong Model in Randomized Social Experiments? And Why Would You Want to?**—◆David Ross Judkins, Abt Associates; Kristin Porter, MDRC

4:25 p.m. **Shrinkage for Improved Inference in Factorial Experiments**—◆Cyrus Samii, Politics Department, New York University; Joel Middleton, Steinhardt School, New York University; Peter M. Aronow, Yale University

4:45 p.m. **Valid Post-Selection Inference**—◆Kai Zhang, The University of North Carolina at Chapel Hill; Richard Berk, University of Pennsylvania; Larry Brown, University of Pennsylvania; Andreas Buja, University of Pennsylvania; Linda Zhao, University of Pennsylvania

5:05 p.m. **Uses and Limitations of GEEs and GLMs for Social Network Data**—◆Elizabeth Ogburn, Harvard University

5:25 p.m. **A Model-Averaging Approach to Improve the Efficiency of Teacher Value-Added Estimates**—◆Bing Han, RAND Corporation; Daniel F. McCaffrey, ETS; J.R. Lockwood, ETS

5:45 p.m. **Floor Discussion**

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## ■ Mismeasurement of Time-to-Event Outcomes: Issues and Methods of Analysis—Topic-Contributed

ENAR, Biometrics Section

Organizer(s): Pamela A Shaw, Biostatistics Research Branch, NIAID, NIH

Chair(s): Philip Hougaard, Lundbeck

4:05 p.m. **Attenuation of Treatment Effect Due to Measurement Variability in Assessment of Progression-Free Survival**—◆Shengyan Hong; Nicola Schmitt, AstraZeneca; Andrew Stone, AstraZeneca; Jonathan Denne, Eli Lilly and Company

4:25 p.m. **Methods of Analysis for Failure Time Data That Adjust for Errors in Survival Outcomes Revealed by Audits**—◆Pamela A Shaw, Biostatistics Research Branch, NIAID, National Institutes of Health; Bryan E Shepherd, Vanderbilt University

4:45 p.m. **Study Design Issues and Analysis of Error-Prone Time-to-Event Data Using Progression-Free Survival as an Example**—◆Sally Hunsberger, NCI; Paul Albert, Eunice Kennedy Shriver National Institute of Child Health and Human Development; Lori Dodd, National Institutes of Health

CC-520c

5:05 p.m. **Measurement Error in the Timing of Events: Effect on Survival Analyses in Randomized Clinical Trials**—◆Lori Dodd, National Institutes of Health

5:25 p.m. Disc: Paul Albert, Eunice Kennedy Shriver National Institute of Child Health and Human Development

5:45 p.m. **Floor Discussion**

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## ■ Developing Statistical Methods in Setting Environmental Exposure Limits—Topic-Contributed

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

Organizer(s): Jing Zhang, Miami University

Chair(s): Bin Zhang, Cincinnati Children's Hospital

4:05 p.m. **Bayesian Model Averaging in Benchmark Dose Analysis**—◆Cuixian Chen, The University of North Carolina at Wilmington; Susan Simmons, The University of North Carolina at Wilmington; Xiaosong Li, The University of North Carolina at Wilmington; Yishi Wang, The University of North Carolina at Wilmington; Walter Piegorsch, University of Arizona; Qijun Fang, University of Arizona

4:25 p.m. **Estimating Potency in Multiple Endpoints in Aquatic Toxicity Testing**—◆Jing Zhang, Miami University; A. John Bailer, Miami University; James T. Oris, Miami University

4:45 p.m. **Benchmark Dose Calculation for Ordinal Responses Using Categorical Regression**—◆James Chen, National Center for Toxicological Research, FDA; Chu-Chih Chen, National Health Research Institutes

5:05 p.m. **Model Uncertainty and Model Averaging in Risk Assessment**—◆Hojin Moon, California State University at Long Beach; Steven Kim, University of California at Irvine; James Chen, National Center for Toxicological Research, FDA; Ralph Kodell, University of Arkansas for Medical Sciences

5:25 p.m. **An Empirical Approach to Sufficient Similarity: A Whole Mixture Strategy for Setting Exposure Limits for Chemical Mixtures**—◆Chris Gennings, Virginia Commonwealth University; Scott Marshall, BioStat Solutions, Inc; LeAnna Stork, Monsanto Company

5:45 p.m. **Floor Discussion**

CC-512c

73 CC-525a  
**New Statistical Methodologies for Sampling and Inference with Big Data—Topic-Contributed**

Section on Statistical Learning and Data Mining, International Chinese Statistical Association, Biometrics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Ali Shojaie, University of Washington

Chair(s): Tyler H. McCormick, University of Washington

- 4:05 p.m. **The Structural Virality of Online Diffusion—**  
◆ Jake Hofman, Yahoo! Research
- 4:25 p.m. **Sparse Laplacian Shrinkage for Inverse Covariance Estimation in Heterogeneous Sample—**◆ Takumi Saegusa, University of Washington; Ali Shojaie, University of Washington
- 4:45 p.m. **On Consistency of Community Detection in Networks—**◆ Yunpeng Zhao, George Mason University; Liza Levina, University of Michigan; Ji Zhu, University of Michigan
- 5:05 p.m. **High-Dimensional Vector Autoregression (VAR)—**  
◆ Sumanta Basu, University of Michigan
- 5:25 p.m. **Balancing Covariates via Propensity Score Weighting—**◆ Fan Li, Duke University; Alan Zaslavsky, Harvard University; Kari Lock Morgan, Duke University
- 5:45 p.m. **Floor Discussion**

74 CC-520a  
**■ The 2013 CPS ASEC Field Test—Topic-Contributed**

Government Statistics Section, Social Statistics Section, Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Edward Welniak, U.S. Census Bureau

Chair(s): Edward Welniak, U.S. Census Bureau

- 4:05 p.m. **An Evaluation of Retirement Income in the CPS ASEC Using IRS Form 1099-R Microdata—**  
◆ Charles Bee, U.S. Census Bureau
- 4:25 p.m. **Health Insurance Measurement in the Current Population Survey: Test Results and Next Steps for a Redesign—**◆ Joanne Pascale, U.S. Census Bureau; Michel Boudreaux, State Health Access Data Assistance Center; Amy Steinweg, U.S. Census Bureau
- 4:45 p.m. **Measuring Transitions, Spells of Uninsurance, and Churning Using the Redesigned CPS—**◆ Brett Fried, University of Minnesota, SHADAC; Joanne Pascale, U.S. Census Bureau; Michel Boudreaux, State Health Access Data Assistance Center
- 5:05 p.m. **CPS ASEC Income Redesign Field Test—**  
◆ Jessica Semega, U.S. Census Bureau
- 5:25 p.m. **Health Insurance in the Current Population Survey: Now and Later?—**◆ Carla Medalia, U.S. Census Bureau
- 5:45 p.m. **Floor Discussion**

**Topic-Contributed Panels**  
**4:00 p.m.–5:50 p.m.**

75 CC-524a  
**● Teaching Online on a Budget—Topic-Contributed**

Section on Statistical Education, Section on Teaching of Statistics in the Health Sciences, Statistics Without Borders

Organizer(s): Michelle G. Everson, University of Minnesota

Chair(s): Michelle G. Everson, University of Minnesota

- Panelists:**
- ◆ Pat Humphrey, Georgia Southern University
  - ◆ Dick Jardine, Keene State College
  - ◆ Dave Rausch, West Texas A&M University
  - ◆ Sue Schou, Idaho State University
  - ◆ Gunnar Stefansson, University of Iceland

5:45 p.m. **Floor Discussion**

**Contributed Sessions**  
**4:00 p.m.–5:50 p.m.**

76 CC-512h  
**Hypothesis Testing and Biomarker Evaluation—Contributed**

Biometrics Section

Chair(s): Chad He, Fred Hutchinson Cancer Research Center

- 4:05 p.m. **Estimate of Search Method Coherence by Using Repeated Probes on Tiled Microarrays—**  
◆ Sigrún Helga Lund, University of Iceland; Gunnar Stefansson, University of Iceland; Thorunn Rafnar, Decode; Daniel Gudbjartsson, Decode
- 4:20 p.m. **Study Design and Statistical Methodology in Biomarker Evaluation—**◆ Qian Li, National Institutes of Health, NCCAM
- 4:35 p.m. **Gene Filtering for Time Course Gene Expression Data Using the Growth Curve Model—**◆ Sayantee Jana, McMaster University; Narayanaswamy Balakrishnan, McMaster University; Dietrich von Rosen, Swedish University of Agricultural Sciences; Jemila Hamid, McMaster University
- 4:50 p.m. **Testing Pathway-Dose Interaction in Clinical Studies—**◆ Jia Kang, Merck
- 5:05 p.m. **SigTree: An Automated Meta-Analytic Approach to Find Significantly Responsive Branches in a Phylogenetic Tree—**◆ John Stevens, Utah State University; Todd R. Jones, Cornell University; Michael Lefevre, Utah State University

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

5:20 p.m. **A Powerful Method for Genetic Pathway Analysis—**  
◆ Qi Yan, The University of Alabama at Birmingham;  
Nianjun Liu, The University of Alabama at Birmingham

5:35 p.m. **Mixed Modeling of Meta-Analysis P-Values  
(MixMAP) with Applications to Genome-Wide  
Association Studies of Low-Density Lipoprotein  
Cholesterol and Insulin Resistance—**◆ Gregory  
Matthews, University of Massachusetts; Andrea S.  
Foulkes, University of Massachusetts; Muredach Reilly,  
University of Pennsylvania School of Medicine

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## Survival Analysis—Contributed

Biometrics Section, SSC

Chair(s): Gajanan Bhat, Lantheus Medical Imaging, Inc.

4:05 p.m. **Chi-Squared Goodness-of-Fit Test Based on  
Random Cells Boundaries with Recurrent  
Events—**◆ Withanage De Mel, Missouri University of  
Science and Technology; Akim Adekpedjou, Missouri  
University of Science and Technology; Gideon K.D.  
Zamba, University of Iowa

4:20 p.m. **Hosmer-Lemeshow Goodness-of-Fit Test:  
Translations to the Cox Proportional Hazards  
Model—**◆ Danielle Guffey, University of Washington;  
Susanne May, University of Washington; David W.  
Hosmer, University of Massachusetts, Amherst

4:35 p.m. **Developing Test Statistics to Identify Over- or  
Under-Dispersion in Parametric Lifetime Models—**  
◆ Md. Rajibul Mian, University of Windsor;  
Sudhir Paul, University of Windsor

4:50 p.m. **Issues of Misspecified Measurement Error Models  
for Survival Data with Covariate Measurement  
Error—**◆ Ying Yan, University of Waterloo;  
Grace Y. Yi, University of Waterloo

5:05 p.m. **Birnbaum-Saunders Frailty Model—**◆ Lin Fang,  
McMaster University; Narayanaswamy Balakrishnan,  
McMaster University

5:20 p.m. **Validation and Use of a Parametric Model for  
Forecasting Implant Survivorship Beyond Observed  
Data in Total Knee Arthroplasty—**◆ Katie Miller,  
Biomet Orthopedics

5:35 p.m. **Floor Discussion**

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## Experimental Design and Analysis— Contributed

Section on Physical and Engineering Sciences, SSC

Chair(s): Jiabin Zhao, Cisco Systems

4:05 p.m. **Search Algorithm and Selection of Optimal Choice  
for Focused Preference of Multiple Objectives—**  
◆ Christine Anderson-Cook, Los Alamos National  
Laboratory; Lu Lu, Los Alamos National Laboratory;  
Dennis Kon-Jin Lin, Penn State University

4:20 p.m. **Optimal Design of a Two-Block Experiment Using  
Contrasts of a Four-Level Categorical Factor—**  
◆ Greg Piepel, Pacific Northwest National Laboratory;  
Joe Westsik, Jr., Pacific Northwest National Laboratory;  
Alex Cozzi, Savannah River National Laboratory; Dave  
Swanberg, Washington River Protection Solutions

4:35 p.m. **Joint Model Selection for Location and Dispersion  
Effects in Unreplicated Factorial Experiments—**  
◆ Thomas Loughin, Simon Fraser University;  
Andrew Henrey, Simon Fraser University

4:50 p.m. **Identification and Estimation of Location and  
Dispersion Effects in Screening Experiments—**  
◆ Kwame Kankam, Statistics Department, Penn State  
University; Jim Rosenberger, Penn State University

5:05 p.m. **Estimating a Generalized Binary Model for  
Mixture Experiments—**◆ Liam Brown,  
University of Manchester; Alexander Donev,  
University of Manchester

5:20 p.m. **QN Allocation: Balancing the Number of Replicates  
vs. the Number of Treatments in a Designed  
Simulation Experiment—**◆ Allan Mense, Raytheon  
Company; Terril N. Hurst, Raytheon Missile Systems;  
Jarom Ballantyne, Raytheon Missile Systems

5:35 p.m. **Floor Discussion**

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## Applications of Risk Analysis—Contributed

Section on Risk Analysis, Section on Statistical Graphics, Korean  
International Statistical Society

Chair(s): Edsel A. Pena, University of South Carolina

4:05 p.m. **A Compartment Model for Estimating Blood  
Donation Loss from Changes in the Inter-Donation  
Interval and Hemoglobin Requirements—**◆ Arianna  
Simonetti, FDA/CBER; Anne Fernando, Norfolk State  
University; Richard Forshee, FDA/CBER

4:20 p.m. **Default Risk Analysis of the Taiwan Industrial: A  
Survival Analysis Approach—**◆ Yi-kuan Jong,  
St. John's University

4:35 p.m. **Quantifying Risks of Extremes—**◆ Ugur Alparslan,  
American University

4:50 p.m. **A Diversity Index for Model Selection in the  
Estimation of Benchmark and Infectious Doses  
via Frequentist Model Averaging—**◆ Steven Kim,  
University of California at Irvine; Ralph Kodell,  
University of Arkansas for Medical Sciences; Hojin  
Moon, California State University at Long Beach

5:05 p.m. **Gradient Extrapolated Stochastic Kriging—**  
◆ Michael Fu, ; Huashuai Qu, University of Maryland

5:20 p.m. **A Statistical Diagnosis of Customer Risk-Ratings in  
Anti-Money Laundering Surveillance—**◆ Bhojnarine  
R. Rambharat, U.S. Treasury (OCC); Andrew J.  
Tschirhart, U.S. Treasury (OCC)

CC-513b

CC-514c

CC-515a

5:35 p.m. **Quantile Regression in Improving the Visualization and Estimation of the Relationship Between Risk Factors and Outcome Measures**—◆ Wanying Li; Michael D. Lock, Crescendo Bioscience, Inc.; Douglas Haney, Crescendo Bioscience, Inc.

## 80 CC-513a **■ Biomarkers and Personalized Medicine—Contributed**

Biopharmaceutical Section, Mental Health Statistics Section, International Chinese Statistical Association, Biometrics Section  
 Chair(s): Emilea Norris, PPDI Inc

- 4:05 p.m. **On Model Building for Combining Genomics and Clinical Covariates Information**—◆ Samir Lababidi, FDA
- 4:20 p.m. **Statistical Methods to Build a Prognostic Model of Residual Risk for Major Cardiovascular Events in Coronary Patients**—◆ Rana Fayyad, Pfizer Inc.; Ingar Holme, Center of Preventive Medicine, Oslo University Hospital, Ullevål; Sarah Young, Pfizer Inc.; Chuan-Chuan Wun, Pfizer Inc.
- 4:35 p.m. **Bi-Level Groupwise Multiple Features Selection Method for Identifying Novel Biomarkers in Pharmacogenetic Studies**—◆ Ting-Huei Chen, The University of North Carolina at Chapel Hill; Wei Sun, The University of North Carolina at Chapel Hill
- 4:50 p.m. **Variable Selection by Combinatorial Optimization, with Application to Pharmacogenomics**—◆ Joseph Levy, Teva Pharmaceuticals Industries; Amir Tchelet, Teva Pharmaceutical Industries
- 5:05 p.m. **Statistical Methods and General Principles of Exploratory Biomarker Analysis: Pathway to Personalized Medicine**—◆ Rui Tang, Amgen, Inc.; Mike Hale, Amgen, Inc.; Jing Huang, Amgen; Li Chen, Amgen, Inc.
- 5:20 p.m. **Sample-Size Determination to Assess Diagnostic Accuracy Based on Area Under Receiver Operating Characteristic Curve Analysis**—◆ Ya-Hui Hsu, AbbVie

## 81 CC-511d **■ Geologic, Atmospheric, and Weather-Related Events—Contributed**

Section on Statistics and the Environment, Scientific and Public Affairs Advisory Committee  
 Chair(s): Phil Yates, Saint Michael's College

- 4:05 p.m. **Discrete Rainfall Predictability Using the El Niño/Southern Oscillation Interaction**—◆ Luis Cid-Serrano, University of Bio Bio; Sandra Ramirez-Buelvas, P. Universidad Javeriana de Cali; Eric Alfaro, Universidad de Costa Rica; Sergio Contreras, University of Bio Bio

- 4:20 p.m. **Hurricane Forecasting Using a Multivariate Spatial Functional Linear Model**—◆ Christopher Krut, North Carolina State University; Montserrat Fuentes, North Carolina State University; Brian J. Reich, North Carolina State University
- 4:35 p.m. **Structured Sparse Methodology for Early Tsunami Warning Systems**—◆ Daniel Percival, Google; Donald Percival, University of Washington
- 4:50 p.m. **Incorporating Geostrophic Wind Information for Improved Space-Time Short-Term Wind Speed Forecasting**—◆ Xinxin Zhu, Texas A&M University; Marc G. Genton, KAUST; Kenneth Bowman, Texas A&M University
- 5:05 p.m. **Spatial-Temporal Interpolation of Non-Methane Hydrocarbons Levels in Kuwait**—◆ Shafiqah Alawadhi, Kuwait University; Fahima Alawadhi, Kuwait University
- 5:20 p.m. **Process Modeling for Soil Moisture Using Sensor Network Data**—◆ Souparno Ghosh, Texas Tech University; David M. Bell, University of Wyoming; Alan E. Gelfand, Duke University; James S. Clark, Duke University; Paul Flikkema, Northern Arizona University
- 5:35 p.m. **Spatial Process Gradients and Their Use in Sensitivity Analysis for Environmental Processes**—◆ Maria Terres, Duke University; Alan E. Gelfand, Duke University

## 82 CC-522bc **Monte Carlo Methods: Models and Tests—Contributed**

Section on Statistical Computing  
 Chair(s): Elena G. Rantou (Randou), George Mason University

- 4:05 p.m. **A Wald's-Type Goodness-of-Fit Test for Binormality**—◆ Yevgeniy Voinov, KIMEP University
- 4:20 p.m. **Generation of Correlated Data for Given Marginal Distributions and Correlation Coefficient**—◆ Jim Xiang, Janssen Pharmaceutical
- 4:35 p.m. **Handling Realistic Assumptions in Hypothesis Testing of 3D Co-Localization of Genomic Elements**—◆ Tonje Lien; Jonas Paulsen, Oslo University Hospital, Section for Medical Informatics, The Norwegian Radium Hospital; Geir Kjetil Sandve, University of Oslo; Lars Holden, Norwegian Computing Center; Ørnulf Borgan, University of Oslo; Ingrid Glad, University of Oslo; Eivind Hovig, Oslo University Hospital, Institute for Cancer Research, Department of Tumor Biology
- 4:50 p.m. **A Characterization of the Power Method Transformation Through the Method of Percentiles**—◆ Jennifer Koran, Southern Illinois University-Carbondale; Todd C. Headrick, Southern Illinois University Carbondale; Tzu Chun Kuo, Southern Illinois University-Carbondale



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

5:05 p.m. **Power Analysis of a Left-Truncated Normal Mixture Distribution with Applications in Red Blood Cell Velocities**—◆ Huichao Chen, Harvard School of Public Health; Xiangjin Xu, Binghamton University

5:20 p.m. **Prediction Intervals for Generalized Linear Mixed Models**—◆ Chenghsueh Yang, University of California at Riverside; Daniel Jeske, University of California

5:35 p.m. **A New Invariant and Consistent Chi-Squared Type Goodness-of-Fit Test for Multivariate Normality**—◆ Vassiliy Voinov, KIMEP University; Natalie Pya, KIMEP University; Rashid Makarov, KIMEP University; Yevgeniy Voinov, KIMEP University

## 83 CC-514b ■ **Analysis of Financial Markets: Stocks, Exchange Rates, and Monetary Policy—Contributed**

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

Chair(s): Sinjini Mitra, California State University at Fullerton

4:05 p.m. **Stock Return Predictability with a Near-Random Walk Model: Evidence and Implications**—◆ Staffan Fredricsson

4:20 p.m. **Herding Through the Tails**—◆ Jose Faias, Catolica Lisbon SBE

4:35 p.m. **Estimating the Renminbi Exchange Rate Basket: A Study on Numeraire**—◆ Kazuhiko Shinki, Wayne State University; Ying Tang, Wayne State University

4:50 p.m. **Panel Data Regressions and New Insights on Monetary Policy Rules**—◆ Joselito Basilio, University of Illinois at Chicago

5:05 p.m. **Nigeria's Monetary Survey: 2001–2012**—Chiomia Nwosu, Central Bank of Nigeria; ◆ Phebian N. Bewaji, Central Bank of Nigeria

5:20 p.m. **Specification Analysis of International Treasury Yield Curve Factors**—◆ Andrew Siegel, University of Washington; Fulvio Pegoraro, Banque de France; Luca Tiozzo 'Pezzoli', Banque de France

5:35 p.m. **Floor Discussion**

## 84 CC-514a ■ **New Developments in Disease Prediction—Contributed**

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

Chair(s): Michelle Ross, University of Washington

4:05 p.m. **Prediction of Tumor Subtypes by Mixture Modeling of Somatic Mutation Profiles**—◆ Lin Hou, Yale School of Public Health; Hongyu Zhao, Yale University

4:20 p.m. **Piecewise Linear Mixed Effects Model to Track the Temporal Changes in Early Childhood Body Mass Index (BMI) Trajectories**—◆ Md Jobayer Hossain, Nemours Biomedical Research A.I. DuPont Children Hospital; Samuel Gidding, A.I. DuPont Children Hospital; H. Timothy Bunnell, Nemours Biomedical Research; Sandra Hassink, A.I. DuPont Children Hospital; Timothy T. Wysocki, Nemours Biomedical Research A.I. DuPont Children Hospital

4:35 p.m. **Multistate Analysis of Interval-Censored Longitudinal Data for Examining Transitions in Performance Status Among Cancer Outpatients**—◆ Rinku Sutradhar, Institute for Clinical Evaluative Sciences

4:50 p.m. **Semiparametric Mixed Model for Detection of Rapid Disease Progression**—◆ Leo Li Duan, Cincinnati Children's Hospital Medical Center; John P. Clancy, Cincinnati Children's Hospital Medical Center; Rhonda D. Szczesniak, Cincinnati Children's Hospital Medical Center

5:05 p.m. **Analysis of Panel Data Under a Markov Assumption with Covariate Measurement Error**—◆ Feng He, University of Waterloo; Grace Y. Yi, University of Waterloo

5:20 p.m. **Estimating Biological Age Using Ensemble-Based Prediction Models**—◆ Wendy Shih, Steve Horvath, University of California at Los Angeles

5:35 p.m. **Bayesian Spatio-Temporal Disease Mapping and Projection Using Data from the National Program of Cancer Registries Lung and Bronchus Cancer 1998–2005**—◆ Qiang Ling

## 85 CC-516e ■ **Survival Analysis and Hypothesis Testing—Contributed**

International Chinese Statistical Association, WNAR

Chair(s): Chen Hu, American College of Radiology

4:05 p.m. **Joint Analysis of Longitudinal Data and Competing Risks Survival Times in the Presence of Dependent Observational Times**—◆ Tai-Fang Chen Lu, Providence University; Chyong-Mei Chen, Providence University

4:20 p.m. **A Cautionary Note on the Nonparametric Test for Equality of Survival Medians**—◆ Zhongxue Chen, Indiana University Bloomington

4:35 p.m. **Exact Lasso Linear Regression**—◆ Kai Wang, University of Iowa

4:50 p.m. **A Parametric Bootstrap Approach for One-Way and Two-Way ANOVA Under Unequal Variances with Unbalanced Data**—◆ Guoyi Zhang, University of New Mexico

5:05 p.m. **Hypothesis Testing for Large Dimensional Covariance Matrices**—◆ Yingli Qin, University of Waterloo; Weiming Li, Beijing University of Posts and Telecommunications



5:20 p.m. **Testing for Long Memory Using Penalized Splines and Adaptive Neyman Methods**—◆Linyuan Li, University of New Hampshire

5:35 p.m. **Joint Analysis of Multivariate Current Status Data with Dependent Censoring**—◆Chyong-Mei Chen, Providence University

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CC-515c

## ■ International Indian Statistical Association Cpapers 1—Contributed

International Indian Statistical Association, SSC

Chair(s): Mallikarjuna Rettiganti, University of Arkansas for Medical Sciences

4:05 p.m. **Impact of Regularization on Spectral Clustering**—◆Antony Joseph, University of California at Berkeley; Bin Yu, University of California at Berkeley

4:20 p.m. **Nonparametric Multivariate Inference on Shift**—◆Yodit Seifu, Novartis; John Kolassa, Rutgers University

4:35 p.m. **Estimating the Number of Signals in Mixed Data with Stationary Colored Noise in the Absence of Reference Noise Samples**—◆Rajesh Nandy

4:50 p.m. **Inference Procedures for Bivariate Exponential Model of Gumbel in Reliability Theory**—◆Paul Savariappan, Luther College

5:05 p.m. **Study of Efficiency in a Two-Stage Design for Dose-Response Model with Ill-Specified Guess Values of Parameters**—◆Karabi Nandy

5:20 p.m. **Copula Models for Data Disclosure Limitation**—◆Mario Trottni, University of Alicante; Krish Muralidhar, University of Kentucky; Rathindra Sarathy, Oklahoma State University

5:35 p.m. **Floor Discussion**

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CC-520d

## Weighting and Estimation of Complex Survey Data—Contributed

Survey Research Methods Section

Chair(s): David Morganstein, Westat

4:05 p.m. **Estimation Methodology for Weekly Surveys of Influenza Vaccination Rates**—◆Kennon Copeland, NORC; Nicholas Davis, NORC at the University of Chicago; Lin Liu, NORC at the University of Chicago; Nadarajasundaram Ganesh, NORC at the University of Chicago; James A. Singleton, NCIRD, Centers for Disease Control and Prevention; Tammy Santibanez, NCIRD, Centers for Disease Control and Prevention

4:20 p.m. **Weighting Adjustments for Panel Nonresponse**—◆Qixuan Chen, Columbia University; Andrew Gelman, Columbia University; Melissa Tracy, Columbia University; Fran Norris, Dartmouth Medical School; Sandro Galea, Columbia University

4:35 p.m. **Bias Analysis of Average Weekly Earnings in the Current Employment Statistics Survey**—◆Diem-Tran Kratzke, Bureau of Labor Statistics

4:50 p.m. **An Investigation of Decennial Census Effects on Estimates of Substance Use and Mental Illness from the National Survey on Drug Use and Health (NSDUH)**—◆Neeraja Sathe, RTI International; Patrick Chen, RTI International; Art Hughes, Center for Behavioral Health Statistics and Quality, SAMHSA; Jonaki Bose, Center for Behavioral Health Statistics and Quality, SAMHSA; Lanting Dai, RTI International; Misty Foster, RTI International

5:05 p.m. **Subsampling the Medical Expenditure Panel Survey for High-Expenditure Cases**—◆Robert Baskin, AHRQ; Lap-Ming Wun, Agency for Healthcare Research and Quality

5:20 p.m. **NSHAP's Wave 2 Nonresponse Weight Adjustment with Some Wave 1 Nonresponses**—◆Steven Pedlow, NORC at the University of Chicago; Colm O'Muircheartaigh, NORC at the University of Chicago; Phil Schumm, The University of Chicago

5:35 p.m. **Weighting Methods for the 2010 Data Collection Cycle of the Medical Monitoring Project**—◆Lee Harding, ICF; Ronaldo Iachan, ICF International; Christopher Johnson, CDC/NCHHSTP; Tonja Kyle, ICF; Jacek Skarbinski, Centers for Disease Control and Prevention

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CC-511f

## Bayesian Methods in the Social and Environmental Sciences—Contributed

Section on Bayesian Statistical Science, Section on Statistics and the Environment, Scientific and Public Affairs Advisory Committee

Chair(s): MaryAnn Morgan-Cox, Eli Lilly and Company

4:05 p.m. **Bayesian Observation Modeling in Presence-Only Data**—◆Ioanna Manolopoulou, University College London; Richard Hahn, The University of Chicago, Booth School of Business

4:20 p.m. **Bayesian Partially Ordered Multinomial Probit Model with an Application to Course Redesign**—Michael Sonksen, The University of New Mexico; Kristin Umland, The University of New Mexico; ◆Xueqin Shelley Wang, The University of New Mexico

4:35 p.m. **A Bayesian Two-Part Latent Class Model for Longitudinal Government Expenditure Data: Assessing the Impact of Vertical Political Alliances and Political Support**—◆Felipe Nunes

4:50 p.m. **Recidivism: Prediction with Bayesian Models**—◆Gail Blattenberger, University of Utah; Richard Fowles, Department of Economics

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

5:05 p.m. **A Bayesian Regression Tree Approach to Identify the Effect of Nanoparticles Properties on Toxicity Profiles**—◆ Cecile Low-Kam, University of California at Los Angeles; Donatello Telesca, University of California at Los Angeles; Zhaoxia Ji, University of California at Los Angeles; Haiyuan Zhang, University of California at Los Angeles; Tian Xia, University of California at Los Angeles; Jeffrey I. Zink, University of California at Los Angeles; Andre E. Nel, University of California at Los Angeles

5:20 p.m. **Nonparametric Seemingly Unrelated Regression with Gaussian Graphical Model**—◆ Debkumar De, Texas A&M University

5:35 p.m. **Modeling Time-Varying Spatial Patterns of Variability in Climate Data with an Approximate Variance-Covariance Matrix**—◆ Xu Tian; Hal S. Stern, University of California; Yaming Yu, University of California at Irvine; Gudrun Magnúsdóttir, University of California at Irvine; Yi-Hui Wang, University of California at Irvine

89 **Data Analysis and Confidentiality**—  
**Contributed** CC-520b

Government Statistics Section, Social Statistics Section, Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee  
Chair(s): John Eltinge, Bureau of Labor Statistics

4:05 p.m. **The Challenges of Gathering and Interpreting National Data on Ambulatory Surgery Over Time**—◆ Margaret Jean Hall, National Center for Health Statistics, Centers for Disease Control and Prevention

4:20 p.m. **JOLTS Reported Separations, Item Imputation, and Sample Rotation: Impact on JOLTS-CES Divergence**—◆ Mark Crankshaw, Bureau of Labor Statistics

4:35 p.m. **Measuring Green Employment: Issues and Observations in Data Collection**—◆ Nicholas Fett, Bureau of Labor Statistics

4:50 p.m. **Designing an Empirically Based Just Linear Income Tax System**—◆ Guillermina Jasso, New York University; Bernd Wegener, Humboldt University



**OPENING MIXER**

Sunday, August 4  
8:30 p.m. – 10:30 p.m.

Palais des congrès de Montréal  
Room CC-517cd

- 5:05 p.m. **Improving LP Performance in Cell Suppression Process**—◆Bei Wang, U.S. Census Bureau
- 5:20 p.m. **Noise Multiplication and Multiple Imputation as Alternatives to Top Coding for Statistical Disclosure Control: An Overview and Comparison**—◆Martin Klein
- 5:35 p.m. **Fast Calculation of Exact Contingency Table Cell Bounds Given Conditional Frequencies**—◆Byran Smucker, Miami University; Steven Wright, Miami University; Andrew Sage, Miami University

- 4:35 p.m. **Losing \$3 Million and Being Happy: A Tale of Money, Lives, and Prediction**—◆Bruce Swihart, Johns Hopkins School of Public Health; Ciprian M. Crainiceanu, The Johns Hopkins University; Brian Caffo, The Johns Hopkins University; Rafa Irizarry, Johns Hopkins School of Public Health; Yingying Wei, Johns Hopkins School of Public Health; Jeff Goldsmith, Columbia University; Russell Shinohara, University of Pennsylvania; Gagan Sidhu, University of Alberta

- 4:50 p.m. **Dominance Modeling for GWAS Hit Regions with Generalized Resample Model Averaging**—◆Jeremy Sabourin, The University of North Carolina; Andrew Nobel, The University of North Carolina at Chapel Hill; William Valdar, The University of North Carolina at Chapel Hill

## 90 CC-512d Nonparametric Testing—Contributed

Section on Nonparametric Statistics

Chair(s): Lei Huang, Johns Hopkins University

- 4:05 p.m. **Detection of Multiple Structural Breaks in Multivariate Time Series**—◆Philip Preuss, Ruhr-University Bochum
- 4:20 p.m. **On a New Distribution-Free Two-Sample Test**—◆Jamy Curry
- 4:35 p.m. **Inference for Locally Stationary Time Series Regression Models**—◆Yeonwoo Rho, University of Illinois at Urbana-Champaign; Xiaofeng Shao, University of Illinois at Urbana-Champaign
- 4:50 p.m. **Permutation Methods to Study Complex Shapes When the Sample Size Cannot Be Increased**—◆Luigi Salmaso, University of Padova; Chiara Brombin, University of Milan-San Raffaele
- 5:05 p.m. **On Small Sample Properties of Simultaneous Inference Based on Rank Statistics**—◆Hossein Mansouri, Texas Tech University
- 5:20 p.m. **A Nonparametric Omnibus Independence Test Based on Copula Density**—◆Gery Geenens, UNSW
- 5:35 p.m. **A Multivariate Two-Sample Test Using Regular Minimum-Weight Spanning Subgraphs**—◆David Ruth, U.S. Navy

- 5:05 p.m. **Statistical Issues in Development of a Predictive Model for Survival in Chronic Lymphocytic Leukemia**—◆Minya Pu, University of California at San Diego, Moores University of California at San Diego Cancer Center; Hongying Li, University of California, San Diego Cancer Center; Lei Bao, University of California at San Diego Cancer Center; Loki Natarajan, University of California at San Diego; Laura Rassenti, University of California at San Diego Cancer Center; Thomas Kipps, University of California at San Diego Cancer Center; Karen Messer, University of California at San Diego

- 5:20 p.m. **Structured Brain-Wide and Genome-Wide Association Study via Multivariate Compound Lasso Using PET Images**—◆Yanming Li, University of Michigan; Bin Nan, University of Michigan; Ji Zhu, University of Michigan

- 5:35 p.m. **Floor Discussion**

## 91 CC-525b ■ Applications of Machine Learning and Data Mining Techniques—Contributed

Section on Statistical Learning and Data Mining

Chair(s): Gerardo Hurtado, SAS Institute

- 4:05 p.m. **Utilizing Data Mining to Predict Elevated Knee Loading in Athletes and Assessing Their Risk for Anterior Crucial Ligament Injury**—◆Kristin Morgan
- 4:20 p.m. **Pilots' Absence Prediction in an Airline Company**—◆Amir Hosein Homaie Shandizi; Bruno Agard, École Polytechnique de Montréal; Michel Gamache, École Polytechnique de Montréal; Vahid Partovi Nia, École Polytechnique Montréal

## 92 CC-517cd Complex Data Analysis and High-Dimensional Computing: Methods and Applications—Invited

Biometrics Section, Government Statistics Section, IMS, Korean International Statistical Society, Section for Statistical Programmers and Analysts, Section on Bayesian Statistical Science, Section on Nonparametric Statistics, Section on Statistical Consulting, Section on Statistical Learning and Data Mining, Section on Statistics and the Environment, Section on Statistics in Epidemiology, Social Statistics Section

Organizer(s): Joyee Ghosh, University of Iowa; Mimi Kim, Albert Einstein College of Medicine; Nancy J. Petersen, Department of Veterans Affairs

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

Biometrics Section

- 1 **Assessing Accuracy of Population Screening Using Longitudinal Marker**—◆Paramita Saha-Chaudhuri, Duke University

## Invited Poster Presentations 8:30 p.m.–10:30 p.m.

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-Hotel InterContinental Montréal

## Section for Statistical Programmers and Analysts

- 2 **The Emerging Role of the Data Scientist**—  
◆ Charles D. Kincaid, Experis Business Analytics

## IMS

- 3 **Optimal Scaling of MCMC Algorithms**—  
◆ Natesh S. Pillai, Harvard University

## Government Statistics Section

- 4 **Geographic Adjustment Factors for Educational Expenditures**—◆ Satkartar Kinney, NISS; Alan F. Karr, National Institute of Statistical Sciences

## Section on Statistics in Epidemiology

- 5 **Using Family Members to Augment Genetic Case-Control Studies of a Life-Threatening Disease**—  
◆ Lu Chen, University of Pennsylvania; Jinbo Chen, University of Pennsylvania School of Medicine; Clarice R. Weinberg, National Institute of Environmental Health

## Korean International Statistical Society

- 6 **Analysis of Secondary Outcomes in Nested Case-Control Study Designs**—◆ Ryung S. Kim, Albert Einstein College of Medicine

## Section on Statistical Learning and Data Mining

- 7 **Nonparametric Bayes Multi-Task Multi-View Learning**—◆ Angela Schoergendorfer, IBM T.J. Watson Research Center; Hongxia Yang, IBM T.J. Watson Research Center

## Section on Bayesian Statistical Science

- 8 **Selection of Building Components Using Sequential Design via Statistical Surrogate Models**—◆ Fei Liu, IBM Watson Research Center; Rui Zhang, IBM Watson Research Center; Angela Schoergendorfer, IBM T.J. Watson Research Center; Youngdoek Hwang, IBM Watson Research Center; Young Lee, IBM Watson Research Center; Jane Snowdon, IBM Watson Research Center

## Section on Statistics in Epidemiology

- 9 **The Validity and Efficiency of the Common Effect Test for Subtype Analysis in Case-Case Studies**—◆ Molin Wang, Harvard Medical School and Harvard School of Public Health; Aya Kuchiba, Harvard School of Public Health; Donna Spiegelman, Harvard School of Public Health

## Section for Statistical Programmers and Analysts

- 10 **Speaking Clearly About Data Scientists: A Survey and Clustering Analysis**—◆ Harlan D. Harris, Data Community DC; Marck Vaisman, Data Community DC; Sean P. Murphy, Data Community DC

- 11 **A Little Goes a Long Way: Habits of the Efficient Project-Juggling SAS Programmer**—  
◆ Jonathan L. Moscovici, Quintiles

## Social Statistics Section

- 12 **Multiply Imputing Missing Values in Data Sets with Mixed Measurement Scales Using a Sequence of Generalized Linear Models**—◆ Robin Mitra, University of Southampton; Min Lee, University of Southampton

## Section on Bayesian Statistical Science

- 13 **Estimates and Standard Errors for Ratios of Normalizing Constants from Multiple Markov Chains**—  
◆ Aixin Tan, University of Iowa

## Korean International Statistical Society

- 14 **Variable Selection for Failure Time Data from Stratified Case-Cohort Studies: An Application to a Retrospective Dental Study**—◆ Sangwook Kang, University of Connecticut

## Section on Statistics and the Environment

- 15 **A Bayesian Nonparametric Method for Spatial Point Processes with Application to Sea Turtles' Nesting Patterns**—◆ Gavino Puggioni, University of Rhode Island; Lance A. Waller, Emory University

## Section on Nonparametric Statistics

- 16 **Data Analysis on Riemannian Symmetric Spaces**—  
◆ Emil Cornea, The University of North Carolina at Chapel Hill; Hongtu Zhu, The University of North Carolina at Chapel Hill; Joseph G. Ibrahim, The University of North Carolina

## Biometrics Section

- 17 **Kernel-Based Aggregation of Marker-Level Genetic Association Tests Involving Copy-Number Variation**—  
◆ Patrick Breheny, University of Kentucky; Yinglei Li, University of Kentucky

## Korean International Statistical Society

- 18 **Design and Analysis of Pre-Post Studies with a Binary Outcome on Partially Overlapping Units**—◆ Song Zhang, The University of Texas Southwestern Medical Center; Jing Cao, Southern Methodist University; Chul Ahn, The University of Texas Southwestern Medical Center

## Section on Statistical Consulting

- 19 **Seeking Partners for LISA 2020: Creating a Network of Statistical Collaboration Laboratories in Developing Countries**—◆ Eric A. Vance, LISA-Virginia Tech



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# MONDAY, AUGUST 5

## Committee/Business Meetings & Other Activities

7:00 a.m.–8:00 a.m. W-Youville

### Section on Teaching of Statistics in the Health Sciences Executive Committee Meeting

Chair(s): Steven Grambow, Duke University-Veteran's Affairs

7:00 a.m.–8:00 a.m. I-Saint-Gabriel

### Significance Editorial Board Meeting (Closed)

7:00 a.m.–8:30 a.m. W-Notre Dame

### Council of Chapters International Science and Engineering Fair Meeting Breakfast (Closed)

Chair(s): Theresa Utlaut, Intel Corporation

7:00 a.m.–8:30 a.m. I-Saint-Jacques

### Section on Statistical Education Executive Committee Meeting

Chair(s): Deborah Nolan, University of California at Berkeley

7:00 a.m.–8:30 a.m. I-Saint-Paul

### Committee on Privacy and Confidentiality Annual Meeting

Chair(s): Julia Lane, American Institutes for Research

7:00 a.m.–8:30 a.m. W-Papineau

### SPAIG Committee Business Meeting

Chair(s): Barry D. Nussbaum, U.S. Environmental Protection Agency

7:00 a.m.–8:30 a.m. I-Saint-Jean-Baptiste

### Health Policy Statistics Section Executive Committee Meeting

Chair(s): Mary Beth Landrum, Harvard Medical School

7:00 a.m.–8:30 a.m. I-Saint-Alexandre

### Committee on Professional Ethics Business Meeting

Chair(s): Howard R. Hogan, U.S. Census Bureau

7:00 a.m.–8:30 a.m. I-Saint-Helene

### ASA/SIAM Book Series

Chair(s): Lisa LaVange, FDA/CDER

7:00 a.m.–8:30 a.m. CC-523a

### Technometrics Management Committee

Chair(s): David Steinberg, Tel Aviv University

7:00 a.m.–8:30 a.m. I-Saint-Pierre

### Ad Hoc Advisory Committee on Forensic Science

Chair(s): Karen Kafadar, Indiana University

7:00 a.m.–8:30 a.m. CC-441

### Committee on Career Development Meeting

Chair(s): Karla Ballman, Mayo Clinic

7:00 a.m.–9:00 a.m. CC-441

### Social Statistics Executive Board Meeting

Chair(s): Linda Jacobsen, Population Reference Bureau

7:00 a.m.–6:00 p.m. CC-513c

### Speaker Management Room

7:00 a.m.–10:00 p.m. CC-200 Viger Hall

### Cyber Center, Sponsored by IBM

7:30 a.m.–8:30 a.m. I-Saint-Francois Xavier

### Section on Statistics and Disability Research Meeting

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

7:30 a.m.–9:00 a.m. CC-524c

### Carnegie Mellon Alumni and Faculty Breakfast

Organizer(s): Margaret Smykla, Carnegie Mellon University

7:30 a.m.–12:30 p.m. I-Maisonneuve

### Biopharmaceutical Section Executive Committee Meeting

Chair(s): Amit Bhattacharyya, GlaxoSmithKline

7:30 a.m.–6:00 p.m.

### JSM Main Registration

7:30 a.m.–6:00 p.m. CC-200 Viger Hall

### ASA Membership/Help Desk/Press Desk

8:00 a.m.–9:00 a.m. I-Le Cave

### Communications in Statistics Annual Editorial Board Meeting

Organizer(s): Narayanaswamy Balakrishnan, McMaster University

8:00 a.m.–10:00 a.m. CC-449

### Section on Statistical Graphics Business Meeting

Chair(s): Webster West, North Carolina State University

8:00 a.m.–5:30 p.m. CC-220d

### Career Placement Service

8:00 a.m.–6:00 p.m. CC-220bc

### Exhibitor Lounge

8:30 a.m.–9:30 a.m. I-Saint-Laurent

### Transportation Special Interest Group Business Meeting

Chair(s): David Banks, Duke University

8:30 a.m.–10:30 a.m. I-Saint-Gabriel

### ACCE Business Meeting

Chair(s): Amita Manatunga, Emory University



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

9:00 a.m.–11:00 a.m. <b>JSM Diversity Mentoring Program</b> Chair(s): Sydeaka Watson, The University of Chicago	I-Saint-Francois Xavier	12:30 p.m.–2:30 p.m. <b>JSM Media Information Luncheon</b> Chair(s): Ron Wasserstein, American Statistical Association	I-Les Huitres
9:00 a.m.–5:30 p.m. <b>American Statistical Association Booth #201</b>		12:30 p.m.–2:30 p.m. <b>Annals of Applied Statistics Editors Meeting</b> Organizer(s): Elyse Gustafson, IMS Executive Director	CC-523a
9:00 a.m.–5:30 p.m. <b>EXPO 2013</b>	CC-220bc	12:30 p.m.–2:30 p.m. <b>JCGS Editors Lunch</b> Chair(s): Thomas Lee, University of California at Davis	I-Saint-Pierre
9:00 a.m.–5:30 p.m. <b>ASA Marketplace</b>	CC-220bc	2:00 p.m. <b>Popcorn Break, Sponsored by RTI International</b>	CC-220bc
10:00 a.m.–12:00 p.m. <b>Council of Chapters Governing Board Executive Committee Meeting (Closed)</b> Chair(s): Dan Kasprzyk, NORC at the University of Chicago	W-Notre Dame	2:00 p.m.–3:30 p.m. <b>Finance Committee Meeting</b> Chair(s): Keith Ord, Georgetown University	I-Saint-Paul
10:00 a.m.–12:00 p.m. <b>Council of Chapters Governing Board Committee on Chapter Status Meeting (Closed)</b> Chair(s): Bonnie LaFleur, University of Arizona	W-Youville	2:00 p.m.–3:30 p.m. <b>National Institute of Health/National Cancer Institute Directors of Training Programs</b> Organizer(s): Michelle Christine Dunn, National Cancer Institute	I-Maisonneuve
11:00 a.m.–12:30 p.m. <b>Section on Statistical Computing Executive Committee Meeting</b> Chair(s): Montse Fuentes, North Carolina State University	I-Saint-Jean-Baptiste	4:00 p.m.–5:30 p.m. <b>Caucus for Women in Statistics Business Meeting and Social</b> Organizer(s): Susmita Datta, University of Louisville	I-Saint-Gabriel
12:00 p.m.–5:00 p.m. <b>Council of Chapters Governing Board Meeting (Closed)</b> Chair(s): Dan Kasprzyk, NORC at the University of Chicago	W-Youville	4:00 p.m.–5:30 p.m. <b>StatCom Annual Business Meeting</b> Organizer(s): Andrew Hoegh, Virginia Tech	I-Saint-Jacques
12:30 p.m.–1:30 p.m. <b>Editorial Meeting: Statistics, Politics, and Policy</b>	I-Saint-Alexandre	4:00 p.m.–6:00 p.m. <b>Section on Nonparametric Statistics Student Paper Awards</b> Chair(s): Rui Song, North Carolina State University	CC-510d
12:30 p.m.–2:00 p.m. <b>2014 JSM Program Committee Meeting</b> Chair(s): Jean Opsomer, Colorado State University	I-Saint-Laurent	4:30 p.m.–6:00 p.m. <b>Section on Statistics and the Environment Executive Committee Meeting</b> Chair(s): Petrutza Caragea, Iowa State University	I-Saint-Helene
12:30 p.m.–2:00 p.m. <b>Biostatistics Journal Editorial Board Meeting</b> Organizer(s): Anastasios Tsiatis, North Carolina State University	I-Saint-Gabriel	4:30 p.m.–6:30 p.m. <b>Section for Statistical Programmers and Analysts (SSPA) Business Meeting and Mixer</b> Chair(s): Jyoti Rayamajhi, Eli Lilly and Company	CC-511b
12:30 p.m.–2:00 p.m. <b>IMS Editors Meetings</b> Organizer(s): Elyse Gustafson, IMS Executive Director	I-Saint-Jacques	5:00 p.m.–6:00 p.m. <b>Business and Economic Statistics Section Officers Meeting</b> Chair(s): John M. Abowd, Chair, Business and Economic Statistics Section	CC-525b
12:30 p.m.–2:00 p.m. <b>Statistics in Medicine Editorial Board Meeting Luncheon</b> Organizer(s): Ralph D'Agostino, Boston University	I-Le Cave	5:00 p.m.–6:00 p.m. <b>Statistical Interest Group for Medical Devices and Diagnostics Meeting</b> Chair(s): Scott M. Berry, Berry Consultants	CC-516d
12:30 p.m.–2:00 p.m. <b>JBES Associate Editor Lunch</b> Chair(s): Jamie Hutchens, JBES Editorial Coordinator	I-Saint-Louis		
12:30 p.m.–2:00 p.m. <b>Committee on Federally Funded Research Meeting</b> Chair(s): Michelle Christine Dunn, National Cancer Institute	W-Bonsecours		

5:00 p.m.–6:30 p.m. CC-523a  
**Centers for AIDS Research Statisticians Annual Meeting at JSM**  
 Organizer(s): Susan Ellenberg, University of Pennsylvania Perleman School of Medicine

5:00 p.m.–7:00 p.m. CC-513b  
**University of Washington - Alumni Reception, Departments of Biostatistics and Statistics**  
 Organizer(s): Bruce Weir, University of Washington

5:00 p.m.–7:00 p.m. CC-710a  
**NISS/SAMSI Reception**  
 Organizer(s): Alan F. Karr, National Institute of Statistical Sciences

5:00 p.m.–7:00 p.m. CC-522a  
**University of California at Los Angeles Department of Statistics Mixer**  
 Organizer(s): Rick Paik Schoenberg, Distinguished Professor

5:00 p.m.–8:00 p.m. CC-516c  
**Texas A&M University, Department of Statistics, Aggie Reunion**  
 Organizer(s): Simon Sheather, Professor and Head

5:30 p.m.–6:00 p.m. CC-516b  
**Section on Statistics in Epidemiology Executive Committee Meeting**  
 Chair(s): M. Elizabeth Halloran, Fred Hutchinson Cancer Research Center

5:30 p.m.–6:30 p.m. I-Saint-Jean-Baptiste  
**JQT Editorial Review Board Meeting**  
 Organizer(s): Bradley Jones, SAS Institute, JMP Division

5:30 p.m.–7:00 p.m. I-Saint-Alexandre  
**Section on Teaching Statistics in the Health Sciences Open Mixer and Business Meeting**  
 Chair(s): Steven Grambow, Duke University-Veteran's Affairs

5:30 p.m.–7:00 p.m. I-Saint-Pierre  
**Biometrics Section Mixer and Business Meeting**  
 Chair(s): Jianwen Cai, The University of North Carolina at Chapel Hill

5:30 p.m.–7:00 p.m. Offsite  
**Section on Statistics in Sports Business Meeting (offsite)**  
 Chair(s): Michael A. Rutter, Penn State Erie, The Behrend College

5:30 p.m.–7:00 p.m. CC-510b  
**Department of Biostatistics and Department of Statistics and Operations Research Joint Alumni, Students, and Friends Reception**  
 Organizer(s): Michael Kosorok, The University of North Carolina at Chapel Hill

5:30 p.m.–7:30 p.m. CC-516a  
**Yale University Biostatistics Alumni Reception**  
 Organizer(s): Haiqun Lin, Yale University

**STUDENT MIXER**

Monday, August 5  
 6:00 p.m. – 8:00 p.m.

Hotel Intercontinental Montréal  
 Room I-Maisonneuve

**Pfizer**

A special thanks to Pfizer Inc.  
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# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

5:30 p.m.–7:30 p.m. <b>Health Policy Statistics Section Business Meeting (offsite)</b> Chair(s): Mary Beth Landrum, Harvard Medical School	Offsite	6:00 p.m.–8:00 p.m. <b>Section on Statistical Computing/Graphics Business Meeting</b> Chair(s): Montse Fuentes, North Carolina State University	W-Fortifications
5:30 p.m.–7:30 p.m. <b>Social Statistics Business Meeting</b> Chair(s): Linda Jacobsen, Population Reference Bureau	I-Les Huitres	6:00 p.m.–8:00 p.m. <b>JSM Student Mixer, Sponsored by Pfizer Inc.</b>	I-Maisonneuve
5:30 p.m.–7:30 p.m. <b>Iowa State University Reception for Alumni and Friends</b> Organizer(s): Kenneth Koehler, Iowa State University	CC-510a	6:00 p.m.–8:00 p.m. <b>COPSS Anniversary Reception</b> Organizer(s): Jane Pendergast, University of Iowa	W-Ville-Marie
6:00 p.m.–7:30 p.m. <b>Section on Statistics and the Environment Business Meeting and Mixer</b> Chair(s): Petrutza Caragea, Iowa State University	CC-524c	6:00 p.m.–8:00 p.m. <b>University of Wisconsin-Madison Welcome Reception</b> Organizer(s): Brian Yandell, University of Wisconsin-Madison	CC-521c
6:00 p.m.–7:30 p.m. <b>Joint Mixer and Business Meeting of the Sections on Risk Analysis and Defense and National Security</b> Chair(s): Murali Haran, Penn State University	I-Saint-Paul	6:00 p.m.–9:00 p.m. <b>Section on Physical and Engineering Sciences Annual Business Meeting</b> Chair(s): Winson Taam	I-Saint-Francois Xavier
6:00 p.m.–7:30 p.m. <b>Taylor &amp; Francis Author/Editor Appreciation Reception</b> Organizer(s): Joanna Knight, Marketing Manager, CRC Press/Taylor & Francis Group	W-St. Antoine	6:30 p.m.–7:30 p.m. <b>ASA Longtime Member Reception (by Invitation Only), Sponsored by RTI International and Westat</b>	I-Saint-Jacques
6:00 p.m.–7:30 p.m. <b>CAUSE Activists and Institutional Members Meeting</b>	I-Le Cave	6:30 p.m.–8:00 p.m. <b>Section on Statistician Epidemiology Business Meeting and Awards Reception</b> Chair(s): M. Elizabeth Halloran, Fred Hutchinson Cancer Research Center	CC-516b
6:00 p.m.–7:30 p.m. <b>Christian Statisticians Informal Discussion Group Meeting</b> Organizer(s): Jason Wilson, Coordinator	I-Saint-Louis	7:00 p.m.–8:30 p.m. <b>Survey Research Methods Section Executive Committee Meeting</b> Chair(s): Jill Montaquila, Westat	CC-445
6:00 p.m.–7:30 p.m. <b>Annals of Statistics Editors Meeting</b> Organizer(s): Elyse Gustafson, IMS Executive Director	CC-523b	7:00 p.m.–8:30 p.m. <b>International Indian Statistical Association General Body Meeting and Mixer</b> Organizer(s): Cyrus Mehta, Cytel Inc.	CC-510c
6:00 p.m.–7:30 p.m. <b>Korean International Statistical Society Annual Meeting</b> Organizer(s): Dongseok Choi, Oregon Health & Science University	CC-710b	9:00 p.m.–11:00 p.m. <b>IMS Presidential Address Reception</b> Organizer(s): Elyse Gustafson, IMS Executive Director	CC-517d

## Continuing Education (Fee Events)

CE\_12C

### Crowdsourcing for Statisticians

8:00 a.m.–12:00 p.m. W-St. Antoine  
 ASA, Section on Statistical Learning and Data Mining  
 Instructor(s): Lyle Ungar, University of Pennsylvania; Adam Kapelner, The Wharton School

CE\_13C

### Techniques for Simulating Data in SAS

8:00 a.m.–12:00 p.m. W-Palais  
 ASA, Section for Statistical Programmers and Analysts  
 Instructor(s): Rick Wicklin, SAS Institute

CE\_14C

### Analysis of Clinical Trials: Theory and Applications

8:30 a.m.–5:00 p.m. W-Fortifications  
 Biopharmaceutical Section, ASA  
 Instructor(s): Devan Mehrotra, Merck; Alexei Dmitrienko, Quintiles; Jeff Maca, Quintiles

CE\_15C

### Successful Data Mining in Practice

8:30 a.m.–5:00 p.m. W-Ville-Marie  
 ASA, Section on Statistical Learning and Data Mining  
 Instructor(s): Richard D. De Veaux, Williams College

CE\_16C

### Monte Carlo and Bayesian Computation with R

8:30 a.m.–5:00 p.m. W-Saint-Helene  
 ASA, Section on Bayesian Statistical Science  
 Instructor(s): Jim Albert, Bowling Green State University; Maria L. Rizzo, Bowling Green State University

CE\_17C

### Practical Tools for Designing and Weighting Survey Samples

8:30 a.m.–5:00 p.m. W-Beaver Hall  
 ASA, Survey Research Methods Section  
 Instructor(s): Richard Valliant, University of Michigan and University of Maryland; Frauke Kreuter, University of Maryland; Jill Dever, RTI International

CE\_18C

### Meta-Analysis: Combining the Results of Multiple Studies

1:00 p.m.–5:00 p.m. W-St. Antoine  
 ASA, Health Policy Statistics Section  
 Instructor(s): Christopher Schmid, Brown University; Ingram Olkin, Stanford University

CE\_19C

### Practical Software Engineering for Statisticians

1:00 p.m.–5:00 p.m. W-Palais  
 ASA, Section on Statistical Computing, Biometrics Section  
 Instructor(s): Murray Stokely, Google

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

93

CC-517d

### Government Statistics Section A.M. Roundtable Discussion (Fee Event)

Government Statistics Section  
 Organizer(s): Grace O’Neil, Energy Information Administration

ML01

**Sampling Asians in the National Health and Nutrition Examination Survey**—◆Margaret Carroll, NCHS/CDC

94

CC-517d

### Health Policy Statistics Section A.M. Roundtable Discussion (Fee Event)

Health Policy Statistics Section  
 Organizer(s): Juned Siddique, Northwestern University

ML02

**Statistical Methods for Mediation Analysis**—◆Douglas Gunzler, Case Western Reserve University

95

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

ML03

**Boost Your Spatiotemporal Data Analysis with Physical Knowledge**—◆Alexander Kolovos, SpaceTimeWorks, LLC

96

CC-517d

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

Section on Statistical Education  
 Organizer(s): Ming-Wen An, Vassar College

ML04

**Discussing ‘Connecting Research to Practice in a Culture of Assessment for Introductory College-Level Statistics’**—◆Herle McGowan, North Carolina State University



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*Are you nearing graduation and wondering about entry-level jobs?*

*Are you an experienced statistics professional interested in career information?*

## **Register for the JSM Career Placement Service**

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**To register onsite, visit the main registration area.**



97 CC-517d  
**Section on Statistics and the Environment A.M.  
 Roundtable Discussion (Fee Event)**

Section on Statistics and the Environment  
 Organizer(s): Mevin Hooten, Colorado State University

ML05 **Statistics for Spatio-Temporal Data:  
 New Challenges**—◆ Christopher K. Wikle,  
 University of Missouri

98 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

ML06 **Challenges and Strategies for Analysis of Complex  
 Survey Data When Statistical Methodology and  
 Software Package Are Underdeveloped**—◆ Yan Ma,  
 Hospital for Special Surgery-Weill Medical College of  
 Cornell University

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

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99 CC-710a  
**Introductory Overview Lecture: Twenty Years  
 of Gibbs Sampling/MCMC—Other**

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

Organizer(s): Ken Rice, University of Washington  
 Chair(s): Ken Rice, University of Washington

8:35 a.m. **Gibbs Sampling and Markov Chain Monte Carlo:  
 A Modeler's Perspective**—◆ Alan E. Gelfand,  
 Duke University

9:25 a.m. **The Theoretical Underpinnings of MCMC**—  
 ◆ Jeffrey S. Rosenthal, University of Toronto

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

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**Invited Sessions  
 8:30 a.m.–10:20 a.m.**

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100 CC-520c  
**Opening the Doors to Open Source  
 Programming in Drug Development—Invited**

Section for Statistical Programmers and Analysts, Section on  
 Statistical Computing

Organizer(s): Vipin Arora, AbbVie, Inc.

Chair(s): Stephen Wilson, FDA/CDER/OTS/OB/DBIII

8:35 a.m. **Advantages of Open Source Software in Clinical  
 Trials**—◆ Frank Harrell, Vanderbilt University

8:55 a.m. **Open Source and Commercialized Open Source:  
 Risks, Mitigations, and Upsides for Commercial  
 Regulated R&D**—◆ Anthony Joseph Rossini,  
 Novartis Pharma AG

9:15 a.m. **Opening the Doors to Open Source Programming in  
 Drug Development**—◆ Narinder K. Nangia, AbbVie,  
 Inc.; Annie Wang, Astellas

9:35 a.m. **Open Source Software in the Biopharma Industry:  
 Challenges and Opportunities**—◆ Jose Carlos  
 Pinheiro, Janssen Research & Development

9:55 a.m. Disc: Jyoti Rayamajhi, Eli Lilly and Company

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

101 CC-520d  
**Advances in Nonstationary Spatial  
 Modeling—Invited**

Section on Statistics and the Environment, International Indian  
 Statistical Association, Section on Statistics in Epidemiology

Organizer(s): Luke Bornn, Harvard University

Chair(s): Luke Bornn, Harvard University

8:35 a.m. **Nonstationary and Nonparametric Modeling of  
 Multivariate Spatial Processes**—◆ Montserrat  
 Fuentes, North Carolina State University; Brian J.  
 Reich, North Carolina State University

9:00 a.m. **Nonstationary Latent Effects in Models for Animal  
 Counts**—◆ Alexandra M Schmidt, Universidade  
 Federal do Rio de Janeiro; Marco A. Rodriguez,  
 Université du Québec à Trois-Rivières

9:25 a.m. **Parameterization of Nonstationarity in Stochastic  
 PDE Models**—◆ Finn Lindgren, University of Bath

9:50 a.m. **Spatial Methods for Nonstationary Fields Using  
 Compact Basis Functions**—◆ Douglas Nychka,  
 National Center for Atmospheric Research; Soutir  
 Bandyopadhyay, Lehigh University

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

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 102 CC-515c ● **The Profession of Statistics and Its Impact on the Media—Invited**

Committee on Excellence in Statistical Reporting, Scientific and Public Affairs Advisory Committee

Organizer(s): Morteza Marzjarani, Saginaw Valley State University

Chair(s): Morteza Marzjarani, Saginaw Valley State University

- 8:35 a.m. **Media and Statistics: Of Excellence and Otherwise—**  
◆ Donald Arthur Berry, The University of Texas MD Anderson Cancer Center
- 9:00 a.m. **Two Ideas We Need to Teach the Media (and Everyone Else)—**◆ Howard Wainer, National Board of Medical Examiners
- 9:25 a.m. **Statistics and the Media—**Andrew Gelman, Columbia University; ◆ Mark Hansen, Columbia University
- 9:50 a.m. **The Concussion Crisis: Football's New Math—**  
◆ Alan Schwarz, *The New York Times*
- 10:15 a.m. **Floor Discussion**

## 103 CC-511c **Dynamic Treatment Regimes and Adaptive Designs Toward Personalized Health Care—Invited**

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

Organizer(s): Lu Wang, University of Michigan

Chair(s): Lu Wang, University of Michigan

- 8:35 a.m. **Personalized Medicine and Statistical Learning—**  
◆ Michael R. Kosorok, The University of North Carolina at Chapel Hill
- 9:00 a.m. **Adaptive Designs for Comparative Effectiveness Experiments of Treatment Strategies—**◆ Philip William Lavori, Stanford University; Mei-Chiung Shih, Stanford University
- 9:25 a.m. **Clinical Studies of Dynamic Treatment Strategies—**  
◆ Michael Baiocchi, Stanford University; Tze Lai, Stanford University
- 9:50 a.m. Disc: Peter Thall, The University of Texas MD Anderson Cancer Center
- 10:10 a.m. **Floor Discussion**

## 104 CC-511a ■ **JABES Showcase: Modern Dimension-Reduction Methods for Big Data Problems in Ecology—Invited**

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

Organizer(s): Mevin Hooten, Colorado State University

Chair(s): Ephraim Hanks, Colorado State University

- 8:35 a.m. **Modeling Spatially Dependent Forest Diameter Class Distributions Using High-Dimensional Lidar Data—**◆ Andrew Oliver Finley, Michigan State University; Sudipto Banerjee, University of Minnesota
- 9:00 a.m. **Hierarchical Bayesian Spatio-Temporal Conway-Maxwell Poisson Models with Dynamic Dispersion—**  
◆ Scott H. Holan, University of Missouri; Guohui Wu, University of Missouri; Christopher K. Wikle, University of Missouri
- 9:25 a.m. **Estimation and Selection of Autologistic Regression Models for Spatial Binary Data—**◆ Jun Zhu, University of Wisconsin-Madison; Rao Fu, University of Wisconsin-Madison; Andrew L. Thurman, University of Wisconsin-Madison; Michelle M. Steen-Adams, University of New England
- 9:50 a.m. **Ecological Prediction with Nonlinear Multivariate Time-Frequency Functional Data Models—**  
◆ Christopher K. Wikle, University of Missouri; Wen-Hsi Yang, University of Missouri; Scott H. Holan, University of Missouri; Mark L. Wildhaber, U.S. Geological Survey
- 10:15 a.m. **Floor Discussion**

## 105 CC-511f ■ **Recent Development in the Analysis of Repeated Survey Data—Invited**

Survey Research Methods Section, International Indian Statistical Association, Section on Statistics in Epidemiology

Organizer(s): Yang Cheng, U.S. Census Bureau

Chair(s): Ruth Ann Killion, U.S. Census Bureau

- 8:35 a.m. **Single-Stage Generalized Raking Weight Adjustments in the Current Population Survey—**  
◆ Eric Victor Slud, U.S. Census Bureau; Reid Rottach, U.S. Census Bureau; Christopher Grieves, U.S. Census Bureau
- 9:00 a.m. **Composite Estimation in Current Population Survey—**Jun Shao, University of Wisconsin; ◆ Zhou Yu, University of Wisconsin-Madison
- 9:25 a.m. **Analysis of Longitudinal Complex Survey Data Using Parametric Bootstrap—**◆ Snigdhanu Chatterjee, University of Minnesota; Partha Lahiri, University of Maryland
- 9:50 a.m. Disc: Edwin Robison, Bureau of Labor Statistics
- 10:10 a.m. **Floor Discussion**

## 106 Random Matrices and Statistical Applications—Invited

IMS, Statistical Learning and Data Mining Section

Organizer(s): Natesh S. Pillai, Harvard University

Chair(s): Natesh S. Pillai, Harvard University

9:05 a.m. **Binary Matrix Completion**—◆ Yaniv Plan, University of Michigan; Mark Davenport, Georgia Institute of Technology; Mary Wootters, University of Michigan; Ewout van den Berg, Stanford University

9:35 a.m. **Multiple Linear Regression with Latent Factors**—◆ Patrick O. Perry, NYU Stern; Natesh S. Pillai, Harvard University; Paul Bourgade, Harvard University

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

## 107 ■ From Real Time to Long Term: Applications of Big Data in Sports—Invited

Section on Statistics in Sports, Statistical Learning and Data Mining Section, Section on Statistical Computing

Organizer(s): Michael A. Rutter, Penn State Erie, The Behrend College

Chair(s): Michael A. Rutter, Penn State Erie, The Behrend College

8:35 a.m. **Big Data in Professional Football**—◆ Brian John Burke, Advanced NFL Stats

9:00 a.m. **Using Pattern Recognition to Classify Pitch Types from MLB PITCHf/x Data**—◆ Michael D. Schader, George Mason University

9:25 a.m. **A First Look at Real-Time Player-Tracking Data That Is Changing the Game for NHL Statistics**—◆ Marc Appleby, PowerScout Hockey

9:50 a.m. **Floor Discussion**

## 108 ■ Functional Data Analysis in Neuroimaging—Invited

Section on Nonparametric Statistics, Section on Statistics in Imaging, Mental Health Statistics Section, Statistical Learning and Data Mining Section, WJAR

Organizer(s): Lei Huang, The Johns Hopkins University

Chair(s): Vadim Zipunnikov, Johns Hopkins Bloomberg School of Public Health

8:35 a.m. **A Bayesian Model of Activation and Functional Connectivity for Event-Related fMRI**—◆ Wesley K. Thompson, University of California at San Diego; Dongli Zhou, Forest Labs

9:00 a.m. **Functional Data Techniques for Mapping of Neurodevelopmental Trajectories**—◆ Philip Reiss, New York University; Lei Huang, The Johns Hopkins University; Huaihou Chen, New York University; Thaddeus Tarpey, Wright State University

CC-514a 9:25 a.m. **Nonparametric Response Function Estimation via FPCA with an Application to Dynamic Pet Data**—◆ Ci-Ren Jiang, Academia Sinica; John Aston, University of Warwick; Jane-Ling Wang, University of California at Davis

9:50 a.m. **Two-Way Regularized Logistic Regression with Dynamic Image Regressors**—◆ T Siva Tian, University of Houston; Jianhua Z. Huang, Texas A&M University

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

## 109 ■ ● Large-Scale Statistical Computing: Methodologies, Tools, and Applications—Invited

Section on Statistical Computing, Statistical Learning and Data Mining Section, Section on Statistical Graphics, International Indian Statistical Association

Organizer(s): Landon H Sego, Pacific Northwest National Laboratory

Chair(s): Landon H Sego, Pacific Northwest National Laboratory

8:35 a.m. **Statistical Theory and Methods for the Divide and Recombine (D&R) Statistical Approach to Large Complex Data**—◆ William S. Cleveland, Purdue University

9:05 a.m. **Recent Developments in Large-Scale Data Analysis Tools and Methodologies Based on the R and Hadoop Integrated Programming Environment (RHIPE)**—◆ Saptarshi Guha, Mozilla Corp.

9:35 a.m. **Visualization of Databases: Detailed Visualization of Large, Complex Data**—◆ Ryan Paul Hafen, Pacific Northwest National Laboratory

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

## 110 Medallion Lecture II—Invited

IMS, SSC

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

Chair(s): Neal Madras, York University

8:35 a.m. **The Kardar-Parisi-Zhang Equation and Universality Class**—◆ Jeremy Quastel, University of Toronto

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

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 111 CC-516d **Statistical Methods for High-Dimensional Data: Presentations by Junior Researchers—Invited**

ASA, Statistical Learning and Data Mining Section, International Indian Statistical Association, Section on Statistics in Epidemiology

Organizer(s): Bhramar Mukherjee, University of Michigan

Chair(s): Amy Herring, The University of North Carolina at Chapel Hill

- 8:35 a.m. **A Data-Adaptive Approach to Modeling Propensity Scores for Inverse Weighted Estimation of Causal Effects**—◆ Yeying Zhu, Penn State University
- 9:00 a.m. **Statistical Modeling of Epigenomewide Data**—◆ Kasper Daniel Hansen, The Johns Hopkins University
- 9:25 a.m. **A Closer Look at the Median Probability Model for Bayesian Model Selection**—◆ Joyee Ghosh, University of Iowa
- 9:50 a.m. **Adaptive Shrinkage via the Hyperpenalized EM Algorithm**—◆ Philip S. Boonstra, University of Michigan; Bhramar Mukherjee, University of Michigan; Jeremy Taylor, University of Michigan
- 10:15 a.m. **Floor Discussion**

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## **Invited Panels** **8:30 a.m.–10:20 a.m.**

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## 112 CC-516b **● Memorial Session: Genichi Taguchi—Invited**

Memorial, Quality and Productivity Section, Section on Physical and Engineering Sciences

Organizer(s): Roshan Joseph Vengazhiyil, Georgia Tech

Chair(s): Roshan Joseph Vengazhiyil, Georgia Tech

- Panelists:** ◆ Madhav Phadke, Phadke Associates, Inc.  
◆ Shin Taguchi, American Supplier Institute  
◆ Vijay Nair, University of Michigan  
◆ C. F. J. Wu, Georgia Institute of Technology
- 10:15 a.m. **Floor Discussion**

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

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## 113 CC-510d **■ Design and Methods for Comparative Effectiveness Research in Mental Health and Other Biomedical Studies—Topic-Contributed**

Mental Health Statistics Section, Biometrics Section, Health Policy Statistics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Organizer(s): Zhehui Luo, Michigan State University

Chair(s): Joseph Gardiner, Michigan State University

- 8:35 a.m. **Heterogeneous Treatment Effects and Decisionmaking**—◆ Zhehui Luo, Michigan State University; Joseph Gardiner, Michigan State University
- 8:55 a.m. **Causal Inference of Maternal Antidepressant Use and Pregnancy Outcomes Using Propensity Scores for Multi-Level Treatment**—◆ Chang Yu, Vanderbilt University; Huiyun Wu, Vanderbilt University; William Dupont, Vanderbilt University; Richard C. Shelton, The University of Alabama at Birmingham; Tina Hartert, Vanderbilt University; Edward Mitchel, Vanderbilt University; Jeffrey Horner, Vanderbilt University; Pingsheng Wu, Vanderbilt University; Hui Nian, Vanderbilt University School of Medicine
- 9:15 a.m. **Estimating Causal Effects in an Observational Study with a Survival Time Endpoint: Comparing Reformulated Versus Original Antidepressants**—◆ Jaeun Choi, Harvard Medical School; Mary Beth Landrum, Harvard Medical School; A. James O'Malley, Harvard Medical School
- 9:35 a.m. **Effect Modification by Post-Treatment Variables in Mental Health Research**—◆ Alisa J Stephens, University of Pennsylvania; Marshall M. Joffe, University of Pennsylvania
- 9:55 a.m. Disc: Sue M. Marcus, Columbia University/New York State Psychiatric Institute
- 10:15 a.m. **Floor Discussion**

## 114 CC-510b **■ Model Selection and Uncertainty in Causal Effect Estimation—Topic-Contributed**

Health Policy Statistics Section, International Chinese Statistical Association, Section on Statistics in Epidemiology

Organizer(s): Francesca Dominici, Harvard School of Public Health

Chair(s): Francesca Dominici, Harvard School of Public Health

- 8:35 a.m. **Double-Robust Estimators: Slightly More Bayesian Than Meets the Eye?**—◆Paul Gustafson, University of British Columbia
- 8:55 a.m. **Uncertainty in Propensity Score Estimation: Bayesian Methods for Variable Selection and Model-Averaged Causal Effects**—◆Corwin Zigler, Harvard University
- 9:15 a.m. **Bayesian Estimation of Average Causal Effect with Adjustment for Confounding**—◆Chi Wang, University of Kentucky; Giovanni Parmigiani, Dana-Farber Cancer Institute; Francesca Dominici, Harvard School of Public Health
- 9:35 a.m. **Penalized Regression Approaches to Variable Selection in the Potential Outcomes Framework**—◆Debashis Ghosh, Penn State University
- 9:55 a.m. Disc: Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health
- 10:15 a.m. **Floor Discussion**

## 115 CC-512g **■ ● Recent Developments in Statistical Adjustment for Measurement Error/Misclassification—Topic-Contributed**

Section on Statistics in Epidemiology, SSC, Biometrics Section, Korean International Statistical Society

Organizer(s): Yan Ma, Hospital for Special Surgery-Weill Medical College of Cornell University

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

- 8:35 a.m. **Bias Correction Methods for Misclassified Covariates in the Cox Model: Comparison of Five Correction Methods by Simulation and Data Analysis**—◆Heejung Bang, University of California at Davis
- 8:55 a.m. **Measurement Error Correction for Survival Data Analysis with Covariates That Are Functions of Time-Varying Exposure Histories**—◆Xiaomei Liao, Harvard School of Public Health; Donna Spiegelman, Harvard School of Public Health
- 9:15 a.m. **Varying-Coefficient Deming Regression (VCDR) and Its Application in Bone Densitometry**—◆Ying Lu, VA Palo Alto Health Care System & Stanford University; Chong Gu, Purdue University; Bo Fan, University of California at San Francisco; Selwyn Au, VA Palo Alto Health Care System; John A Shepherd, University of California at San Francisco

- 9:35 a.m. **Discordance in Estrogen Receptor Status Between Two Primary Breast Cancers: Impact of Misclassification**—◆Juxin Liu, University of Saskatchewan; Paul Gustafson, University of British Columbia; Dezheng Huo, The University of Chicago

9:55 a.m. **Floor Discussion**

## 116 CC-512ab **■ ● Statistical Modeling of fMRI Data—Topic-Contributed**

Section on Statistics in Imaging, International Chinese Statistical Association

Organizer(s): Jaroslaw Harezlak, Indiana University Fairbanks School of Public Health

Chair(s): Jaroslaw Harezlak, Indiana University Fairbanks School of Public Health

- 8:35 a.m. **Search for Default Network Using Likelihood-Based Population Independent Component Analysis**—◆Lei Huang, The Johns Hopkins University; Shaojie Chen, The Johns Hopkins University; Huitong Qiu, The Johns Hopkins University; Ani Eloyan, The Johns Hopkins Bloomberg School of Public Health; Ciprian M. Crainiceanu, The Johns Hopkins University; Brian Caffo, The Johns Hopkins University
- 8:55 a.m. **A Semiparametric Model of the Hemodynamic Response for Multi-Subject fMRI Data**—◆Tingting Zhang, University of Virginia; Fan Li, Duke University
- 9:15 a.m. **Semiparametric Wavelet Estimation of the Hemodynamic Response Function (HRF) and Its Application in a Gustatory Functional Magnetic Resonance Imaging (fMRI) Study**—◆Maria Aleksandra Kudela, Indiana University Fairbanks School of Public Health; Mario Dzemidzic, Indiana University School Medicine; Brandon Oberlin, Indiana University School Medicine; David Kareken, Indiana University School Medicine; Jaroslaw Harezlak, Indiana University Fairbanks School of Public Health
- 9:35 a.m. **Inferring 3D Images from Lower-Dimensional Measurements**—◆Ke Deng, Harvard University
- 9:55 a.m. Disc: Jimin Ding, Washington University
- 10:15 a.m. **Floor Discussion**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 117 CC-516a ■ **The Analysis of Recurrent Event Data in the Presence of Competing Risks and Informative Censoring—Topic-Contributed**

Biopharmaceutical Section, SSC, Biometrics Section

Organizer(s): Byron Jones, Novartis

Chair(s): Byron Jones, Novartis

8:35 a.m. **The Analysis of Recurrent Event Data in the Presence of Competing Risks and Informative Censoring**—◆Lee-Jen Wei, Harvard University

8:55 a.m. **Semiparametric Proportional Rate Regression for the Composite Endpoint of Recurrent and Terminal Events**—◆Danyu Lin, The University of North Carolina; Lu Mao, The University of North Carolina

9:15 a.m. **Recurrent Event Data Approaches in Cardiovascular Outcome Trials: A Case Study**—◆Mouna Akacha, Novartis

9:35 a.m. **The Role of Recurrent Event Analysis in Cardiovascular Trials: A Trialist's Perspective**—◆Scott Solomon, Harvard University

9:55 a.m. Disc: H. M. James Hung, FDA

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

## 118 CC-520a ■ **Innovative Bayesian Methods for Big, Complex Object Data Sets—Topic-Contributed**

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

Organizer(s): Jeffrey S. Morris, The University of Texas MD Anderson Cancer Center

Chair(s): Michele Guindani, The University of Texas MD Anderson Cancer Center

8:35 a.m. **Shrink Large Covariance Matrix Without Penalty: An Empirical Nonparametric Bayesian Framework for Brain Connectivity Network Analysis**—◆Shuo Chen, University of Maryland

8:55 a.m. **Novel and Computationally Efficient Bayesian Methods in Neuroimaging**—◆Theodore Kypraios, University of Nottingham

9:15 a.m. **Variable Selection in High-Dimensional Problems with Complex Structures**—◆Subharup Guha, University of Missouri; Veera Baladandayuthapani, The University of Texas MD Anderson Cancer Center

9:35 a.m. **Bayesian Models for Integrative Analysis of High-Dimensional Genomics Data**—◆Veera Baladandayuthapani, The University of Texas MD Anderson Cancer Center; Jeffrey S. Morris, The University of Texas MD Anderson Cancer Center; wenting wang, The University of Texas MD Anderson Cancer Center; Kim-Ahn Do, The University of Texas MD Anderson Cancer Center

9:55 a.m. **Bayesian Object Regression for Complex, High-Dimensional Data**—◆Jeffrey S. Morris, The University of Texas MD Anderson Cancer Center; Veera Baladandayuthapani, The University of Texas MD Anderson Cancer Center

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

## 119 CC-524b ● **Time Series Signal Extraction—Topic-Contributed**

Business and Economic Statistics Section

Organizer(s): Tucker S. McElroy, U.S. Census Bureau

Chair(s): Brian C. Monsell, U.S. Census Bureau

8:35 a.m. **The Trilemma Between Accuracy, Timeliness, and Smoothness in Real-Time Forecasting and Signal Extraction**—◆Marc Wildi; Tucker S. McElroy, U.S. Census Bureau

8:55 a.m. **General and Consistent Signal Extraction for Nonstationary Time Series with Diverse Sampling Rules**—◆Thomas Trimbur, Federal Reserve Board; Tucker S. McElroy, U.S. Census Bureau

9:15 a.m. **Seasonal Adjustment of CPS Labor Force Series During the Latest Recession**—◆Thomas Evans, Bureau of Labor Statistics; Richard Tiller, Bureau of Labor Statistics

9:35 a.m. **Weighted-Covariance Reduction of Vector Autoregressive Moving Average Models**—◆Peter Zadrozny, Bureau of Labor Statistics; Baoline Chen, Bureau of Economic Analysis

9:55 a.m. **An Appraisal of Multivariate Seasonal Adjustment**—◆Tucker S. McElroy, U.S. Census Bureau

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

## 120 CC-522bc ■ **Non-Negative Matrix Factorization—Topic-Contributed**

Section on Statistical Learning and Data Mining, Section on Physical and Engineering Sciences

Organizer(s): S. Stanley Young, National Institute of Statistical Sciences

Chair(s): S. Stanley Young, National Institute of Statistical Sciences

8:35 a.m. **Introduction to Non-Negative Matrix Factorization**—◆George Luta, Georgetown University; Fajwel Fogel, Ecole Polytechnique ParisTech; Douglas A. Marsteller, PepsiCo; Joe Maisog, Glotech, Inc.

8:55 a.m. **sNMF for Sparse Data and Method for Determining Matrix Degree from Noisy Data**—◆Jiayang Sun, Case Western Reserve University; Kenneth Lopiano, SAMSI; S. Stanley Young, National Institute of Statistical Sciences

- 9:15 a.m. **A Unified Statistical Approach to Non-Negative Matrix Factorization and Probabilistic Latent Semantic Indexing**—◆Karthik Devarajan, Fox Chase Cancer Center; Guoli Wang, SRA International Inc.; Nader Ebrahimi, Northern Illinois University
- 9:35 a.m. **Contingency Table Analysis via Matrix Factorization**—◆Kumer Das, Lamar University; Jay Powell, Better Schooling Systems; Myron Katzoff,
- 9:55 a.m. Disc: Jon Kettenring, Drew University - RISE
- 10:15 a.m. **Floor Discussion**

## 121 CC-511e

### ■ ● **Cash in Hand or Under the Mattress? Analyzing Consumer Payment Surveys—Topic-Contributed**

Survey Research Methods Section, Section on Statistics in Marketing, Scientific and Public Affairs Advisory Committee

Organizer(s): Kim P. Huynh, Bank of Canada

Chair(s): Marcin Hitczenko, Federal Reserve Bank of Boston

- 8:35 a.m. **The Role of Risk Perception in Determining Consumer Cash Balances: A Study of Three Countries**—◆Ben Mazzotta, Tufts University; Bhaskar Chakravorti, Tufts University
- 8:55 a.m. **Cash Versus Cards: The Role of Budget Control**—◆Anneke Kosse, De Nederlandsche Bank; Nicole Jonker, De Nederlandsche Bank; Lola Hernández, De Nederlandsche Bank
- 9:15 a.m. **Experimental Results from a Consumer Diary**—◆Kevin Foster, Federal Reserve Bank of Boston
- 9:35 a.m. **Bayesian Solutions to Missing Data Problems in a Consumer Payments Survey**—◆Christopher Henry, Bank of Canada; Kyle Vincent, Bank of Canada
- 9:55 a.m. **Measuring Payment Choice from Bank Survey Data: Can We Identify Consumer and Business Payments?**—◆Geoffrey Gerdes, Federal Reserve Board; Xuemei Liu, Federal Reserve Board
- 10:15 a.m. **Floor Discussion**

## NEW for 2013 – SPEED Sessions

Be sure to catch the new JSM SPEED sessions! Each SPEED session will consist of oral presentations of approximately five minutes each and floor discussion time, followed by a poster session later on the same day. All poster presentations will include use of the new electronic poster boards.

### SPEED Sessions

#### Analytic Challenges in Epidemiological Studies and Public Health

Part 1, Oral Presentations – Monday, August 5, 8:30 a.m. – 10:20 a.m., Room CC-516c

Part 2, Poster Presentations – Monday, August 5, 10:30 a.m. – 12:20 p.m., Room CC-220bc

#### Methods and Applications in Biomedical Data and Clinical Trials

Part 1, Oral Presentations – Tuesday, August 6, 8:30 a.m. – 10:20 a.m., Room CC-516c

Part 2, Poster Presentations – Tuesday, August 6, 10:30 a.m. – 12:20 p.m., Room CC-220bc

#### Methods and Applications in High-Dimensional Data

Part 1, Oral Presentations – Tuesday, August 6, 10:30 a.m. – 12:20 p.m., Room CC-516c

Part 2, Poster Presentations – Tuesday, August 6, 2:00 p.m. – 3:50 p.m., Room CC-220bc

#### Statistical Challenges with Measurement, Complex Design, and Missing Data

Part 1, Oral Presentations – Wednesday, August 7, 8:30 a.m. – 10:20 a.m., Room CC-516c

Part 2, Poster Presentations – Wednesday, August 7, 10:30 a.m. – 12:20 p.m., Room CC-220bc

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 122 CC-511b ■ Patient Report Outcome and Biomarkers in Asthma—Topic-Contributed

Biometrics Section, Biopharmaceutical Section, Section on Statistical Consulting, Health Policy Statistics Section, Korean International Statistical Society

Organizer(s): Hyun (Grace) Kim, University of California at Los Angeles

Chair(s): Hyun (Grace) Kim, University of California at Los Angeles

8:35 a.m. **Asthma and Clinical Challenges in Clinical Trials—**  
◆ Jonathan Goldin, University of California at Los Angeles Radiology

8:55 a.m. **Patient-Reported Outcome and Biomarkers in Asthma—**  
◆ Wen-Hung Chen, United BioSource Corporation; Gary Globe, Amgen, Inc.; Ingela Wiklund, United BioSource Corporation; Seppi Lin, Amgen, Inc.; Michael Schatz, Kaiser Permanente Medical Center; Maria Mattera, United BioSource Corporation; Yun Chon, Amgen, Inc.

9:15 a.m. **Missing Data Handling for Daily Diary Data with Application to Asthma Symptoms eDiary—**  
◆ Nan Zhang, Amgen, Inc.; Yun Chon, Amgen, Inc.; Jia Cao, Amgen, Inc; Trina Patel, University of California at Los Angeles

9:35 a.m. **Heterogeneity Index for Spatial Distribution in CT Images and Correlation with Symptom Scores—**  
◆ Eran Barnoy, University of California at Los Angeles; Hyun (Grace) Kim, University of California at Los Angeles; Jonathan Goldin, University of California at Los Angeles; Eric Kleerup, University of California at Los Angeles; Peiyun Lu, University of California at Los Angeles

9:55 a.m. Disc: Yun Chon, Amgen, Inc.

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

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

### 123 CC-515b ■ ● Estimating Mortality Among Indigenous Populations: An International Collaboration—Topic-Contributed

Committee on Scientific Freedom and Human Rights, Scientific and Public Affairs Advisory Committee, Statistics Without Borders

Organizer(s): Fritz J. Scheuren, NORC at the University of Chicago

Chair(s): F. Sam Notzon, National Center for Health Statistics, Centers for Disease Control and Prevention

**Panelists:** ◆ Fritz J. Scheuren, NORC at the University of Chicago; Lisa Jackson Pulver, University of New South Wales; Malcolm King, Institute of Aboriginal Peoples' Health; John Waldon, University of New South Wales; Teshia Solomon, The University of Arizona

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

### 124 CC-524a ■ ● Understanding and Improving the Client-Consultant Interaction—Topic-Contributed

Section on Statistical Consulting

Organizer(s): Doug Zahn, Zahn and Associates

Chair(s): Eric A. Vance, LISA-Virginia Tech

**Panelists:** ◆ Doug Zahn, Zahn and Associates  
◆ Heather Smith, Cal Poly  
◆ Sandra Stinnett, Duke University  
◆ Rob Fowler, Telligen

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

### 125 CC-510a ■ Hurricanes, Damned Hurricanes, and Statistics—Topic-Contributed

Social Statistics Section, Section on Statistics and the Environment, Scientific and Public Affairs Advisory Committee

Organizer(s): Allison Plyer, Greater New Orleans Community Data Center

Chair(s): Linda Jacobsen, Population Reference Bureau

**Panelists:** ◆ Joseph Salvo, New York City Department of City Planning  
◆ David Bowman, State of Louisiana Office of Community Development Disaster Recovery Unit  
◆ Christopher Emrich, Hazards and Vulnerability Research Institute, University of South Carolina

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

126 CC-516e  
**Statistical Practice Without Borders: Consulting Opportunities and Challenges to Overcome in Developing Countries—Topic-Contributed**

Statistics Without Borders, Scientific and Public Affairs Advisory Committee  
 Organizer(s): Asaph Young Chun, U.S. Census Bureau  
 Chair(s): Rebecca Scherzer, University of California at San Francisco

- Panelists:** ◆Krisztina Filep, Statistics without Borders  
 ◆Vinh Nguyen, Statistics Without Borders  
 ◆Pinar Ucar, Pyongyang Summer Institute in Survey Science and Quantitative Methodology  
 ◆Jackie Pennings, Pyongyang Summer Institute in Survey Science and Quantitative Methodology  
 ◆Marina Hanna, Texas A&M University  
 ◆William Fripp, Stephen F. Austin State University

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

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

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127 CC-512e  
**High-Dimensional Problems in Statistical Genetics—Contributed**

Biometrics Section, WNAR, Health Policy Statistics Section, Korean International Statistical Society  
 Chair(s): Ruixiao Lu, Novartis Vaccine and Diagnostics

- 8:35 a.m. **A General Framework for Association Tests with Multivariate Traits in Large-Scale Genomics Studies**—◆Chad He, Fred Hutchinson Cancer Research Center; Christy L. Avery, The University of North Carolina at Chapel Hill; Danyu Lin, The University of North Carolina
- 8:50 a.m. **Functional Genome-Wide Association Studies Using Sparse Group Lasso**—◆Qing Pan, George Washington University; Yunpeng Zhao, George Mason University
- 9:05 a.m. **Identifying Regulatory Regions in Drosophila**—◆Jennifer Tom, University of California at Berkeley
- 9:20 a.m. **Monte Carlo Null Models for Genomic Data**—◆Egil Ferkingstad, Norwegian Computing Center; Lars Holden, Norwegian Computing Center; Geir Kjetil Sandve, University of Oslo
- 9:35 a.m. **A Method for Calling Copy Number Polymorphism Using Haplotypes**—◆Gun Ho Jang, Ontario Institute for Cancer Research; Jason Christie, University of Pennsylvania; Rui Feng, University of Pennsylvania

9:50 a.m. **Predicting Phenotypes of Arbitrary Related Individuals Using Penalized Maximum Likelihood Method**—◆Xuesong Li, Oklahoma State University; Lan Zhu, Oklahoma State University

10:05 a.m. **Prediction of Active Molecular Modules Through Integrated Expression Analysis**—◆Christine Duarte, Maine Medical Center

128 CC-512f  
**Semiparametric and Nonparametric Methods for Survival Analysis—Contributed**

Biometrics Section

Chair(s): Bonnie LaFleur, University of Arizona

8:35 a.m. **Nonparametric Comparison of Survival Functions Based on Interval-Censored Data with Unequal Censoring**—◆Ran Duan, Missouri-Columbia; Yanqin Feng, Wuhan University; Jianguo Sun, University of Missouri-Columbia

8:50 a.m. **A Semiparametric Bayesian Approach to an Instrumental Variable Model with Right-Censored Time-to-Event Outcome**—◆Xuyang Lu, University of California at Los Angeles; Gang Li, University of California at Los Angeles

9:05 a.m. **Nonparametric Testing Methods for Treatment-Biomarker Interaction Based on Local Partial-Likelihood**—◆Yicong Liu, Queen's University; Wenyu Jiang, Queen's University; Bingshu E. Chen, NCIC Clinical Trials Group and Department of Community Health and Epidemiology, Queen's University

9:20 a.m. **Estimation on the Semiparametric Transformation Models with Length-Biased Data**—◆Yu-Jen Cheng, National Tsing Hua University; Chiung-Yu Huang, National Institute of Allergy and Infectious Diseases; Meng-Tang Pan, Institute of Statistics, National Tsing Hua University

9:35 a.m. **Semiparametric Methods to Contrast Restricted Mean Gap Times**—◆Xu Shu, University of Michigan; Douglas Earl Schaubel, University of Michigan

9:50 a.m. **Nonparametric Adjustment for Measurement Error in Time-to-Event Data**—◆Danielle Braun, Harvard University; Malka Gorfine, Technion - Israel Institute of Technology; Hormuzd Katki, National Cancer Institute; Giovanni Parmigiani, Dana-Farber Cancer Institute

10:05 a.m. **A Class of Weighted Estimating Equations for Semiparametric Transformation Models with Missing Covariates**—◆Yang Ning, University of Waterloo; Grace Y. Yi, University of Waterloo; Nancy Reid, University of Toronto



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 129 CC-525b ■ Customers and Clickstreams—Contributed

Section on Statistics in Marketing

Chair(s): Yesim Orhun, Ross School of Business

- 8:35 a.m. **Clustering Analysis of Clickstream Data in Consumer Path to Purchase**—◆Mark Irwin, Compete; Amit Phansalkar, Compete
- 8:50 a.m. **Performance Tournaments with Crowdsourced Judges**—◆William Heavlin, Google; Daryl Pregibon, Google
- 9:05 a.m. **A Model for Estimation of Anonymous Visits on Websites**—◆Julie Novak
- 9:20 a.m. **Detecting Consumer Experience Comments off the Web**—◆Kurt Pflughoeft, Martiz Research; Joseph J. Retzer, MarketTools Inc.
- 9:35 a.m. **Agent-Based Model and Statistical Engineering of Automobile Purchase Behavior and Retail Actions**—◆James Wendelberger, Urban Science
- 9:50 a.m. **Application of Statistical Analysis of Extreme Values to Customer Journeys**—◆Rainhard Bengez
- 10:05 a.m. **Floor Discussion**

## 130 CC-513b ■ Statistical Issues in Personalized Medicine—Contributed

Biopharmaceutical Section, Mental Health Statistics Section, Biometrics Section

Chair(s): Michael Crager, Genomic Health

- 8:35 a.m. **Post-GWAS Analysis of Snip Data with Applications to Systolic Blood Pressure Sensitivity to Weight and Sodium Change**—◆Jie Liu, Rutgers University; Javier Cabrera, Rutgers University; Jerry Q. Cheng, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School; John Kostis, Robert Wood Johnson Medical School, Rutgers University
- 8:50 a.m. **Biomarker Cutoff Identification in Clinical Trials with Biomarker-Driven Subgroups**—◆Lin Wang, Sanofi; Lynn Wei, Sanofi
- 9:05 a.m. **Overview of Study Designs for Personalized Medicine**—Lei Zhu, Boston University; ◆Sandeep Menon, Pfizer Inc.; Siyan Xu, Boston University
- 9:20 a.m. **Personalized Medicine in Oncology: A Statistical Perspective**—◆Cheng Rong, Amgen, Inc.

- 9:35 a.m. **Trial Duration and Sample Size Trade-Off When There Are Subgroups with Different Expected Treatment Effects**—◆Kyle D. Rudser, University of Minnesota; Edward Bendert, Statistics Collaborative; Joseph S. Koopmeiners, University of Minnesota
- 9:50 a.m. **Mixture Representation of Efficacy Measures in Biomarker Studies**—◆Jason Hsu, The Ohio State University; Szu-Yu Tang, Ventana Medical Systems, Inc.
- 10:05 a.m. **Evaluating Marker-Guided Treatment Selection Strategies**—◆Junlong Li, Harvard University; Roland Matsouaka, Harvard University; Tianxi Cai, Harvard University

## 131 CC-525a ■ Physical and Engineering Sciences—Contributed

Section on Physical and Engineering Sciences

Chair(s): Peter W. Hovey, University of Dayton

- 8:35 a.m. **Dimensional Analysis and Its Applications in Statistics**—◆Weijie Shen, Penn State University; Dennis Kon-Jin Lin, Penn State University; Christopher J. Nachtsheim, University of Minnesota
- 8:50 a.m. **Inference with Interference and Interference for Inference: Modeling Potential Outcomes and Interference in a 3D Printing Experiment**—◆Arman Sabbaghi, Harvard University; Tirthankar Dasgupta, Harvard University; Jizhe Zhang, University of Southern California; Qiang Huang, University of Southern California
- 9:05 a.m. **Chip Placement Design in Capacitive Proximity Communication**—◆Yu-Jung Huang, I-Shou University
- 9:20 a.m. **Using Statistical Moments to Improve the Control of Chaotic Oscillators**—◆Morris Morgan, Hampton University; Carolyn Morgan, Hampton University
- 9:35 a.m. **Modeling of Multi-Modal Diffusion Processes with Applications to Protein Folding**—◆Julie Forman, University of Copenhagen; Michael Sørensen, University of Copenhagen
- 9:50 a.m. **Statistical Forecasting of Hurricane Power Outages**—◆Seth Guikema, The Johns Hopkins University; Roshanak Nateghi, The Johns Hopkins University; Steven Quiring, Texas A&M University
- 10:05 a.m. **The T-X Class of Probability Distributions**—◆Felix Famoye, Central Michigan University; Carl Lee, Central Michigan University; Ayman Alzaatreh, Austin Peay State University



## 132 CC-518 **Financial Econometrics—Contributed**

Business and Economic Statistics Section, International Chinese Statistical Association, International Indian Statistical Association, Scientific and Public Affairs Advisory Committee  
 Chair(s): Kathy Ensor, Rice University

- 8:35 a.m. **Regularized Portfolio Optimization Using Constrained Hierarchical Bayes Models—**  
 ◆Jiangyong Yin, The Ohio State University;  
 Xinyi Xu, The Ohio State University
- 8:50 a.m. **Generalized Variance Inference for Alternative Measures of Income Inequality Based on the Pareto Distribution Function—**  
 ◆Sumith Gunasekera, University of Tennessee-Chattanooga
- 9:05 a.m. **Reduced-Rank Stochastic Intensity Modelling for Multivariate Point Processes—**  
 ◆Victor Solo, University of New South Wales; Ahmed Pasha, University of Sydney
- 9:20 a.m. **Homogeneity Test for Hidden Markov Models Using Penalized Composite Likelihood—**  
 ◆Yi Huang; Jiahua Chen, University of British Columbia
- 9:35 a.m. **Estimation of the Leverage Effect in Jump Processes—**  
 ◆Dan Christina Wang, Princeton University
- 9:50 a.m. **An Information-Theoretic Approach to Learning from Mergers and Acquisitions—**  
 ◆Padma Rao Sahib, University of Groningen; Harmen de Weerd, University of Groningen; Katrin Muehlfeld, University of Utrecht
- 10:05 a.m. **An Importance Sampling Approach for Exploring Likelihoods of Stochastic Differential Equations—**  
 ◆Grant Schneider, The Ohio State University

## 133 CC-513a **Statistical Topics in Non-Clinical Studies—Contributed**

Biopharmaceutical Section, Biometrics Section  
 Chair(s): Jing Han, FDA CVM

- 8:35 a.m. **Determination of Acceptance Criteria for Statistical Equivalence Testing in CMC Applications—**  
 ◆Richard Burdick, Amgen, Inc.; Leslie Sidor, Amgen, Inc.
- 8:50 a.m. **Use of Acceptance Sampling Plan for Stability Studies—**  
 ◆Frank Ye, Amgen, Inc.
- 9:05 a.m. **Estimating Shelf Life via Mixed-Model Quantile Regression—**  
 ◆Michelle Quinlan, Novartis Oncology; Walt W. Stroup, University of Nebraska-Lincoln; Dave Christopher, Merck
- 9:20 a.m. **Estimation of Tukey G - and - H Distributional Family Parameters by Quantile Least Squares Method—**  
 ◆Yihuan Xu, ImClone Systems, a wholly-owned subsidiary of Eli Lilly and Company; Boris Iglewicz, Temple University

- 9:35 a.m. **Information Criteria as Alternatives to Hypothesis Testing—**  
 ◆Charles Tan, Pfizer Inc.
- 9:50 a.m. **Finding D-Optimal Design for Multi-Toxicant Poisson Model via Ultra-Dimensional Particle Swarm Optimization—**  
 ◆Jiaheng Qiu, University of California at Los Angeles; Weng Kee Wong, University of California at Los Angeles
- 10:05 a.m. **Floor Discussion**

## 134 CC-520e **Bayesian Modeling—Contributed**

Section on Statistical Computing, International Indian Statistical Association  
 Chair(s): Derek Feng, Yale University

- 8:35 a.m. **A Bayesian Spatio-Temporal Geostatistical Model with an Auxiliary Lattice for Large Data Sets—**  
 ◆Ganggang Xu, Texas A&M University; Faming Liang, Texas A&M University; Marc G. Genton, KAUST
- 8:50 a.m. **A Product Partition Model for Detecting Change Points on General Graphs—**  
 ◆Xiaofei Wang, Yale University; John W. Emerson, Yale University
- 9:05 a.m. **Parameterizing Individual-Level Models of Infectious Disease Spread Using Sampling-Based Likelihood Approximations—**  
 ◆Rajat Malik, University of Guelph; Rob Deardon, University of Guelph; Grace Pui Sze Kwong, Ontario Veterinary College, University of Guelph
- 9:20 a.m. **Bayesian Bivariate Linear Mixed-Effects Models with Skewed Distributions, with Application to AIDS Studies—**  
 ◆Yangxin Huang, University of South Florida; Ren Chen, University of South Florida
- 9:35 a.m. **Prediction Intervals for Future Order Statistics from Generalized Modified Weibull Distribution—**  
 ◆Yuhlong Lio, University of South Dakota; Yu-Jau Lin, Chung Yuan Christian University; H. M. Okasha, Department of Statistics
- 9:50 a.m. **Sequential Bayesian Inference in Hidden Markov Stochastic Kinetic Models with Application to Detection and Response to Seasonal Epidemics—**  
 ◆Junjing Lin, University of California at Santa Barbara; Michael Ludkovski, University of California at Santa Barbara
- 10:05 a.m. **Convergence Assessment in Large Finite State Space MCMC with an Application to Bayesian Clustering—**  
 ◆Masoud Asgharian, McGill University; Ioana Ada Cozma, University of Ottawa; Vahid Partovi Nia, École Polytechnique Montréal

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 135 CC-521ab ■ Assessment of Students, Instructors, and Teaching Approaches—Contributed

Section on Statistical Education

Chair(s): Walt W. Stroup, University of Nebraska-Lincoln

8:35 a.m. **Investigation of the Impact of Nonrandomization and Ceiling Effects on Estimates of Classroom Effects from Value-Added Models**—◆ Pamela Fellers, University of Nebraska-Lincoln; Walt W. Stroup, University of Nebraska-Lincoln; Jennifer Green, University of Nebraska-Lincoln

8:50 a.m. **Using Technology to Support In-Service Teachers' Conjecturing in Statistics Professional Development**—◆ Jeremy Strayer, Middle Tennessee State University; Brandon Hanson, Middle Tennessee State University

9:05 a.m. **Identifying Statistical Concepts Associated with High and Low Self-Efficacy to Teach Statistics: Using the Sets Instrument with Pre-Service Middle-Grades Teachers**—◆ Leigh Harrell-Williams, Georgia State University; M. Alejandra Sorto, Texas State University; Rebecca Pierce, Ball State University; T. J. Murphy, Northern Kentucky University; Lawrence M. Lesser, The University of Texas at El Paso

9:20 a.m. **Using Explanatory Item Response Model to Assess the Impact of an Inquiry-Based Science Teaching Approach**—◆ Dai-trang Le, Iowa State University; Mack Shelley, Iowa State University; Brian Hand, University of Iowa; William Therrien, University of Iowa

9:35 a.m. **Does Making Connections Improve Student Attitudes?**—◆ Jacqueline Wroughton, Northern Kentucky University; April Kerby, Winona State University

9:50 a.m. **Exploring the Mechanisms Underlying Gender Differences in Statistical Reasoning: A Focus on Experience and Individual Differences**—◆ Nadia Martin, University of Waterloo; Jonathan Fugelsang, University of Waterloo

10:05 a.m. **Research Study to Assess Whether Mentors and Research Projects Positively Impact Student Performance**—◆ Carolyn Morgan, Hampton University; Anne Pierce, Hampton University

## 136 CC-514b High-Dimensional Covariance and Precision Matrix Estimation—Contributed

IMS

Chair(s): Margaret Carroll, NCHS/CDC

8:35 a.m. **Band-Width Selection for High-Dimensional Covariance Matrix Estimation**—◆ Yumou Qiu; Song Xi Chen, Peking University and Iowa State University

8:50 a.m. **Statistical Inference and Optimalities in Estimation of Gaussian Graphical Model**—◆ Zhao Ren, Yale University; Harrison Zhou, Yale University; Tingni Sun, University of Pennsylvania; Cun-Hui Zhang, Rutgers University

9:05 a.m. **Thresholding Test for Bandedness of Covariance Matrices**—◆ Jing He, Peking University; Song Xi Chen, Peking University and Iowa State University

9:20 a.m. **Law of Log Determinant of Sample Covariance Matrix and Optimal Estimation of Differential Entropy for High-Dimensional Gaussian Distributions**—◆ Tengyuan Liang, University of Pennsylvania; Tony Cai, University of Pennsylvania; Harrison Zhou, Yale University

9:35 a.m. **A Fiducial Approach to Sparse Covariance Estimation**—◆ Wen Shi, The University of North Carolina; Jan Hannig, The University of North Carolina at Chapel Hill

9:50 a.m. **Sparse Precision Matrix Estimation via Vector Half Operator**—◆ Shota Katayama, Osaka University

10:05 a.m. **Permutation Tests for Comparison of Covariance Operators**—◆ Davide Pigoli, University of Warwick; John Aston, University of Warwick; Ian L. Dryden, University of Nottingham; Piercesare Secchi, Politecnico di Milano

## 137 CC-512h ■ Recent Advances in Categorical and Survival Data Analysis—Contributed

Section on Statistics in Epidemiology

Chair(s): Feng Dai, Yale Center for Analytical Sciences

8:35 a.m. **Log-Binomial Model and Its Comparison with Suitable Models**—◆ Shailendra Banerjee, Centers for Disease Control and Prevention

8:50 a.m. **Are Robust Poisson Models Less Affected by Outliers Comparing to Log-Binomial Models When Estimating Relative Risks for Common Binary Outcomes?**—◆ Wansu Chen, Kaiser Permanente; Bonnie H. Li, Kaiser Permanente Southern California; Jiaxiao Shi, Kaiser Permanente; Lei Qian, Kaiser Permanente Southern California; Robert S. Zeiger, Kaiser Permanente Southern California; Michael Schatz, Kaiser Permanente Medical Center

- 9:05 a.m. **Case-Wise Diagnostics for the Multinomial Log-Link Regression Model**—◆ Leigh Blizzard, University of Tasmania; David W. Hosmer, University of Massachusetts-Amherst; Stephen J. Quinn, Flinders Clinical Effectiveness; Jana D. Canary, Menzies Research Institute Tasmania
- 9:20 a.m. **Predictors of Colon Cancer Screening Among Older Adults in East South Central**—◆ Yating Yeh
- 9:35 a.m. **Application of a Reconstructed Population Method to the Global Enteric Multicenter Study Mortality Data**—◆ Yukun Wu, University of Maryland School of Medicine; Diluba Nasrin, University of Maryland School of Medicine; Tamer Farag, University of Maryland School of Medicine; Karen Kotloff, University of Maryland School of Medicine; Myron Levine, University of Maryland School of Medicine; Halvor Sommerfelt, University of Bergen; William C. Blackwelder, University of Maryland School of Medicine
- 9:50 a.m. **Adjustment to the Proportion of Suicides to Incorporate Suicide Attempts**—◆ David Lawrence, Department of Veterans Affairs Cooperative Studies Program West Haven Coordinating Center
- 10:05 a.m. **'Bootstrapping' by Variables: Using Resampling to Test the Robustness of Index Variables - an Application to Health Assessments**—◆ Arnold Mitnitski, Dalhousie University; Melissa Andrew, Dalhousie University; Kenneth Rockwood, Dalhousie University

## 138 CC-512c Disclosure Risk and Confidentiality Protection with Complex Survey Data—Contributed

Survey Research Methods Section, Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee  
Chair(s): Daniell Toth, Bureau of Labor Statistics

- 8:35 a.m. **Generation of Linearly Representative Samples**—◆ F. Berenice Baez-Revueltas, ITAM; ◆ Rafael Gamboa-Hirales, Tecnologico de Monterrey
- 8:50 a.m. **Kuk's Model Adjusted for Efficiency and Protection Using Two Non-Sensitive Questions Unrelated to the Characteristic of Interest**—◆ Stephen Andrew Sedory, Texas A&M University at Kingsville; Shu-Ching Su, Texas A&M University at Kingsville; Sarjinder Singh, Texas A&M University at Kingsville
- 9:05 a.m. **Quasi-Empirical Bayes Estimates in Randomized Response Sampling**—◆ Oluseun Odumade, Best Buy; Stephen Andrew Sedory, Texas A&M University at Kingsville; Sarjinder Singh, Texas A&M University at Kingsville
- 9:20 a.m. **Alternative Variance Estimators for Data Perturbed for Confidentiality Protection**—◆ Jianzhu Li, Westat; Michael D. Larsen, The George Washington University; Tom Krenzke, Westat; Laura Zayatz, U.S. Census Bureau

- 9:35 a.m. **Likelihood-Based Finite Sample Inference Based on Synthetic Data**—◆ Bimal Sinha, University of Maryland, Baltimore County
- 9:50 a.m. **Measures of Disclosure Risk for Functions of Totals**—◆ Ann-Marie Flygare, Statistics Sweden; Helen Lindkvist, Statistics Sweden
- 10:05 a.m. **Alternative Disclosure Limitation Methodologies for Small Establishments in the Quarterly Census of Employment and Wages Program**—◆ Spencer Jobe, Bureau of Labor Statistics; Michael Buso, Bureau of Labor Statistics; Shail Butani, Bureau of Labor Statistics; David Hiles, Bureau of Labor Statistics; Randall Powers, Bureau of Labor Statistics; Daniell Toth, Bureau of Labor Statistics

## 139 CC-512d Inference and Variance Estimation with Complex Survey Data—Contributed

Survey Research Methods Section  
Chair(s): Jamie Ridenhour, RTI International

- 8:35 a.m. **Calibration and Evaluation of Generalized Variance Functions**—◆ Julie Gershunskaya, Bureau of Labor Statistics; Alan H. Dorfman, Bureau of Labor Statistics
- 8:50 a.m. **Variance Estimation for High-Income Tables**—◆ Wei Qian, Statistics Canada
- 9:05 a.m. **Estimating the Variance of a Two-Phase Estimator with Sudaan 11**—◆ Dhuly Chowdhury, RTI International; Phil Kott, RTI International
- 9:20 a.m. **An Evaluation of Successive Difference Replication Variance Estimation for Systematic Sampling**—◆ Yao Li, Colorado State University; Jean Opsomer, Colorado State University
- 9:35 a.m. **Weighted Least Squares Estimation with Sampling Weights**—◆ Hee-Choon Shin, National Center for Health Statistics
- 9:50 a.m. **Evaluations of Design- and Model-Based Regression Methods in Analyzing Complex Survey Data: A Simulation Study**—◆ Van Parsons, National Center for Health Statistics; Rong Wei, National Center for Health Statistics; Jennifer D. Parker, National Center for Health Statistics
- 10:05 a.m. **Aerial-Access Creel Surveys with Incomplete Matching of Aerial and Access Components**—◆ Audrey Béliveau, Simon Fraser University; Carl Schwarz, Simon Fraser University; Richard Lockhart, Simon Fraser University; Steve Arndt, Fish & Wildlife Compensation Program

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 140 CC-520b Bayesian Modeling in the Life Sciences and Medicine II—Contributed

Section on Bayesian Statistical Science

Chair(s): Yan He, University of California at Irvine

8:35 a.m. **Joint Nonlinear Mixed-Effects Models and Diagnostics for Censored HIV Viral Loads with CD4 Measurement Error**—◆Mauricio Castro, University of Concepción; Dipankar Bandyopadhyay, University of Minnesota; Victor Lachos, University of Campinas

8:50 a.m. **Bayesian Smoothing Spline ANOVA for Binary Response with Dimension Reduction**—◆Chin-I Cheng; Paul Speckman, University of Missouri-Columbia

9:05 a.m. **Informative Priors for Modeling Immunogenic Responses of Biopharmaceuticals**—◆Rinke Klein Entink, TNO; Babs O. Fabriek, TNO; Geertje van Mierlo, TNO; Frans Tielen, TNO; Esther Reefman, TNO

9:20 a.m. **Bayesian Functional Regression Model for Analyzing Intracranial Pressure Data**—◆Lu Wang, University of California at Los Angeles; Donatello Telesca, University of California at Los Angeles

9:35 a.m. **A Bayesian Hierarchical Repeated Measures Model to Estimate the ED50 of Known Teratogens in Sea Urchin Eggs**—◆Martiniano Flores, University of California at Los Angeles Fielding School of Public Health; Robert E. Weiss, University of California at Los Angeles; Michael D. Collins, University of California at Los Angeles Fielding School of Public Health

9:50 a.m. **Spatial Modeling of Visual Field Data for Assessing Glaucoma Progression**—◆Brigid Betz-Stablein, Massey University; William H. Morgan, University of Western Australia; Philip H. House, University of Western Australia; Martin L. Hazelton, Massey University

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

## 141 CC-510c Advances in Methods for Causal Inference— Contributed

Social Statistics Section, Korean International Statistical Society

Chair(s): Robert A. Kominski, U.S. Census Bureau

8:35 a.m. **A Causal Framework for Intervention Evaluation with Survey Data**—◆Robert Ashmead

8:50 a.m. **Principal Surrogacy in a Time-to-Event Setting**—◆Xin Gao, University of Michigan; Michael Elliott, University of Michigan

9:05 a.m. **Measuring Individual Propensity to Follow a Developmental Trajectory with Application to Real Data in the Sample of Quebec Longitudinal Study of Child Development**—◆Xuecheng Liu, University of Montréal; Richard Tremblay, University of Montréal; Sylvana Cote, University of Montréal; Rene Carbonneau, University of Montréal

9:20 a.m. **Matching on Double Balancing Scores for Estimating Average Treatment Effect in a Small Sample**—◆Xiaoshan Wang, Forsyth Institute; Jacqueline Starr, Forsyth Institute

9:35 a.m. **Enhancing Respondent Representativeness Through Responsive Design and External Benchmarks**—◆Shin-Jung Lee, University of Michigan

9:50 a.m. **Structural Equation Modeling: An Alternative to Predictive Modeling**—◆An-Lin Cheng, University of Missouri-Kansas City; Patricia J. Kelly, University of Missouri-Kansas City

10:05 a.m. **Estimating Cross-Site Impact Variation in the Presence of Heteroscedasticity**—◆Kristin Porter, MDRC; Howard S. Bloom, MDRC; Michael J. Weiss, MDRC; Stephen Raudenbush, The University of Chicago

## 142 CC-511d Frames and Other Census Issues—Contributed

Government Statistics Section, Social Statistics Section, Scientific and Public Affairs Advisory Committee

Chair(s): David Dolson, Statistics Canada

8:35 a.m. **An Examination of Coverage Issues Associated with the U.S. Census Bureau's National Address List**—◆Nancy Johnson, U.S. Census Bureau; Kathleen Kephart, U.S. Census Bureau

8:50 a.m. **Improving Coverage of New College Housing in the Group Quarters Frame for the Household Surveys**—◆Bonnie Moore, U.S. Census Bureau

9:05 a.m. **Effects of Missing Data on Modeling Enumeration Status in the U.S. Census**—◆Ryan Janicki, U.S. Census Bureau; Eric Victor Slud, U.S. Census Bureau

9:20 a.m. **Research Using Administrative Records for Address List Maintenance**—Christine Tomaszewski, U.S. Census Bureau; ◆Kathleen Kephart, U.S. Census Bureau

9:35 a.m. **Model-Based Targeted Address Canvassing: A Simulation Based on the 2009 Address Canvassing Program**—◆John Boies, U.S. Census Bureau; Kevin M. Shaw, U.S. Census Bureau; Jonathan Holland, U.S. Census Bureau

9:50 a.m. **Nonresponse Followup Modeling and Microsimulation: Examining Cost-Benefit Tradeoffs for 2020**—◆Kevin M. Shaw, U.S. Census Bureau; John Boies, U.S. Census Bureau

10:05 a.m. **Constructing Tax Units from the American Community Survey**—◆Bruce Webster, U.S. Census Bureau; John Coder, U.S. Census Bureau



## 143 CC-514c High-Dimensional Data Nonparametrics—Contributed

Section on Nonparametric Statistics, International Chinese Statistical Association  
Chair(s): Ani Eloyan, Johns Hopkins Bloomberg School of Public Health

- 8:35 a.m. **On Testing Common Indices for Two Multi-Index Models**—◆Xuejing Liu, Zhou Yu, University of Wisconsin; Xuerong Meggie Wen, Missouri University of Science and Technology; Robert Paige, Missouri University of Science and Technology
- 8:50 a.m. **A Two-Sample Test for Equality of Means in High Dimension**—◆Karl Gregory; Soumendra N. Lahiri, North Carolina State University
- 9:05 a.m. **Profile Thresholded Partial Correlation Approach for Variable Selection in Partial Linear Models**—◆Lejia Lou; Runze Li, Penn State University
- 9:20 a.m. **Covariance-Assisted Screening and Estimation**—◆Tracy Ke, Princeton University; Jiashun Jin, Carnegie Mellon University; Jianqing Fan, Princeton University
- 9:35 a.m. **Fourier Analysis of Stationary Time Series in Function Space**—◆Shahin Tavakoli, EPFL; Victor Panaretos, EPFL
- 9:50 a.m. **Matrix Recovery by Bilinear Random Measurements**—◆Anru Zhang, University of Pennsylvania; Tony Cai, University of Pennsylvania
- 10:05 a.m. **A New Semiparametric Framework for Modeling Group Testing Data**—◆Dewei Wang, Clemson University; Karunarathna B. Kulasekera, University of Louisville; Colin M. Gallagher, Clemson University; Christopher S. McMahan, Clemson University

## 144 CC-515a Techniques for Functional Data—Contributed

Section on Statistical Learning and Data Mining  
Chair(s): Cuixian Chen, The University of North Carolina at Wilmington

- 8:35 a.m. **Functional Generalized Model**—◆Yichi Zhang, North Carolina State University; Ana-Maria Staicu, North Carolina State University; Arnab Maity, North Carolina State University
- 8:50 a.m. **Dynamic Functional Principal Components**—◆Lukasz Kidzinski, Université libre de Bruxelles
- 9:05 a.m. **New Ideas for Sufficient Dimension Reduction for Functional Data**—◆James Wright
- 9:20 a.m. **Structured Functional Principal Component Analysis**—◆Haochang Shou, Johns Hopkins Bloomberg School of Public Health; Vadim Zipunnikov, Johns Hopkins Bloomberg School of Public Health; Ciprian M. Crainiceanu, The Johns Hopkins University; Sonja Greven, Ludwig-Maximilians-Universität München
- 9:35 a.m. **Optimizing Spline Approximation of Functional Data**—◆Lu Wang, Rice; Dennis Cox, Rice University
- 9:50 a.m. **Floor Discussion**

## 145 CC-516c Analytic Challenges in Epidemiological Studies and Public Health, Part 1—Contributed

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

Chair(s): Bhramar Mukherjee, University of Michigan

- 8:35 a.m. **A Comparison of Methods and Platforms for Copy Number Variation Studies**—◆Siddharth Roy, North Carolina State University; Alison Motsinger-Reif, North Carolina State University
- 8:40 a.m. **Addressing Within-Subject Genomic Heterogeneity**—◆Matthew Nicholson McCall, University of Rochester Medical Center; Anthony Almudevar, University of Rochester Medical Center
- 8:45 a.m. **Designing a Genome-Based HIV Incidence Assay with High Sensitivity and Specificity**—Sung Yong Park, University of Southern California; ◆Tanzy Love, University of Rochester; Sally W. Thurston, University of Rochester; Alan S. Perelson, Los Alamos National Laboratory; Ha Youn Lee, University of Southern California
- 8:50 a.m. **Detecting Rare Variant Effects Using Extreme Phenotype Sampling in Sequencing Association Studies**—◆Ian Barnett, Harvard University; Seunggeun Lee, Harvard School of Public Health; Xihong Lin, Harvard School of Public Health
- 8:55 a.m. **Nonlinear Mixed Effects Models to Study Determinants of Local Airway Inflammation Using Multiple Flow Exhaled Nitric Oxide Data**—◆Sandra Eckel, University of Southern California; Kiros Berhane, University of Southern California; Meng Liu, University of Southern California; Linn S. William, University of Southern California; Muhammad T. Salam, University of Southern California; Edward B. Rappaport, University of Southern California; Frank D. Gilliland, University of Southern California
- 9:00 a.m. **Excess Lung Cancer Risk Attributable to Low-Dose CT Screening Among Long-Term Smokers**—◆Rui Yang, Quintiles; Deborah Goldwasser, Rice University
- 9:05 a.m. **Challenges in Age-Period-Cohort Modeling of Breast Cancer Incidence**—◆Ronald Gangnon, University of Wisconsin; Brian Sprague, University of Vermont; Natasha Stout, Harvard Medical School and Harvard Pilgrim Health Care; Oguzhan Alagoz, University of Wisconsin; Amy Trentham-Dietz, University of Wisconsin
- 9:10 a.m. **Efficient Estimation of Relative Risk in Case-Cohort Studies**—◆Emmanuel Sampene; Abdus Wahed, University of Pittsburgh
- 9:15 a.m. **Incorporating Variation of Group Exposure Levels Into Estimation of Dose Response Relation in Meta-Analyses**—◆Junshan Qiu, FDA



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 9:20 a.m. **Correcting Bias in Effects of Risk Factors in Longitudinal Studies Due to Non-Random Missingness Using Auxiliary Data**—◆ Charles Hall, Albert Einstein College of Medicine; Culing Wang, Albert Einstein College of Medicine; Mindy Katz, Albert Einstein College of Medicine; Richard Lipton, Albert Einstein College of Medicine
- 9:30 a.m. **Combined Statistical Approaches for Comparing Performances of Two Independent Prediction Models**—◆ Hui Zhou, Kaiser Permanente; Jeff M. Slezak, Southern California Permanente Medical Group; Stephen F. Derose, Southern California Permanente Medical Group; Don Morris, Archimedes; Anny H. Xiang, Kaiser Permanente; Steve J. Jacobsen, Southern California Permanente Medical Group
- 9:35 a.m. **Identifying Predictors for HIV/AIDS Disease Progression and Compare Estimates from Separate and Joint Modeling of Longitudinal HIV-RNA Measurements and Survival Outcome (AIDS)**—◆ Prosanta Mondal, University of Saskatchewan; Stuart Skinner, University of Saskatchewan; Hyun-Ja Lim, University of Saskatchewan
- 9:40 a.m. **Gene-Environment Interaction Analysis for Repeated Measures Data with AMMI Models**—◆ Yi-An Ko, University of Michigan; Bhramar Mukherjee, University of Michigan
- 9:45 a.m. **A Standardization Initiative to Link Public Health Surveillance Problem Owners to Solution Developers**—◆ Howard Burkom, Johns Hopkins Applied Physics Lab
- 9:50 a.m. **A Comparison of Knot Selection Algorithms for B-Spline Varying-Coefficient Methods When Controlling for Nonignorable Dropout**—◆ Camille Moore, Colorado School of Public Health, University of Colorado at Denver; Samantha MaWhinney, Colorado School of Public Health; Jeri Forster, Colorado School of Public Health; Nichole Carlson, Colorado School of Public Health, University of Colorado at Denver
- 9:55 a.m. **Point and Interval Estimation of Average Population Attributable Fraction in a Matched Case Control Design**—◆ Lin H. Tian, Centers for Disease Control and Prevention; Laura A. Schieve, Centers for Disease Control and Prevention; Owen Devine, Centers for Disease Control and Prevention
- 10:00 a.m. **Risk-Ranking: Is It Meta-Meta-Analysis?**—◆ Mary Bartholomew, FDA Center for Veterinary Medicine
- 10:05 a.m. **Current European Perspective in Structured Benefit-Risk Assessment**—◆ Shihua Wen, AbbVie
- 10:10 a.m. **Using Delong, Fligner, and Birnbaum's Method to Estimate Standard Errors of AUC Regression with Covariates**—◆ Amy Buros, Baylor University; Jack Tubbs, Baylor University

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

146 CC-510a

### ■ ● Paper Highlights from Bayesian Analysis—Invited

Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), Korean International Statistical Society  
Organizer(s): Herbie Lee, University of California at Santa Cruz  
Chair(s): Marina Vannucci, Rice University

- 10:35 a.m. **Spatial Quantile Multiple Regression Using the Asymmetric Laplace Process**—◆ Kristian Lum, Virginia Tech; Alan E. Gelfand, Duke University
- 11:05 a.m. **Combining Expert Knowledge Elicited from Experts for Bayesian Priors**—◆ Samantha Low-Choy, Queensland University of Technology
- 11:35 a.m. **Bayesian Clustering in Decomposable Graphs**—◆ Luke Bornn, Harvard University; François Caron, INRIA Bordeaux-Sud-Ouest
- 12:05 p.m. **Floor Discussion**

147 CC-511c

### ■ Recent Advances in Dose-Finding Methods Addressing Practical Issues—Invited

ENAR, Biopharmaceutical Section, Biometrics Section

Organizer(s): Shing M. Lee, Columbia University  
Chair(s): Shing M. Lee, Columbia University

- 10:35 a.m. **How Good (or How Bad) Are New (or Old) Dose-Finding Designs?**—◆ John O'Quigley, Universsity Paris 6
- 11:00 a.m. **Challenges of Phase I Trials with Dose Expansion Cohorts**—◆ Alexia Iasonos, Memorial Sloan-Kettering Cancer Center; John O'Quigley, Universsity Paris 6
- 11:25 a.m. **Objective Calibration of the Bayesian Continual Reassessment Method**—◆ Ken Cheung, Columbia University; Shing M. Lee, Columbia University
- 11:50 a.m. **An Adaptive Study Design for Dose-Finding Based on Both Safety and Immunologic Response for Oncology Clinical Trials**—◆ Elizabeth Garrett-Mayer, Hollings Cancer Center, Medical University of South Carolina; Cody Chiuzan, Hollings Cancer Center, Medical University of South Carolina
- 12:15 p.m. **Floor Discussion**

## 148 CC-516c Shrinkage and Variable Selection—Invited

SSC, Statistical Learning and Data Mining Section

Organizer(s): Jianan Peng, Acadia University

Chair(s): Patrick Brown, University of Toronto

- 10:35 a.m. **Variable Selection and Inference Procedures for Marginal Analysis of Longitudinal Data with Missing Observations or Measurement Error—**◆ Grace Y. Yi, University of Waterloo
- 11:00 a.m. **Regularization on Multivariate Functional-Coefficient Regression Models—**◆ Jiancheng Jiang, The University of North Carolina at Charlotte
- 11:25 a.m. **Estimation of Symmetry-Constrained Gaussian Graphical Models: Application to Clustered Dense Networks—**◆ Xin Gao, York University; Helene Massam, York University
- 11:50 a.m. **Shrinkage Estimation for High Dimensional—**Xiaoli Gao, Oakland University; ◆ Ejaz Syed Ahmed, Brock University
- 12:15 p.m. **Floor Discussion**

## 149 CC-511f Mendelian Randomization Methods for Causal Inference—Invited

Section on Statistics in Epidemiology, Biometrics Section

Organizer(s): Dylan S. Small, University of Pennsylvania

Chair(s): Dylan S. Small, University of Pennsylvania

- 10:35 a.m. **Mendelian Randomization Analysis for Dichotomous Disease Traits Under Outcome-Dependent Sampling—**◆ James Dai, Fred Hutchinson Cancer Research Center
- 11:00 a.m. **Methodological Challenges in Mendelian Randomization Analysis—**◆ Tyler J. VanderWeele, Harvard School of Public Health
- 11:25 a.m. **Mendelian Randomization Assumptions Revisited—**◆ Vanessa Didelez, Bristol University
- 11:50 a.m. **Genome-Wide Quantification of Expression QTLs for Mendelian Randomization—**◆ Nancy Zhang, University of Pennsylvania; Dylan S. Small, University of Pennsylvania; Yang Jiang, University of Pennsylvania
- 12:15 p.m. **Floor Discussion**

## 150 CC-516b Getting It Right in Comparative Effectiveness Research: Design Matters!—Invited

Health Policy Statistics Section, Section on Statistics in Epidemiology

Organizer(s): Elizabeth R. Zell, Centers for Disease Control and Prevention

Chair(s): Sue M. Marcus, Columbia/New York State Psychiatric Institute

- 10:35 a.m. **A Propensity Score Design That Parallels a Large Randomized Experiment: Effect of Single Versus Double Embryo Transfer for in Vitro Fertilization—**◆ Cassandra Wolos Pattanayak, Harvard University; Donald B. Rubin, Harvard University
- 11:00 a.m. **Assessing the Effectiveness of Intrapartum Antibiotic Prophylaxis for Prevention of Early-Onset Group B Streptococcal Disease Through Propensity Score Design—**◆ Elizabeth R. Zell, Centers for Disease Control and Prevention; Stephanie Schrag, Centers for Disease Control and Prevention; Tarayn Fairlie, Centers for Disease Control and Prevention
- 11:25 a.m. **Use and Misuse of Observational Data: The Critical Importance of Sound Study Design—**◆ Allen Heller, Bayer HealthCare Pharmaceuticals
- 11:50 a.m. Disc: Donald B. Rubin, Harvard University
- 12:10 p.m. **Floor Discussion**

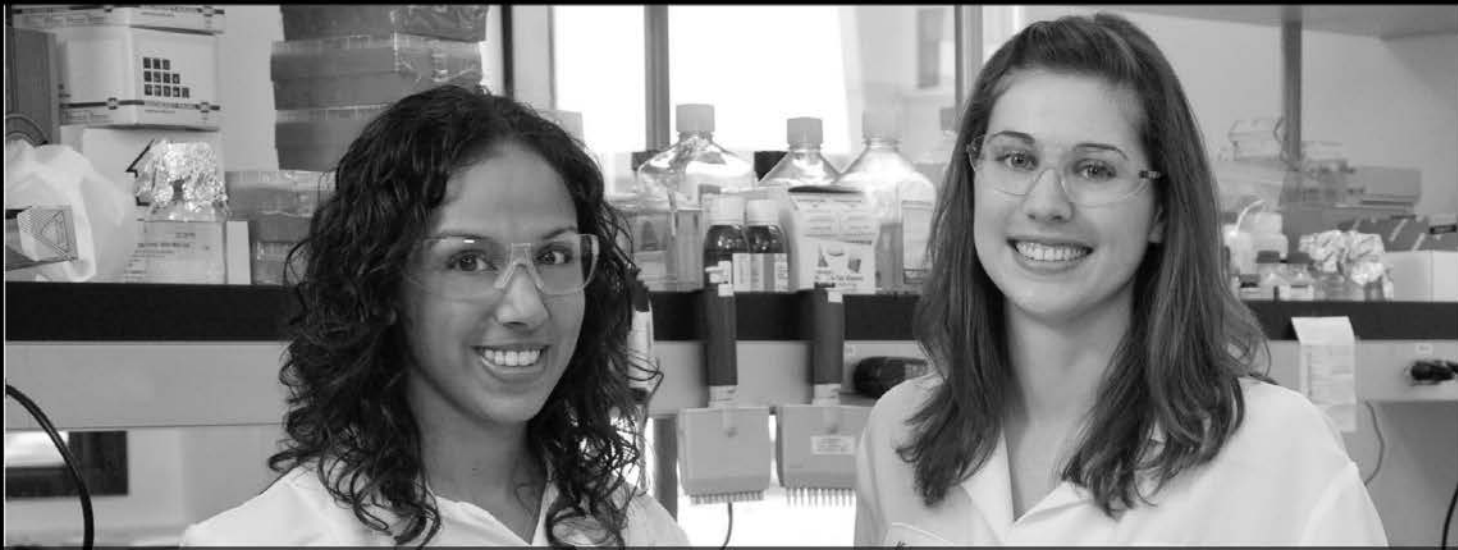
## 151 CC-710b Annals of Applied Statistics Discussion Paper: Estimating the Historical and Future Probabilities of Large Terrorist Events—Invited

IMS, Section on Statistics in Defense and National Security, Scientific and Public Affairs Advisory Committee

Organizer(s): Stephen E. Fienberg, Carnegie Mellon University

Chair(s): Susan Paddock, RAND Corporation

- 10:35 a.m. **Estimating the Historical and Future Probabilities of Large Terrorist Events—**◆ Aaron Clauset, University of Colorado at Boulder; Ryan Woodard, ETH Zurich
- 11:15 a.m. Disc: Cosma Shalizi, Carnegie Mellon University
- 11:25 a.m. Disc: Brian J. Reich, North Carolina State University
- 11:35 a.m. Disc: George Mohler, Santa Clara State University
- 11:45 a.m. Disc: Gentry White, University of Queensland
- 11:55 a.m. Disc: Michael Porter, The University of Alabama
- 12:05 p.m. **Floor Discussion**



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- Acts as lead statistical programmer for multiple projects.
- Identifies potential issues in statistical analysis and proposes solutions.
- Work as a primary programmer for multiple Phase 1-3 studies and as a secondary programming contact for one or more Phase 1-3 studies.

**Applications Analyst II SharePoint – Req. #9523**

- Participates in the evaluation, design and development of database applications that automate and support Biometrics internal processes.
- Provides end-user support for multiple systems.

**Associate Director, Biostatistics – Req. #10662**

- Uses knowledge of regulatory requirements regarding statistical principles to ensure the company meets regulatory, scientific and business objectives.
- Oversees and contributes to the completion of all technical and operational statistical activities.

**Senior Manager, Biostatistics – Req. #11378**

- Provides overall leadership for a departmental strategic initiative.
- Uses knowledge of regulatory requirements regarding statistical principles to ensure the company meets regulatory, scientific and business objectives.

**Senior Biostatistician – Req. #11926**

- Provides statistical consultation on trial design and study endpoints.
- Calculates sample sizes and authors statistical analysis plans.
- Works on 4-6 clinical trials as well as other assigned tasks.

**Manager, Statistical Programming – Req. #12458**

- Generates and oversees the production of statistical output.
- Responsible for all statistical programming activities within a therapeutic project or equivalent.

**Assoc. Manager, Clinical Data Management – Req. #12502**

- Works to meet project deliverables and timelines for moderately complex clinical data and data structure across all projects.
- Trains and mentors CDM staff on business process and clinical programs.



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## 152 CC-516a Toward Better Statistical Methods for Causal Inference—Invited

Social Statistics Section, SSC, Section on Statistics in Epidemiology  
Organizer(s): Zhiqiang Tan, Rutgers University  
Chair(s): Eric Tchetgen Tchetgen, Harvard University

- 10:35 a.m. **Set-Valued Dynamic Treatment Regimes for Competing Outcomes**—◆Eric Laber, North Carolina State University; Daniel J. Lizotte, University of Waterloo; Bradley Ferguson, North Carolina State University
- 10:55 a.m. **Robust Estimation of Inverse Probability Weights for Marginal Structural Models**—◆Kosuke Imai, Princeton University; Marc Ratkovic, Princeton University
- 11:15 a.m. **Improving the Finite-Sample Performance of Doubly Robust Estimators Through Focused Nuisance Parameter Estimation**—◆Karel Vermeulen, Ghent University; Stijn Vansteelandt, Ghent University
- 11:35 a.m. **Improving Doubly Robust Estimation via Model Comparison**—◆Zhiqiang Tan, Rutgers University
- 11:55 a.m. Disc: James Robins, HSPH
- 12:15 p.m. **Floor Discussion**

## 153 CC-519b Statistics in Chemistry and Chemical Biology—Invited

Section on Physical and Engineering Sciences, Korean International Statistical Society  
Organizer(s): Kirby Shedden, University of Michigan  
Chair(s): Kirby Shedden, University of Michigan

- 10:35 a.m. **Robust Analysis of High-Throughput Screening (HTS) Assay Data**—◆Changwon Lim, Loyola University; Pranab K. Sen, The University of North Carolina at Chapel Hill; Shyamal D. Peddada, NIEHS, National Institutes of Health
- 11:05 a.m. **Statistical Analysis of Raman Spectroscopy Data in a Bone Healing Study**—◆Arash Amini, University of Michigan; Liza Levina, University of Michigan; Kirby Shedden, University of Michigan
- 11:35 a.m. **Local Kernel Canonical Correlation Analysis with Application to Virtual Drug Screening**—◆Daniel Victor Samarov, National Institute of Standards and Technology; Yufeng Liu, The University of North Carolina; Christopher Grulke, Environmental Protection Agency; Alexander Tropsha, The University of North Carolina at Chapel Hill; J. S. Marron, The University of North Carolina
- 12:05 p.m. **Floor Discussion**

## 154 CC-511d Showcase of Analysis of Correlated Measurements—Invited

International Chinese Statistical Association, SSC, Statistical Learning and Data Mining Section, WNAR, Biometrics Section  
Organizer(s): Naisyin Wang, University of Michigan  
Chair(s): Naisyin Wang, University of Michigan

- 10:35 a.m. **Challenges and New Approaches to Merging Longitudinal or Clustered Studies**—◆Lu Wang, University of Michigan; Fei Wang, Wayne State University; Peter X.K. Song, University of Michigan
- 11:00 a.m. **Joint Analysis of Multivariate Spatial Count and Zero-Heavy Count Outcomes Using Common Spatial Factor Models**—◆Charmaine Dean, University of Western Ontario; Cindy Feng, University of Saskatchewan
- 11:25 a.m. **Varying-Coefficient Additive Model for Functional Data**—◆Jane-Ling Wang, University of California at Davis; Xiaoke Zhang, University of California at Davis
- 11:50 a.m. **The Prevention and Detection of Differential Measurement Biases in Analyses of Multiply Measured Outcomes**—◆Karen Bandeen-Roche, Johns Hopkins Bloomberg School of Public Health; Yuxin Zhu, Nanjing University
- 12:15 p.m. **Floor Discussion**

## 155 CC-510c Scaling Bayes Up and Out—Invited

IMS, International Society for Bayesian Analysis (ISBA), Section on Statistical Computing  
Organizer(s): James G. Scott, The University of Texas at Austin  
Chair(s): James G. Scott, The University of Texas at Austin

- 10:35 a.m. **Bayesian Estimation on High-Frequency Time Series Data**—◆Natesh S. Pillai, Harvard University
- 11:05 a.m. **Massive Data, Massive Parallelization, and the Bayesian Self-Controlled Case Series**—◆Marc A. Suchard, University of California at Los Angeles; Trevor Shaddox, University of California at Los Angeles; David Madigan, Columbia University
- 11:35 a.m. **MCMC and the Bias-Variance Tradeoff**—◆Anoop Korattikara, University of California; Yutian Chen, University of California at Irvine; Max Welling, University of Amsterdam
- 12:05 p.m. **Floor Discussion**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 156 CC-513b ■ ● Vertical Integration of High-Throughput Biological Data—Invited

WNAR, Statistical Learning and Data Mining Section, Biometrics Section, Section on Statistics in Epidemiology, Korean International Statistical Society

Organizer(s): Jean Yee Hwa Yang, University of Sydney

Chair(s): Katerina Kechris, University of Colorado

10:35 a.m. **Removing Unwanted Variation from High-Dimensional Data with Negative Controls**—◆ Johann Gagnon-Bartsch, University of California at Berkeley; Laurent Jacob, University of California at Berkeley; Terence Speed, The Walter & Eliza Hall Institute of Medical Research

11:00 a.m. **Genomic Data Integration to Improve Disease Subtype Discovery**—◆ George Tseng, University of Pittsburgh; Sunghwan Kim, University of Pittsburgh; Caleb Huo, University of Pittsburgh

11:25 a.m. **Integrating Multi-Layered Data for Biomarker Discovery**—◆ Jean Yee Hwa Yang, University of Sydney; Kaushala Jayawardana, University of Sydney; Samuel Mueller, University of Sydney

11:50 a.m. **Connecting the Layers of the Epigenome**—◆ Nicola Joy Armstrong, Garvan Institute of Medical Research

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

## 157 CC-710a JASA Theory and Methods—Invited

JASA, Theory and Methods

Organizer(s): Jun S. Liu, Harvard University

Chair(s): Jun S. Liu, Harvard University

10:35 a.m. **Generalized Jackknife Estimators of Weighted Average Derivatives**—◆ Matias Damian Cattaneo, University of Michigan; Richard Crump, Federal Reserve Bank of New York; Michael Jansson, University of California at Berkeley

11:15 a.m. Disc: Enno Mammen, University of Mannheim

11:35 a.m. Disc: Holger Dette, Ruhr-Universität Bochum

11:55 a.m. Disc: Donglin Zeng, The University of North Carolina

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

## Invited Panels 10:30 a.m.–12:20 p.m.

## 158 CC-516e ■ ● Help, I'm Supposed to Teach! How to Teach Biostatistics to Nonstatisticians in Biomedical Environments—Invited

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

Organizer(s): Constantine Daskalakis, Thomas Jefferson University

Chair(s): Constantine Daskalakis, Thomas Jefferson University

**Panelists:** ◆ Scott Evans, Harvard University School of Public Health

◆ Vincent Lo Re, University of Pennsylvania

◆ Megan Mocko, University of Florida

◆ Lisa Sullivan, Boston University School of Public Health

◆ Roger Vaughan, Columbia University

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

## 159 CC-524a ■ ● Secrets to Effective Communication for Statistical Consultants—Invited

Section on Statistical Consulting, Statistics Without Borders

Organizer(s): Isabella R. Ghement, Ghement Statistical Consulting Company Ltd.

Chair(s): Isabella R. Ghement, Ghement Statistical Consulting Company Ltd.

**Panelists:** ◆ Jeffrey A. Bakal, Canadian VIGOUR Centre, Faculty of Medicine and Dentistry

◆ Alan Salzberg, Analysis & Inference Inc.

◆ David R. Bristol, Statistical Consulting Services, Inc.

◆ Ralph M. Turner, Healthcare

◆ John (Jack) H Schuenemeyer, Southwest Statistical Consulting, LLC

◆ Colleen Mangeot, Cincinnati Children's Hospital

◆ Elena G. Rantou (Randou), George Mason University

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



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

### 160 CC-521ab **■ ● Risk Assessment in Lifetime Data Analysis—Topic-Contributed**

Section on Risk Analysis, SSC

Organizer(s): Mei-Ling Ting Lee, University of Maryland

Chair(s): Mei-Ling Ting Lee, University of Maryland

- 10:35 a.m. **Evaluating Readmission Rates in Dialysis Facilities with or Without Adjustment for Hospital Effects—**  
◆Kevin (Zhi) He, University of Michigan; John David Kalbfleisch, University of Michigan; Yijiang Li, Google; Yi Li, University of Michigan
- 10:55 a.m. **Semiparametric Estimation Methods for Longitudinal Data with Informative Observation Times—**  
◆Xingqiu Zhao, The Hong Kong Polytechnic University
- 11:15 a.m. **Predictiveness in the Presence of Censoring—**  
◆David Oakes, University of Rochester Medical Center
- 11:35 a.m. **Semiparametric Extended Hazard Cure Models—**  
◆Chen-Hsin Chen, Academia Sinica (Institute of Statistical Science); Ken-Ning Hsu, Academia Sinica (Institute of Statistical Science)
- 11:55 a.m. **Modeling Composite Degradation Processes in Lifetime Data Analysis—**  
◆George Whitmore, McGill University; Mei-Ling Ting Lee, University of Maryland
- 12:15 p.m. **Floor Discussion**

### 161 CC-512c **Disparities as Nonparametric Interfaces to Parametric Models—Topic-Contributed**

Section on Nonparametric Statistics

Organizer(s): Giles Hooker, Cornell University

Chair(s): Anand Vidyashankar, George Mason University

- 10:35 a.m. **Robust Dimension Reduction in Regression Using Divergences—**  
◆Tharuvai Sriram, University of Georgia
- 10:55 a.m. **Robust High-Dimensional Testing Using a Minimum Hellinger Distance Procedure—**  
◆Bret Hanlon
- 11:15 a.m. **Measures of Robustness in Regularized Estimates—**  
◆Giles Hooker, Cornell University

- 11:35 a.m. **Large Deviations for Minimum Hellinger Distance Estimators—**  
◆Jeffrey F. Collamore, University of Copenhagen; Anand Vidyashankar, George Mason University
- 11:55 a.m. **Measuring and Testing Mutual Multivariate Independence—**  
◆David Matteson, Cornell University
- 12:15 p.m. **Floor Discussion**

### 162 CC-515c **● Celebrating 30 Years of the Survey of Consumer Finances—Topic-Contributed**

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

Organizer(s): Steven Pedlow, NORC at the University of Chicago

Chair(s): Steven Pedlow, NORC at the University of Chicago

- 10:35 a.m. **Some Almost-Forgotten SCF Days, Imputed, Occasionally Multiply—**  
◆Daniel Lee, NORC, at the University of Chicago; Fritz J. Scheuren, NORC at the University of Chicago
- 10:55 a.m. **An Enduring Partnership: Incorporating Administrative Data Into Sample Design for the Survey of Consumer Finances—**  
◆Barry Johnson, Statistics of Income, IRS
- 11:15 a.m. **The Worst of Times, the Best of Times: A History of Coping in the SCF—**  
◆Arthur Kennickell, Federal Reserve Board
- 11:35 a.m. **Identifying Data Problems and Improving Data Quality in the Survey of Consumer Finances—**  
◆Catherine Haggerty, NORC at the University of Chicago; Micah Sjoblom, NORC at the University of Chicago; Steven Pedlow, NORC at the University of Chicago
- 11:55 a.m. **Using the Survey of Consumer Finances in Federal Reserve Board Policy Analysis—**  
◆John Sabelhaus, Federal Reserve Board; Kevin Moore, Federal Reserve Board; Jesse Bricker, Federal Reserve Board
- 12:15 p.m. **Floor Discussion**

Monday



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# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 163 CC-511b ■ Enrichment Clinical Trials: Design, Implementation, and Regulatory Perspectives—Topic-Contributed

Biopharmaceutical Section, Mental Health Statistics Section, International Chinese Statistical Association, Biometrics Section, International Indian Statistical Association, Scientific and Public Affairs Advisory Committee

Organizer(s): Ray Liu, Millennium: The Takeda Oncology Company  
Chair(s): Gregory Hather, Millennium: The Takeda Oncology Company

- 10:35 a.m. **Challenges in Oncology Drug-Diagnostics Co-Development**—◆Ru-Fang Yeh, Genentech, Inc.
- 10:55 a.m. **Quantitative Considerations for Enrichment Clinical Trial Implementation: Marker Prevalence, Effect Size, Diagnostic Assay Performance, Sample Size, and Beyond**—◆Ray Liu, Columbia University
- 11:15 a.m. **Decisionmaking for Enrichment Clinical Trial Implementation: Effect of Trial Strategies on Operations and Revenues**—◆Feng Gao, Millennium; Hongliang Shi, Millennium; Yanyan Zhu, Millennium
- 11:35 a.m. **Biomarker Thresholding to Identify Subgroup of Patients with Treatment Benefit**—◆Yi Liu, Millennium: The Takeda Oncology Company; Jason Hsu, The Ohio State University
- 11:55 a.m. **A Brief Overview of the Draft Enrichment Guidance**—◆Boguang Zhen, FDA
- 12:15 p.m. **Floor Discussion**

## 164 CC-510d ■ ● Stochastic Downscaling Methods in Geosciences—Topic-Contributed

Section on Statistics and the Environment

Organizer(s): Julie Carreau, Institut de Recherche pour le Développement (IRD)

Chair(s): Julie Carreau, Institut de Recherche pour le Développement (IRD)

- 10:35 a.m. **Stochastic Downscaling for Large Spatial Data Sets**—◆William Kleiber, University of Colorado
- 10:55 a.m. **Spatio-Temporal Change of Support Methods in Aquarius Sea Surface Salinity Data**—◆Elizabeth Mannshardt, North Carolina State University; Katarina Sucic, North Carolina State University; Frederick Bingham, The University of North Carolina at Wilmington; Montserrat Fuentes, North Carolina State University
- 11:15 a.m. **Spatial Modeling of Rainfall Intensity-Frequency-Duration Curves**—◆Aloke Phatak, CSIRO Mathematics, Informatics and Statistics; Mark Palmer, CSIRO Mathematics, Informatics and Statistics; Eric Lehmann, CSIRO Mathematics, Informatics and Statistics; Kwok Wai Lau, CSIRO Mathematics, Informatics and Statistics

- 11:35 a.m. **Flexible, Nonlinear Probabilistic Downscaling Models: Conditional Density Estimation Networks and Quantile Regression Neural Networks**—◆Alex Cannon, Pacific Climate Impacts Consortium
- 11:55 a.m. **Floor Discussion**

## 165 CC-512e ■ ● Statistical Methodology for High-Dimensional and High-Throughput Biomedical Data—Topic-Contributed

Biometrics Section, Section on Statistics in Epidemiology

Organizer(s): Sujay Datta, University of Akron

Chair(s): Sujay Datta, University of Akron

- 10:35 a.m. **Issues in Constructing 3D Chromosome Configurations from Chromatin Conformation Capture Assays**—◆Mark Segal, University of California at San Francisco
- 10:55 a.m. **Hierarchical Geostatistical Analysis in Clustering fMRI Time Series**—◆Jun Ye, University of Akron
- 11:15 a.m. **A Stratified Sampling Scheme for Clique Estimation in Bait-Prey Graphs**—◆Denise Scholtens, Northwestern University Medical School
- 11:35 a.m. **ROCs: Receiver Operating Characteristic Surface for Class-Skewed High-Throughput Data**—◆Tianwei Yu, Emory University
- 11:55 a.m. **Leverage GPU Computing Power for High-Dimensional Data Analysis in R**—◆Nathan Morris, Case Western Reserve University
- 12:15 p.m. **Floor Discussion**

## 166 CC-520c ■ Statistical Learning and Data Mining: Winners of Student Paper Competition—Topic-Contributed

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

Organizer(s): Mu Zhu, University of Waterloo

Chair(s): Mu Zhu, University of Waterloo

- 10:35 a.m. **Multicategory Angle-Based Large Margin Classification**—◆Chong Zhang, The University of North Carolina at Chapel Hill; Yufeng Liu, The University of North Carolina
- 10:55 a.m. **Discrepancy Pursuit: A Nonparametric Framework for High-Dimensional Variable Selection**—◆Li Liu, Carnegie Mellon University; Kathryn Roeder, Carnegie Mellon University; Han Liu, Princeton University
- 11:15 a.m. **PenPC: A Two-Step Approach to Estimate the Skeletons of High-Dimensional Directed Acyclic Graphs**—◆Min Jin Ha; Wei Sun, The University of North Carolina at Chapel Hill; Jichun Xie, Temple University

- 11:35 a.m. **An Underdetermined Peaceman-Rachford Splitting Algorithm with Application to Highly Nonsmooth Sparse Learning Problems**—◆Zhaoran Wang, Princeton University; Han Liu, Princeton University; Xiaoming Yuan, Hong Kong Baptist University
- 11:55 a.m. **Latent Supervised Learning**—◆Susan Wei, The University of North Carolina
- 12:15 p.m. **Floor Discussion**

## 167 CC-524b **Business Analytics: The Role of Statistics— Topic-Contributed**

Business and Economic Statistics Section, Section on Statistics in Marketing, Scientific and Public Affairs Advisory Committee  
 Organizer(s): Sinjini Mitra, California State University at Fullerton  
 Chair(s): Randy Bartlett, Blue Sigma Analytics

- 10:35 a.m. **The State of Business Analytics in Academia and Practice**—◆Bhushan Kapoor, California State University at Fullerton; Ofir Turel, California State University at Fullerton
- 10:55 a.m. **Analytics in Health Care: A Health Plan Case Study**—◆Sinjini Mitra, California State University at Fullerton; Rema Padman, Carnegie Mellon University
- 11:15 a.m. **Analytics on Ice: Financial Evaluations of Player Contributions in Hockey**—◆Andrew Thomas, Carnegie Mellon University
- 11:35 a.m. **Design and Analysis of Marketing Experiments on Social Networks**—◆Michael Finegold, Carnegie Mellon University
- 11:55 a.m. **Are the Classical Variable Selection Techniques Obsolete?**—◆F. Michael Speed, SAS Institute
- 12:15 p.m. **Floor Discussion**

## 168 CC-519a **Statistical Literacy 2013— Topic-Contributed**

Section on Statistical Education, Scientific and Public Affairs Advisory Committee  
 Organizer(s): Milo Schield, Augsburg College  
 Chair(s): Daniel Theodore Kaplan, Macalester College

- 10:35 a.m. **The Relevance of Rhetoric to Statistical Literacy**—◆Joel Best
- 10:55 a.m. **Getting to Know Your Variables: A Critical Element of a Statistical Analysis**—◆Jane Miller, Rutgers University

- 11:15 a.m. **Adding Context to the Introductory Statistics Course**—◆Milo Schield, Augsburg College
- 11:35 a.m. **Challenging Statistical Claims in the Media: Course and Gender Effects**—◆Rose Martinez-Dawson, Clemson University
- 11:55 a.m. **The Key Components of a Numeracy Infusion Course for Higher Education (NICHE): Using Best Practices to Train Faculty**—◆Esther Wilder, Lehman College, CUNY; Elin Waring, Lehman College; Frank Wang, LaGuardia Community College; Dene Hurley, Lehman College
- 12:15 p.m. **Floor Discussion**

## 169 CC-522bc **Statistical Process Control Research: Some Recent Advances—Topic-Contributed**

Quality and Productivity Section  
 Organizer(s): Subha Chakraborti, The University of Alabama  
 Chair(s): Subha Chakraborti, The University of Alabama

- 10:35 a.m. **Statistical Quality Control in a Service Environment**—◆Fugee Tsung, The Hong Kong University of Science & Technology
- 10:55 a.m. **On the Design and Implementation of a Phase II Distribution-Free CUSUM Exceedance Control Chart for Monitoring Unknown Location**—◆Marien Graham, University of Pretoria; Amitava Mukherjee, Indian Institute of Management; Subha Chakraborti, The University of Alabama
- 11:15 a.m. **A Distribution-Free CUSUM Control Chart for Joint Monitoring of Location and Scale**—◆Amitava Mukherjee, Indian Institute of Management
- 11:35 a.m. **A Linear Rank Nonparametric CUSUM Control Chart for Detecting Mean Shifts**—◆Gary Mercado, Utah Valley University; Subha Chakraborti, The University of Alabama
- 11:55 a.m. **State of the Art in Sequential Change-Point Detection**—◆Aleksy Polunchenko, Binghamton University
- 12:15 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 170 CC-514a ■ Issues in Building Imputation Models for Missing Data Techniques—Topic-Contributed

Biopharmaceutical Section, Biometrics Section

Organizer(s): Robert D. Small, Sanofi Pasteur

Chair(s): Aleksandra Kolenc-Saban, Sanofi Pasteur

- 10:35 a.m. **Missing Data Imputation Under Intention-to-Treat**—◆ Steven Snapinn, Amgen, Inc.
- 10:55 a.m. **Some Statistical Issues in Estimating Slope Effect for Repeated Measures**—◆ Tao Song, Biogen Idec
- 11:15 a.m. **A Two-Step Multiple Imputation for Analysis of Repeated Measures with Left-Censored and Missing Data**—◆ G. Frank Liu, Merck Research Laboratories; Peter Hu, Bristol-Myers Squibb; Devan Mehrotra, Merck
- 11:35 a.m. **Issues in Building Imputation Models for Missing Data Techniques**—Robert D. Small, Sanofi Pasteur; ◆ Christele Augard, Sanofi Pasteur
- 11:55 a.m. Disc: Tom Permutt, FDA/CDER
- 12:15 p.m. **Floor Discussion**

## 171 CC-515a ■ Design and Adjustment Challenges in Modern Surveys—Topic-Contributed

Government Statistics Section, Survey Research Methods Section, International Chinese Statistical Association, Section on Statistics in Epidemiology, Statistics Without Borders

Organizer(s): Denise A. Abreu, USDA/NASS

Chair(s): Denise A. Abreu, USDA/NASS

- 10:35 a.m. **Adjustment Methodologies for the Census of Agriculture**—◆ Andrea Lamas, USDA/National Agricultural Statistics Service; Linda Young, University of Florida; Denise A. Abreu, USDA/NASS; Shu Wang, University of Florida; Daniel Adrian, USDA/National Agricultural Statistics Service
- 10:55 a.m. **Properties of Some Size-Based Sample Designs Based on Imperfect Frame Information**—◆ Randall Powers, Bureau of Labor Statistics; John Eltinge, Bureau of Labor Statistics
- 11:15 a.m. **Cellular RDD Sampling Enhancements for the Behavioral Risk Factor Surveillance System**—◆ G. Machell Town, Centers for Disease Control and Prevention; Ashley Hyon, Marketing Systems Group; Denise Bradford, Centers for Disease Control and Prevention and Northrop Grumman; Carol Pierannunzi, Centers for Disease Control and Prevention; Carol Gotway Crawford, Centers for Disease Control and Prevention
- 11:35 a.m. Disc: Wendy Barboza, USDA/NASS
- 11:55 p.m. **Floor Discussion**

## 172 CC-520b ■ ● Bayesian Computations: Challenges, Solutions, and Implementations in Medical Product Development—Topic-Contributed

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

Organizer(s): Fanni Natanegara, Eli Lilly and Company

Chair(s): Fanni Natanegara, Eli Lilly and Company

- 10:35 a.m. **Bayesian Computation Without Tears**—◆ Mani Lakshminarayanan, Merck Research Laboratories
- 10:55 a.m. **Learning Bayesian Computation from A to Z**—◆ Aijun Gao, inVentiv Health Clinical; Fanni Natanegara, Eli Lilly and Company; Jinghui Liu, inVentiv Health Clinical; Wei Zou, inVentiv Health Clinical
- 11:15 a.m. **Practical Bayesian Computation in Clinical Trials**—◆ Karen Lynn Price, Eli Lilly and Company; Fang Chen, SAS Institute; Baoguang Han, Eli Lilly and Company
- 11:35 a.m. **Advances in Facilitated Prior Elicitation**—◆ David Kahle, Baylor University; James D. Stamey, Baylor University; Karen Lynn Price, Eli Lilly and Company; Fanni Natanegara, Eli Lilly and Company; Baoguang Han, Eli Lilly and Company
- 11:55 a.m. Disc: Neal Thomas, Pfizer Inc.
- 12:15 p.m. **Floor Discussion**

## 173 CC-511a ■ ● Nontraditional Approaches to Process Models in Space and/or Time—Topic-Contributed

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

Organizer(s): Cynthia Rudin, Massachusetts Institute of Technology

Chair(s): Ali Shojaie, University of Washington

- 10:35 a.m. **Valid Post-Selection Inference**—◆ Andreas Buja, University of Pennsylvania
- 10:55 a.m. **Geometric Analysis of Textured 3D Scenes via Locally Scaled Point Processes**—◆ Thordis Thorarinsdottir, Norwegian Computing Center; Eva-Maria Didden, Heidelberg University; Alex Lenkoski, Norwegian Computing Center; Christoph Schnoerr, Heidelberg University
- 11:15 a.m. **Spatio-Temporal Models for Point Pattern Data with Network-Dependent Sampling**—◆ Tyler H. McCormick, University of Washington
- 11:35 a.m. **The Reactive Point Process Model and Its Application to Electrical Grid Reliability**—◆ Seyda Ertekin, Massachusetts Institute of Technology; Tyler H. McCormick, University of Washington; Cynthia Rudin, Massachusetts Institute of Technology
- 11:55 a.m. **Floor Discussion**



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

174 CC-515b  
**Herd Immunity: Teaching Techniques for the Health Sciences—Topic-Contributed**  
 Section on Teaching of Statistics in the Health Sciences, Section on Statistical Education  
 Organizer(s): Johanna Hardin, Pomona College  
 Chair(s): Johanna Hardin, Pomona College

**Panelists:** ◆ Dalene K. Stangl, Duke University  
 ◆ Keith Williams, University of Arkansas Medical Sciences  
 ◆ John McGready, The Johns Hopkins University  
 12:15 p.m. **Floor Discussion**

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

175 CC-512f  
**■ Clinical Trials—Contributed**  
 Biometrics Section, Biopharmaceutical Section, Korean International Statistical Society  
 Chair(s): Catherine Crespi, University of California at Los Angeles

- 10:35 a.m. **Confidence Interval Construction for the Ratio of Two Treatment Means: An Application to Clinical Trial Data**—◆ Krishna K. Saha, Central Connecticut State University; Roger Bilisoly, Central Connecticut State University; Dariusz Dziuda, Central Connecticut State University
- 10:50 a.m. **Longitudinal Trials with Adaptive Choice of Follow-Up Time**—◆ Neal Jeffries, National Heart, Lung, and Blood Institute, National Institutes of Health; Nancy L. Geller, National Heart, Lung, and Blood Institute, National Institutes of Health
- 11:05 a.m. **Identifying Immune Response Combinations Associated with Heterogeneous Infectious Risk in HIV Vaccine Studies**—◆ Chaeryon Kang, Fred Hutchinson Cancer Research Center; Ying Huang, Fred Hutchinson Cancer Research Center; Michael R. Kosorok, The University of North Carolina at Chapel Hill
- 11:20 a.m. **Risk of Using Instruments in International Clinical Trials: The Scores May Not Be Comparable Across Different Countries**—◆ Chengwu Yang, Penn State University College of Medicine; Weiquan Wei, Huazhong University of Science and Technology; Zengzhen Wang, Huazhong University of Science and Technology

- 11:35 a.m. **Estimating Intraclass Correlation Coefficient Using Data from Pilot Study of Two Clusters**—◆ Zhiying You, Michigan State University; Lorraine Robbins, Michigan State University
- 11:50 a.m. **Classification of Disease States Under a Mixed-Effects Hidden Markov Model with Application to a Smoking Cessation Clinical Trial**—◆ Jesse Raffa, University of Washington; Joel A. Dubin, University of Waterloo
- 12:05 p.m. **Time-to-Event Surrogate Endpoint Predicting Overall Survival**—◆ Susan Halabi, Duke University; Chen-Yen Lin, Duke University

176 CC-512g  
**High-Dimensional Regression and Graphic Model—Contributed**  
 Biometrics Section, International Chinese Statistical Association, Section on Statistical Graphics, Korean International Statistical Society  
 Chair(s): Huaqing Zhao, Temple University School of Medicine

- 10:35 a.m. **An Alternative Sample Size Method for Training Survival Risk Predictors in High Dimensions**—◆ Kevin Dobbin, University of Georgia; Xiao Song, University of Georgia
- 10:50 a.m. **Estimating Simultaneous Confidence Bands for the Mean Function: A Wild Bootstrap Approach**—◆ Chung Chang, NSYSU; R. Todd Ogden, Columbia University
- 11:05 a.m. **Variable Selection of Spatial Generalized Linear Models: A Penalized Quasi-Likelihood Approach**—◆ Wenning Feng, Michigan State University; Chae Young Lim, Michigan State; Tapabrata Maiti, Michigan State University
- 11:20 a.m. **Regularized Canonical Correlation and Application to High-Dimensional Biomarker Data with Survival Endpoint**—◆ Li Liu, Sanofi
- 11:35 a.m. **Detection Boundary of a Particular Class of Tests in Sparse High-Dimensional Regression**—◆ Rajarshi Mukherjee, Harvard University
- 11:50 a.m. **Direct Estimation of the Difference of Two Precision Matrices**—◆ Sihai Zhao; Tony Cai, University of Pennsylvania; Hongzhe Li, University of Pennsylvania
- 12:05 p.m. **Sensitivity Analysis for Inference with Partially Identifiable Covariance Matrices**—◆ Maxwell Grazier G'Sell, Stanford University; Shai S. Shen-Orr, Technion; Rob Tibshirani, Stanford University



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 177 CC-514b Statistical Methods in Oncology Trials and Studies—Contributed

Biopharmaceutical Section, Biometrics Section, Section for Statistical Programmers and Analysts

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

- 10:35 a.m. **Assessing Methods for Dealing with Crossover in Active-Control Trials**—◆ Jihong Chen, Astellas; Jay Yang, Astellas Pharma Global Development Inc.; Xiaosha Sherman Zhang, Astellas Pharma Global Development, Inc.; Andrew Strahs, AVEO
- 10:50 a.m. **Continuous Longitudinal Tumor Measurement-Based Phase II Endpoints for Predicting Overall Survival (OS) Using the RECIST 1.1 Data Warehouse**—◆ Ming-Wen An, Vassar College; Sumithra Mandrekar, Mayo Clinic; Daniel J. Sargent, Mayo Clinic; Xinxin Dong, University of Pittsburgh; Axel Grothey, Mayo Clinic; Jan Bogaerts, EORTC
- 11:05 a.m. **Tumor Dynamics and Central-Review Bias in Progression-Free Survival Clinical Trials**—◆ Jonathan Siegel, Bayer HealthCare Pharmaceuticals
- 11:20 a.m. **Study Designs in Induction/Maintenance Trials**—◆ Lixia Pei, Janssen Research & Development; Kevin Liu, Janssen Research & Development
- 11:35 a.m. **A Weighted Harrell-Davis Distance Test with Applications to Censored Data**—◆ Dongliang Wang, State University of New York Upstate Medical University; Alan D. Hutson, University at Buffalo
- 11:50 a.m. **Identifying the Potential Risk Factors of a Safety Event in Clinical Trials**—◆ Kao-Tai Tsai
- 12:05 p.m. **Meeting the Demand for More Sophisticated Study Designs: A Proposal for a New Type of Clinical Trial—The Hybrid Design**—Guoxing (Greg) Soon, FDA; ◆ Lei Nie, FDA

## 178 CC-512ab Bayesian Methods in Early-Phase Clinical Trials—Contributed

Biopharmaceutical Section, International Society for Bayesian Analysis (ISBA), International Chinese Statistical Association, Biometrics Section

Chair(s): John Scott, Center for Biologics Evaluation and Research/FDA

- 10:35 a.m. **Bayesian PPOS Design for Pilot Drug Development**—◆ Zhongwen Tang, Novartis Oncology; Jyotirmoy Dey, Novartis Oncology
- 10:50 a.m. **A Two-Stage Bayesian Design with Sample-Size Re-Estimation and Subgroup Analysis for Phase II Binary Response Trials**—◆ Wei Zhong, Genentech Inc.; Joseph S. Koopmeiners, University of Minnesota; Bradley P. Carlin, University of Minnesota

- 11:05 a.m. **A Novel Bayesian Approach to Designing Dose-Ranging Clinical Trials: A More Efficient Alternative to Traditional Approaches**—◆ Jianjun Gan, GlaxoSmithKline; Amy Cutrell, GlaxoSmithKline
- 11:20 a.m. **Bayesian Adaptive Design in a Dose-Finding Study**—◆ Zijiang Yang, Merck
- 11:35 a.m. **Dose-Finding Using Bayesian E-Max Model to Find Minimum Effective Dose**—◆ Yukiko Imai, GlaxoSmithKline
- 11:50 a.m. **A Bayesian Design for Phase II Clinical Trials with Delayed Responses Based on Multiple Imputation**—◆ Chunyan Cai, The University of Texas Health Science Center at Houston; Suyu Liu, The University of Texas MD Anderson Cancer Center
- 12:05 p.m. **Bayesian Dose-Finding for Combined Drugs with Discrete and Continuous Doses**—◆ Lin Huo, Novartis Oncology; Ying Yuan, The University of Texas MD Anderson Cancer Center; Guosheng Yin, University of Hong Kong

## 179 CC-514c Topics in Bioequivalence and Biosimilarity—Contributed

Biopharmaceutical Section

Chair(s): Stella Grosser, U.S. Food and Drug Administration

- 10:35 a.m. **Stability Design and Analysis of Biosimilar Products**—◆ Annpey Pong, Merck Research Laboratories; Shein-Chung Chow, Duke University
- 10:50 a.m. **Improved Biosimilar Design via Disease-Progression Model**—◆ Russell Reeve, Quintiles; Guochen Song, Quintiles; Michael O'Kelly, Quintiles
- 11:05 a.m. **Multiplicity Adjustment in Bioequivalence Using Two One-Sided Tests (TOST)**—◆ Steven Hua, Pfizer Research; Siyan Xu, Boston University; Ronald Menton, Pfizer Inc.
- 11:20 a.m. **Assessment of Exchangeability in Equivalence Trial**—◆ Yi Tsong, FDA; Xiaoyu Dong, FDA; Meiyu Shen, FDA
- 11:35 a.m. **A Comparison of Different Development Strategies and Study Designs for Device-Bridging Bioequivalence Studies**—◆ Ying “Denise” Wang, Amgen, Inc.; Tony Sabin, Amgen, Inc.
- 11:50 a.m. **Sample-Size Determination for Equivalence Trial of Continuous Responses**—◆ Yu-Wei Chang, Temple University; Xiaoyu Dong, FDA; Yi Tsong, FDA
- 12:05 p.m. **Floor Discussion**

## 180 CC-520a **Statistical Computing with Big Data—Contributed**

Section on Statistical Computing, Section on Statistical Graphics, Section for Statistical Programmers and Analysts, Scientific and Public Affairs Advisory Committee

Chair(s): Matthew Austin, Amgen, Inc.

- 10:35 a.m. **Making Rules Human-Interpretable for Alarm Prediction in Sensor Network**—◆Hongfei Li, IBM T. J. Watson Research; Buyue Qian, University of California at Davis; Dhaivat Parikh, IBM GBS; Arun Hampapur, IBM Research
- 10:50 a.m. **ANOVA for Symbolic Data**—◆Yi Chen, University of Georgia; Lynne Billard, University of Georgia
- 11:05 a.m. **SeqArray: An R/Bioconductor Package for Big Data Management of Genome-Wide Sequencing Variants**—◆Xiuwen Zheng
- 11:20 a.m. **Multiple Test Functions for Discrete Data**—◆Josh Habiger, Oklahoma State University
- 11:35 a.m. **Tensor Regression with Applications in Neuroimaging Data Analysis**—◆Xiaoshan Li, North Carolina State University
- 11:50 a.m. **Evolving Visualization of Intruder Paths in Sensor Networks**—◆James Shine; James E. Gentle, George Mason University
- 12:05 p.m. **Estimating Average Proportional Changes in Large, Sparse Data**—◆Ryan Giordano

## 181 CC-525a **Economic Modeling of Income, Tax, Growth, and Employment—Contributed**

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

Chair(s): Kevin L. McKinney, University of California at Los Angeles-CCRDC

- 10:35 a.m. **Joint Distributions of Expenditures, Income, and Wealth Using the Consumer Expenditure Survey**—◆Thesia Garner, Bureau of Labor Statistics; Kathleen Short, U.S. Census Bureau
- 10:50 a.m. **Gini Indices by Quantile Range**—◆Chaitra Nagaraja, Fordham University
- 11:05 a.m. **Estimation in the Weighted Generalized Beta Distributions of the Second Kind with Applications to U.S. Family Income Data**—◆Broderick Oluyede, Georgia Southern University
- 11:20 a.m. **Evaluating Tax Data Generated Using the Survey of Consumer Finances and TAXSIM**—John Sabelhaus, Federal Reserve Board; ◆Kevin Moore, Federal Reserve Board; Robert Argento, Federal Reserve Board

- 11:35 a.m. **Differential Migration Costs and the Lessons for Progressivity in State-Level Taxes**—◆Jeffrey Thompson, Federal Reserve Board
- 11:50 a.m. **Role of Science and Engineering Education and R&D in U.S. State Growth and Innovation**—◆Juana Sanchez, University of California at Los Angeles; Weisong Lin, University of California at Los Angeles; Vincent Vu, University of California at Los Angeles
- 12:05 p.m. **Implementation of National Bureau of Economic Research's Taxism in the Consumer Expenditure Survey: How Do the Estimates Measure Up?**—◆Laura Paszkiewicz, Bureau of Labor Statistics

## 182 CC-511e **Challenges in Parameter Estimation and Inference for Environmental Applications—Contributed**

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

Chair(s): Raymond Mooring, Analysis Made Easy

- 10:35 a.m. **Adaptive Probability-Based Sampling for Environmental Studies**—◆Huijuan Li, Rutgers University; Hung Ying, Rutgers University
- 10:50 a.m. **Penalized Importance Sampling for Parameter Estimation in Stochastic Differential Equations for Two Chronic Wasting Disease Epidemics**—◆Libo Sun, Colorado State University; Chihoon Lee, Colorado State University; Jennifer Hoeting, Colorado State University
- 11:05 a.m. **Two Sample Comparisons for Non-Normal Data**—◆Luna Sun, Oregon State University; Alix I. Gitelman, Oregon State University
- 11:20 a.m. **Generalized Method of Moments Approach for Spatial-Temporal Binary Data**—◆Kimberly Kaufeld, University of Northern Colorado
- 11:35 a.m. **Estimation of the Linear Model with Right-Censored Covariates**—◆Folefac Atem, Harvard University; Rebecca A. Betensky, Harvard School of Public Health
- 11:50 a.m. **Reducing Dimensionality in Multitemporal MODIS Data Using Principal Component Analysis for Land Cover Mapping**—◆Hunter Glanz, Boston University; Luis E. Carvalho, Boston University; Mark Friedl, Boston University; Damien Sulla-Menashe, Boston University
- 12:05 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 183 Multivariate Data Analysis and Genetics— Contributed

ENAR, WNAR, International Indian Statistical Association  
Chair(s): Melanie M. Wall, Columbia University

- 10:35 a.m. **Statistical Linkage Across High-Dimensional Observational Domains**—◆Leonard Hearne; Toni Kazic, University of Missouri-Columbia
- 10:50 a.m. **The Role of Covariate Heterogeneity in Meta-Analysis of Gene-Environment Interactions with Quantitative Traits**—◆Shi Li, University of Michigan; Bhramar Mukherjee, University of Michigan
- 11:05 a.m. **Elucidating Heritability via Kernel Machine Testing for Epistasis**—◆Jennifer Clark, The University of North Carolina; Michael Wu, The University of North Carolina; Arnab Maity, North Carolina State University
- 11:20 a.m. **Weight Optimization for Comparing Areas Under ROC Curve for a Repeated Marker Between Correlated Groups**—◆Ping Xu, University of South Florida; Yougui Wu, University of South Florida
- 11:35 a.m. **Multiord: An R Package for Generating Correlated Ordinal Data**—◆Anup Amatya
- 11:50 a.m. **Comparative Study of Tests for the Equality of Multivariate Mean Ratios**—◆Chand Chauhan, Indiana-Purdue University; Yvonne M. Zubovic, Indiana-Purdue University
- 12:05 p.m. **Efficient Estimation of Approximate Factor Models**—◆Yuan Liao, University of Maryland; Jushan Bai, Columbia University

## 184 Assorted Topics in Mathematical Statistics I— Contributed

IMS, Korean International Statistical Society  
Chair(s): Silas Bergen, University of Washington

- 10:35 a.m. **Improving Experiments by Optimal Blocking: Minimizing the Maximum Inter-Block Distance**—◆Michael Higgins; Jasjeet S. Sekhon, University of California at Berkeley
- 10:50 a.m. **Characterizations Based on Regression Assumptions of Order Statistics**—◆Wen-Jang Huang, National University of Kaohsiung; Nan-Cheng Su, National Taipei University
- 11:05 a.m. **Copula Calibration of Multivariate Probabilistic Forecasts**—◆Johanna F. Ziegel, University of Bern; Tilmann Gneiting, Heidelberg University

## CC-513a 11:20 a.m. **Marketing on Dynamical Random Networks and Related Inference**—◆Daniel Saxton; Anand Vidyashankar, George Mason University

11:35 a.m. **Best Power-Divergence Confidence Interval for a Binomial Proportion**—◆Shaobo Jin, Uppsala University

11:50 a.m. **Empirical Likelihood-Based Deviance Information Criterion**—◆Teng Yin; Sanjay Chaudhuri, National University of Singapore

12:05 p.m. **Leave-K-Out Likelihood: Alternative for Selecting the Best Likelihood-Based Estimator in the Presence of Multiple Local Maximizers**—◆Daeyoung Kim, University of Massachusetts, Amherst; Byungtae Seo, Sungkyunkwan University

## 185 Statistical Methods for Applied Problems— Contributed

Korean International Statistical Society  
Chair(s): Hang Joon Kim, Duke University and NISS

10:35 a.m. **New Method on Nonlinearity Test in Time Series**—◆Hang Kim, Temple University

10:50 a.m. **Intermediate Order Statistics Under Progressive Type-II Censoring and Applications to Nonparametric Confidence Intervals of Quantiles**—◆David Han, The University of Texas at San Antonio

11:05 a.m. **Approximate Confidence Limits for the Ratio of Two Binomials with Sequential Sampling**—◆Hokwon Cho, University of Nevada, Las Vegas

11:20 a.m. **Corrected False-Discovery Rate for Removing the Gene-Set-Level Bias of RNA-Seq**—◆Seongmun Jeong, Myongji University; Tae Young Yang, Myongji University

11:35 a.m. **Accelerated Life Testing Case Study**—◆Jaiwook Baik, Korea National Open University

11:50 a.m. **Statistical Evaluation Process of Material Unaccounted for and It's Application to Bulk Handling Facility**—◆Min-Su KIM, Korea Institute of Nuclear Nonproliferation and Control; Hyewon Shim, Korea Institute of Nuclear Nonproliferation and Control; Seung Ho Ahn, Korea Institute of Nuclear Nonproliferation and Control; Ki Hyun KIM, Korea Institute of Nuclear Nonproliferation and Control; Seong Yeon Jo, Korea Institute of Nuclear Nonproliferation and Control

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

## CC-520f

## 186 CC-516d Current Topics in Phone Surveys—Contributed

Survey Research Methods Section

Chair(s): Kristen Cyffka, U.S. Census Bureau

- 10:35 a.m. **How Representative Are Google Consumer Surveys?: Results from an Analysis of Google Consumer Survey Questions Relative to National Level Benchmarks**—◆Erin Tanenbaum, NORC at the University of Chicago; Michael Stern, NORC at the University of Chicago; Parvati Krishnamurty, NORC at the University of Chicago
- 10:50 a.m. **How Changes to Improve the Reliability of Telephone Status Items Affect Telephone Status Estimates**—◆Vince Welch, Jr., NORC at the University of Chicago; Robert Montgomery, NORC at the University of Chicago
- 11:05 a.m. **Nationwide Surveys in Mexico Based on a Mobile Phone Sampling Design**—◆Olivia Carrillo-Gamboá, ITESM
- 11:20 a.m. **2013 National Census Contact Test**—◆Timothy Stewart, U.S. Census Bureau
- 11:35 a.m. **Weighting for Dual-Frame Designs Where Nonresponse Differs Between Frames**—◆Olena Kaminska, Institute for Social and Economic Research; Peter Lynn, University of Essex
- 11:50 a.m. **Simulation of Alternative Single-Frame and Dual-Frame Sample Designs for the NIS**—Kirk Wolter, NORC at the University of Chicago; ◆Nadarajasundaram Ganesh, NORC at the University of Chicago; Wei Zeng, NORC at the University of Chicago; Kennon Copeland, NORC; Stacie Greby, Centers for Disease Control and Prevention; Meena Khare, NCHS/CDC
- 12:05 p.m. **Location, Location, Location: Incentives and Geography**—◆Alicia M. Frasier, NORC at the University of Chicago; Jacquelyn M. George, NORC at the University of Chicago; Heather M. Morrison, NORC at the University of Chicago; Matthew D. Bramlett, National Center for Health Statistics

## 187 CC-510b Bayesian Networks, Graphs, and Mixture Models—Contributed

Section on Bayesian Statistical Science, International Chinese Statistical Association, Korean International Statistical Society

Chair(s): Abel Rodriguez, University of California at Santa Cruz

- 10:35 a.m. **A Bayesian Graphical Model for Integrative Analysis of TCGA Data**—◆Yanxun Xu
- 10:50 a.m. **Preimage Reconstruction of Molecules with a Graph Kernel**—◆Ryo Yoshida, The Institute of Statistical Mathematics; Hiroshi Yamashita, Graduate University for Advanced Studies; Yukito Iba, Institute of Statistical Mathematics; Tomoyuki Higuchi, Institute of Statistical Mathematics

- 11:05 a.m. **A Bayesian Infinite Factor Model for Learning and Content Analytics**—◆Kassie Fronczyk
- 11:20 a.m. **Efficient Inference in Large Graphical Models Using Bayesian Non-Negative Tensor Decompositions**—◆Hongxia Yang, IBM T.J. Watson Research Center; Yinglong Xia, IBM T.J. Watson Research Center; Yasuo Amemiya, IBM T.J. Watson Research Center; Ching-Yung Lin, IBM T.J. Watson Research Center
- 11:35 a.m. **Integrated Modelling of European Migration: Age and Sex-Specific Estimates**—◆Peter W.F. Smith, University of Southampton; Arkadiusz Wisniowski, University of Southampton
- 11:50 a.m. **Efficient Parameter Estimation for Models of Health Care--Associated Infection in Continuous Time with Bayesian Networks**—◆Andrew Reed, University of Utah; Alun Thomas, University of Utah; Karim Khader, University of Utah; Molly Leecaster, University of Utah; Tom Greene, University of Utah; Matthew Samore, University of Utah
- 12:05 p.m. **Bayesian Mixture Model--Based Clustering with Unknown Number of Components**—◆Taiyeong Lee, SAS Institute; Jaeseok Kim, Samsung Electronics; Yongdai Kim, Seoul National University

## 188 CC-512d Nonparametric Methods for Big Data—Contributed

Section on Nonparametric Statistics, Scientific and Public Affairs Advisory Committee

Chair(s): Bruce Swihart, Johns Hopkins School of Public Health

- 10:35 a.m. **Bayesian Bandwidth Estimation for a Semi-Functional Partial Linear Regression Model with Unknown Error Density**—◆Han Lin Shang, University of Southampton
- 10:50 a.m. **The Convergence Rate of Majority Vote Under Exchangeability**—◆Miles Lopes, University of California at Berkeley
- 11:05 a.m. **Comparison of Nonparametric Functional Data Analysis Methods**—◆Kathryn Prewitt, Arizona State University
- 11:20 a.m. **Penalized Isotonic Regression**—◆Jiwen Wu, Colorado State University; Mary Meyer, Colorado State University; Jean Opsomer, Colorado State University
- 11:35 a.m. **Time-Spatial Correlation Patterns for Global Temperature and Humidity Components**—◆Ming Luo, State University of New York at Albany; Igor Zurbenko, State University of New York at Albany
- 11:50 a.m. **Nonparametric Regression Method for ECG Signal Pre-Processing Under Heteroscedasticity**—◆Donghui Zhang, Sanofi Aventis; Cun-Hui Zhang, Rutgers University
- 12:05 p.m. **Group Thresholding for Principal Component Selection and Estimation in Functional Data Analysis**—◆Mark Koudstaal; Fang Yao, University of Toronto



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 189 CC-518 ■ Hybrid or Online Teaching and Quantitative Reasoning—Contributed

Section on Statistical Education

Chair(s): Sam Behseta, California State University at Fullerton

- 10:35 a.m. **Evaluating a Hybrid Learning Environment in an Introductory Statistics Course**—◆Herle McGowan, North Carolina State University
- 10:50 a.m. **Student Choices of Reduced Seat Time in a Blended Introductory Statistics Course**—◆James R. Schmidt, University of Nebraska-Lincoln; Carlos J. Asarta, University of Nebraska-Lincoln
- 11:05 a.m. **A Slightly Inverted Classroom**—◆Shonda Kuiper, Grinnell College
- 11:20 a.m. **Using Electronic Homework Systems in Introductory Statistics**—◆Roger Woodard, North Carolina State University
- 11:35 a.m. **Enhancing Student Education Through Quantitative Reasoning**—◆Ermine Orta, The University of Texas at San Antonio; Kimberly Massaro, The University of Texas at San Antonio; Rajendra Boppana, The University of Texas at San Antonio; Nandini Kannan, The University of Texas at San Antonio
- 11:50 a.m. **Examples of Quantitative Reasoning**—◆Kimberly Massaro, The University of Texas at San Antonio
- 12:05 p.m. **From In-Class Lectures to Online Delivery**—◆Cathy Poliak, University of Wisconsin-Milwaukee

## 190 CC-520d Techniques for High-Dimensional Data—Contributed

Section on Statistical Learning and Data Mining

Chair(s): Hao Helen Zhang, University of Arizona

- 10:35 a.m. **Variable Length Markov Chains for Sequential Prediction in Dependence Time Series**—Abraham J. Wyner, The Wharton School; ◆Joshua Magarick, University of Pennsylvania
- 10:50 a.m. **Graph Estimation from Multi-Attribute Data**—◆Mladen Kolar, Carnegie Mellon University; Han Liu, Princeton University; Eric P. Xing, Carnegie Mellon University
- 11:05 a.m. **Optimization of PRIM Under Normality**—◆Daniel A. Diaz, University of Miami; J. Sunil Rao, University of Miami; Jean-Eudes Dazard, Center for Proteomics and Bioinformatics-Case Western Reserve University
- 11:20 a.m. **Thresholded Reduced-Rank Multivariate Regression**—◆Ranye Sun, Texas A&M University; Mohsen Pourahmadi, Texas A&M University

- 11:35 a.m. **Sequential Reduced-Dimension Change-Point Detection**—◆Yao Xie, Duke University; Meng Wang, Rensselaer Polytechnic Institute; Robert Calderbank, Duke University
- 11:50 a.m. **Factoring Hidden State Spaces for HMMs**—◆Jordan Rodu, The Wharton School
- 12:05 p.m. **Seqclock: Analysis Pipeline for Time Course Genomic Sequencing Experiments**—◆Xuekui Zhang, The Johns Hopkins University

## 191 CC-520e Variable Selection for Regression—Contributed

Section on Statistical Learning and Data Mining

Chair(s): Kai Zhang, The University of North Carolina at Chapel Hill

- 10:35 a.m. **Sparse Multivariate Factor Regression Models and Its Application to High-Throughput Array Data Analysis**—◆Yan Zhou, University of Michigan; Peter X.K. Song, University of Michigan; Ji Zhu, University of Michigan
- 10:50 a.m. **Tuning Parameter Selection in Bridge Regression Modeling**—◆Shuichi Kawano, Osaka Prefecture University
- 11:05 a.m. **Iterative Selection Using Orthogonal Regression Techniques**—◆Bradley Turnbull, North Carolina State University; Subhashis Ghosal, North Carolina State University; Hao Helen Zhang, North Carolina State University
- 11:20 a.m. **Large Sample Properties of Model Selection Criteria in High-Dimensional Regression**—◆Peng Yang, North Carolina State University; Soumendra N. Lahiri, North Carolina State University
- 11:35 a.m. **Variable Selection in Regression Using Maximal Correlation and Distance Correlation**—◆Deniz Yenigun, Bilkent University; Maria L. Rizzo, Bowling Green State University
- 11:50 a.m. **Regression with Generalized Elastic Net Penalty**—◆Geoffroy Mouret, École Polytechnique de Montréal; Jean-Jules Brault, École Polytechnique de Montréal; Vahid Partovi Nia, École Polytechnique Montréal
- 12:05 p.m. **On the Sensitivity of the Lasso to the Number of Predictor Variables**—◆Cheryl Flynn, New York University; Clifford M. Hurvich, Stern School of Business, New York University; Jeffrey S. Simonoff, Stern School of Business, New York University



192 CC-525b  
**Customer Preferences and Lifetime Value—Contributed**

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

Chair(s): Song Lin, Massachusetts Institute of Technology Sloan School of Management

- 10:35 a.m. **The Effect of Service Quality on Customer Lifetime Value**—◆Michael Braun, Massachusetts Institute of Technology Sloan School of Management; David Schweidel, Goizueta Business School, Emory University; Eli Stein, Harvard University
- 10:50 a.m. **Simulation and Modeling of Churn and Customer Lifetime Value in Mobile Applications**—◆Alex Zolot, Medio Systems; Yakov Keselman, Medio Systems
- 11:05 a.m. **Monetizing Rating Scales**—◆Nino Hardt, The Ohio State University, Fisher College of Business; Greg M. Allenby, The Ohio State University; Alex Varbanov, The Procter & Gamble Company
- 11:20 a.m. **Optimality of Reduced-Size Choice Sets**—◆Pallavi Chitturi, Temple University; Ke Huang, Temple University
- 11:35 a.m. **Is What You Choose What You Want? Uncertainty in Choice-Based Conjoint Analysis**—◆Yu-Cheng Ku, Fannie Mae
- 11:50 a.m. **Clustering of Respondents and Diagnostics for Choice-Based Conjoint**—◆Robert Mee, University of Tennessee; Wenjun Zhou, University of Tennessee
- 12:05 p.m. **Floor Discussion**

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

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193 CC-220bc  
**Analytic Challenges in Epidemiological Studies and Public Health, Part 2—Contributed Poster Presentations**

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

Chair(s): Joyee Ghosh, University of Iowa

- 1 **A Comparison of Methods and Platforms for Copy Number Variation Studies**—◆Siddharth Roy, North Carolina State University; Alison Motsinger-Reif, North Carolina State University
- 2 **Addressing Within-Subject Genomic Heterogeneity**—◆Matthew Nicholson McCall, University of Rochester Medical Center; Anthony Almudevar, University of Rochester Medical Center

- 3 **Designing a Genome-Based HIV Incidence Assay with High Sensitivity and Specificity**—Sung Yong Park, University of Southern California; ◆Tanzy Love, University of Rochester; Sally W. Thurston, University of Rochester; Alan S. Perelson, Los Alamos National Laboratory; Ha Youn Lee, University of Southern California
- 4 **Detecting Rare Variant Effects Using Extreme Phenotype Sampling in Sequencing Association Studies**—◆Ian Barnett, Harvard University; Seunggeun Lee, Harvard School of Public Health; Xihong Lin, Harvard School of Public Health
- 5 **Nonlinear Mixed Effects Models to Study Determinants of Local Airway Inflammation Using Multiple Flow Exhaled Nitric Oxide Data**—◆Sandra Eckel, University of Southern California; Kiro Berhane, University of Southern California; Meng Liu, University of Southern California; Linn S. William, University of Southern California; Muhammad T. Salam, University of Southern California; Edward B. Rappaport, University of Southern California; Frank D. Gilliland, University of Southern California
- 6 **Excess Lung Cancer Risk Attributable to Low-Dose CT Screening Among Long-Term Smokers**—◆Rui Yang, Quintiles; Deborah Goldwasser, Rice University
- 7 **Challenges in Age-Period-Cohort Modeling of Breast Cancer Incidence**—◆Ronald Gangnon, University of Wisconsin; Brian Sprague, University of Vermont; Natasha Stout, Harvard Medical School and Harvard Pilgrim Health Care; Oguzhan Alagoz, University of Wisconsin; Amy Trentham-Dietz, University of Wisconsin
- 8 **Efficient Estimation of Relative Risk in Case-Cohort Studies**—◆Emmanuel Sampene; Abdus Wahed, University of Pittsburgh
- 9 **Incorporating Variation of Group Exposure Levels Into Estimation of Dose Response Relation in Meta-Analyses**—◆Junshan Qiu, FDA
- 10 **Correcting Bias in Effects of Risk Factors in Longitudinal Studies Due to Non-Random Missingness Using Auxiliary Data**—◆Charles Hall, Albert Einstein College of Medicine; Culing Wang, Albert Einstein College of Medicine; Mindy Katz, Albert Einstein College of Medicine; Richard Lipton, Albert Einstein College of Medicine
- 11 **Combined Statistical Approaches for Comparing Performances of Two Independent Prediction Models**—◆Hui Zhou, Kaiser Permanente; Jeff M Slezak, Southern California Permanente Medical Group; Stephen F. Derose, Southern California Permanente Medical Group; Don Morris, Archimedes; Anny H Xiang, Kaiser Permanente; Steve J. Jacobsen, Southern California Permanente Medical Group
- 12 **Identifying Predictors for HIV/AIDS Disease Progression and Compare Estimates from Separate and Joint Modeling of Longitudinal HIV-RNA Measurements and Survival Outcome (AIDS)**—◆Prosanta Mondal, University of Saskatchewan; Stuart Skinner, University of Saskatchewan; Hyun-Ja Lim, University of Saskatchewan

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 13 **Gene-Environment Interaction Analysis for Repeated Measures Data with AMMI Models**—◆ Yi-An Ko, University of Michigan; Bhramar Mukherjee, University of Michigan
- 14 **A Standardization Initiative to Link Public Health Surveillance Problem Owners to Solution Developers**—◆ Howard Burkom, Johns Hopkins Applied Physics Lab
- 15 **A Comparison of Knot Selection Algorithms for B-Spline Varying-Coefficient Methods When Controlling for Nonignorable Dropout**—◆ Camille Moore, Colorado School of Public Health, University of Colorado Denver; Samantha MaWhinney, Colorado School of Public Health; Jeri Forster, Colorado School of Public Health; Nichole Carlson, Colorado School of Public Health, University of Colorado Denver
- 16 **Point and Interval Estimation of Average Population Attributable Fraction in a Matched Case Control Design**—◆ Lin H. Tian, Centers for Disease Control and Prevention; Laura A. Schieve, Centers for Disease Control and Prevention; Owen Devine, Centers for Disease Control and Prevention
- 17 **Risk-Ranking: Is It Meta-Meta-Analysis?**—◆ Mary Bartholomew, FDA Center for Veterinary Medicine
- 18 **Current European Perspective in Structured Benefit-Risk Assessment**—◆ Shihua Wen, AbbVie
- 19 **Using Delong, Fligner, and Birnbaum's Method to Estimate Standard Errors of AUC Regression with Covariates**—◆ Amy Buros, Baylor University; Jack Tubbs, Baylor University
- 4 **Detection of Statistically Significant Sub-Clusters in Biological Data**—◆ Guoli Sun, Stony Brook University; Alexander Krasnitz, Cold Spring Harbor Laboratory
- 5 **A Random-Effect Model on Correlated Health Care Costs with Zeroes**—◆ Y. V. Hui, City University of Hong Kong; Andy H. Lee, Curtin University; Kelvin K. W. Yau, City University of Hong Kong
- 6 **A Bayesian Dose-Finding Design for Drug Combination Trials with Delayed Toxicities**—◆ Suyu Liu, The University of Texas MD Anderson Cancer Center; Jing Ning, The University of Texas MD Anderson Cancer Center
- 7 **Comparing Different Methods of Handling Overrun in Group Sequential Trials**—◆ Timothy Skalland, Oregon State University; Sarah Emerson, Oregon State University
- 8 **A Multivariate Semiparametric Model for Longitudinal Binary Data with Application in Sexually Transmitted Infection Research**—◆ Zhuokai Li, Indiana University School of Medicine; Hai Liu, Indiana University School of Medicine; Wanzhu Tu, Indiana University School of Medicine
- 9 **Combining Several Pairwise Comparisons in Meta-Analysis for Joint Test of Effect Size**—◆ Shaheena Bashir, University Health Network, Toronto; Celia M.T. Greenwood, McGill University
- 10 **After-Treatment Quality-of-Life Assessment in Breast Cancer Patients**—◆ Cynthia Fuentes, University of Concepcion; Marcela Valdes, University of Bio Bio; Luis Cid-Serrano, University of Bio Bio
- 11 **Intra-Examiner Reproducibility of the Agar Plate Method for Estimation of Phospholipase Activity in Candida Albicans**—◆ Livia Nordi Dovigo, Araraquara Dental School, UNESP-Universidade Estadual Paulista; Paula Volpato Sanitá Dantas, Araraquara Dental School, UNESP-Universidade Estadual Paulista; Juliana Alvares Duarte Bonini Campos, Araraquara Dental School, UNESP-Universidade Estadual Paulista

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

194 CC-220bc

### Contributed Oral Poster Presentations: Biometrics Section — Contributed Poster Presentations

Biometrics Section, Korean International Statistical Society  
Chair(s): Joyee Ghosh, University of Iowa

- 1 **Gauss's Mortality Formula: A Demometric Analysis with Application to the Feral Camel Population in Central Australia**—◆ Peter Pflaumer, Technical University
- 2 **Bayesian Semiparametric Modeling of Clustered Interval-Censored Data Through a Mixture Frailty**—◆ Chun Pan, University of South Carolina; Bo Cai, University of South Carolina; Lianming Wang, University of South Carolina
- 3 **Semiparametric Approach for Regression with Covariate Subject to Limit of Detection**—◆ Shengchun Kong; Bin Nan, University of Michigan
- 12 **Flipped-Data Survival Analysis for Metabolomics Data with Non-Detects**—◆ Eric Siegel, University of Arkansas for Medical Sciences
- 13 **Functional Analysis of Variance with Application to Genetic Association Study**—◆ Olga Vsevolozhkaya, Montana State University; Mark C. Greenwood, Montana State University
- 14 **A Review of the Illumina Infinium Humanmethylation450 Beadchip Assay Design and Implications for Normalization**—◆ Cong Lu, Carnegie Mellon University; Diane E. Grill, Division of Biomedical Statistics, Division of Health Sciences Research, Mayo Clinic; Douglas W. Mahoney, Division of Biomedical Statistics, Division of Health Sciences Research, Mayo Clinic; Gregory A. Poland, Mayo Clinic Vaccine Research Group, Mayo Clinic; Ann L. Oberg, Division of Biomedical Statistics, Division of Health Sciences Research, Mayo Clinic

- 15 **Graph-Based Shrinkage as an Alternative for Linear Mixed Models in Plant Association Studies**—◆Wei Liu, University of Nebraska-Lincoln; Dong Wang, University of Nebraska-Lincoln
- 16 **A Coexpression Network for Biological Pathways** —◆Yered Hammurabi Pita-Juarez, Harvard University
- 17 **Wavelet-Based Principal Component Analysis for Functional Mixed Effects Models**—◆Xiaochen Cai, Columbia University; R. Todd Ogden, Columbia University
- 18 **A Comparison of Methods for Analysis of Longitudinal Categorical Data with Dropouts**—◆Takayuki Abe, Keio University School of Medicine; Yuji Sato, Keio University School of Medicine; Manabu Iwasaki, Seikei University
- 19 **Joint Modeling of Latent Group-Based Trajectory Models with Subdistributions**—◆Nilesh Shah, University of Pittsburgh; Chung-Chou H. Chang, University of Pittsburgh; John A. Kellum, University of Pittsburgh
- 20 **Bayesian Framework for Estimating the Incremental Value of a Diagnostic Test in the Absence of a Gold Standard**—◆Nandini Dendukuri, McGill University; Madhukar Pai, McGill University; Daphne Ling, Health Quality Ontario; Ian Schiller, Division of Clinical Epidemiology, McGill University Health Centre
- 21 **Statistics for Quantifying Heterogeneity in Univariate and Multivariate Meta-Analyses of Binary Data: The Case of Meta-Analyses for Diagnostic Accuracy**—◆Yan Zhou, McGill University; Nandini Dendukuri, McGill University
- 22 **Local Likelihood-Based Estimation for Quantile Classification in the Logistic Regression Model**—◆John Rice, University of Michigan; Jeremy Taylor, University of Michigan
- 23 **Assessing Models of RNA-Sequencing Data**—◆Yanming Di, Oregon State University; Gu Mi, Oregon State University; Sarah Emerson, Oregon State University; Daniel Schafer, Oregon State University
- 24 **Simulation Study for the Zero-Inflated Negative Binomial**—◆Jelani Wiltshire, University of Rochester; David Oakes, University of Rochester Medical Center
- 25 **Forecasting the Cognitive Status in an Aging Population**—◆Georgios Tripodis, Boston University; Nikolaos Zirogiannis, University of Massachusetts, Amherst
- 26 **An Assessment of the Impact of Missing Values on Statistical Methods for Binary Repeated Measures and Hierarchical Data**—◆Elmabrok Masaoud; Henrik Stryhn, University of Prince Edward Island
- 27 **A Two-Dimensional Multiple Testing Procedure Using Voronoi Tessellations**—◆Daisy Phillips, Penn State University; Debashis Ghosh, Penn State University
- 28 **Modeling Longitudinal Change-point Data: Gradual or Abrupt Transition, or Simply a Linear Trend?**—◆Shahedul Khan, University of Saskatchewan
- 29 **Strategies for Developing Prediction Models from Genome-Wide Association Studies**—◆Jincao Wu, National Cancer Institute; Ruth M. Pfeiffer, National Cancer Institute; Mitchell Gail, National Cancer Institute
- 30 **NextAllele: A Bioinformatic Pipeline to Infer Full-Length Haplotypes**—◆Edward Roualdes, Department of Statistics
- 31 **Doubly Robust G-Estimation for Time-Varying Outcome via the Kalman Filter**—◆Sepideh Farsinezhad, McGill University; Masoud Asgharian, McGill University; Russell J. Steele, McGill University
- 32 **Extended Tests for Non-Zero Between-Study Variance**—Kepher H. Makambi, Georgetown University; ◆Jing Wu, Georgetown University, Lombardi Comprehensive Cancer Center
- 33 **Variance Smoothing with Multiple Groups via Fully Moderated T-Statistic**—◆Lianbo Yu, The Ohio State University; David Jarjoura, The Ohio State University
- 34 **Normalization and Extraction of Interpretable Metrics from Raw Accelerometry Data**—◆Jiawei Bai, The Johns Hopkins University; Bing He, The Johns Hopkins University; Thomas A. Glass, The Johns Hopkins University; Ciprian M. Crainiceanu, The Johns Hopkins University
- 35 **A Novel Method for Analysis of Health Indices Data**—Huann-Sheng Chen, National Cancer Institute/NIH; ◆Shunpu Zhang, University of Nebraska
- 36 **Dispersion Estimation and Its Effect on Test Performance in RNA-Seq Data Analysis**—◆William Landau, Iowa State University; Peng Liu, Iowa State University
- 37 **A Dynamic Mover-Stayer Model for Recurrent Event Processes Subject to Resolution**—◆Hua Shen, University of Waterloo; Hua Shen, University of Waterloo; Richard Cook, University of Waterloo
- 38 **An Examination of the Accuracy of a Composite Reference**—◆Ian Schiller, Division of Clinical Epidemiology, McGill University Health Centre; Nandini Dendukuri, McGill University; Michael Libman, Division of Infectious Diseases, McGill University Health Centre; Alula Hadgu, Centers of Disease Control and Prevention
- 39 **Estimation for Some Functions of Covariance Matrix for Multivariate Linear Model Under Non-Normality**—◆Tetsuto Himeno, Seikei University; Takayuki Yamada, The Institute of Statistical Mathematics
- 40 **Gene Expression Profiling of Bone Marrow Biopsy in Multiple Myeloma Patients Under Treatment Helps Define Duration of Maintenance Therapy**—◆Pingping Qu, Cancer Research And Biostatistics; Christoph Heuck, University of Arkansas for Medical Sciences; Qing Zhang, University of Arkansas for Medical Sciences; Antje Hoering, Cancer Research And Biostatistics; Joshua Epstein, University of Arkansas for Medical Sciences; Bart Barlogie, University of Arkansas for Medical Sciences; John Crowley, Cancer Research And Biostatistics

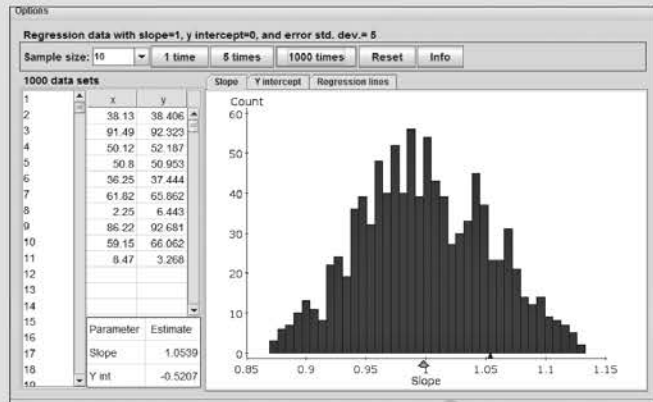
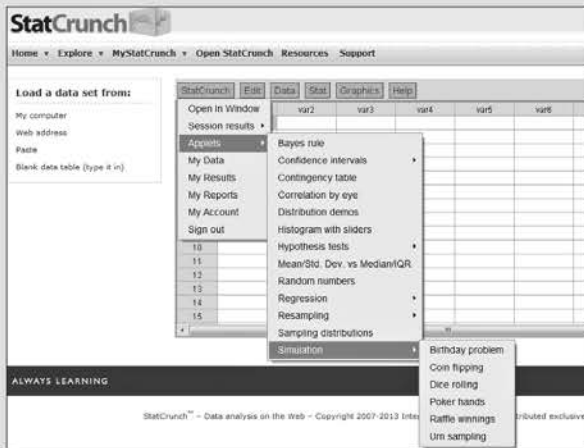
# BREAKTHROUGH

## To improving results

## StatCrunch®

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- 41 **Adjusting for Missing Covariates in Bayesian Latent Class Models for Diagnostic Test Data**—◆ZhuoYu Wang, McGill University; Nandini Dendukuri, McGill University; Lawrence Joseph, McGill University
- 42 **Semiparametric Regression Modeling of Longitudinal Binary Outcomes with Outcome-Dependent Observation Times**—◆Kay See Tan, Unniversity of Pennsylvania; Andrea Troxel, University of Pennsylvania School of Medicine; Stephen E. Kimmel, University of Pennsylvania Perelman School of Medicine; Kevin G. Volpp, University of Pennsylvania Perelman School of Medicine; Benjamin French, University of Pennsylvania Perelman School of Medicine
- 43 **A Natural B-Spline Varying-Coefficient Method for Longitudinal Binary Response Data with Nonignorable Dropout**—◆Jeri Forster, Colorado School of Public Health; Samantha MaWhinney, Colorado School of Public Health; Xinshuo M. Wang, Colorado School of Public Health
- 44 **Efficient Estimation in Additive Hazards Model for Stratified Case-Cohort Design**—◆Soyoung Kim, The University of North Carolina at Chapel Hill
- 51 **Modeling Spatial Binary Fields Over Time With Dynamic Markov Random Fields**—◆Kenneth Wakeland, Iowa State University
- 52 **A Nonstationary Spatial Covariance Regression Model**—◆Mark Risser, The Ohio State University; Catherine A. Calder, Ohio State University
- 53 **Inter-Laboratory Quality Control on Indoor Air Quality Analysis**—◆Guang-Hwa Chang, Youngstown State University
- 54 **Model Averaging Predictions Is Good; Model Averaging Multiple Regression Coefficients Is Bad**—◆Philip Dixon, Iowa State University
- 55 **Investigating the Variation in the Annual Progression of Snow Accumulation and Melt in the Sierra Nevada: A Functional Data Analysis Approach**—◆Eduardo Montoya, California State University at Bakersfield; Wendy Meiring, University of California at Santa Barbara; Jeff Dozier, University of California at Santa Barbara
- 56 **Detecting Clustering in Inhomogeneous Point Processes with Applications to Duck Nesting Locations**—◆Daniel Fortin, Iowa State University; Philip Dixon, Iowa State University; William Clark, Iowa State University; Nicholas Michaud, Iowa State University
- 57 **Statistical Models for Global Phenological Phenomena**—◆Maggie Johnson, Iowa State University; Petrutza Caragea, Iowa State University
- 58 **Evaluating Radar Reflectivity Measurements as Predictors of Rainfall**—◆Marisa Akers; Meera Venkataraman, North Carolina State University
- 59 **Spatial Analysis to Predict Minimum Temperature and Initial Spring Freeze in the Southeast United States**—◆Meagan Gentry, North Carolina State University; Austin John, North Carolina State University
- 60 **Smooth Change-Point Estimation for Spatial Image Intensity Profiles**—◆Joseph Usset, North Carolina State University
- 61 **Fitting an AR(1) Model to Environmental Measurements with Non-Detects**—◆John Rogers
- 62 **Imputation of Missing Data Under a Spatial-Temporal Autologistic Regression Model**—◆Yanbing Zheng, University of Kentucky; Zilong Wang, University of Kentucky
- 63 **Using Ripley's L-Function to Examine Spatial Clustering in Duck Nests**—◆Nicholas Michaud, Iowa State University; Philip Dixon, Iowa State University; William Clark, Iowa State University; Daniel Fortin, Iowa State University; David Howerter, Ducks Unlimited Canada
- 64 **Diagnostics to Assess Toxicokinetic-Toxicodynamic Models**—◆Xia Xu, Merck Research Laboratories; Philip Dixon, Iowa State University
- 65 **Analysis and Modeling of Major Power Outages in Northeast U.S.**—◆David Trindade, Bloom Energy

## 195 CC-220bc Contributed Oral Poster Presentations: Section on Statistics and the Environment— Contributed

Section on Statistics and the Environment

Chair(s): Joyee Ghosh, University of Iowa

Section on Statistics and the Environment

- 45 **Maximum Likelihood Estimation of Multivariate Normal Parameters in the Presence of Left-Censored and Missing Data: A Pseudo-Likelihood Approach**—◆Heather Hoffman, George Washington University; Robert E. Johnson, Vanderbilt University
- 46 **Protozoa Co-Occurrence in Surface Water Sources of Drinking Water**—◆Michael Messner, U.S. Environmental Protection Agency
- 47 **Quantifying Model Error in Posterior Distributions**—◆Staci White, The Ohio State University; Radu Herbei, The Ohio State University
- 48 **K Distribution Related to Environmental Statistics**—◆Koji Kanefuji, Institute of Statistical Math; Kosei Iwase, Hokohama College of Pharmacy
- 49 **Predicting the Geographic Distribution of Two Invasive Termite Species in Florida Using a Bayesian Logistic Model for Presence-Only Data**—◆Francesco Tonini, Fabio Divino, University of Molise; Giovanna Jona Lasinio, University of Rome, La Sapienza; Hartwig Hochmair, University of Florida; Rudolf H. Scheffrahn, University of Florida
- 50 **Examining the Heterogeneity of the Elemental Composition of Indoor, Outdoor, and Personal PM<sub>2.5</sub> Samples**—◆Jenny Chen, University of Cincinnati; Marepalli Rao, University of Cincinnati; Patrick Ryan, Cincinnati Children's Hospital Medical Center



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

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## Speaker with Lunch 12:30 p.m.–1:50 p.m.

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196 CC-524c  
**Section on Statistics in Sports Speaker with Lunch (Fee Event)—Speaker with Lunch**  
Section on Statistics in Sports  
Organizer(s): Shane Reese, Brigham Young University

ML07 **What Statistical Analyses Tell Us About Ice Hockey—**  
◆Michael Schuckers, St. Lawrence University

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## Roundtables with Lunch 12:30 p.m.–1:50 p.m.

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197 CC-517d  
**Biopharmaceutical Section P.M. Roundtable Discussion (Fee Event)**

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

ML08 **Randomization Methods Used in Clinical Trials—**  
◆Dennis Sweitzer, Medidata Solutions

ML09 **Overcoming Challenges with Implementing CRM Designs—**  
◆Aileen Murphy, Seattle Genetics, Inc.; Alan Hartford, Agensys, Inc

ML10 **Impact of Missing Data on the Approvability of Potentially Efficacious Therapies—**  
◆Abdul Sankoh, Vertex Pharmaceuticals

198 CC-517d  
**Health Policy Statistics Section P.M. Roundtable Discussion (Fee Event)**

Health Policy Statistics Section  
Organizer(s): Juned Siddique, Northwestern University

ML11 **From Accelerometers to Androids: Design and Analytic Issues in Mobile Phone–Based Health Studies—**  
◆Warren Comulada, University of California at Los Angeles Center for Community Health

ML12 **Integrating Health Policy Concepts Into Graduate Education in Statistics and Biostatistics—**  
◆Thomas R. Belin, University of California at Los Angeles

199 CC-517d  
**Quality and Productivity Section P.M. Roundtable Discussion (Fee Event)**

Quality and Productivity Section  
Organizer(s): Ming Li, GE Global Research

ML13 **Using Statistical Engineering to Attack Large, Complex, Unstructured Problems—**  
◆Roger W. Hoerl, GE Global Research

200 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.

ML14 **Allocating Programming Resources in a Dynamic Environment—**  
◆William Coar, Axio Research; Amber Randall, Axio Research

201 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

ML15 **Interdisciplinary Research: Role of the Statistician and Opportunities for Funding and Leadership—**  
◆Montserrat Fuentes, North Carolina State University

ML16 **Ticks, Tweets, and Trails of Pain: Some Examples of Big Data in Business Research—**  
◆James G. Scott, The University of Texas at Austin

202 CC-517d  
**Section on Statistical Consulting P.M. Roundtable Discussion (Fee Event)**

Section on Statistical Consulting  
Organizer(s): Nicholas Pajewski, Wake Forest University

ML17 **How You Can Help with the LISA 2020 Initiative to Build Statistics Capacity in Developing Countries—**  
◆Eric A. Vance, LISA-Virginia Tech

203 CC-517d  
**Section on Statistical Education P.M. Roundtable Discussion (Fee Event)**

Section on Statistical Education  
 Organizer(s): Ming-Wen An, Vassar College

- ML18 **Exploring (and Removing) Hesitations to Using (Thoughtful) Fun in Statistics Classes**—◆Lawrence M. Lesser, The University of Texas at El Paso
- ML19 **Statistics Projects from the ‘Real World’**—◆Laura Chihara, Carleton College
- ML20 **Hands-on Activities and Other Tools for Teaching Hypothesis Testing**—◆Georgette Nicolaidis, Syracuse University Whitman School of Management

204 CC-517d  
**Section on Statistics in Defense and National Security P.M. Roundtable Discussion (Fee Event)**

Section on Statistics in Defense and National Security  
 Organizer(s): Laura June Freeman, Institute for Defense Analyses

- ML21 **Statistical Rigor in DOD Test and Evaluation**—◆Alyson Wilson, IDA

205 CC-517d  
**Section on Statistics in Epidemiology P.M. Roundtable Discussion (Fee Event)**

Section on Statistics in Epidemiology  
 Organizer(s): Madhuchhanda Mazumdar, Weill Cornell Medical College

- ML22 **Dissemination of Novel Quantitative Methods**—◆Paul Nietert, Medical University of South Carolina

206 CC-517d  
**Social Statistics Section P.M. Roundtable Discussion (Fee Event)**

Social Statistics Section, Korean International Statistical Society  
 Organizer(s): Michael Sinclair, NORC

- ML23 **The National Children’s Study (NCS) Vanguard Study Data Analytics**—◆Christina Park, Eunice Kennedy Shriver National Institute of Child Health and Human Development

207 CC-517d  
**Survey Research Methods Section P.M. Roundtable Discussion (Fee Event)**

Survey Research Methods Section  
 Organizer(s): Karol Krotki, RTI International

- ML24 **Calibration Weighting: What We Know Now, What We Still Need to Know**—◆Phil Kott, RTI International

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**Invited Sessions**  
**2:00 p.m.–3:50 p.m.**

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208 CC-516d  
**■ ● Impact of Bayesian Methods in Medical Product Development—Invited**

Biopharmaceutical Section, International Society for Bayesian Analysis (ISBA), ASA Special Interest Group for Medical Devices and Diagnostics, Pharmaceutical Statistics

Organizer(s): Karen Lynn Price, Eli Lilly and Company  
 Chair(s): Nelson Kinnersley, Roche Products Limited

- 2:05 p.m. **An Overview of Current State of Bayesian Methods in Medical Product Development**—◆Fanni Natanegara, Eli Lilly and Company; Beat Neuenschwander, Novartis
- 2:30 p.m. **Assessing Drug Safety Using Bayesian Evidence Synthesis**—◆David I. Ohlssen, Novartis; Amy Xia, Amgen, Inc.
- 2:55 p.m. **The Use of Historical Information in Clinical Trials**—Scott M. Berry, Berry Consultants; ◆Kert Viele, Berry Consultants
- 3:20 p.m. Disc: Lisa LaVange, FDA/CDER
- 3:40 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 209 CC-510a 211 CC-515a ● **Signal Identification in High-Dimensional Settings—Invited** ■ ● **Gene-Environment Interaction in Disease Risks: Beyond Logistic Rmodels—Invited**

Section on Statistical Learning and Data Mining, Biometrics Section  
Organizer(s): Moulinath Banerjee, University of Michigan  
Chair(s): George Michailidis, University of Michigan

- 2:05 p.m. **A Classification Rule of Feature Augmentation via Nonparametrics and Selection (FANS) in High-Dimensional Space**—Jianqing Fan, Princeton University; ◆Yang Feng, Columbia University; Xin Tong, Massachusetts Institute of Technology
- 2:30 p.m. **On Consistency of Community Detection in Networks**—Yunpeng Zhao, George Mason University; Liza Levina, University of Michigan; ◆Ji Zhu, University of Michigan
- 2:55 p.m. **Independent Component Analysis via Nonparametric Maximum Likelihood**—◆Richard Samworth, University of Cambridge; Ming Yuan, University of Wisconsin-Madison
- 3:20 p.m. **Fast Network Community Detection by Score**—◆Jiashun Jin, Carnegie Mellon University
- 3:45 p.m. **Floor Discussion**

## 210 CC-510c ■ ● **Toward Big Data in Teaching Statistics—Invited**

Section on Statistical Education, SSC, Statistical Learning and Data Mining Section, Section on Statistical Graphics, Section on Statistical Computing, Section on Teaching of Statistics in the Health Sciences, Statistics Without Borders

Organizer(s): John G. Gabrosek, Grand Valley State University  
Chair(s): John G. Gabrosek, Grand Valley State University

- 2:05 p.m. **Statistical Inference at Google Scale**—◆Nicholas Chamandy, Google
- 2:25 p.m. **Introducing Science Students to Big Data**—◆Randall Pruim, Calvin College, Daniel Theodore Kaplan, Macalester College; Elizabeth Shoop, Macalester College
- 2:45 p.m. **Precursors to the Data Explosion: Teaching How to Compute with Data**—◆Nicholas J. Horton, Smith College; Benjamin S. Baumer, Smith College; Daniel Theodore Kaplan, Macalester College; Randall Pruim, Calvin College
- 3:05 p.m. **Big Data: Does the Song Remain the Same?**—◆Chris J. Wild, University of Auckland; Antony Unwin, IUniversity of Augsburg
- 3:25 p.m. Disc: Rob Gould, University of California at Los Angeles
- 3:45 p.m. **Floor Discussion**

International Indian Statistical Association, International Chinese Statistical Association, Statistical Learning and Data Mining Section, WNAR, Section on Statistics and the Environment, Section on Statistics in Epidemiology

Organizer(s): Nilanjan Chatterjee, National Cancer Institute  
Chair(s): Nilanjan Chatterjee, National Cancer Institute

- 2:05 p.m. **Statistical Interactions, Link Functions, and Bayes Estimation of Log Odds for Case-Control Studies**—◆Jaya M. Satagopan, Memorial Sloan-Kettering Cancer Center; Sara H. Olson, Memorial Sloan-Kettering Cancer Center; Robert C. Elston, Case Western Reserve University
- 2:30 p.m. **Informed Conditioning on Environmental Covariates Increases Power in Case-Control Association Studies**—◆Noah Aaron Zaitlen, University of California at San Francisco; Sara Lindstrom, HSPH; Bogdan Pasaniuc, University of California at Los Angeles; Marilyn Cornelis, HSPH; Giulio Genovese, HMS; Samuela Pollack, HSPH; Benjamin Voight, University of Pennsylvania; Peter Kraft, HSPH; Nick Patterson, Broad Institute; Alkes L. Price, Harvard School of Public Health
- 2:55 p.m. **A Unified Framework for Testing Genetic Associations Integrating Environmental Exposures**—◆Summer S. Han, Stanford University; Philip S. Rosenberg, National Cancer Institute; Nilanjan Chatterjee, National Cancer Institute
- 3:20 p.m. Disc: Charles Kooperberg, Fred Hutchinson Cancer Research Center
- 3:40 p.m. **Floor Discussion**

## 212 CC-511a ■ **A Decade of Profile Monitoring: What's Next?—Invited**

Quality and Productivity Section

Organizer(s): Willis Jensen, W.L. Gore & Associates

Chair(s): Willis Jensen, W.L. Gore & Associates

- 2:05 p.m. **An Overview of Profile Monitoring**—◆William H. Woodall, Virginia Tech
- 2:30 p.m. **Parametric Methods: Review and Future Work**—◆Mahmoud A. Mahmoud, Cairo University
- 2:55 p.m. **Nonparametric Profile Monitoring**—◆Peihua Qiu, University of Minnesota
- 3:20 p.m. **Profile- and Surface-Monitoring Methods for Shapes**—◆Bianca Maria Colosimo, Politecnico Milano
- 3:45 p.m. **Floor Discussion**

## 213 CC-524a **Graphical Approaches for Survey Data—Invited**

Government Statistics Section, Section on Statistical Graphics, Section on Statistical Computing, Statistics Without Borders

Organizer(s): Wendy L. Martinez, Bureau of Labor Statistics

Chair(s): Gwyn R. Ferguson, Bureau of Labor Statistics

- 2:05 p.m. **Dynamic Visualization of Economic Indicators—**  
◆ Katherine Jenny Thompson, U.S. Census Bureau;  
Mark Wallace, U.S. Census Bureau
- 2:40 p.m. **Visualizing Survey Data: Uncertainty, Outliers,  
and More—**◆ Wendy L. Martinez, Bureau of Labor  
Statistics; Richard Holden, Bureau of Labor Statistics
- 3:15 p.m. Disc: Daniel Carr, George Mason University
- 3:35 p.m. **Floor Discussion**

## 214 CC-511c **Causal Inference in Observational Studies with Time-Varying Treatments—Invited**

Section on Statistics in Epidemiology, SSC, Biometrics Section

Organizer(s): Yun Li, University of Michigan

Chair(s): Yun Li, University of Michigan

- 2:05 p.m. **Q-Learning with a Useful Utility—**  
◆ Erica E. M. Moodie, McGill University
- 2:30 p.m. **Assessing the Effect of Organ Transplantation on  
the Distribution of Residual Lifetime—**◆ David  
Michael Vock, University of Minnesota; Anastasios  
(Butch) Tsiatis, North Carolina State University; Marie  
Davidian, North Carolina State University; Eric Laber,  
North Carolina State University; Wayne M. Tsuang,  
Duke University; C. Ashley Finlen Copeland, Duke  
University; Scott M. Palmer, Duke University
- 2:55 p.m. **Estimating the Average Treatment Effect on Mean  
Survival Time When Treatment Is Time-Dependent  
and Censoring Is Dependent—**◆ Douglas Earl  
Schaubel, University of Michigan; Qi Gong,  
Amgen, Inc.
- 3:20 p.m. **The Extended G-Formula—**◆ James Robins, HSPH
- 3:45 p.m. **Floor Discussion**

## 215 CC-522bc **Advanced Methods in Brain Imaging Research—Invited**

Section on Statistics in Imaging, Mental Health Statistics Section, Statistical Learning and Data Mining Section, WNAR, Korean International Statistical Society

Organizer(s): Hakmook Kang, Vanderbilt University

Chair(s): Martin Lindquist, Johns Hopkins Bloomberg School of Public Health

- 2:05 p.m. **Methods for Detecting Functional Connectivity  
Change Points in fMRI Data—**◆ Ivor Cribben,  
University of Alberta School of Business; Tor D. Wager,  
University of Colorado, Boulder; Martin Lindquist,  
Johns Hopkins Bloomberg School of Public Health
- 2:25 p.m. **Spectral Density Shrinkage for High-Dimensional  
Time Series—**◆ Mark Fiecas, University of California  
at San Diego; Rainer von Sachs, Universite Catholique  
de Louvain
- 2:45 p.m. **Longitudinal Analysis of Resting-State fMRI  
Functional Connectivity Networks—**◆ Hakmook  
Kang, Vanderbilt University; Mark Fiecas, University  
of California at San Diego
- 3:05 p.m. **A Model for the Detection of Abnormal Regions  
in Quantitative Cerebral Maps with Application  
to Myelin Water Fraction Maps—**◆ Sandra Milena  
Hurtado Rúa, Weill Medical College of Cornell University
- 3:25 p.m. **Confidence Envelopes for Population-Level  
Activations in fMRI Studies—**◆ David Degras,  
DePaul University; Martin Lindquist, Johns Hopkins  
Bloomberg School of Public Health
- 3:45 p.m. **Floor Discussion**

## 216 CC-511b **Bayesian Finance—Invited**

Business and Economic Statistics Section, International Society for Bayesian Analysis (ISBA)

Organizer(s): Robert E. McCulloch, The University of Chicago Booth School of Business

Chair(s): Alan L. Montgomery, Carnegie Mellon University

- 2:05 p.m. **Asset Allocation: A Bayesian Perspective—**  
◆ Nicholas G. Polson, The University of Chicago Booth  
School of Business
- 2:30 p.m. **Shrinking Toward Models with Time-Varying  
Parameters—**◆ Satadru Hore, Federal Reserve,  
Boston; Robert E. McCulloch, The University of  
Chicago Booth School of Business
- 2:55 p.m. **A New Class of Bayesian Semiparametric Models  
with Applications to Option Pricing—**◆ Paul Damien,  
The University of Texas
- 3:20 p.m. **On the Long Run Volatility of Stocks:  
A Bayesian Perspective—**◆ Carlos Carvalho,  
The University of Texas
- 3:45 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 217 CC-510b ■ ● Visualizing Big Data Interactively— Invited

Section on Statistical Graphics, Statistical Learning and Data Mining Section, Section on Physical and Engineering Sciences, Section on Statistical Computing

Organizer(s): Kary Myers, Los Alamos National Laboratory

Chair(s): Kary Myers, Los Alamos National Laboratory

- 2:05 p.m. **Web-Based Interactive Graphics for Big Data**—  
◆ Simon Urbanek, AT&T Labs
- 2:35 p.m. **Expert-Guided Generative Topographic Modeling with Visual to Parametric Interaction**—◆ Leanna House, Virginia Tech; Chao Han, Virginia Tech; Scotland Charles Leman, Virginia Tech
- 3:05 p.m. **Feature-Based Statistical Analysis of Extreme-Scale Physics Simulation Data**—Janine Camille Bennett, Sandia National Laboratories; ◆ Timo Bremer, Lawrence Livermore National Laboratory
- 3:35 p.m. **Floor Discussion**

## 218 CC-520f ■ Sampling and Model-Based Inference for Network Data—Invited

IMS, International Chinese Statistical Association, Statistical Learning and Data Mining Section, Biometrics Section, Section on Statistics in Epidemiology

Organizer(s): Anton H. Westveld, University of Arizona

Chair(s): Anton H. Westveld, University of Arizona

- 2:05 p.m. **A Bayesian Model for the Study of Interpersonal Perception**—◆ Paramjit S. Gill, UBC Okanagan
- 2:30 p.m. **Detecting Perturbed Biological Pathways Through Latent Network Modeling of Gene Expression**—  
◆ Eric Kolaczyk, Boston University; Lisa Pham, Boston University; Luis E. Carvalho, Boston University; Scott E. Schaus, Boston University
- 2:55 p.m. **Inference from Nonignorable Network Sampling Designs**—Edo Airoldi, Harvard University; ◆ Simon Lunagomez, Harvard University
- 3:20 p.m. **Modeling Networks When Data Is Missing or Sampled**—◆ Mark Stephen Handcock, University of California at Los Angeles; Krista J. Gile, University of Massachusetts, Amherst; Ian Fellows, University of California at Los Angeles
- 3:45 p.m. **Floor Discussion**

## 219 CC-512h ■ Multi-Armed Bandits and Adaptive Marketing Experiments—Invited

Section on Statistics in Marketing

Organizer(s): Eric M. Schwartz, The Wharton School

Chair(s): William Rand, Center for Complexity in Business

- 2:05 p.m. **Learning from Experience, Simply**—◆ Song Lin, Massachusetts Institute of Technology Sloan School of Management; Juanjuan Zhang, Massachusetts Institute of Technology Sloan School of Management; John Hauser, Massachusetts Institute of Technology Sloan School of Management
- 2:30 p.m. **Thompson Sampling for Solving Multi-Armed Bandits**—◆ Lihong Li, Microsoft Research; Olivier Chapelle, Criteo
- 2:55 p.m. **Bandit's Paradise: Customer Acquisition Through Online Display Advertising**—◆ Eric M. Schwartz, The Wharton School; Eric Bradlow, The Wharton School; Peter Fader, The Wharton School
- 3:20 p.m. Disc: Steven L Scott, Google
- 3:45 p.m. **Floor Discussion**

## 220 CC-710b Medallion Lecture III—Invited

IMS

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

Chair(s): Bin Yu, University of California at Berkeley

- 2:05 p.m. **Statistics Meets Computation: Efficiency Trade-Offs in High Dimensions**—◆ Martin Wainwright, University of California at Berkeley
- 3:35 p.m. **Floor Discussion**

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## Invited Panels 2:00 p.m.–3:50 p.m.

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## 221 CC-516e ■ ● Post PhD: What to Expect in Your First Year?—Invited

ENAR, Mental Health Statistics Section, Biometrics Section

Organizer(s): Layla Parast, RAND Corporation Chair(s): Jennifer Sinnott, Harvard University

- Panelists:** ◆ Layla Parast, RAND Corporation  
◆ Miguel Marino, Oregon Health and Science University  
◆ Jessica Minnier, Fred Hutchinson Cancer Research Center  
◆ Gourab De, Analysis Group Inc.  
◆ Violeta Hennessey, Amgen, Inc.
- 3:45 p.m. **Floor Discussion**



## 222 CC-516b **Reflection of Statistical Sciences: Past, Present, and Future—Celebration of the COPSS 50th Anniversary—Invited**

ASA, Committee of Presidents of Statistical Societies, SSC  
 Organizer(s): Xihong Lin, Harvard School of Public Health  
 Chair(s): Xihong Lin, Harvard School of Public Health

- Panelists:** ◆ Norman Breslow, University of Washington  
 ◆ Rob Tibshirani, Stanford  
 ◆ Bernard Silverman, St. Peter's College, University of Oxford  
 ◆ Nancy Reid, University of Toronto  
 ◆ Donald B. Rubin, Harvard University  
 ◆ Kathryn Roeder, Carnegie Mellon University

3:45 p.m. **Floor Discussion**

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## Topic-Contributed Sessions 2:00 p.m.–3:50 p.m.

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## 223 CC-510d **Challenges in Using Markov Chain Monte Carlo in Modern Applications—Topic-Contributed**

Section on Statistical Computing, SSC  
 Organizer(s): Galin Jones, University of Minnesota  
 Chair(s): Felipe Acosta Archila, University of Minnesota

- 2:05 p.m. **MCMC for Co-Ancestry in Pedigrees and Populations**—◆ Elizabeth Thompson, University of Washington  
 2:25 p.m. **Relative Fixed-Width Stopping Rules for Markov Chain Monte Carlo Simulations**—◆ James M. Flegal, University of California at Riverside  
 2:45 p.m. **Bayesian Latent Variable Modelling of Longitudinal Family Data for Genetic Pleiotropy Studies**—◆ Radu Craiu, University of Toronto; Lizhen Xu, Princess Margaret Hospital; Lei Sun, University of Toronto  
 3:05 p.m. **Exact MCMC Using Approximations**—◆ Radu Herbei, The Ohio State University  
 3:25 p.m. **Advances in MCMC for Spatial Generalized Linear Mixed Models**—◆ John Hughes, University of Minnesota  
 3:45 p.m. **Floor Discussion**

## 224 CC-520c **Statistics as Support: Why Statistical Research on the Mental Health Conditions of United States Veterans Is a National Priority—Topic-Contributed**

Mental Health Statistics Section, Section on Statistics in Defense and National Security, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Organizer(s): Frank B. Yoon, Mathematica Policy Research  
 Chair(s): Frank B. Yoon, Mathematica Policy Research

2:05 p.m. **Assessing Alcohol and Drug Use Following Return from Deployment to Iraq or Afghanistan: A Statistical Perspective**—◆ Mark Glickman, Boston University; Sue Eisen, Center for Health Quality, Outcomes and Economics Research; Mark Schultz, Center for Health Quality, Outcomes and Economics Research

2:25 p.m. **Adjustments for Temporal Misclassification of Exposure Status in Surveys of Health Outcomes**—◆ Donsig Jang, Mathematica Policy Research, Inc; Frank B Yoon, Mathematica Policy Research; Amang Sukasih, Mathematica Policy Research; Amii Kress, Department of Veteran Affairs; Shannon K. Barth, Veterans Health Administration; Clare M. Mahan, Veterans Health Administration; Steven S. Coughlin, Veterans Health Administration; Erin K. Dursa, Veterans Health Administration; Aaron Schneiderman, Department of Veteran Affairs

2:45 p.m. **Overview: Injury Mechanisms and Psychiatric Stressors During the Conflicts in Afghanistan and Iraq**—◆ Aaron Schneiderman, Department of Veteran Affairs

3:05 p.m. **Is Time from Separation/Deactivation Associated with Suicide Incidence Rate Among OEF/OIF Veterans?**—◆ Amii Kress, Department of Veteran Affairs

3:25 p.m. **Suicide Re-Event Measure, Adjusting for Suicidal History**—◆ Brady Stephens, Department of Veteran Affairs; Robert Bossarte, Veterans Administration Medical Center

3:45 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## Longtime Member Reception

BY INVITATION ONLY

Monday, August 5  
6:30 p.m. – 7:30 p.m.  
Hotel Intercontinental Montréal  
Room I-Saint Jacques

If you joined the ASA 35 or more years ago, the American Statistical Association would like to thank you for your longtime support.

Please join us for a reception in your honor.

Special thanks to RTI International and Westat for their sponsorship



## 225 CC-511d

### Recent Developments on Learning Methods from Manifold Data and Related Theory—Topic-Contributed

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

Organizer(s): Sungkyu Jung, University of Pittsburgh; Lingsong Zhang, Purdue University

Chair(s): Sungkyu Jung, University of Pittsburgh

- 2:05 p.m. **Bayesian Analysis of Functions and Curves Using Registration**—◆ Wen Cheng; Ian L. Dryden, University of Nottingham; David Hitchcock, University of South Carolina; Xianzheng (Shan) Huang, University of South Carolina; Huiling Le, University of Nottingham

- 2:25 p.m. **A Longitudinal Functional Analysis Framework**—◆ Ying Yuan, St. Jude; Hongtu Zhu, The University of North Carolina at Chapel Hill; Jane-Ling Wang, University of California at Davis; John Gilmore, The University of North Carolina; Martin Styner, The University of North Carolina at Chapel Hill; Xiujuan Geng, The University of North Carolina
- 2:45 p.m. **Statistical Summarization, Modeling, and Evaluation of Temporally Registered Trajectories on Riemannian Manifolds**—◆ Jingyong Su
- 3:05 p.m. **Problems in Approximating and Estimating Mean Shapes of Planar Contours**—◆ Leif Ellingson, Texas Tech University; Chalani Prematilake, Texas Tech University
- 3:25 p.m. **Nested Semi-Definite Cone Analysis with Application to Diffusion Tensor Image Data**—◆ Lingsong Zhang, Purdue University; Sungkyu Jung, University of Pittsburgh
- 3:45 p.m. **Floor Discussion**

## 226 CC-511f

### Translation of Innovative Dose-Finding Designs Into Phase I Trials—Topic-Contributed

Biometrics Section, Biopharmaceutical Section

Organizer(s): Bo Huang, Pfizer Inc.

Chair(s): Yufan Zhao, Boston Scientific Neuromodulation

- 2:05 p.m. **Translation of Innovative Dose-Finding Designs Into Practical Phase I Trials**—◆ Yuan Ji, NorthShore University HealthSystem Research Institute; Sue-Jane Wang, FDA
- 2:25 p.m. **Adaptive Dose-Finding Designs in Industry-Sponsored Oncology Trials: Where the Rubber Meets the Road**—◆ Bo Huang, Pfizer Inc.; Paul Bycott, Pfizer Inc.; Enayet Talukder, Pfizer Inc.
- 2:45 p.m. **FDA and Innovative Designs: Case Study of a Missed Opportunity**—◆ Andre Rogatko, Samuel Oschin Comprehensive Cancer Institute At Cedars Sinai Medical Center; Galen Cook-Wiens, Cedars Sinai Medical Center; Mourad Tighiouart, Cedars Sinai Medical Center
- 3:05 p.m. **Calibration in the Continual Reassessment Method for Phase I Clinical Trials**—◆ Xiaoyu Jia, Columbia University; Shing M. Lee, Columbia University
- 3:25 p.m. **Combination Dose-Finding for Targeted Agents: A Bayesian Case Study in Oncology**—◆ Suman Sen, Novartis Pharmaceuticals Corp; Meredith Goldwasser, Novartis Pharmaceuticals Corp; Stuart Bailey, Novartis Pharma AG
- 3:45 p.m. **Floor Discussion**

## 227 CC-514a **An Overview of Recent Advances in Adaptive and Nonlinear Estimation in Nonparametrics—Topic-Contributed**

Section on Nonparametric Statistics  
 Organizer(s): Piotr Fryzlewicz, London School of Economics  
 Chair(s): Sam Efromovich, The University of Texas at Dallas

- 2:05 p.m. **Instantaneous Frequency, Shape Functions, Synchronizing Transform, and Some Applications**—◆Hau-Tieng Wu, University of California at Berkeley
- 2:25 p.m. **From Unbalanced and Shape-Adaptive Wavelets to Wild Binary Segmentation**—◆Piotr Fryzlewicz, London School of Economics
- 2:45 p.m. **Multiscale Approximation in Function Spaces**—◆Laurie Davies, University of Duisburg Essen
- 3:05 p.m. **Adaptive Forecasting with a Functional AR Model**—◆Ying Chen, National University of Singapore; Bo Li, National University of Singapore
- 3:25 p.m. **Extending the Scope of Empirical Mode Decomposition by Smoothing**—◆Hee-Seok Oh, Seoul National University
- 3:45 p.m. **Floor Discussion**

## 228 CC-516c **Future Evolution of Data Monitoring Committees—Topic-Contributed**

Biopharmaceutical Section, Biometrics Section  
 Organizer(s): Zoran Antonijevic, Cytel Inc.  
 Chair(s): Christy J. Chuang-Stein, Pfizer Inc.

- 2:05 p.m. **The Role of the Data-Monitoring Committee: The Past and the Present in Preparation for the Future**—◆John Loewy, Dataforethought
- 2:25 p.m. **General Considerations for Data Monitoring of Adaptive Trials**—◆Zoran Antonijevic, Cytel Inc.
- 2:45 p.m. **Communication, Confidentiality, and Oversight Issues for DMCs in Adaptive Trials**—◆Paul Gallo, Novartis
- 3:05 p.m. Disc: Matilde Sanchez, Arena Pharmaceuticals, Inc.
- 3:25 p.m. Disc: Kerry Barker, Pfizer Inc.
- 3:45 p.m. **Floor Discussion**

## 229 CC-516a **Pharmacogenomics: Statistical Challenges and Opportunities on the Journey to Personalized Medicine—Topic-Contributed**

Biopharmaceutical Section, Biometrics Section  
 Organizer(s): Gary L. Rosner, The Johns Hopkins University  
 Chair(s): Gary L. Rosner, The Johns Hopkins University

- 2:05 p.m. **Statistical Analysis of Methylation Array Data**—◆Brooke Fridley, University of Kansas Medical Center
- 2:25 p.m. **Phenotype-Specific Genomic Network Discovery**—◆Cheng Cheng, St. Jude Children's Research Hospital
- 2:45 p.m. **Overview of Pharmacogenomics, Gene-Gene Interaction, System Genomics**—◆Marylyn Ritchie, Penn State University
- 3:05 p.m. **Pharmacogenomics: Statistical Challenges and Opportunities on the Journey to Personalized Medicine**—◆Nicholas Tatonetti, Columbia University
- 3:25 p.m. Disc: Paul Scheet, The University of Texas MD Anderson Cancer Center
- 3:45 p.m. **Floor Discussion**

## 230 CC-520d **Advances in Bayesian Variable Selection—Topic-Contributed**

Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)  
 Organizer(s): Edward George, The Wharton School  
 Chair(s): Merlise Clyde, Duke University

- 2:05 p.m. **Bayesian Additive Regression Trees for Variable Selection in Biological Data**—◆Shane T. Jensen, The Wharton School; Justin Bleich, The Wharton School; Adam Kapelner, The Wharton School; Edward George, The Wharton School
- 2:25 p.m. **EMVS: The EM Approach to Bayesian Variable Selection**—◆Veronika Rockova, Erasmus University; Edward George, The Wharton School
- 2:45 p.m. **Structuring Dependence in Regression: Spherical Symmetry and Variable Selection**—◆Christopher Hans, The Ohio State University; Steven MacEachern, The Ohio State University; Agniva Som, The Ohio State University
- 3:05 p.m. **Defining Testing Priors from Estimation Priors via Truncation**—◆David Rossell, IRB Barcelona; Donatello Telesca, University of California at Los Angeles
- 3:25 p.m. Disc: Daniel Zantedeschi, The Wharton School
- 3:45 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 231 CC-519a ■ Data Collection, Processing, and Analysis in the Energy Industry—Topic-Contributed

Survey Research Methods Section, Section on Physical and Engineering Sciences, Scientific and Public Affairs Advisory Committee

Organizer(s): Cha-Chi Fan, U.S. Energy Information Administration

Chair(s): Samson Adeshiyan, U.S. Energy Information Administration

- 2:05 p.m. **Inter-Agency Energy Data Standardization: Combining Multi-Source Data with Imperfect Information**—◆Carrie Milton, U.S. Energy Information Administration
- 2:25 p.m. **Research Into Alternative Imputation Protocols for the Eia-857 Monthly Report of Natural Gas Purchases and Deliveries to Consumers**—◆Joseph Conklin, U.S. Energy Information Administration
- 2:45 p.m. **A Hierarchical State-Space Model for Short-Term Forecasting of Residential Electricity Demand**—◆Jonathan Hosking, IBM Research Division; Ramesh Natarajan, IBM Research; Soumyadip Ghosh, IBM Research; Shivaram Subramanian, IBM Research; Xiaoxuan Zhang, IBM Research
- 3:05 p.m. **Examining and Estimating Power Plant Operations and Maintenance (O&M) Costs**—◆Cha-Chi Fan, U.S. Energy Information Administration
- 3:25 p.m. Disc: Barry D. Nussbaum, U.S. Environmental Protection Agency
- 3:45 p.m. **Floor Discussion**

## 232 CC-519b ■ Under-Reporting in Filter and Screener Questions: Interviewer and Respondent Effects—Topic-Contributed

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

Organizer(s): Mark Trappmann, IAB (Institute for Employment Research)

Chair(s): Shelton M. Jones, RTI International

- 2:05 p.m. **Face-to-Face Screening Interviews: Tradeoffs Between Coverage and Nonresponse Errors**—◆Roger Tourangeau, Westat; Frauke Kreuter, University of Maryland; Stephanie Eckman, IAB (Institute for Employment Research)
- 2:25 p.m. **Does Data Quality Decrease Over the Course of an Expenditure Survey?**—◆David Cantor, Westat; Cong Ye, American Institute for Research; Brandon Kopp, Bureau of Labor Statistics
- 2:45 p.m. **Design Principles for the Use of Filter Questions**—◆Stephanie Eckman, IAB; Frauke Kreuter, University of Maryland; Annette Jaeckle, ISER; Antje Kirchner, IAB; Stanley Presser, JPSM; Roger Tourangeau, Westat
- 3:05 p.m. **Interviewer Behavior and Survey Data Quality: The Case of Social Network Data**—◆Bernadette Huyer-May; Josef Brüderl, University of Munich; Claudia Schmiedeberg, University of Munich

3:25 p.m. **Interviewer Effects on a Network-Size Filter Question**—◆Mark Trappmann, IAB (Institute for Employment Research); Michael Josten, University of Mannheim

3:45 p.m. **Floor Discussion**

## 233 CC-520a ■ Recent Developments in Statistical Methods for 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): Devin Johnson, National Marine Mammal Laboratory

- 2:05 p.m. **Detection Probability Estimates from Ice-Based Surveys of Bowhead Whales Near Barrow, Alaska, Using a Weighted Recapture Model**—◆Geof Givens, Colorado State University; Stacy Edmondson, Colorado State University; Craig George, North Slope Borough, Alaska, Department of Wildlife Management; Barbara Tudor, North Slope Borough, Alaska, Department of Wildlife Management; Rob DeLong, DeLongView Enterprises; Robert Suydam, North Slope Borough, Alaska, Department of Wildlife Management
- 2:25 p.m. **Adjusting for Recapture Uncertainty: Improved Abundance Estimates from Capture-Recapture Surveys**—◆Stacy Edmondson, Colorado State University
- 2:45 p.m. **Fringe Benefits: The Hidden Utility of Constraints in Telemetry Studies**—◆Mevin Hooten, Colorado State University; Ephraim Hanks, Colorado State University; Brian Brost, Colorado State University
- 3:05 p.m. **Spatio-Temporal Analysis for Bird Migration Phenology**—◆Ali Arab, Georgetown University; Jason Courter, Taylor University
- 3:25 p.m. **Properties of Slope Estimators Associated with Random Slope Models**—Brian Gray, U.S. Geological Survey; ◆Vyacheslav Lyubchich, University of Waterloo, Canada; Yulia R. Gel, University of Waterloo
- 3:45 p.m. **Floor Discussion**

## 234 CC-512d ■ ● Replicable Science and Metadata—Topic-Contributed

Business and Economic Statistics Section, Survey Research Methods Section, International Indian Statistical Association

Organizer(s): John M. Abowd, Chair, Business and Economic Statistics Section

Chair(s): Warren Brown, Cornell University

- 2:05 p.m. **Data Management of Confidential Data**—◆Lars Vilhuber, Cornell University/ILR
- 2:25 p.m. **Administrative Data and Replicable Science: Does It Fit?**—◆Stefan Bender, IAB (Institute for Employment Research); David Schiller, IAB



- 2:45 p.m. **Managing Disclosure Risks in the Curation and Dissemination of Research Data**—◆ John E. Marcotte, University of Michigan; George Alter, University of Michigan; Susan Jekielek, University of Michigan
- 3:05 p.m. **Meeting the Long-Term Needs of Scientific Progress Through Data-Collection Standards**—◆ Richard Welpton, UK Data Archive; Matthew Woollard, UK Data Archive; Melanie Wright, UK Data Archive
- 3:25 p.m. Disc: John M. Abowd, Chair, Business and Economic Statistics Section
- 3:45 p.m. **Floor Discussion**

## 235 CC-710a

### ■ ● Data and Safety Monitoring Boards: Current Issues and Challenges— Topic-Contributed

Biometrics Section, Section on Teaching of Statistics in the Health Sciences, Scientific and Public Affairs Advisory Committee  
Organizer(s): Rebecca DerSimonian, National Institute of Allergy and Infectious Diseases  
Chair(s): Rebecca DerSimonian, National Institute of Allergy and Infectious Diseases

- 2:05 p.m. **Making Judgments About What to Report to Your DSMB**—◆ Susan Ellenberg, University of Pennsylvania Perleman School of Medicine
- 2:25 p.m. **How Blind Should the Investigators and Sponsors Be?**—◆ James Neaton, University of Minnesota
- 2:45 p.m. **DMCs and the New Final Rule: How Will We (Should We) Respond?**—◆ Janet Wittes, Statistics-Collaborative
- 3:05 p.m. **DSMB Review for Cluster Randomized Trials of HIV Prevention**—◆ Victor De Gruttola, Harvard School of Public Health; Quanhong Lei, Harvard School of Public Health; Rui Wang, Harvard School of Public Health; Max Essex, Harvard School of Public Health
- 3:25 p.m. Disc: David Demets, University of Wisconsin
- 3:45 p.m. **Floor Discussion**

## 236 CC-525a

### HPSS Student Paper Competition— Topic-Contributed

Health Policy Statistics Section  
Organizer(s): Juned Siddique, Northwestern University  
Chair(s): Juned Siddique, Northwestern University

- 2:05 p.m. **A Hybrid Bayesian Hierarchical Model Combining Cohort and Case-Control Studies for Meta-Analysis of Diagnostic Test: Accounting for Disease Prevalence and Partial Verification Bias**—◆ Xiaoye Ma, University of Minnesota; Haitao Chu, University of Minnesota School of Public Health; Yong Chen, The University of Texas School of Public Health; Stephen R. Cole, The University of North Carolina at Chapel Hill
- 2:25 p.m. **Effectiveness of Biological Drug Testing Among Adolescent Substance Users: A Multiple Group Propensity Score Analysis**—◆ Megan Schuler, Johns Hopkins Bloomberg School of Public Health; Beth Ann Griffin, RAND; Rajeev Ramchand, RAND; Daniel Almirall, University of Michigan; Daniel McCaffrey, RAND
- 2:45 p.m. **Composite Kaplan-Meier and Semiparametric Commensurate Bayesian Methods for Post-Market Medical Device Surveillance with Historical Survival Information**—◆ Thomas Murray, University of Minnesota; Brian Hobbs, The University of Texas MD Anderson Cancer Center; Ted Lystig, Medtronic, Inc.; Bradley P. Carlin, University of Minnesota
- 3:05 p.m. **A Bayesian Missing Data Framework for Generalized Multiple Outcome Mixed Treatment Comparisons**—◆ Hwanhee Hong, Division of Biostatistics, University of Minnesota; Haitao Chu, University of Minnesota School of Public Health; Jing Zhang, University of Minnesota School of Public Health; Bradley P. Carlin, University of Minnesota
- 3:25 p.m. **Estimating the Average Treatment Effects of Nutritional Label Use Using Subclassification with Regression Adjustment**—◆ Michael Lopez, Brown University
- 3:45 p.m. **Floor Discussion**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## Topic-Contributed Panels 2:00 p.m.–3:50 p.m.

237 CC-515b

### ■ ● Statistical Challenges in Nursing Research—Topic-Contributed

ENAR

Organizer(s): Matthew J. Hayat, College of Nursing, Rutgers University

Chair(s): Patricia Eckardt, School of Nursing, Stony Brook University

- Panelists:** ◆ Matthew J. Hayat, College of Nursing, Rutgers University  
◆ Todd Schwartz, The University of North Carolina at Chapel Hill  
◆ Vincent Staggs, University of Kansas Medical Center

3:45 p.m. **Floor Discussion**

## Topic-Contributed Poster Presentations 2:00 p.m.–3:50 p.m.

238 CC-220bc

### Topic-Contributed Poster Presentations: Data Expo 2013—Topic-Contributed

Section on Statistical Graphics

Organizer(s): Heike Hofmann, Iowa State University

Chair(s): Joyee Ghosh, University of Iowa

Section on Statistical Graphics

- 1 **Can You Buy a President? Politics After the Tillman Act**—◆ Eric Hare, Iowa State University; Andrea Kaplan, Iowa State University
- 2 **Resources, Perceptions, and Outcomes: What Builds a Strong Community?**—◆ Michael C. Minnotte, University of North Dakota; Krista Lynn Minnotte, University of North Dakota
- 3 **Dynamic Exploration of the Soul of the Community**—◆ Samuel Gardner, SAS Institute; Nicole Jones, SAS Institute, JMP Division; Michael Crotty, SAS Institute; Justin Mosiman, SAS Institute, JMP Division
- 4 **Soul of the Community**—◆ Anna Quach, Juergen Symanzik, Utah State University; Nicole Velasquez, Utah State University
- 5 **Exposing the Soul of a Community**—◆ Millicent Grant, Iowa State University
- 6 **Data Expo 2013: Locating the Heart of the Community**—◆ Karsten Tait Maurer, Iowa State University; David Osthus, Iowa State University; Adam Loy, Iowa State University
- 7 **Data Expo 2013: What Attaches People to Their Community?**—◆ Xiaoyue Cheng, Iowa State University; Dianne H. Cook, Iowa State University

- 8 **Data Expo 2013: Data-Conforming Visualization**—◆ Graham Wills, IBM; Alan Keahey, IBM
- 9 **Data Expo 2013: Data Visualization on the Soul of the Community**—◆ Amelia McNamara, University of California at Los Angeles
- 10 **Data Expo 2013: Using Data to Find Your Way Home**—◆ Niladri Roy Chowdhury, Iowa State University; Luke Fostvedt, Iowa State University
- 11 **Putting Down Roots: A Graphical Exploration of Community Attachment**—◆ Andrea Kaplan, Iowa State University; Eric Hare, Iowa State University
- 12 **Seeing the Soul of the Community**—◆ Angela Minster
- 13 **Data Expo 2013**—◆ Samantha Tyner, Iowa State University; Susan VanderPlas, Iowa State University
- 14 **Dynamic Graphics: An Interactive Analysis of What Attaches People to Their Communities**—◆ Jessica Orth, University of Iowa
- 15 **A Geographic Analysis of Survey Responses in Long Beach**—◆ Samuel Ackerman, Temple University
- 16 **Clicks and Cliques: What Makes a Community Work (Data Expo '13)**—◆ Dianne H. Cook, Iowa State University; Natalia Da Silva, Iowa State University; Ignacio Alvarez-Castro, Iowa State University
- 17 **Soul of the Community**—◆ Cynthia Rush, Yale University; William Brinda, Yale University; Yuezhu He, Yale University; Dingjie Wang, Yale University; Xiaofei Wang, Yale University

## Contributed Sessions 2:00 p.m.–3:50 p.m.

239 CC-513a  
**Random Effects and Variance Component Estimation—Contributed**

Biometrics Section

Chair(s): Kiros Berhane, University of Southern California

- 2:05 p.m. **Multiple Local Maxima in Restricted Likelihoods and Posterior Distributions for Mixed Linear Models**—◆ Lisa Henn, University of Minnesota; James Hodges, University of Minnesota
- 2:20 p.m. **An Alternative REML Estimation of Covariance Matrices in Linear Mixed Models**—◆ Erning Li, University of Iowa; Mohsen Pourahmadi, Texas A&M University
- 2:35 p.m. **Bias Correction for Covariance Parameter MLEs in GLMMs**—◆ Elizabeth Claassen, University of Nebraska-Lincoln; Christopher Gotwalt, SAS Institute; Walt W. Stroup, University of Nebraska-Lincoln

- 2:50 p.m. **Estimating Kurtosis and Approximate Confidence Intervals for Variance Components**—◆ Brent Burch, Northern Arizona University
- 3:05 p.m. **Improving the Estimates of Variance Ratios and BLUPs of Mixed-Effects Models**—◆ Samaradasa Weerahandi, Pfizer; Malwane Ananda, University of Nevada, Las Vegas
- 3:20 p.m. **Design Effects in the Estimation of Variance Components for Mixed-Effects Models**—◆ Li Guo; Subir Ghosh, University of California at Riverside
- 3:35 p.m. **Estimation of Random Effects in a Logistic Regression**—◆ Jorgen Holm Petersen, Kobenhavns Universitet

## 240 CC-513b Semiparametric Modeling—Contributed

Biometrics Section

Chair(s): Jeff M. Szychowski, The University of Alabama at Birmingham

- 2:05 p.m. **Dual-Likelihood Ratio Test for Type-I Censored Multiple Samples Under Semiparametric Density Ratio Models**—◆ Song Cai, University of British Columbia; Jiahua Chen, University of British Columbia
- 2:20 p.m. **Statistical Inference for Nonlinear Functional Models with Application to Copy Number Variation and Multiple Myeloma Data**—◆ Adrian Coles, North Carolina State University; Arnab Maity, North Carolina State University; Veera Baladandayuthapani, The University of Texas MD Anderson Cancer Center; Ganiraju Manyam, The University of Texas MD Anderson Cancer Center
- 2:35 p.m. **On the Asymptotic Behavior of the Pseudolikelihood Ratio Test Statistic with Boundary Problems in Semiparametric Models**—◆ Yong Chen, The University of Texas School of Public Health; Jing Ning, The University of Texas MD Anderson Cancer Center; Kung-Yee Liang, National Yang Ming University
- 2:50 p.m. **Integrating M-Regression with False Discovery Rates for Outlier Detection in Genetic Association Studies of Quantitative Traits**—◆ Vanda Lourenco, CMA, FCT - Universidade Nova de Lisboa; Ana Maria Pires, CEMAT, IST - Universidade Técnica de Lisboa
- 3:05 p.m. **Methods and Dilemmas of Using Patient Registries in Evidence-Based Research**—◆ Carolyn Carroll, Stat Tech Inc; Jan F. Nygard, Norwegian Cancer Registry
- 3:20 p.m. **Model Selection and Model Averaging Partially Linear Single-Index Models**—◆ Yao Yu, University of Rochester; Sally W. Thurston, University of Rochester; Russ Hauser Hauser, Harvard School of Public Health; Hua Liang, University of Rochester
- 3:35 p.m. **Risk Prediction in Consecutive Time-to-Event Outcome Subject to a Competing Event**—◆ Joanna Shih, National Cancer Institute; Paul Albert, NICHD

## 241 CC-520b Statistical Methods and Inference for Extreme Environmental Events—Contributed

Section on Statistics and the Environment, Scientific and Public Affairs Advisory Committee

Chair(s): William Christensen, Brigham Young University

- 2:05 p.m. **M-Estimation for Max-Stable Random Fields via CRPS**—◆ Robert Yuen, University of Michigan; Stilian A. Stoev, University of Michigan
- 2:20 p.m. **Design Life Level: Quantifying the Risk of Extreme Events in a Changing Climate**—◆ Richard Katz, NCAR/IMAGE; Holger Rootzen, Chalmers and Gothenburg University
- 2:35 p.m. **Downscaling Precipitation Extremes from Regional Climate Model Outputs**—◆ Eric Laflamme, University of New Hampshire; Ernst Linder, University of New Hampshire; Yibin Pan, University of New Hampshire
- 2:50 p.m. **Spatio-Temporal Downscaling of Daily Precipitation Extremes in New England from Regional Climate Model Outputs**—◆ Yibin Pan; Ernst Linder, University of New Hampshire; Eric Laflamme, University of New Hampshire
- 3:05 p.m. **Functional ANOVA of Precipitation Extremes from Regional Climate Model Output**—◆ Ernst Linder, University of New Hampshire; Yibin Pan, University of New Hampshire; Eric Laflamme, University of New Hampshire
- 3:20 p.m. **A Study on Spatio-Temporal Extremes**—◆ Whitney Huang, Purdue University; Hao Zhang, Purdue University
- 3:35 p.m. **Estimation of a Time-Varying Extreme Quantile with Application to the Measurement of the Activity of Bivalves in an Environmental Context**—◆ Ion Grama, University of South Brittany; Gilles Durrieu, University of South Brittany; Jean-Charles Massabuau, University of Bordeaux; Quang Khoai Pham, University of South Brittany; Jean-Marie TRICOT, University of South Brittany

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 242 **Methods for Dealing with Missing Data—Contributed** CC-512ab

Biopharmaceutical Section, International Indian Statistical Association, Section for Statistical Programmers and Analysts

Chair(s): Davis Gates, Merck

- 2:05 p.m. **Effects of Interval Censoring on Kaplan-Meier Estimates of Median Survival and Difference in Median Survival**—◆ Ying Zhou, Amgen, Inc.; Chunlei Ke, Amgen, Inc.
- 2:20 p.m. **Simulation Study to Compare New Hybrid Model with Pattern Mixture Model Under Missing Not at Random**—◆ Fang Liu, Merck & Co., Inc; Jingjing Chen, Accenture PLC
- 2:35 p.m. **Asymptotic Biases and Misspecified Models for Missing Data**—Melanie Poulin-Costello, Amgen, Inc.; ◆Michael McIsaac, University of Waterloo; Richard Cook, University of Waterloo
- 2:50 p.m. **Handling of Not-Missing-at-Random Data**—◆Madhuja Mallick, Forest Research Institute, Inc.
- 3:05 p.m. **Multivariate Longitudinal Analysis with Missing Data**—◆Priya Kohli, Assistant Professor; Tanya Garcia, Texas A&M University; Mohsen Pourahmadi, Texas A&M University
- 3:20 p.m. **Inference for Treatment Effects in Clinical Trials with Nonrandom Dropouts**—◆Shan Kang, University of Michigan; Roderick J. Little, University of Michigan
- 3:35 p.m. **Missing Data Sensitivity Analyses with Small Sample Sizes**—◆Susan Huyck, Merck

## 243 **Reliability Testing and Prediction—Contributed** CC-512c

Section on Physical and Engineering Sciences, Quality and Productivity Section

Chair(s): Yili Hong, Virginia Tech

- 2:05 p.m. **Reliability Analysis of Random Shape Deformation Problems: A Criterion for Switching from Gradient-Enhanced Kriging to Importance Sampling**—◆Thomas P. Scholcz, Delft University of Technology; Jouke H.S. de Baar, Delft University of Technology; Richard P. Dwight, Delft University of Technology; Alexander H. van Zuijlen, Delft University of Technology; Hester Bijl, Delft University of Technology
- 2:20 p.m. **Optimal Design for Accelerated Destructive Degradation Tests**—◆Chih-Chun Tsai, Tamkang University; Sheng-Tsaing Tseng, Institute of Statistics, National Tsing-Hua University; Narayanaswamy Balakrishnan, McMaster University; Chien-Tai Lin, Tamkang University
- 2:35 p.m. **Better Confidence Limits for System Reliability**—◆Wayne Nelson, Wayne Nelson Stat Consulting; J. Brian Hall, U.S. Army, Office of the Secretary of Defense

- 2:50 p.m. **Product Component Genealogy Modeling and Warranty Return Prediction**—◆Caleb B. King, Virginia Tech; Yili Hong, Virginia Tech; William Q. Meeker, Iowa State University

- 3:05 p.m. **Lower Prediction and Tolerance Bounds in Accelerated Life Testing for the Rayleigh Distribution**—◆Ananda Jayawardhana, Pittsburg State University; Yang Song, University of Illinois Urbana-Champaign

- 3:20 p.m. **Nonparametric Tolerance Intervals to Evaluate Reliability of Two Respiration Devices with Skewed Data**—◆Xuan Wang, Baylor Healthcare System

- 3:35 p.m. **Floor Discussion**

## 244 **The Analysis of Time-to-Event Data—Contributed** CC-515c

Biopharmaceutical Section, Biometrics Section, Section for Statistical Programmers and Analysts

Chair(s): Wenquan Wang, Morphotek Inc

- 2:05 p.m. **A Multivariate Frailty Model for the Multi-Type Recurrent Event Data Using an Automated Monte Carlo EM Algorithm**—◆Khaled Bedair, Virginia Tech; Yili Hong, Virginia Tech

- 2:20 p.m. **U-Statistics for Multiple Censored Outcomes with Varying Frequency, Severity, Attribution**—◆Knut Wittkowski, The Rockefeller University

- 2:35 p.m. **Sample Size Considerations When Using Two Time-to-Event Outcomes for Comparing Two Interventions in Clinical Trials**—◆Toshimitsu Hamasaki, Osaka University Graduate School of Medicine; Tomoyuki Sugimoto, Hirosaki University Graduate School of Science and Technology; Takashi Sozu, Kyoto University School of Public Health; Scott Evans, Harvard University School of Public Health

- 2:50 p.m. **Causal Multiple Comparisons for Survival Data**—◆Hong Zhu, The Ohio State University; Bo Lu, The Ohio State University

- 3:05 p.m. **A Frailty-Based Progressive Multistate Model for Progression and Death in Cancer Studies**—◆Chen Hu, American College of Radiology; Alex Tsodikov, University of Michigan

- 3:20 p.m. **Predicting Analysis Time in Event-Driven Clinical Trials When There Are Multiple Correlated Time-to-Event Endpoints**—◆Jianming Wang, Celgene; Zhinuan Yu, Celgene

- 3:35 p.m. **Making Medical Transfer Mode Decisions Under Time Pressure: Understanding How Decisionmakers Interpret Historical Data**—Birsan Donmez, University of Toronto; ◆Wayne Giang, University of Toronto; Russell D. MacDonald, Ornge; Mahvareh Ahghari, Ornge

## 245 CC-511e Statistical Computing and Machine Learning— Contributed

Section on Statistical Computing

Chair(s): Sandra De Iaco, University of Salento

- 2:05 p.m. **Squeezing the Margins to Improve Ensemble Performance**—◆ Waldyn Martinez, The University of Alabama; J. Brian Gray, The University of Alabama
- 2:20 p.m. **The Superior Prediction Accuracy of the Random Generalized Linear Model Predictor (RandomGLM)**—◆ Lin Song, University of California at Los Angeles; Peter Langfelder, Genetics, University of California at Los Angeles; Steve Horvath, University of California at Los Angeles
- 2:35 p.m. **Particle Swarm Stepwise (PASS) Algorithm for Variable Selection**—◆ Ray-Bing Chen, National Cheng Kung University; Chien-Chih Huang, National Taiwan University; Weichung Wang, National Taiwan University
- 2:50 p.m. **Generating CHAID Trees on Large and Distributed Data**—◆ Damiir Spisic, IBM; Jing Xu, IBM; Xue Ying Zhang, IBM
- 3:05 p.m. **Merging Mixture Components for Model-Based Clustering**—◆ Volodymyr Melnykov, The University of Alabama
- 3:20 p.m. **The Lasso: Backward and Forward**—◆ David Scott, Rice University
- 3:35 p.m. **Boosting with Fully Grown Trees**—J. Brian Gray, The University of Alabama; ◆ Jie Xu, The University of Alabama

## 246 CC-512e Genetic Epidemiology and Sequencing Data Analysis—Contributed

Section on Statistics in Epidemiology

Chair(s): Chao Xing, The University of Texas Southwestern Medical Center

- 2:05 p.m. **Adjusting a Quantitative Trait for Medication Effects When the Medication Received Depends on the Trait**—◆ Yildiz Yilmaz, University of Toronto; Stefan Konigorski, University of Toronto; Shelley Bull, University of Toronto
- 2:20 p.m. **Binary Trait Analysis in Sequencing Studies with Trait-Dependent Sampling**—◆ Zheng-Zheng Tang, The University of North Carolina at Chapel Hill; Danyu Lin, The University of North Carolina
- 2:35 p.m. **Massively Parallel Sequencing of FIV Reveals Compartmental Differences Among Tissues in Dual and Single Infections**—◆ Yang Liu, Penn State University; Francesca Chiaromonte, Penn State University; Howard Ross, University of Auckland; Daniel Elleder, Penn State University; Mary Poss, Penn State University

- 2:50 p.m. **A Bayesian Approach to Two-Phase Designs for Regional Sequencing**—◆ Zhijian Chen, Samuel Lunenfeld Research Institute; Radu Craiu, University of Toronto; Shelley Bull, University of Toronto

- 3:05 p.m. **Stochastic Modeling of Systems Mapping in Pharmacogenomics**—◆ Zuoheng Wang, Yale University; Jiangtao Luo, University of Nebraska Medical Center; Guifang Fu, Utah State University; Zhong Wang, Yale University; Rongling Wu, Pennsylvania State University

- 3:20 p.m. **Nonparametric Regression via Supervised Partition of the Features Space**—◆ Luca Pozzi, University of California at Berkeley; Alan Hubbard, University of California at Berkeley; Nicholas Jewell, University of California at Berkeley

- 3:35 p.m. **A Tree-Based Approach for Gene-Gene Interaction Detection in DNA Sequencing Data**—◆ Chi Song, Yale University; Heping Zhang, Yale University

## 247 CC-521ab Topics in Sample Design and Data Collection— Contributed

Survey Research Methods Section, Korean International Statistical Society

Chair(s): Iris Shimizu, CDC/OSELS/NCHS

- 2:05 p.m. **Simulation Study to Validate Sample Allocation for the National Compensation Survey**—◆ Hyunshik Lee, Westat; Tiandong Li, Westat; Klaus Teuter, Westat; Chester H. Ponikowski, Bureau of Labor Statistics; Gwyn R. Ferguson, Bureau of Labor Statistics

- 2:20 p.m. **Study and Sample Design Plan Review for Federal Compliance Programs: NHTSA's State Seat Belt Use Study**—◆ Martha Rozsi, Westat; James L. Green, Westat

- 2:35 p.m. **Expanding the Number of Primary Sampling Units for the National Health Interview Survey**—◆ Chris Moriarity, National Center for Health Statistics; Van Parsons, National Center for Health Statistics

- 2:50 p.m. **Impact on Weights and Sampling Errors of Using Hybrid Frame and Composite MOS**—◆ John Hall, Mathematica Policy Research; Mark Denbaly, Economic Research Service-USDA; Pheny Weidman, Economic Research Service USDA

- 3:05 p.m. **Changes in the Selection of Dwellings in the Labour Force Survey of Argentina: A Simulation**—Augusto Hoszowski, INDEC-Argentina; ◆ Claudio Comari, INDEC-Argentina

- 3:20 p.m. **Redesigning the Sample of the Company Organization Survey Using Predictive Modeling**—◆ Matthew Thompson, U.S. Census Bureau; Chrishelle Lawrence, U.S. Census Bureau

- 3:35 p.m. **Indirect Sampling in Case of Asymmetrical Link Structures**—◆ Torsten Harms, ISS Hamburg, International Business School



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 248 Bayesian Computation and Algorithms I—Contributed

CC-520e

Section on Bayesian Statistical Science, Section on Statistical Computing  
Chair(s): Brigid Betz-Stablein, Massey University

- 2:05 p.m. **Metropolis Unchained: Generalizing and Parallelizing the Metropolis-Hastings Algorithm**—◆ Serge Sverdllov, University of Washington
- 2:20 p.m. **A Geometrically Adaptive Metropolis-Hastings Algorithm with Gaussian Calibration**—◆ Wen Zhou, Iowa State University; Stephen Bruce Vardeman, Iowa State University; Huaqing Wu, Iowa State University
- 2:35 p.m. **Repulsive Parallel MCMC for Motif Discovery**—◆ Hisaki Ikebata, The Graduate University for Advanced Studies; Ryo Yoshida, The Institute of Statistical Mathematics
- 2:50 p.m. **Analysis of Mortality Trends Using a Mixture of Reference Priors**—◆ Michael Sonksen, The University of New Mexico
- 3:05 p.m. **Efficient Bayesian Inference for Multivariate Factor Stochastic Volatility (SV) Models**—◆ Gregor Kastner, WU Vienna University of Economics and Business; Sylvia Frühwirth-Schnatter, WU Vienna University of Economics and Business; Hedibert Freitas Lopes, The University of Chicago Booth School of Business
- 3:20 p.m. **Information Theoretic Sensitivity Analysis for Stochastic Simulators**—◆ Yu-Jay Huoh, University of California at Berkeley; Cari Kaufman, University of California at Berkeley
- 3:35 p.m. **Floor Discussion**

## 249 Estimation and Inference Methods with Complex Survey Data—Contributed

CC-518

Survey Research Methods Section  
Chair(s): Deborah Mayo, Virginia Tech

- 2:05 p.m. **A Comparison of Methods for Estimating Confidence Intervals for Proportions in Clustered Surveys**—◆ Natalie Exner, Harvard University; Marcello Pagano, Harvard University
- 2:20 p.m. **Analysis of Variance as a Basis for Sample Surveys**—◆ Andrew Vogt, Georgetown University; Dhiren Ghosh, Synectics for Management Decisions, Inc.
- 2:35 p.m. **Pre-Sampling Model-Based Inference V: Applications to Longitudinal Data**—◆ Stephen Woodruff, Specified Designs
- 2:50 p.m. **Partially Linear Models in Dual-Frame Surveys**—◆ Yan Lu, University of New Mexico; Yang Cheng, U.S. Census Bureau

- 3:05 p.m. **A Comparison of Design-Based and Calibrated-Bayes Estimates Using Data from a Health Survey**—◆ Meena Khare, NCHS/CDC; Hee-Choon Shin, National Center for Health Statistics; Alena S. Maze, NCHS/CDC

- 3:20 p.m. **An Empirical Study to Evaluate the Performance of Synthetic Estimates of Substance Use in the National Survey of Drug Use and Health**—◆ Akhil Vaish, RTI International; Neeraja Sathe, RTI International; Kathryn Spagnola, RTI International; Ralph Folsom, RTI International; Art Hughes, Center for Behavioral Health Statistics and Quality, SAMHSA

- 3:35 p.m. **Confidence Intervals for Population Size Based on a Capture-Recapture Design**—◆ Jianjun Hua, Dartmouth College; Paul Nelson, Kansas State University

## 250 Strategic and Programmatic Changes: Applications in Government Organizations—Contributed

CC-524b

Social Statistics Section, Scientific and Public Affairs Advisory Committee  
Chair(s): Frank Anthony Vitrano, U.S. Census Bureau

- 2:05 p.m. **Strategic Change at the Census Bureau**—◆ Nancy Potok, U.S. Census Bureau
- 2:20 p.m. **Organizational Change Within the Decennial Census Programs Directorate: Preparing for the Future**—◆ Tiwanda M. Burse, U.S. Census Bureau
- 2:35 p.m. **Program-Level Organizational Change: Results of the American Community Survey Program Review**—◆ Sally Obenski, U.S. Census Bureau
- 2:50 p.m. **Program-Level Organizational Change: American Community Survey Key Methods and Content Changes**—◆ James Treat, U.S. Census Bureau
- 3:05 p.m. **Transformation at the U.S. Census Bureau: Balancing the Need for Change with the Capacity to Absorb It**—◆ Ty Mitchell, U.S. GAO
- 3:20 p.m. **Development and Implementation of a Data Coordinating Center for Managing Complex HIV Surveillance Systems**—◆ Tonja Kyle, ICF; Alicia Edwards, Centers for Disease Control and Prevention
- 3:35 p.m. **Bridging Government Offices of Inspectors General and Academic Statistics to Reduce Fraud and Abuse**—◆ Cathy Furlong, Caucus for Women; Timothy F. Champney, Integrity Management Services, LLC; Richard Kusserow, Strategic Management Systems



## 251 **Application of Modern Regression Methodology to Health Policy Studies—Contributed**

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

Chair(s): Robert Gerzoff

- 2:05 p.m. **Two Ways of Modeling Hospital Readmissions: Mixed and Marginal Models**—◆ Hui Fen Tan; Ronald Low, New York City Health and Hospitals Corporation; Shunsuke Ito, New York City Health and Hospitals Corporation; Raymond Gregory, New York City Health and Hospitals Corporation; Van Dunn, Metroplus Health Plan
- 2:20 p.m. **Inference for Identifying Outlying Health Care Providers**—◆ Michael Racz, Albany College of Pharmacy and Health Sciences
- 2:35 p.m. **Conditional Trajectory Class Modeling for Bivariate Outcomes**—◆ Shu-Xia Li, Yale University; Haiqun Lin, Yale University; Xiao Xu, Yale University; Harlan Krumholz, Yale University
- 2:50 p.m. **A Latent Mixture Approach to Modeling Zero-Inflated Bivariate Ordinal Data**—◆ Rajendra Kadel, University of South Florida; Gatachew Dagne, University of South Florida
- 3:05 p.m. **The Relationship Between Cluster Size, Between-Cluster Variance, and a Performance Measurement from Hierarchical Generalized Linear Models**—◆ Fu-Chi Hsieh, Yale University, Center for Outcome Research and Evaluation; Harlan Krumholz, Yale University; Zhenqiu Lin, Yale Center for Outcome Research and Evaluation; Haiqun Lin, Yale University
- 3:20 p.m. **Mixture Model for Multilevel Data**—◆ Haiqun Lin, Yale University; Shu-Xia Li, Yale University; Xiao Xu, Yale University; Harlan Krumholz, Yale University
- 3:35 p.m. **Growth Curves, BMI, and Childhood Obesity: An Assessment of Measurement Issues from NYC Public Schools**—◆ Stuart Sweeney, University of California; Kevin Konty, NYCDOHMH; Sophia Day, NYCDOHMH

## 252 **Nonparametric Modeling and Prediction—Contributed**

Section on Nonparametric Statistics

Chair(s): Jeff Goldsmith, Columbia University

- 2:05 p.m. **Infinite Order Cross-Validated Local Polynomial Regression**—◆ Jeffrey Racine, McMaster University; Peter Gavin Hall, University of Melbourne
- 2:20 p.m. **Semiparametric Rank Regression with Missing Responses**—◆ Huybrechts Bindele, University of South Alabama; Asheber Abebe, Auburn University
- 2:35 p.m. **Bias and Variance Improvements in Nonparametric Estimation of Time-Dependent Accuracy Measures**—◆ Chin-Tsang Chiang, National Taiwan University
- 2:50 p.m. **A Study of Random Forests Using Robust Aggregation Methods and Splitting Criterion**—◆ Marie-Hélène Roy, HEC Montréal; Denis Larocque, HEC Montréal
- 3:05 p.m. **PHM and Logistic Regression Model Using Time-Dependent Covariates for Survival Analysis**—◆ Alexandre Mendes, Northeastern University; Nasser Fard, Northeastern University
- 3:20 p.m. **Switching Nonparametric Regression Models**—◆ Camila De Souza, University of British Columbia; Nancy Heckman, University of British Columbia
- 3:35 p.m. **Nonparametric Regression in the Secondary Analysis of the Case-Control Studies**—◆ Shahina Rahman, Texas A&M University; Raymond J. Carroll, Texas A&M University

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 253 CC-514c ● **New Methods on Complex Lifetime Data and Beyond—Contributed**

SSC, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Chair(s): Neil Klar, University of Western Ontario

- 2:05 p.m. **Multistate Modeling of Intermittent Observations with Application to Viral Load Measurements in HIV-Positive Patients**—◆Narges Nazeri Rad, University of Waterloo; Jerald F Lawless, University of Waterloo
- 2:20 p.m. **Multistate Models for the Evaluation of Screening Interventions in Family Designs**—◆Laurent Briollais, Samuel Lunenfeld Research Institute; Yun-Hee Choi, Western University; Yildiz Yilmaz, University of Toronto
- 2:35 p.m. **Copula Models for Multivariate Multistate Markov Processes Observed Subject to Right Censoring**—◆Liqun Diao, University of Waterloo; Richard Cook, University of Waterloo
- 2:50 p.m. **Statistical Methods for Bivariate Failure Times Under Event-Dependent Censoring**—◆Yujie Zhong; Richard Cook, University of Waterloo
- 3:05 p.m. **Nonparametric Estimation of Copula by Empirical Copula Spline Smoothing**—◆Ayi Ajavon; François Perron, Université de Montréal
- 3:20 p.m. **Comparison of Statistical Harmonization Methods in Individual Participant Data Meta-Analysis**—◆Jinhui Ma, McMaster University; Parminder Raina, McMaster University; Lauren Griffith, McMaster University
- 3:35 p.m. **A Valid Parametric Test of Significance for the Average R<sup>2</sup> in Redundancy Analysis with Spatial Data**—◆Pierre Dutilleul, McGill University, Macdonald Campus; Bernard Pelletier, McGill University, Macdonald Campus

## 254 CC-512g Techniques for Graph and Network Analysis—Contributed

Section on Statistical Learning and Data Mining, International Chinese Statistical Association, Korean International Statistical Society

Chair(s): Jeremy Sabourin, The University of North Carolina

- 2:05 p.m. **Estimation of Sparse Directed Acyclic Graphs Through a Penalized Likelihood**—◆Sung Won Han, Hoffmann-La Roche / New York University; Hua Zhong, New York University; Gong Chen, Hoffmann-La Roche Inc.; Belousov Anton, Hoffmann-La Roche Inc.; Laurent Essioux, Hoffmann-La Roche Inc.
- 2:20 p.m. **Estimation of Time-Varying Networks Using Latent Dynamics**—◆Sandipan Roy, University of Michigan; Yves Atchade, University of Michigan; George Michailidis, University of Michigan

- 2:35 p.m. **Sufficient Statistic Selection for Dynamic Networks**—◆Xizhen Cai, Penn State University; David Hunter, Penn State University
- 2:50 p.m. **Pathway Enrichment Analysis Based on Estimating the Underlying Network**—◆Jing Ma, University of Michigan; George Michailidis, University of Michigan; Ali Shojaie, University of Washington
- 3:05 p.m. **Multilevel Gaussian Graphical Model for Gene and Pathway Networks**—◆Lulu Cheng, Virginia Tech; Inyoung Kim, Virginia Tech
- 3:20 p.m. **Extraction of Statistically Significant Communities in Undirected Networks**—◆James Wilson, The University of North Carolina at Chapel Hill; Simi Wang, The University of North Carolina at Chapel Hill; Andrew Nobel, The University of North Carolina at Chapel Hill; Peter Mucha, The University of North Carolina at Chapel Hill; Shankar Bhamidi, The University of North Carolina at Chapel Hill
- 3:35 p.m. **Approximate Conditional Inference for Degree-Corrected Network Models**—◆Daniel Klein, Brown University

## 255 CC-512f ■ **New Methods and Applications to Cancer and Psychiatric Research—Contributed**

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

Chair(s): Ronald Gangnon, University of Wisconsin

- 2:05 p.m. **Estimation of Limited-Time Cure Rate for Population-Based Cancer Relative Survival Data**—◆Binbing Yu, MedImmune, LLC.
- 2:20 p.m. **A New Marginal Approach to Model Clustered Survival Data with a Cure Fraction**—◆Yingwei Peng, Queen's University; Yi Niu, Queen's University
- 2:35 p.m. **A Semiparametric Model of Personal Cure**—◆Margaret Stedman, National Cancer Institute; Joanne Chang, National Cancer Institute; Kathleen Cronin, National Cancer Institute; Angela Mariotto, National Cancer Institute
- 2:50 p.m. **Bi-Factor Models in Health-Related Quality-of-Life Measurements**—◆Zugui Zhang, Christiana Care Health System
- 3:05 p.m. **The Effects of Sampling Frame on Estimates of Violence and Injury Outcomes in a National Surveillance System**—◆Jieru Chen, Centers for Disease Control and Prevention
- 3:20 p.m. **Modeling Volatility Characteristics of Epileptic EEGs Using GARCH Models**—◆Jack Follis, University of St. Thomas; Dejian Lai, University of Texas Health Science Center at Houston School of Public Health; Giridhar Kalamangalam, University of Texas Medical School at Houston
- 3:35 p.m. **Multilevel Structural Models of Quality of Life of Breast Cancer Survivors**—◆Shahid Kamal, University of the Punjab, Q.A. Campus; Rehan Ahmad Khan, University of the Punjab

## Contributed Poster Presentations 2:00 p.m.–3:50 p.m.

### 256 CC-220bc Contributed Oral Poster Presentations: Mental Health Statistics Section— Contributed Poster Presentations

Mental Health Statistics Section

Chair(s): Joyee Ghosh, University of Iowa

- 18 **Using Item Response Theory to Create a Screening Test**—◆Douglas Tommet, Institute for Aging Research / Hebrew Senior Life; Frances Yang, Institute for Aging Research / Hebrew Senior Life; Alden Gross, Institute for Aging Research / Hebrew Senior Life; Richard Jones, Institute for Aging Research / Hebrew Senior Life
- 19 **Trajectories to Dementia Identified with Mixed Membership Models**—◆Fabrizio Lecci, Carnegie Mellon University; Brian Junker, Carnegie Mellon University; James Becker, University of Pittsburgh; Oscar Lopez, University of Pittsburgh
- 20 **Fused Lasso to Determine the Risk Factors for Dementia**—◆Samrachana Adhikari, Carnegie Mellon University; Fabrizio Lecci, Carnegie Mellon University; Ryan Tibshirani; Brian Junker, Department of Statistics, Carnegie Mellon University; James Becker, University of Pittsburgh; Oscar Lopez, University of Pittsburgh
- 21 **Semi-Markov Models for Interval-Censored Transient Cognitive States with Competing Risk**—◆Shaoceng Wei, University of Kentucky; Richard J. Kryscio, University of Kentucky
- 22 **Methods of Handling Missing Data in a Cluster-Randomized Community-Partnered Participatory Research Project to Reduce the Burden of Depression**—◆Lingqi Tang, University of California at Los Angeles Center for Health Services & Society; Thomas R. Belin, University of California at Los Angeles; Susan Stockdale, VA Greater Los Angeles HCS, Sepulveda; Difan Zhao, University of California at Los Angeles Center for Health Services and Society; Elizabeth Dixon, QueensCare Health and Faith Partnership; Jim Gilmore, Behavioral Health Services; Felicia Jones, Healthy African American Families II; Klap Klap, VA Greater Los Angeles HCS, Sepulveda; Kenneth B. Wells, University of California at Los Angeles Center for Health Services and Society; Loretta Jones, Healthy African American Families II

### 257 CC-220bc Contributed Oral Poster Presentations: Section for Statistical Programmers and Analysts — Contributed Poster Presentations

Section for Statistical Programmers and Analysts

Chair(s): Joyee Ghosh, University of Iowa

- 23 **Partially Linear Single Index Survival Model: Case Study of Calf Survival Data**—◆Asheber Sewalem, AAFC-CDN; Antony F. Desmond, University of Guelph; Radhey S. Singh, University of Guelph; Xuewen Lu, University of Calgary
- 24 **A Primer for Integrating Microsoft Excel, Access, and SAS**—◆Martin Selzer, Genzyme
- 25 **An Exploration of the GSIMEX Approach to Modeling Variables with Correlated Measurement Errors in R**—◆Jennifer Weeding; Mark C. Greenwood, Montana State University
- 26 **Categorical Predictors and Pairwise Comparisons in Logistic Regression via Penalization and Bregman Methods**—◆Tian Chen, North Carolina State University; Howard Bondell, North Carolina State University

### 258 CC-220bc Contributed Oral Poster Presentations: Section on Risk Analysis—Contributed Poster Presentations

Section on Risk Analysis

Chair(s): Joyee Ghosh, University of Iowa

- 27 **Risk Assessment for Rare Events Using Logistic Model Averaging**—◆Chun-Shu Chen, National Changhua University of Education; Jin-Hua Chen, Graduate Institute of Biostatistics, China Medical University; Meng-Fan Huang, National Changhua University of Education

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259 CC-220bc  
**Contributed Oral Poster Presentations:  
 Section on Statistical Consulting—  
 Contributed Poster Presentations**

Section on Statistical Consulting

Chair(s): Joyee Ghosh, University of Iowa

- 28 **Accomplishments of STATCOM Chicago**—◆Haopeng Wang, DePaul University; Yuxin Zhong, DePaul University; Hoa Le, STATCOM Chicago
- 29 **Longitudinal Patterns in the Un-Belted North Carolinian**—◆Cynthia Augustine, RTI International
- 30 **Statistical Consulting and Scale Development: Refinement Without Loss of Precision**—◆Richard Ittenbach, Cincinnati Children's Hospital Medical Center; Resmi Gupta, Cincinnati Children's Hospital Medical Center; Kim D. Barber Foss, Cincinnati Children's Hospital Medical Center; Gregory D. Myer, Cincinnati Children's Hospital Medical Center
- 31 **STATCOM at Virginia Tech: An Overview of Student-Led Pro Bono Statistical Consulting**—◆Andrew Hoegh, Virginia Tech
- 32 **Using Proportional Odds Model of Ordinal Logistic Regression to Rate National Reporter Panel**—◆Xuemei Pan

260 CC-220bc  
**Contributed Oral Poster Presentations:  
 Section on Statistical Education—  
 Contributed Poster Presentations**

Section on Statistical Education

Chair(s): Joyee Ghosh, University of Iowa

- 33 **Looking Forward: Data Mining and the Business Curriculum**—◆Deborah Gougeon
- 34 **A Comprehensive Analytics (Statistics, Data, and Technology) Sequence for Business Students**—◆Scott Toney, University of Denver
- 35 **Improving Efficiency of Computerized Classification Tests Using Modified SPRT**—◆Haskell Sie, Penn State University; Jim Rosenberger, Penn State University
- 36 **The Evolution of an Online Program in Applied Statistics at Penn State**—◆Glenn Johnson, Penn State University; Mosuk Chow, Penn State University
- 37 **A Monte Carlo Investigation of the Effectiveness of Backward Elimination Analysis as a Multivariate Analysis of Variance (MANOVA) Post Hoc Procedure**—◆Chittanun Sitthisan, University of Northern Colorado

- 38 **Assessing Limitations and Uses of Convenience Samples: A Guide for Graduate Students**—◆S. David Kriska, Walden University; Marcia M. Sass, UMDNJ; Mark C. Fulcomer, Restat Systems, Inc.
- 39 **Using Media Resources and Journal Articles to Teach Statistics**—◆Phyllis Curtiss, Grand Valley State University
- 40 **Classroom Demonstrations of Parallel Processing for Statistics**—◆Eric Sues, California State University at East Bay
- 41 **Innovative Data Visualization: Activities for Your Class**—◆Kirk Anderson, Grand Valley State University
- 42 **Using Internet Videos to Address Availability Stress at Oglala Lakota College for Introduction to Statistics**—◆Frank Matejeik, South Dakota School of Mines
- 43 **Designing a GAISE-Inspired Statistics Course for Current High-School and Community College Mathematics Instructors**—◆Amy Froelich, Iowa State University
- 44 **Recommendations/Learning Outcomes for Master's Degree Programs in Statistics: Report of ASA Workgroup**—◆A. John Bailer, Miami University; Roger W. Hoerl, GE Global Research; David Madigan, Columbia University; Jill Montaquila, Westat; Tommy Wright, U.S. Census Bureau/Center for Statistical Research and Methodology
- 45 **Cookies in the Classroom: Specific Instructions for Implementation**—◆Wilmina Siegfried, Iowa State University; Ulrike Genschel, Iowa State University; Juliane Janek, Iowa State University
- 46 **The Data Scientist Degree: A Necessity for Growth in Our Discipline**—◆April Kerby, Brant Deppa, Winona State University; Chris J. Malone, Winona State University; Tisha Hooks, Winona State University
- 47 **Stochastic Challenge**—◆Timothy Matis, Texas Tech University; Doug Timmer, The University of Texas Pan American; Ivan Guardiola, Missouri University of Science and Technology
- 48 **Ethical Reasoning for Quantitative Scientists: Portfolios and Developmental Trajectories**—◆Rochelle Tractenberg
- 49 **Statway Successes**—◆Mary Parker, Austin Community College
- 50 **Measurement Usage in Self-Assessment**—◆Julia Norton, California State University at East Bay; John Dewey Lovell, California State University at East Bay; John Alva Norton, California State University at East Bay; Yaelan Wong, California State University at East Bay

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 261 CC-220bc Contributed Oral Poster Presentations: Section on Statistical Graphics—Contributed Poster Presentations

Section on Statistical Graphics

Chair(s): Joyee Ghosh, University of Iowa

- 51 **Respondent Behavior in Respondent-Driven Sampling: Sensitivity Analysis Based on Real Network Data—**  
◆ Isabelle Beaudry; Krista J. Gile, University of Massachusetts, Amherst; Corinne M. Mar, University of Washington

## 262 CC-220bc Contributed Oral Poster Presentations: Section on Statistics in Marketing—Contributed Poster Presentations

Section on Statistics in Marketing

Chair(s): Joyee Ghosh, University of Iowa

- 52 **Making Launch Decisions Using a Bayesian Treatment of Competing Risks—**◆ Qian Weng; Tony Thrall, eBay Inc.; Jing Xia, eBay Inc.; Lili Zhuang, eBay Inc.

## 263 CC-220bc Contributed Oral Poster Presentations: Section on Statistics in Sports—Contributed Poster Presentations

Section on Statistics in Sports

Chair(s): Joyee Ghosh, University of Iowa

- 53 **The Effect of 'Freebies' on Run Production in Major League Baseball—**◆ Jay Schaffer, University of Northern Colorado; Daniel Mundfrom, Eastern Kentucky University; Michelle L. Smith, Eastern Kentucky University
- 54 **Creating an NFL Dynasty: There Is Always Next Year—**  
◆ Raymond Mooring, Analysis Made Easy
- 55 **Predicting Owner Tendencies in Fantasy Football Drafts—**  
◆ Ivan Ramler, St. Lawrence University; Nobu Yamanashi, St. Lawrence University
- 56 **A Statistical Analysis of the 'Fairness' of the NCAA Basketball Tournaments—**◆ Tracy Morris, University of Central Oklahoma; Minzhe Wu, University of Central Oklahoma

## 264 CC-220bc Contributed Oral Poster Presentations: Section on Teaching of Statistics in the Health Sciences — Contributed Poster Presentations

Section on Teaching of Statistics in the Health Sciences

Chair(s): Joyee Ghosh, University of Iowa

- 57 **Utilizing Linear and Nonlinear Random-Effects Modeling to Understand Temporal Change in Rehabilitation Medicine Outcomes: A NIDRR Traumatic Brain Injury Model Systems Presentation —**  
◆ Christopher Pretz, Craig Hospital
- 58 **Evaluation of Undergraduate Nursing Students' Attitudes Toward a Mandatory Introductory Course in Statistics—**◆ Oluwagbohunmi Awosoga, University of Lethbridge; Bradley Hagen, University of Lethbridge; Peter Kellett, University of Lethbridge; Samuel Ofori Dei, University of Lethbridge
- 59 **Tools for Presenting Examples of Sampling Distributions and Hypothesis Testing —** Mark C. Fulcomer, Restat Systems, Inc.; S. David Kriska, Walden University; Marcia M. Sass, UMDNJ

## 265 CC-220bc Contributed Oral Poster Presentations: SSC—Contributed Poster Presentations SSC

Chair(s): Joyee Ghosh, University of Iowa

- 60 **The ROC Curve and the Hit Curve: A Close Look —**  
◆ Yan Yuan, University of Alberta; Wanhua Su, MacEwen University; Mu Zhu, University of Waterloo
- 61 **Improved Portmanteau Diagnostic Check for ARFIMA Time Series Models—**◆ Jinkun Xiao, University of Western Ontario; Ian McLeod, University of Western Ontario
- 62 **Sample Size Calculations for Treatment and Biomarker Interactions—**◆ Scarlett Kazimer

266 CC-220bc  
**Contributed Oral Poster Presentations:  
 Statistics Without Borders—Contributed**

Statistics Without Borders

Chair(s): Joyee Ghosh, University of Iowa

- 63 **Statistical Analysis of Whale Shark Population in the Red Sea**—◆Kun Xu, Texas A&M University; Michael Berumen, King Abdullah University of Science and Technology; Marc G. Genton, KAUST; Yanyuan Ma, Texas A&M University
- 64 **My Observation of Statistics/Statisticians**—◆Shriniwas Katti, University of Missouri
- 65 **Tbd**—◆Yalan Hu
- 66 **Score Test in a Pseudo-Value Regression Setting with Correlated Survival Data**—◆Yanzhi Wang, Medical College of Wisconsin; Brent Logan, Medical College of Wisconsin
- 67 **Internet-Based Biostatistics Education in Low- to Middle-Income Countries: A 5-Year Experience at Peoples-uni.org**—◆Abdulaziz Farooq, Aspetar-Qatar Orthopaedic and Sports Medicine; Victoriya Repka, Peoples-uni.org; Suresh V. Merdabala, Peoples-uni.org; Laurie Budd, Peoples-uni.org; Richard Heller, Peoples-uni.org

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**Invited Sessions  
 4:00 p.m.–5:50 p.m.**

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267 CC-517ab  
**ASA President’s Invited Address—Invited**

ASA, ENAR, IMS, International Chinese Statistical Association, International Indian Statistical Association, SSC, WNAR, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA), Statistics Without Borders

Chair(s): Marie Davidian, North Carolina State University

4:05 p.m. **JSM Welcomes Nate Silver**—◆Nate Silver, FiveThirtyEight.com

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**Invited Sessions  
 8:00 p.m.–9:30 p.m.**

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268 CC-517ab  
**IMS Presidential Address—Invited**

IMS

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

Chair(s): Hans Rudolf Kunsch, Seminar fur Statistik, ETH Zurich

8:05 p.m. **Ars Conjectandi: 300 Years Later**—◆Hans Rudolf Kunsch, Seminar fur Statistik, ETH Zurich



# TUESDAY, AUGUST 6

## Committee/Business Meetings & Other Activities

7:00 a.m.–8:30 a.m.	I-Saint-Pierre	7:00 a.m.–10:00 p.m.	CC-200 Viger Hall
<b>Technometrics Editorial Board Meeting</b>		<b>Cyber Center, Sponsored by IBM</b>	
Chair(s): Hugh A. Chipman, Acadia University			
7:00 a.m.–8:30 a.m.	I-Saint-Louis	7:30 a.m.–9:00 a.m.	I-Saint-Jacques
<b>Government Statistics Section Executive Board Meeting</b>		<b>OSU Department of Statistics Alumni and Friends Breakfast</b>	
Chair(s): Lisa Blumerman, U.S. Census Bureau		Organizer(s): Elizabeth Stasny, The Ohio State University	
7:00 a.m.–8:30 a.m.	W-Papineau	7:30 a.m.–12:00 p.m.	I-Saint-Francois Xavier
<b>ASA-MAA Statistics Education Business Meeting</b>		<b>SBR Editorial Board Meeting</b>	
Chair(s): Shonda Kuiper, Grinnell College		Chair(s): Steven Snapinn, Amgen, Inc.	
7:00 a.m.–8:30 a.m.	I-Saint-Alexandre	7:30 a.m.–4:30 p.m.	CC-200 Viger Hall
<b>ASA Advisory Committee on Climate Change Policy</b>		<b>ASA Membership/Help Desk/Press Desk</b>	
Chair(s): Richard Katz, NCAR/IMAGE			
7:00 a.m.–8:30 a.m.	I-Saint-Jean-Baptiste	7:30 a.m.–4:30 p.m.	CC-200 Viger Hall
<b>Committee of Representatives to AAAS Business Meeting</b>		<b>JSM Main Registration</b>	
Chair(s): Robert Fay, Westat			
7:00 a.m.–8:30 a.m.	I-Saint-Gabriel	8:00 a.m.–9:00 a.m.	I-Saint-Helene
<b>JOS Editorial Meeting</b>		<b>JASA Editors Meeting</b>	
Organizer(s): Ingeged Jansson, Statistics Sweden; Annica Isaksson, Statistics Sweden; Liu, Statistics Sweden		Chair(s): Joseph G. Ibrahim, The University of North Carolina	
7:00 a.m.–8:30 a.m.	W-Bonsecours	8:00 a.m.–9:30 a.m.	W-Youville
<b>ASA Development Committee Meeting</b>		<b>CHANCE Editors Meeting</b>	
Chair(s): Jim Landwehr, Avaya Labs		Chair(s): Sam Behseta, California State University at Fullerton	
7:00 a.m.–8:30 a.m.	CC-445	8:00 a.m.–5:30 p.m.	CC-220d
<b>Mental Health Statistics Section Executive Committee Meeting (Closed)</b>		<b>Career Placement Service</b>	
Chair(s): Naihua Duan, Columbia University; Robert Gibbons, The University of Chicago			
7:00 a.m.–9:00 a.m.	W-Notre Dame	8:00 a.m.–6:00 p.m.	CC-220bc
<b>Committee on ASA Archives and Historical Materials Business Meeting</b>		<b>Exhibitor Lounge</b>	
Chair(s): John McKenzie, Babson College			
7:00 a.m.–10:00 a.m.	I-Saint-Laurent	8:30 a.m.–12:00 p.m.	I-Les Huitres
<b>Council of Chapters Business Meeting and Breakfast</b>		<b>COPSS Executive Committee Meeting</b>	
Chair(s): Dan Kasprzyk, NORC at the University of Chicago		Organizer(s): Jane Pendergast, University of Iowa	
7:00 a.m.–6:00 p.m.	CC-513c	9:00 a.m.–11:00 a.m.	W-Ramezay
<b>Speaker Management Room</b>		<b>JSM Diversity Mentoring Program</b>	
		Chair(s): Sydeaka Watson, The University of Chicago	
		9:00 a.m.–5:30 p.m.	CC-220bc
		<b>ASA Marketplace</b>	
		9:00 a.m.–5:30 p.m.	CC-220bc
		<b>EXPO 2013</b>	
		9:00 a.m.–5:30 p.m.	
		<b>American Statistical Association Booth #201</b>	
		10:00 a.m.–12:00 p.m.	CC-445
		<b>Aptiv Solutions SAB/IC Meeting</b>	
		Organizer(s): Laura Saklad, Aptiv Solutions	



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

12:00 p.m.–1:30 p.m. I-Saint-Jacques  
**Journal of Agricultural, Biological, and Environmental Statistics  
Editorial Board Meeting**  
Organizer(s): Montse Fuentes, North Carolina State University

12:00 p.m.–2:00 p.m. I-Saint-Gabriel  
**The American Statistician Editors Lunch**  
Chair(s): Ronald Christensen, University of New Mexico

12:30 p.m.–1:30 p.m. CC-510a  
**Informational Meeting on ASA Accreditation**  
Chair(s): Theresa Utlaut, Intel

12:30 p.m.–2:00 p.m. I-Saint-Paul  
**JQAS Editorial Panel Meeting**  
Organizer(s): Jim Albert, Bowling Green State University

12:30 p.m.–2:00 p.m. I-Saint-Alexandre  
**JCGS Management Committee Business Meeting**  
Chair(s): Roy Welsch, Massachusetts Institute of Technology

12:30 p.m.–2:00 p.m. W-Bonsecours  
**International Statistics Institute (ISI) Editorial Board Meeting**

12:30 p.m.–2:00 p.m. I-Saint-Louis  
**Journal on Uncertainty Quantification Editorial Board Meeting**  
Organizer(s): Jim Berger, Duke University

12:30 p.m.–2:00 p.m. I-Saint-Jean-Baptiste  
**Deming Committee Luncheon**  
Chair(s): Marilyn Seastrom, NCES/U.S. Department of Education

12:30 p.m.–2:00 p.m. I-Saint-Laurent  
**JASA Editorial Board Associate Editors Lunch**  
Chair(s): Jamie Hutchens, JASA Editorial Coordinator

12:30 p.m.–2:30 p.m. W-Ramezay  
**IMS Council Meeting**  
Organizer(s): Elyse Gustafson, IMS Executive Director

12:30 p.m.–4:30 p.m. I-Saint-Pierre  
**RAB/RECOM Luncheon Meeting**  
Organizer(s): Dan Heitjan, ENAR; DuBois Bowman, ENAR

2:00 p.m.–3:30 p.m. I-Saint-Helene  
**Council of Chapters Traveling Course Committee Meeting**  
Chair(s): Anwar Hossain, Eli Lilly and Company



# JSM Dance Party & Lounge

Tuesday, August 6  
9:30 p.m. – Midnight

Palais des congrès de Montréal  
Room CC-517d



A special thanks to IBM for its support of this event

2:30 p.m.–3:30 p.m. <b>IMS Business Meeting</b> Organizer(s): Elyse Gustafson, IMS Executive Director	W-Ramezay	5:30 p.m.–6:30 p.m. <b>2015 JSM Program Committee Orientation Meeting</b> Chair(s): Annie Qu, University of Illinois at Urbana-Champaign	CC-512c
2:30 p.m.–4:30 p.m. <b>Committee on Applied Statisticians Social Mixer</b> Chair(s): Amarjot Kaur, Merck Research Labs	CC-523a	5:30 p.m.–6:30 p.m. <b>Committee on Gay and Lesbian Concerns in Statistics</b> Chair(s): Christopher Johnson, CDC/NCHHSTP	W-Papineau
4:00 p.m.–5:30 p.m. <b>Funding Opportunities for Statistics (Open to All)</b> Chair(s): Stephan Sain, National Center for Atmospheric Research	CC-516b	5:30 p.m.–7:00 p.m. <b>Government Statistics Section Business Meeting</b> Chair(s): Lisa Blumerman, U.S. Census Bureau	I-Saint-Louis
4:00 p.m.–5:30 p.m. <b>Statistics in Business Schools Interest Group Business Meeting</b> Organizer(s): John McKenzie, Babson College	I-Saint-Francois Xavier	5:30 p.m.–7:00 p.m. <b>Colorado State Alumni and Friends Reception</b> Organizer(s): Jean Opsomer, Colorado State University	I-Saint-Alexandre
4:00 p.m.–5:30 p.m. <b>Mental Health Statistics Section Business Meeting &amp; Mixer (Open)</b> Chair(s): Naihua Duan, Columbia University; Robert Gibbons, The University of Chicago	CC-523b	5:30 p.m.–7:00 p.m. <b>Section on Statistical Consulting Business Meeting</b> Chair(s): Marlene Egger, University of Utah, DFPMP	I-Saint-Gabriel
4:00 p.m.–6:00 p.m. <b>Council of Chapters Officer Appreciation Reception and Workshop</b> Chair(s): John Stevens, Utah State University	I-Saint-Laurent	5:30 p.m.–7:30 p.m. <b>Section on Bayesian Statistical Sciences Business Meeting and Reception</b> Chair(s): Alicia Carriquiry, Iowa State University	I-Sarah Bernhardt
4:30 p.m.–6:00 p.m. <b>Statistics Without Borders Business Meeting</b> Organizer(s): Justin Fisher, Government Accountability Office	CC-524c	5:30 p.m.–7:30 p.m. <b>Biopharmaceutical Section Business Meeting</b> Chair(s): Amit Bhattacharyya, GlaxoSmithKline	CC-710a
4:30 p.m.–6:00 p.m. <b>DIA Bayesian Scientific Working Group Meeting</b> Organizer(s): Karen Lynn Price, Eli Lilly and Company	CC-510a	5:30 p.m.–7:30 p.m. <b>Statistical Society of Canada Reception</b> Organizer(s): Mike Evans, SSC, ASA, IMS	I-Chez Plume
4:30 p.m.–6:00 p.m. <b>Biometrics Editorial Board Meeting</b> Organizer(s): Marie Davidian, North Carolina State University	CC-522a	5:30 p.m.–7:30 p.m. <b>SPES and Q&amp;P Joint Mixer</b> Chair(s): Winson Taam	I-Vieux Montreal/Vieux Port
5:00 p.m.–6:00 p.m. <b>Section on Statistical Learning and Data Mining Business Meeting</b> Chair(s): David Banks, Duke University	CC-510b	6:00 p.m.–7:00 p.m. <b>Section on Nonparametric Statistics Meeting</b> Chair(s): Jianqing Fan, Princeton University	CC-510c
5:00 p.m.–6:00 p.m. <b>Business and Economic Statistics Section Business Meeting</b> Chair(s): John M. Abowd, Chair, Business and Economic Statistics Section	CC-525b	6:00 p.m.–7:00 p.m. <b>Friends of Australasia - Open Invitation</b> Organizer(s): Mark Griffin, Australian Development Agency for Statistics	I-Maisonneuve
5:00 p.m.–7:00 p.m. <b>North Carolina State University Reception for Department and Friends</b> Organizer(s): Montse Fuentes, North Carolina State University	I-Saint-Jacques	6:00 p.m.–7:30 p.m. <b>ASA Committee on Minorities in Statistics Networking Reception and Business Meeting</b> Chair(s): Sydeaka Watson, The University of Chicago	CC-523b
5:30 p.m.–6:30 p.m. <b>Russian-Speaking Statisticians Mixer</b> Organizer(s): Stas Kolenikov, Abt SRBI	CC-512d	6:00 p.m.–7:30 p.m. <b>HSPH Department of Biostatistics Alumni Reception</b> Organizer(s): Shaina Andelman, Harvard School of Public Health	W-Palais
		6:00 p.m.–7:30 p.m. <b>University of Michigan JSM Joint Alumni Reception</b> Organizer(s): Trivellore E. Raghunathan, University of Michigan	CC-521c

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

6:00 p.m.–8:00 p.m. I-Saint-Paul

## Southern Methodist University Alumni Gathering

Chair(s): Wayne Woodward, Southern Methodist University;  
Sheila Crane

6:00 p.m.–8:30 p.m. CC-523a

## Columbia University Joint Reception, Department of Statistics and Biostatistics

Organizer(s): David Madigan, Columbia University

6:30 p.m.–10:00 p.m. I-Saint-Pierre

## Adaptive Design and ADDPLANÆ Network Meeting

Organizer(s): Reinhard Eisebitt, Aptiv Solutions

9:30 p.m.–12:00 a.m. CC-517d

## JSM Dance Party and Lounge, Sponsored by IBM

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## Continuing Education (Fee Events)

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CE\_20C

### Personalized Medicine and Dynamic Treatment Regimes

8:00 a.m.–12:00 p.m. W-Ville-Marie  
ASA, Biometrics Section

Instructor(s): Eric Laber, North Carolina State University; Michael R. Kosorok, The University of North Carolina at Chapel Hill

CE\_21C

### Causal Inference and Its Application in Health Sciences

8:30 a.m.–5:00 p.m. W-Fortifications  
ASA, Section on Statistics in Epidemiology

Instructor(s): Miguel A. Hernan, Harvard School of Public Health;  
Dylan S. Small, University of Pennsylvania

CE\_22C

### Introduction to Statistical Learning

8:30 a.m.–5:00 p.m. W-Palais  
ASA, Section on Statistical Learning and Data Mining

Instructor(s): Daniela Witten, University of Washington

CE\_23C

### Analysis of Interval-Censored Survival Data

8:30 a.m.–5:00 p.m. W-St. Antoine B  
ASA, Biometrics Section

Instructor(s): Philip Hougaard, Lundbeck

CE\_24C

### Applied Bayesian Nonparametric Mixture Modeling

8:30 a.m.–5:00 p.m. W-St. Antoine A  
ASA, Section on Bayesian Statistical Science

Instructor(s): Athanasios Kottas, University of California at Santa Cruz;  
Abel Rodriguez, University of California at Santa Cruz

CE\_25C

### Statistical Methods for Neuroimaging Data Analysis

8:30 a.m.–5:00 p.m. W-McGill  
ASA, Biometrics Section

Instructor(s): Hongtu Zhu, The University of North Carolina at Chapel Hill; Haipeng Shen, The University of North Carolina at Chapel Hill; Linglong Kong, University of Alberta

CE\_26C

### Statistical Methods in Genetic Association Studies

1:00 p.m.–5:00 p.m. W-Ville-Marie  
ASA, Biometrics Section

Instructor(s): Danyu Lin, The University of North Carolina

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## Roundtables with Coffee

### 7:00 a.m.–8:15 a.m.

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269

CC-517d

### Health Policy Statistics Section A.M. Roundtable Discussion (Fee Event)

Health Policy Statistics Section

Organizer(s): Juned Siddique, Northwestern University

TL01

**Publishing, Refereeing, and Editorial Service for Applied Statisticians**—◆ Susan Paddock, RAND Corporation; ◆ Marc Elliott, RAND Corporation

270

CC-517d

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

Section on Statistical Education

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

TL02

**Using R Markdown for Integrating Reproducibility Tools Into an Introductory Statistics Course**—◆ Benjamin S. Baumer, Smith College

TL03

**Introducing Inference in Introductory Courses**—◆ William Notz, The Ohio State University

271

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

TL04

**Development and Application of Statistical Methods in the International Tobacco Control Four-Country Survey**—◆ Mary E. Thompson, University of Waterloo

272 CC-517d  
**Section on Statistics in Marketing A.M. Roundtable Discussion (Fee Event)**

Section on Statistics in Marketing  
 Organizer(s): Lynd D. Bacon, Loma Buena Associates

TL05 **Making Causal Inferences from Observed Web Visits**—◆ Stephen Iaquaniello, SapientNitro

273 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

TL06 **Teaching Biostatistics with Technology, ITV Challenges, and Rewards**—◆ Michael Swartz, The University of Texas Health Science Center at Houston, School of Public Health

274 CC-517d  
**Survey Research Methods Section A.M. Roundtable Discussion (Fee Event)**

Survey Research Methods Section  
 Organizer(s): Karol Krotki, RTI International

TL07 **Can Randomized Response Techniques Play a Role in the Era of Big Data?**—◆ Sarjinder Singh, Texas A&M University at Kingsville

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

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275 CC-710a  
**Introductory Overview Lecture: Personalized Medicine: Tailoring Treatment to the Right Patient—Other**

ASA, International Chinese Statistical Association, ENAR, WNAR, IMS, SSC, International Indian Statistical Association, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA)  
 Organizer(s): Jeremy Taylor, University of Michigan  
 Chair(s): Bhramar Mukherjee, University of Michigan

8:35 a.m. **Introductory Overview Lecture 6: Personalized Medicine**—◆ Anastasios (Butch) Tsiatis, North Carolina State University

9:25 a.m. **Introductory Overview Lecture 6: Personalized Medicine**—◆ Stephen J. Ruberg, Eli Lilly and Company  
 10:15 a.m. **Floor Discussion**

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**Invited Sessions**  
**8:30 a.m.–10:20 a.m.**

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276 CC-524b  
**JBES Invited Session—Invited**

JBES-Journal of Business & Economic Statistics  
 Organizer(s): Rong Chen, Rutgers University  
 Chair(s): Rong Chen, Rutgers University

8:35 a.m. **Quasi-Maximum Likelihood Estimation of GARCH Models with Heavy-Tailed Likelihoods**—◆ Dacheng Xiu, The University of Chicago; Jianqing Fan, Princeton University

9:20 a.m. **Principal Volatility Component Analysis**—◆ Ruey S. Tsay, The University of Chicago; Yu-Pin Hu, National Chi Nan University

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

277 CC-520d  
**Statistical Knowledge for Teaching: Research Results and Implications for Professional Development—Invited**

Section on Statistical Education  
 Organizer(s): Jennifer J. Kaplan, University of Georgia  
 Chair(s): Christine Franklin, University of Georgia

8:35 a.m. **Assessing Statistical Understanding of Students: Implications for Research and Teaching**—◆ Tim Jacobbe, University of Florida

9:00 a.m. **The Influence of Statistical Knowledge for Teaching Theory on the Development of a Statistics Course for Pre-K-8 Teachers**—◆ Randall Edgar Groth, Salisbury University

9:25 a.m. **Statistical Knowledge for Teaching Informal Line of Best Fit**—◆ Stephanie Casey, Eastern Michigan University; Jennifer J. Kaplan, University of Georgia

9:50 a.m. **Preparing High-School Teachers to Teach Statistics in the Common Core: Effective Research-Based Resources**—◆ Anna Emilia Bargagliotti, Loyola Marymount University

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



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 278 **Recent Developments in Bayesian Computational Methods—Invited** CC-512c 280 **Statistical Inference for Large Matrices—Invited** CC-510a

Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), International Chinese Statistical Association, Statistical Learning and Data Mining Section, Section on Statistical Computing  
Organizer(s): Babak Shahbaba, University of California at Irvine  
Chair(s): Fletcher Christensen, University of California at Irvine

- 8:35 a.m. **Exact Hamiltonian Monte Carlo for Truncated Multivariate Gaussians**—◆ Ari Pakman, Columbia University; Liam Paninski, Columbia University
- 9:05 a.m. **Local Step Size Adaptation for Hamiltonian MCMC**—◆ Matthew Douglas Hoffman, Adobe Research
- 9:35 a.m. **Split Hamiltonian Monte Carlo**—◆ Babak Shahbaba, University of California at Irvine; Shiwei Lan, University of California at Irvine; Wesley O. Johnson, University of California at Irvine; Radford M. Neal, University of Toronto
- 10:05 a.m. **Floor Discussion**

IMS, Statistical Learning and Data Mining Section, Biometrics Section  
Organizer(s): Lie Wang, Massachusetts Institute of Technology  
Chair(s): Mladen Kolar, Carnegie Mellon University

- 8:35 a.m. **Conditional Sparsity in Large Covariance Matrix Estimation**—◆ Jianqing Fan, Princeton University; Yuan Liao, University of Maryland; Martina Mincheva, Princeton University
- 9:05 a.m. **Multivariate Regression with Calibration**—◆ Lie Wang, Massachusetts Institute of Technology; Han Liu, Princeton University; Tuo Zhao, The Johns Hopkins University
- 9:35 a.m. **Principal Component Analysis for High-Dimensional Non-Gaussian Data**—Fang Han, The Johns Hopkins University; ◆ Han Liu, Princeton University
- 10:05 a.m. **Floor Discussion**

## 279 **Statistical Approaches for Modeling Mortality and Risk Factors in End-Stage Renal Disease—Invited** CC-511d 281 **Health Policy Research with a Special Focus on Women—Invited** CC-516b

WNAR, SSC, Biometrics Section, Scientific and Public Affairs Advisory Committee  
Organizer(s): Damla Senturk, University of California, Los Angeles  
Chair(s): Donatello Telesca, University of California at Los Angeles

- 8:35 a.m. **Understanding Cardiovascular Event Risk Dynamics Over Time in Older Patients on Dialysis: A Generalized Multiple-Index Varying Coefficient Model Approach**—◆ Damla Senturk, University of California at Los Angeles; Jason Estes, University of California at Los Angeles; Lorien Dalrymple, University of California at Sacramento; Yi Mu, University of California at Davis; Danh Nguyen, University of California at Davis
- 9:00 a.m. **Case Series Design, Inference, and Analysis of Infection-Cardiovascular Risk in Patients on Dialysis**—◆ Danh Nguyen, University of California at Davis
- 9:25 a.m. **Strategies for Joint Modeling of Longitudinal Inflammation and Health Events for Patients on Hemodialysis**—◆ Joel A. Dubin, University of Waterloo
- 9:50 a.m. **A Gaussian Process Model for Estimating Within-Subject Variation in Indices of Protein-Energy Malnutrition Among ESRD Patients**—◆ Daniel L. Gillen, University of California at Irvine; Tracy Holsclaw, University of California at Irvine; Babak Shahbaba, University of California at Irvine
- 10:15 a.m. **Floor Discussion**

Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee, Statistics Without Borders  
Organizer(s): Kelly Zou, Pfizer Inc.  
Chair(s): Kelly Zou, Pfizer Inc.

- 8:35 a.m. **The Courts and Women's Health**—◆ Mary W. Gray, American University
- 9:00 a.m. **Some Statistical Challenges in the Design and Analysis of Gestational Diabetes Studies**—◆ Aiyi Liu, National Institutes of Health/NICHD; Paul Albert, NICHD; Ruzong Fan, National Institutes of Health; Cuilin Zhang, NICHD
- 9:25 a.m. **Well-Studied Women Make History: Women's Health Research and the Future of Medicine**—Karen Freund, Tufts University School of Medicine; ◆ Aimee R. Kroll-Desrosiers, University of Massachusetts Medical School; Arlene S. Ash, University of Massachusetts Medical School
- 9:50 a.m. Disc: Dalene K. Stangl, Duke University
- 10:10 a.m. **Floor Discussion**



## 282 CC-511f **■ New Developments in the Use of Smartphones for Survey Research—Invited**

Social Statistics Section, Mental Health Statistics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee  
 Organizer(s): Robert Santos, The Urban Institute  
 Chair(s): Robert Santos, The Urban Institute

- 8:35 a.m. **Everyone Uses Smartphones, Right? Recruitment and Compliance Issues with Mobile-Based Behavior Diaries**—◆Michael W. Link, Nielsen; Jennie Lai, Nielsen
- 8:55 a.m. **Addressing Data Needs and User Requirements in the Future Mobility Survey**—Caitlin D. Cottrill, Singapore-MIT Alliance for Research and Technology; ◆Francisco C. Pereira, Singapore-MIT Alliance for Research and Technology; Fang Zhao, Singapore-MIT Alliance for Research and Technology; Moshe Ben-Akiva, Massachusetts Institute of Technology; Christopher P Zegras, Massachusetts Institute of Technology; Rukshan Batuwitige, Singapore-MIT Alliance for Research and Technology
- 9:15 a.m. **Using Smartphones for GPS Data Collection in Travel Surveys**—◆Sarah Griffith, NuStats; Martin Kunzmann, NuStats
- 9:35 a.m. **Use of Smartphone as a Methodology for Scientific Data Collection**—◆Raja Sengupta, University of California at Berkeley
- 9:55 a.m. **Recruiting, Retaining, and Engaging Participants in a Representative App-Based Smartphone Survey Panel**—◆David James Roe, RTI International; Joe James Murphy, RTI International; Michael James Keating, RTI International
- 10:15 a.m. **Floor Discussion**

## 283 CC-524a **■ ● Causal Inference for Outcomes Only Observed Among Survivors—Invited**

Committee on Applied Statisticians, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee, Statistics Without Borders  
 Organizer(s): Jing Cheng, University of California at San Francisco  
 Chair(s): Jing Cheng, University of California at San Francisco

- 8:35 a.m. **Simple Techniques to Assess the Principal Strata Effect: Estimation, Sensitivity Analysis, and Bounds**—◆Yasutaka Chiba, Kinki University School of Medicine
- 8:55 a.m. **Using Complications to Evaluate Neonatal Health Care: Controlling for Censoring by Death**—◆Dylan S. Small, University of Pennsylvania; Fan Yang, University of Pennsylvania; Jing Cheng, University of California at San Francisco; Scott Lorch, Children's Hospital of Philadelphia
- 9:15 a.m. **The Balanced Survivor Average Causal Effect**—◆Tom Greene, University of Utah

- 9:35 a.m. **The Survivor Average Causal Effect: Weaknesses and Alternatives**—◆Marshall M. Joffe, University of Pennsylvania
- 9:55 a.m. **On Partially Defined Outcomes in Experiments**—◆Donald B. Rubin, Harvard University
- 10:15 a.m. **Floor Discussion**

## 284 CC-519a **■ ● International Statistical Consulting: Current Initiatives to Build Statistics Capacity in Developing Countries—Invited**

Section on Statistical Consulting, Section on Statistical Education, Statistics Without Borders  
 Organizer(s): Eric A. Vance, LISA-Virginia Tech  
 Chair(s): Türknur Hamsici Brand, Central Bank of Turkey

- 8:35 a.m. **Consulting with Colleagues in Developing Nations on Building Academic Programs in Statistics = Experiences in Buea**—◆James J. Cochran, Louisiana Tech University
- 9:00 a.m. **Lessons Learned from Consulting in 25 Developing Countries: Becoming a Culturally Intelligent International Statistical Consultant**—◆Brian Hannon, Independent International Consultant in Survey Statistics
- 9:25 a.m. **Beyond Consulting: Training to Become an Interdisciplinary Statistical Collaborator**—◆Marcos Carzolio, Virginia Tech
- 9:50 a.m. **LISA 2020: Building Statistics Capacity in Developing Countries by Training Statisticians to Communicate and Collaborate with Nonstatisticians**—◆Eric A. Vance, LISA-Virginia Tech
- 10:15 a.m. **Floor Discussion**

## 285 CC-519b **■ Change-Points and Related Processes in Economic Time Series—Invited**

Business and Economic Statistics Section, Scientific and Public Affairs Advisory Committee  
 Organizer(s): John Aston, University of Warwick  
 Chair(s): Hernando Ombao, University of California at Irvine

- 8:35 a.m. **Locally Stationary Latent Factors**—◆Giovanni Motta, Columbia University; Michael Eichler, Maastricht University
- 9:00 a.m. **Piecewise Quantile Autoregressive Modeling for Nonstationary Time Series**—◆Alexander Aue, University of California at Davis; Thomas C.M. Lee, University of California at Davis; Ming Zhong, University of California at Davis
- 9:25 a.m. **Modeling Nonstationarities in Energy Time Series**—◆Idris Eckley, Lancaster University
- 9:50 a.m. Disc: John Aston, University of Warwick
- 10:10 a.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 286 Medallion Lecture IV—Invited

IMS

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

Chair(s): Jon Wellner, University of Washington

8:35 a.m. **Multiscale Methods and Shape Constraints—**

◆Lutz Duembgen, University of Bern

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

## 287 Memorial Session: Kesar Singh—Invited

ASA, Memorial, International Indian Statistical Association

Organizer(s): Regina Liu, Rutgers University

Chair(s): Regina Liu, Rutgers University

8:35 a.m. **An Appreciation of the Work of a Gentle Man—**

◆Peter Gavin Hall, University of Melbourne

8:55 a.m. **Confidence Distribution and the Contributions**

**of Kesar Singh to Distributional Inference—**

◆Min-ge Xie, Rutgers University

9:15 a.m. **Exact and Asymptotically Robust Permutation**

**Tests—**◆Joseph Paul Romano, Stanford University

9:35 a.m. **Higher-Order Properties of the Bootstrap in High-**

**Dimensional Problems—**◆Soumendra N. Lahiri,  
North Carolina State University; Arindam Chatterjee,  
Indian Statistical Institute

9:55 a.m. **Highlights of Kesar Singh's Contributions—**

◆G. Jogesh Babu, Penn State University

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

## Invited Panels 8:30 a.m.–10:20 a.m.

## 288 ■ Research Questions and Data Resources in Transportation Statistics—Invited

Transportation Statistics Interest Group, Scientific and Public Affairs  
Advisory Committee

Organizer(s): Li Leung, U.S. Department of Transportation

Chair(s): Feng Guo, Virginia Tech Transportation Institute

**Panelists:** ◆Rolf Schmitt, Bureau of Transportation Statistics  
◆David Banks, Duke University  
◆Alan F. Karr, National Institute of Statistical Sciences  
◆Clifford H. Spiegelman, Texas A&M University

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

## CC-710b **Topic-Contributed Sessions** 8:30 a.m.–10:20 a.m.

## 289 **International Perspectives in Advanced**

## **Methodologies for Spatiotemporal Information** **Processing—Topic-Contributed**

Section on Physical and Engineering Sciences, Section on Statistics and  
the Environment

Organizer(s): Alexander Kolovos, SpaceTimeWorks, LLC;

Andreas Langousis, University of Patras

Chair(s): Alexander Kolovos, SpaceTimeWorks, LLC

8:35 a.m. **Objective Bayesian Analysis of Geometrically**  
**Anisotropic Spatial Data—**◆Hannes Kazianka,  
Austrian Central Bank

8:55 a.m. **A Goodness-of-Fit Measure for Spatio-Temporal**  
**Models—**◆Pavel Chernyavskiy; Aimee Schwab,  
University of Nebraska-Lincoln; David B. Marx,  
University of Nebraska-Lincoln

9:15 a.m. **Space-Time Covariance Functions on Spheres—**  
◆Emilio Porcu, Universidad Federico Santa Maria;  
Moreno Bevilacqua, University of Valparaiso;  
Marc G. Genton, KAUST

9:35 a.m. **Quantile-Based Bayesian Maximum Entropy**  
**Approach for Spatiotemporal Air Quality**  
**Modeling—**◆Hwa-Lung Yu, National Taiwan  
University; Yi-Jen Lien, National Taiwan University

9:55 a.m. Disc: George Christakos, San Diego State University

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

## 290 **Spatial Uncertainty in Public Health**

Section on Statistics in Epidemiology, Section on Statistical Graphics,  
Biometrics Section, Section on Statistics and the Environment, Health  
Policy Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Li Zhu, National Cancer Institute

Chair(s): Huilin Li, New York University

8:35 a.m. **A Bayesian Analysis of Small-Area Infectious Disease**  
**Surveillance Data Using Syndromic Information—**  
◆Ana Corberan-Vallet, University of Valencia; Andrew  
B. Lawson, Medical University of South Carolina

8:55 a.m. **Time-Series Analysis of Air Pollution and Health**  
**Accounting for Spatial Exposure Uncertainty—**  
◆Howard Chang, Emory University; Yang Liu, Emory  
University; Stefanie Sarnat, Emory University

9:15 a.m. **Spatial Analysis of Environmental Risk in Cancer**  
**Case-Control Studies with Residential Histories—**  
◆David Wheeler, Virginia Commonwealth University;  
Catherine A. Calder, The Ohio State University; Kevin  
Donges, The Ohio State University

- 9:35 a.m. **NIH Funding Opportunity on Spatial Uncertainty and Q&A**—◆Li Zhu, National Cancer Institute
- 9:55 a.m. **Optimizing the Choice of Maximum Spatial Window Size in Spatial Scan Statistic**—◆Li Zhu, National Cancer Institute; Junhee Han, University of Arkansas
- 10:15 a.m. **Floor Discussion**

## 291 CC-520a **■ ● Ideas and Issues Flowing Between Statistics and Machine Learning—Topic-Contributed**

Section on Statistical Learning and Data Mining, SSC, Biometrics Section  
 Organizer(s): Alejandro Murua, University of Montréal  
 Chair(s): Russell J. Steele, McGill University

- 8:35 a.m. **For Complex Data, Let's Give Up on Interpretability**—◆Bertrand Clarke, University of Miami; Jennifer Clarke, University of Miami; Camillo Valdes, University of Miami
- 8:55 a.m. **When Is the Majority-Vote Classifier Beneficial?**—◆Mu Zhu, University of Waterloo
- 9:15 a.m. **Variable Selection with Overlapping Clustering**—◆Thierry Chekouo Tekougang, The University of Texas MD Anderson Cancer Center; Alejandro Murua, University of Montréal
- 9:35 a.m. **Learning Latent Structures via Hierarchical Nonparametric Bayes: A Look at the Posterior Asymptotics**—◆Long Nguyen
- 9:55 a.m. **Manifold Learning: Nonlinear Dimension Reduction Sans Distortion**—◆Dominique Perrault-Joncas, Amazon.com; Marina Meila, University of Washington
- 10:15 a.m. **Floor Discussion**

## 292 CC-520f **Student Paper Competition: Computing and Graphics—Topic-Contributed**

Section on Statistical Computing, Section on Statistical Graphics  
 Organizer(s): Jay Emerson, Yale University  
 Chair(s): Jay Emerson, Yale University

- 8:35 a.m. **Are You Normal? The Problem of Confounded Residual Structures in Hierarchical Models**—◆Adam Loy, Iowa State University; Heike Hofmann, Iowa State University
- 8:55 a.m. **Fast and Stable Multiple Smoothing Parameter Selection in Smoothing Spline Analysis of Variance Models with Large Samples**—◆Nathaniel Helwig, University of Illinois; Ping Ma, University of Illinois at Urbana-Champaign
- 9:15 a.m. **Time-Varying Networks Estimation and Dynamic Model Selection**—◆Xinxin Shu, University of Illinois at Urbana-Champaign; Annie Qu, University of Illinois at Urbana-Champaign

- 9:35 a.m. **Multivariate Visual Data Mining Tools for Functional Actigraphy Data**—◆Abbass Sharif, Utah State University; Juergen Symanzik, Utah State University
- 10:15 a.m. **Floor Discussion**

## 293 CC-510c **■ ● Survey and Statistical Methods in Forestry Research—Topic-Contributed**

Section on Statistics and the Environment  
 Organizer(s): Michael D. Larsen, The George Washington University  
 Chair(s): Andrew Oliver Finley, Michigan State University

- 8:35 a.m. **A Model-Dependent Ratio Estimator of Variance for Two-Stage with Regression Designs**—◆Steen Magnussen, Canadian Forest Service; Erik Næsset, Norwegian University of Life Sciences; Terje Gobakken, Norwegian University of Life Sciences
- 8:55 a.m. **The Estimators Used in the New Mexico Inventory: Practical Implications of Nonresponse Being 'Truly' Random Within Each Stratum**—◆Paul Patterson, U.S. Forest Service; Sara Goeking, U.S. Forest Service
- 9:15 a.m. **Maximum Likelihood Forest Canopy Profile Estimation**—◆Paul Van Deusen, NCASI
- 9:35 a.m. **An Emulator Approach to Upscaling an Individual-Based Model of Tree Growth for Learning About Tree Traits Affecting Forest Dynamics**—◆Jarrett Barber, Arizona State University; Darren Gemoets, University of Wyoming; Kiona Ogle, Arizona State University; Michael Fell, Arizona State University
- 9:55 a.m. **The Use of Composite Estimators for Estimating Forest Biomass and Growth from Permanent Sample Plots Established by the Angle Count Method**—◆John Paul McTague, Rayonier
- 10:15 a.m. **Floor Discussion**

## 294 CC-514a **■ ● Patient-Reported Outcomes in Mental and Behavioral Health—Topic-Contributed**

Mental Health Statistics Section, Biopharmaceutical Section, Health Policy Statistics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee  
 Organizer(s): Douglas Gunzler, Case Western Reserve University  
 Chair(s): Samprit Banerjee, Weill Cornell Medical College

- 8:35 a.m. **Patient-Reported Outcomes and Endpoint Selection in Mental and Behavioral Health Research**—◆Laura Lee Johnson, National Center for Complementary and Alternative Medicine (NCCAM)
- 8:55 a.m. **Survival-Related Prognostic Threshold on Quantitative Biomarkers**—◆Xinhua Liu, Columbia University; Zhezhen Jin, Columbia University
- 9:15 a.m. **Modeling the Causal Pathways Between Multiple Sclerosis and Depression**—◆Douglas Gunzler, Case Western Reserve University

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 9:35 a.m. **Pain Intensity, Pain Interference, and Depression in Patients Treated for Low Back Pain: Linear Growth Model Analysis**—◆Dennis Revicki, United BioSource Corporation; Wen-Hung Chen, United BioSource Corporation; Dagmar Amtmann, University of Washington; Karon Cook, Northwestern University
- 9:55 a.m. **Development and Evaluation of Item Banks for Smoking-Related Assessment**—Maria Edelen, RAND Corporation; ◆Brian D Stucky, RAND Corporation
- 10:15 a.m. **Floor Discussion**

## 295 CC-512g **■ ● Nonparametric and Semiparametric Modeling for Modern Applications—Topic-Contributed**

Section on Nonparametric Statistics

Organizer(s): Li-Shan Huang, National Tsing Hua University

Chair(s): Yu-Jen Cheng, National Tsing Hua University

- 8:35 a.m. **Principal Component Analysis for Multivariate Functional Data**—◆Jeng-Min Chiou, Academia Sinica
- 8:55 a.m. **Local Polynomial Density Estimation with Interval Censored Data**—◆Derick Peterson, University of Rochester; Mark J van der Laan, University of California at Berkeley
- 9:15 a.m. **On Sample Size for Nonparametric Regression and Partial Linear Models**—◆Li-Shan Huang, National Tsing Hua University; Hsiao-Hsian Gao, National Tsing Hua University
- 9:35 a.m. **Density-Based Clustering Using a Stochastic Approximation Mean-Shift Algorithm**—◆Ollivier Hyrien, University of Rochester
- 9:55 a.m. **Penalized Spline Regression for Comparing Spectroscopic Analyses of Protein Unfolding: Methods in a Bayesian Framework**—◆Miranda Lynch, University of Minnesota-Duluth
- 10:15 a.m. **Floor Discussion**

## 296 CC-511e **Dimensional and Spatial Models—Topic-Contributed**

ENAR, Section on Statistics and the Environment

Organizer(s): Zhulin He, National Institute of Statistical Sciences

Chair(s): Zhulin He, National Institute of Statistical Sciences

- 8:35 a.m. **Heat-Related Morbidity and Mortality in Florida**—◆Emily Leary, University of Florida; Linda Young, University of Florida
- 8:55 a.m. **Evaluation of Small-Area Estimation Methods for Use by the Behavioral Risk Factor Surveillance System**—Betsy Cadwell-Gunnels, Center for Disease Control and Prevention; Carol Gotway Crawford, Centers for Disease Control and Prevention; ◆Haci Akcin, Centers for Disease Control and Prevention; Theodore J. Thompson, Centers for Disease Control and Prevention; Derek Ford, Centers for Disease Control and Prevention and Northrop Grumman; Martin Frankel, Baruch College, City University of New York; Michael Battaglia, Battaglia Consulting Group; Xingyou Zhang, Centers for Disease Control and Prevention
- 9:15 a.m. **Oracle Inference for GMM Models**—◆Mihai Giurcanu, University of Florida; Brett Presnell, University of Florida
- 9:35 a.m. **Determining Dimensionality of a Cognitive Process: Testing Online Reading Comprehension**—◆Weiwei Cui, National Institute of Statistical Sciences; Nell Sedransk, National Institute of Statistical Sciences
- 9:55 a.m. **Conducting Inference on Ripley's K-Function for Spatial Point Processes**—◆Michael Hyman
- 10:15 a.m. **Floor Discussion**

## 297 CC-512d **● SBSS Student Paper Travel Award Winners I—Topic-Contributed**

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

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

Chair(s): Sudipto Banerjee, University of Minnesota

- 8:35 a.m. **Bayesian Hierarchical Feature Selection of Structured Functional Predictors for Multilevel Functional Data Measured with Error**—◆Yize Zhao, Emory University; Jian Kang, Emory University; Qi Long, Emory University
- 8:55 a.m. **Probabilistic Integration for Uncertainty Quantification in Differential Equation Models**—◆Oksana Chkrebtii, Simon Fraser University; Dave Campbell, Simon Fraser University; Mark Girolami, University College London; Ben Calderhead, University College London

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in the Exhibit Hall!



- 9:15 a.m. **Bayesian Semiparametric Density Deconvolution in the Presence of Conditionally Heteroscedastic Measurement Errors**—◆Abhra Sarkar, Texas A&M University; Bani Mallick, Texas A&M; John Staudenmayer, University of Massachusetts; Debdeep Pati, Florida State University; Raymond J. Carroll, Texas A&M University
- 9:35 a.m. **Bayesian Modeling of Temporal Dependence in Large Sparse Contingency Tables**—◆Tsuyoshi Kuniyama, Duke University; David B. Dunson, Duke University
- 9:55 a.m. **Sequential Monte Carlo with Adaptive Weights for Approximate Bayesian Computation**—◆Fernando Bonassi, Duke University; Mike West, Duke University
- 10:15 a.m. **Floor Discussion**

## 298 CC-512e **Bayesian Modeling of Populations— Topic-Contributed**

Social Statistics Section, International Society for Bayesian Analysis (ISBA), Scientific and Public Affairs Advisory Committee  
 Organizer(s): Peter W.F. Smith, University of Southampton  
 Chair(s): Peter W.F. Smith, University of Southampton

- 8:35 a.m. **Bayesian Estimation of Child Mortality**—◆Leontine Alkema, National University of Singapore; Jin Rou New, National University of Singapore
- 8:55 a.m. **Volatility in International Migration Flows of Nordic Countries: Estimating Past Trends and Lessons for Forecasting with Uncertainty**—◆Guy Abel, Wittgenstein Centre (IIASA, VID/OAW, WU), Vienna Institute of Demography
- 9:15 a.m. **Bayesian Cohort Component Population Forecasts**—◆Arkadiusz Wisniowski, University of Southampton; Peter W.F. Smith, University of Southampton; James Raymer, Australian National University; Jakub Bijak, University of Southampton
- 9:35 a.m. Disc: Jakub Bijak, University of Southampton
- 9:55 a.m. **Floor Discussion**

## 299 CC-513a **Recent Developments in High-Dimensional Statistical Learning—Topic-Contributed**

Biometrics Section, Section on Statistical Learning and Data Mining, Biometrics Section  
 Organizer(s): Peng Wang, Bowling Green State University  
 Chair(s): Peng Wang, Bowling Green State University

- 8:35 a.m. **High-Dimensional Learning for Ordinal and Multiclass Data**—◆Xingye Qiao, Binghamton University
- 8:55 a.m. **Sparse Singular Value Decomposition with Missing Data**—◆Tingni Sun, University of Pennsylvania; Zongming Ma, University of Pennsylvania

- 9:15 a.m. **Variable Selection and Estimation with Nonconvex Penalty Functions**—◆Sijian Wang, University of Wisconsin-Madison; Zhigeng Geng, University of Wisconsin-Madison; Grace Wahba, University of Wisconsin-Madison
- 9:35 a.m. **Learning Hierarchical Models**—◆Ruslan Salakhutdinov, University of Toronto
- 9:55 a.m. **Spatial Graphical Model for High-Dimensional Discrete Lattices**—◆Xuan Che, Oregon State University; Alix I. Gitelman, Oregon State University
- 10:15 a.m. **Floor Discussion**

## 300 CC-516d **Recent Research on Interviewer Observations in Household Surveys—Topic-Contributed**

Survey Research Methods Section, Social Statistics Section, Section on Statistics in Epidemiology  
 Organizer(s): Peter Miller, U.S. Census Bureau  
 Chair(s): Nicholas Beyler, Mathematica Policy Research

- 8:35 a.m. **Developing Interviewer Observations of the Neighborhood and Sample Unit for the National Health Interview Survey**—◆Peter Miller, U.S. Census Bureau; Nancy Bates, U.S. Census Bureau; James Dahlhamer, National Center for Health Statistics; Renee Gindi, National Center for Health Statistics
- 8:55 a.m. **The Implications of Differential Measurement Error in Interviewer Observations for Nonresponse Adjustment of Survey Estimates: A Simulation Study**—◆Brady West, Institute for Social Research
- 9:15 a.m. **Assessing Interviewer Observations in the NHIS**—◆Rachael Walsh, U.S. Census Bureau; James Dahlhamer, National Center for Health Statistics; Nancy Bates, U.S. Census Bureau
- 9:35 a.m. **Evaluating Interviewer Observations in the National Health Interview Survey: Associations with Response Propensity**—◆Chandra Erdman, U.S. Census Bureau; James Dahlhamer, National Center for Health Statistics
- 9:55 a.m. Disc: Thomas Louis, U.S. Census Bureau
- 10:15 a.m. **Floor Discussion**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 301 CC-516a ■ Synthetic Data Approaches to Disclosure Limitation—Topic-Contributed

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

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

Chair(s): Wendy L. Martinez, U.S. Bureau of Labor Statistics

- 8:35 a.m. **Data Smearing: An Approach to Disclosure Limitation for Tabular Data**—◆ Daniell Toth, U.S. Bureau of Labor Statistics
- 8:55 a.m. **Nonparametric Bayesian Models for Generating Synthetic Household Data**—◆ Jingchen Hu, Duke University; Jerry Reiter, Duke University
- 9:15 a.m. **Generalized Linear Models with Variables Subject to Post-Randomization Method, with Dependent Covariates**—◆ Yong Ming Woo, Penn State University; Aleksandra Slavkovic, Penn State University
- 9:35 a.m. **Balancing Use of Weights, Predictions, and Locality Effects in a Model-Assisted Constrained Hot Deck Approach for Perturbation**—◆ Tom Krenzke, Westat; Jianzhu Li, Westat; Laura Zayatz, U.S. Census Bureau
- 9:55 a.m. **Generating Synthetic Graphs Under Differential Privacy**—◆ Vishesh Karwa
- 10:15 a.m. **Floor Discussion**

## 302 CC-511a Key Subgroup Analysis Issues in Clinical Trials—Topic-Contributed

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

Organizer(s): Alexei Dmitrienko, Quintiles; Sue-Jane Wang, FDA

Chair(s): Sue-Jane Wang, FDA

- 8:35 a.m. **Exploratory Subgroup Analysis: Subgroup Identification Approaches in Clinical Trials**—◆ Ilya Lipkovich; Alexei Dmitrienko, Quintiles
- 8:55 a.m. **Confirmatory Subgroup Analysis: Multiple Testing Approaches**—◆ Alexei Dmitrienko, Quintiles
- 9:15 a.m. **Decisionmaking in Confirmatory Multipopulation Tailoring Clinical Trials**—◆ Brian Millen, Eli Lilly and Company; Alexei Dmitrienko, Quintiles
- 9:35 a.m. Disc: Olga Marchenko, Quintiles
- 9:55 a.m. **Floor Discussion**

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

## 303 CC-514b ■ High Throughput Sequencing Data— Contributed Papers

Biometrics Section, WNAR

Chair(s): Xinyi Lin, Harvard University

- 8:35 a.m. **Nonparametric Methods for Identifying Differential Binding Regions with ChIP-Seq Data**—◆ Qian Wu, University of Pennsylvania; Kyoung-Jae Won, University of Pennsylvania; Hongzhe Li, University of Pennsylvania
- 8:50 a.m. **Testing for Differences Between Multiple Groups in High-Throughput Sequencing Data Using Bayesian Multiscale Models**—◆ Heejung Shim, The University of Chicago; Ester Pantaleo, The University of Chicago; Matthew Stephens, The University of Chicago
- 9:05 a.m. **Goodness-of-Fit Tests and Diagnostics for Negative Binomial Regression of RNA-Seq Data**—◆ Gu Mi, Oregon State University; Yanming Di, Oregon State University; Daniel Schafer, Oregon State University; Jeff Chang, Oregon State University
- 9:20 a.m. **Identification of Alternative Splicing Variation in RNA-Seq Time Series Data**—◆ Sunghee Oh, CCHMC; Seongho Song, University of Cincinnati; Gregory Grabowski, CCHMC
- 9:35 a.m. **Detecting Differentially Methylated Genomic Regions with Generalized Gaussian Process Regression**—◆ Dong Wang, University of Nebraska-Lincoln
- 9:50 a.m. **Analysis of Sequencing Studies Under Multivariate Trait-Dependent Sampling**—◆ Ran Tao, The University of North Carolina; Danyu Lin, The University of North Carolina; Donglin Zeng, The University of North Carolina
- 10:05 a.m. **Adaptive Resistant Regression Method (ARM): A Better Alternative to Quantile Normalization for Methylation Data**—◆ Jean-Philippe Fortin, Johns Hopkins School of Public Health; Aurélie Labbe, McGill University; Celia M.T. Greenwood, McGill University; Mathieu Lemire, Ontario Institute of Cancer Research; Brent W. Zanke, Ottawa Hospital Research Institute; Thomas J. Hudson, Ontario Institute of Cancer Research

## 304 CC-514c Methods and Application of Mixed Models— Contributed Papers

Biometrics Section, International Indian Statistical Association  
Chair(s): Deborah Dawson, University of Iowa

- 8:35 a.m. **Estimation of Heterogeneity Parameters in Multivariate Meta-Analysis**—◆ Abera Wouhib, NCHS/CDC
- 8:50 a.m. **Use of Mixed-Effect Models in Optimization of Risk-Based Monitoring of Multicenter Trials**—◆ Xiaoqiang Xue; Valerii Fedorov, Quintiles
- 9:05 a.m. **Identifying Treatment Heterogeneity in Complex Experiments: A Linear Mixed Effects Model Approach**—◆ Troy Richardson, Kansas State University; Gary L. Gadbury, Kansas State University
- 9:20 a.m. **Agreement Evaluation with Heteroscedastic Method Comparison Data**—◆ Lakshika Shamalie Nawarathna, The University of Texas at Dallas; Pankaj Kumar Choudhary, The University of Texas at Dallas
- 9:35 a.m. **Multivariate Cumulative Incidence Models for Twin Data**—◆ Klaus Holst, University of Copenhagen
- 9:50 a.m. **Joint Modeling of Multivariate Longitudinal Hearing Loss Data Ascertained at Multiple Frequencies**—◆ Mulugeta Gebregziabher, Medical University of South Carolina; Mark Eckert, Medical University of South Carolina; Lois Matthews, Medical University of South Carolina; Judy Dubno, Medical University of South Carolina
- 10:05 a.m. **Markov-Dependent Models for Correlated Binary Responses**—◆ Forrest Crawford, Yale University; Daniel Zelterman, Yale University

## 305 CC-512h Nonparametric Smoothing— Contributed Papers

Section on Nonparametric Statistics  
Chair(s): Emily H. Griffith, North Carolina State University

- 8:35 a.m. **Two-Stage Subsampling-Extrapolation Techniques in Bandwidth Selection**—◆ Qing Wang, Williams College; Bruce G. Lindsay, Penn State University
- 8:50 a.m. **Improving Sheather and Jones Bandwidth Selector for Difficult Densities in Kernel Density Estimation**—◆ Jiangang Liao, Penn State
- 9:05 a.m. **Testing for the Covariate Effect in the Fully Nonparametric ANCOVA**—◆ Shu-Min Liao, Amherst College; Michael G. Akritas, Penn State University
- 9:20 a.m. **Shape-Constrained Nonparametric Estimators of the Baseline Distribution in the Cox Proportional Hazards Model**—◆ Gabriela Nane; Hendrik Lopuhaa, Delft University of Technology

- 9:35 a.m. **Kernel Estimation of a Quantile Partially Additive Linear Regression Model**—◆ Dawit Zerom, California State University at Fullerton
- 9:50 a.m. **Parameterization and Smoothing Using Bernstein Polynomials: Another Look at Beta Mixture**—◆ Zhong Guan, Indiana University South Bend
- 10:05 a.m. **New Kernel Density Estimates and Their Empirical Likelihood Versions and Applications**—◆ Ningning Wang; Ibrahim Ahmad, Oklahoma State University

## 306 CC-510d Time Series Methods for Environmental Data—Contributed Papers

Section on Statistics and the Environment  
Chair(s): Tess Astatkie, Dalhousie University

- 8:35 a.m. **Flamelets and Wavelets: An EDA**—◆ David Brillinger, University of California at Berkeley; Mark Finney, Missoula Fire Sciences Laboratory
- 8:50 a.m. **A Nonparametric Approach to Detecting Parametric Nonmonotonic Trends in Environmental Processes**—Vyacheslav Lyubchich, University of Waterloo; ◆ Yulia R. Gel, University of Waterloo; Abdel El-Shaarawi, The American University in Cairo
- 9:05 a.m. **Practical Test for Goodness-of-Fit of Low-Order AR Models Applied to Pinot Noir Grape Harvest Dates**—◆ Karim Rahim, Queen's University; David Thomson, Queen's University
- 9:20 a.m. **Bayesian Time Series Models of Ultrafine Particle Concentrations**—◆ Heidi Fischer, University of California at Los Angeles; Robert E. Weiss, University of California at Los Angeles
- 9:35 a.m. **Joint Modeling of Paired Spatially Correlated Multilevel Functional Data**—◆ Beth Tidemann-Miller, North Carolina State University; Brian J. Reich, North Carolina State University; Ana-Maria Staicu, North Carolina State University
- 9:50 a.m. **A Bayesian Hierarchical Chronology Model for Time Series Analysis of Paleoenvironmental Data**—◆ Aaron Springford, Queen's University
- 10:05 a.m. **Changepoint Detection in Climate Time Series with Long-Term Trends**—◆ Michael Robbins, University of Missouri, Columbia

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CC-511b

## ■ Bayesian Approaches to Biopharmaceutical Applications—Contributed Papers

Biopharmaceutical Section, International Society for Bayesian Analysis (ISBA), Korean International Statistical Society

Chair(s): Anna McGlothlin, Berry Consultants

- 8:35 a.m. **Bayesian Approach for Similarity Assessment of Treatment Effects in Bridging Studies**—◆ Sinae Kim, University of Medicine and Dentistry of New Jersey; Weichung Joe Shih, University of Medicine and Dentistry of New Jersey
- 8:50 a.m. **Hierarchical Bayesian Approaches to the Subgroup Analysis Problem in Infectious Disease Clinical Trials**—◆ Carl Dicasoli, Vertex Pharmaceuticals; Cynthia DeSouza, Vertex Pharmaceuticals; Lan Lan, Vertex Pharmaceuticals
- 9:05 a.m. **Monitoring Clinical Trials Based on the Bayesian Predictive Probability Using Data from Both Completers and Non-Completers**—◆ Qi Tang, AbbVie; Weining Zhao Robieson, AbbVie; Yili Lu Pritchett, Astellas Pharma Global Development, Inc.
- 9:20 a.m. **Application of Bayesian Approaches to Noninferiority Trials**—◆ Radha Railkar, Merck; Mani Lakshminarayanan, Merck Research Laboratories
- 9:35 a.m. **Bayesian Confidence Intervals in Stratified Matched Proportions with Incomplete Data**—◆ Vivek Pradhan, Boston Scientific Corporation; Samiran Sinha, Texas A&M University
- 9:50 a.m. **A Bayesian Subgroup Analysis Using an Additive Model**—Sivaganesan Siva, University of Cincinnati; ◆ Yang Xiao, University of Cincinnati; Purushottan Laud, Medical College of Wisconsin; Peter Müller, The University of Texas at Austin
- 10:05 a.m. **A Bayesian Hierarchical Model for Meta-Analysis of Rare Binary Adverse Event Data**—◆ Ou Bai, Southern Methodist University; Xinlei Wang, Southern Methodist University; Min Chen, The University of Texas Southwestern Medical Center at Dallas; Guanghua Xiao, The University of Texas Southwestern Medical Center

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CC-512ab

## Methods for Longitudinal Studies and/or Missing Data—Contributed Papers

Biopharmaceutical Section, International Chinese Statistical Association, Biometrics Section

Chair(s): Kevin Lawson, PPD INC

- 8:35 a.m. **Modeling High-Dimensional Longitudinal Data with Structural Equation Modeling**—Xinming An, SAS Institute; ◆ Yiu-Fai Yung, SAS Institute; Qing Yang, University of California at Los Angeles
- 8:50 a.m. **Joint Modeling of Multivariate Longitudinal Measurements and Survival Data with Applications to Parkinson's Disease**—◆ Sheng Luo, The University of Texas Health Science Center at Houston; Bo He, The University of Texas at Houston
- 9:05 a.m. **Constrained Longitudinal Data Analysis as an Alternative to Multiple Imputation for Handling Missing Data in Randomized Clinical Trials**—◆ Jin Xu, Merck
- 9:20 a.m. **Marginal Treatment Effect Estimation Using Pattern Mixture Model**—◆ Zhenzhen Xu, FDA
- 9:35 a.m. **Applying Weighted GEE for Sample-Size Estimation in Repeated Measurement Studies with Dropout**—◆ Anna Sun, University of Maryland, Baltimore County
- 9:50 a.m. **Sensitivity Analyses in Clinical Trials via Pattern-Mixture Models Using Standard SAS Procedures for Multiple Imputations: How Much We Improve Over LOCF?**—◆ Anjela Tzontcheva, Merck
- 10:05 a.m. **Assessing a Treatment Effect in Light of Rescue Therapy**—◆ Judy Li, FDA; Jerry John Weaver, Novartis Pharmaceuticals Corporation; David I. Ohlssen, Novartis Pharmaceuticals Corporation

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CC-518

## Monte Carlo Methodology—Contributed Papers

Section on Statistical Computing

Chair(s): Feng Liang, University of Illinois at Urbana Champaign

- 8:35 a.m. **Simulation Based Nearest Neighbor Entropy Estimation for MCMC Evaluation**—◆ Didier Chauveau, CNRS; Pierre Vandekerkhove, University Marne la Vallée-CNRS
- 8:50 a.m. **Empirically Comparing the Performance of Local MCMC Algorithms with Pools of Proposals**—◆ Mylène Bédard, Université de Montréal
- 9:05 a.m. **Continual Reassessment Method with Bayesian Variable Selection in Phase I Clinical Trials**—◆ Zhenyu Zhao, Northwestern University

- 9:20 a.m. **Improved Estimation and Uncertainty Quantification Using Monte Carlo–Based Optimization Algorithms**—◆ Cong Xu, University of California at Davis; Paul David Baines, University of California at Davis; Jane-Ling Wang, University of California at Davis
- 9:35 a.m. **Warp Bridge Sampling: The Next Generation**—◆ Lazhi Wang, Harvard University; Xiao-Li Meng, Harvard University
- 9:50 a.m. **A Nonparametric Method for Extreme Values**—◆ Mei Ling Huang, Brock University; Lucas Thorpe, Brock University
- 10:05 a.m. **EM Algorithm and Likelihood Inference for Flexible Cure Rate Models with Weibull Lifetimes**—◆ Suvra Pal, McMaster University; Narayanaswamy Balakrishnan, McMaster University

## 310 CC-522bc **Statistical Methodology for Business and Economics—Contributed Papers**

Business and Economic Statistics Section

Chair(s): Carol Corrado, The Conference Board

- 8:35 a.m. **Bias Reduction in Nonlinear and Dynamic Panels in the Presence of Cross-Section Dependence, with a GARCH Panel Application**—◆ Cavit Pakel, Bilkent University
- 8:50 a.m. **Using Factor Scores to Predict Metropolitan Growth: Regional Indicators**—◆ Merissa C. Piazza, Cleveland State University; Iryna V. Lendel, Cleveland State University
- 9:05 a.m. **Statistical Analysis of the Factors Affecting the Profitability of Commercial Banks in Pakistan**—◆ Salahuddin Khan, University of Peshawar
- 9:20 a.m. **Factor Score Estimates in Clustered Data**—◆ Albert Satorra, Universitat Pompeu Fabra; Peter M. Bentler, University of California at Los Angeles
- 9:35 a.m. **Methodological Implications of Conducting Multiplier-Based Economic Impact Assessments: A Case Study of Three Methodologies**—◆ Candice Clouse, Cleveland State University; Merissa C. Piazza, Cleveland State University
- 9:50 a.m. **Forecasting Inflation from Disaggregated Data: The Colombian Case**—◆ Wilmer Martinez, Central Bank of Colombia; Eliana Rocio Gonzalez, Central Bank of Colombia
- 10:05 a.m. **Case Studies Modeling Count Conditional Distributions**—◆ Robert Jung, Univesitaet Hohenheim; A.R. Tremayne, University of New South Wales and University of Liverpool

## 311 CC-512f **Statistics in Genetic Epidemiology—Contributed Papers**

Section on Statistics in Epidemiology

Chair(s): Huaqing Zhao, Temple University

- 8:35 a.m. **Using Stochastic Search Gene Suggestion to Identify Single Nucleotide Polymorphisms Associated with Childhood Leukemia Risk in Case-Parent Triads**—◆ Michael Swartz, The University of Texas Health Science Center at Houston, School of Public Health; Ying Cao, The University of Texas Health Science Center of Houston, School of Public Health; Darryl Nounsonme, University of Southern California; Philip Lupo, Baylor College of Medicine; Michael Scheurer, Baylor College of Medicine
- 8:50 a.m. **Analysis of SNP Data Through Sparse Principal Component Analysis with Altered Similarity Matrix**—◆ Ashley Bonner
- 9:05 a.m. **Evaluation of Genetic Risk Score Models in the Presence of Interaction and Linkage Disequilibrium**—◆ Ronglin Che, North Carolina State University; Alison Motsinger-Reif, North Carolina State University
- 9:20 a.m. **Extension of Within-Family Genetic Association to Polytomous Phenotypes and Two-Locus Models**—◆ Alexandre Bureau, Université Laval; Jordie Croteau, Institut Universitaire en Santé Mentale de Québec; Thierry Duchesne, Université Laval
- 9:35 a.m. **Ascertaining the Effect Size Distribution for Mapping Genetic Determinants of Diseases**—◆ Dmitri Zaykin, National Institute of Environmental Health Sciences; Chia-Ling Kuo, NIEHS
- 9:50 a.m. **Detecting Master Regulators in Methylation QTL Studies**—◆ Jianxin Shi
- 10:05 a.m. **Floor Discussion**

## 312 CC-521ab **Marketing Analytics—Contributed Papers**

Section on Statistics in Marketing

Chair(s): Peter Ebbes, HEC Paris

- 8:35 a.m. **The Ten Killer Data-Mining Errors**—◆ Samuel Koslowsky, Harte Hanks
- 8:50 a.m. **Customer Service Escalation Early Warning System: A Subsampling Approach**—◆ Jiabin Zhao, Cisco Systems
- 9:05 a.m. **Statistical Modeling of Win Odds for Sales Opportunities**—◆ Ta-Hsin Li, IBM
- 9:20 a.m. **Exploratory Data Analysis of the Presidential Political Campaign 2012**—◆ Mario A. Morales, Simulmedia Inc.



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 9:35 a.m. **Statistical Sampling for Masking Saltiness and Enhancing Sweetness**—◆Shangkang Qu, PepsiCo; Laura Nattress, PepsiCo; Winsome Johnson, PepsiCo; Robert Saunders, PepsiCo
- 9:50 a.m. **Shapley Value Line Optimization: Extension to Continuous Case**—◆Faina Shmulyian, Markettools; Michael Conklin, GfK
- 10:05 a.m. **Forecasting VOD Demand Curves: A Functional Spatial-Temporal Approach**—◆Yue Tian, University of Maryland

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CC-520b

## ■ Using Commercial and Other Software for Report Generation and Improved Estimation —Contributed Papers

Section for Statistical Programmers and Analysts, Section on Statistical Computing

Chair(s): Kuolung Hu, Amgen, Inc.

- 8:35 a.m. **Medical History Reconciliation in Pharmacoepidemiology Studies**—◆Ying Su, Merck
- 8:50 a.m. **Using ODS and PROC Report to Generate in-Text Tables for a Clinical Study Report (CSR)**—◆Faye Yeh, Takeda
- 9:05 a.m. **CDISC Electronic Submission? Here Are How and What to Prepare**—◆Kevin Lee, Cytel
- 9:20 a.m. **Estimation in Partially Linear Model with Missing Covariates by Using Unified Approach**—◆Wei Tang
- 9:35 a.m. **Evaluating a Continuous Variable as a Proxy for Another Measure**—◆Jonathan Mahnken, The University of Kansas Medical Center; Eric D. Vidoni, The University of Kansas Medical Center; Sandra A. Billinger, The University of Kansas Medical Center; Xueyi Chen, The University of Kansas Medical Center
- 9:50 a.m. **Time Series Forecasting with R**—◆Deepak Sanjel
- 10:05 a.m. **Composite Change-Point Estimation for Bent Line Quantile Regression**—◆Liwen Zhang, Fudan University; Huixia Judy Wang, North Carolina State University; Zhongyi Zhu, Fudan University

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CC-510b

## Bayesian Modeling in the Life Sciences and Medicine I — Contributed Papers

Section on Bayesian Statistical Science

Chair(s): Michael Sonksen, University of New Mexico

- 8:35 a.m. **Bayesian Inference for Assessing the Association Between Urinary Incontinence and Hormone Profiles During the Menopausal Transition**—◆Yan He, University of California at Irvine; Wesley O. Johnson, University of California at Irvine

- 8:50 a.m. **Mixture Models of Metagenomic Read Counts for Ecological Analysis**—◆John O'Brien, Bowdoin College

- 9:05 a.m. **A Bayesian Prediction Model of Severe Intra-Ventricular Hemorrhage in Very Pre-Term Infants**—◆Michael Anderson, University of Oklahoma; Suzanne Dubnicka, Kansas State University; Shahab Noori, Newborn and Infant Critical Care, Children's Hospital Los Angeles

- 9:20 a.m. **An Adaptive Design of Initial Therapy for Emergency Department Patients with Heart Failure**—Jing Ning, The University of Texas MD Anderson Cancer Center; ◆Sijin Wen, West Virginia University; Sean Collins, Vanderbilt University; Donald Arthur Berry, The University of Texas MD Anderson Cancer Center

- 9:35 a.m. **Modeling Health Outcomes via Values, Gradients, or Variation of Follicle-Stimulating Hormone in Penn Ovarian Aging Study**—◆Bei Jiang, University of Michigan; Michael Elliott, University of Michigan; Mary Sammel, University of Pennsylvania; Naisyin Wang, University of Michigan

- 9:50 a.m. **Predicting Rare Events in the Presence of Zero-Inflation and Covariate Misclassification: A Bayesian Approach**—◆MaryAnn Morgan-Cox, Eli Lilly and Company; James D. Stamey, Baylor University; John W. Seaman, Jr., Baylor University

- 10:05 a.m. **Bayesian Family Factor Models for Multiple Outcomes**—◆Qiaolin Chen, University of California at Los Angeles; Robert E Weiss, University of California at Los Angeles; Catherine Ann Sugar, University of California at Los Angeles; Keith Nuechterlein, University of California at Los Angeles; Asarnow Robert, University of California at Los Angeles

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CC-516e

## Sampling Strategies for Rare and Hard-to-Reach Populations — Contributed Papers

Survey Research Methods Section, Social Statistics Section, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Chair(s): Barbara Lepidus Carlson, Mathematica Policy Research

- 8:35 a.m. **Design Effects in Surveys That Require Oversampling of Certain Subpopulations**—◆Kadaba Srinath, Abt SRBI

- 8:50 a.m. **The Relative Statistical and Operational Plausibility of Multiple-Frame Sampling for Rare Population Subgroups**—◆William D. Kalsbeek, The University of North Carolina at Chapel Hill; Bruce D. Spencer, Northwestern University; Carol C. House, National Academy of Science



- 9:05 a.m. **Using Targeted Lists for Studies of Rare Populations: The Super Wealthy** — ◆Ned English, NORC; Steven Pedlow, NORC at the University of Chicago; Lee Fiorio, NORC at the University of Chicago; Catherine Haggerty, NORC at the University of Chicago; Benjamin Page, Northwestern University; Jason Seawright, Northwestern University
- 9:20 a.m. **Sampling Designs for Populations at High Risk for HIV** — ◆Lillian Lin, Centers for Disease Control and Prevention; Teresa Finlayson, Centers for Disease Control and Prevention; Ronaldo Iachan, ICF International; Maria C. B. Mendoza, Centers for Disease Control and Prevention; Cyprian Wejnert, Centers for Disease Control and Prevention
- 9:35 a.m. **Weighting Methods for a Study of Men Who Have Sex with Men (MSM3)** — ◆Ronaldo Iachan, ICF International; Teresa Finlayson, Centers for Disease Control and Prevention; Cyprian Wejnert, Centers for Disease Control and Prevention; Binh Le, Centers for Disease Control and Prevention; Gabriela Paz-Bailey, Centers for Disease Control and Prevention; Tonja Kyle, ICF International
- 9:50 a.m. **Sampling Designs for HIV Patient Populations** — ◆Christopher Johnson, CDC/NCHHSTP; Ronaldo Iachan, ICF International; Richard Lee Harding, ICF International; Linda Beer, Centers for Disease Control and Prevention; Emma Frazier, Centers for Disease Control and Prevention; Christine Mattson, Centers for Disease Control and Prevention; Jacek Skarbinski, Centers for Disease Control and Prevention
- 10:05 a.m. **Sensitivity Analysis of Respondent-Driven Sampling** — ◆Sunghee Lee, University of Michigan; Tuba Suzer Gurtekin, University of Michigan; Michael Elliott, University of Michigan

## 316 CC-511c CPI and Indexes—Contributed Papers

Government Statistics Section, Scientific and Public Affairs Advisory Committee

Chair(s): Kimberly Henry, Statistics of Income, IRS

- 8:35 a.m. **Description of the Revised Commodities and Services Optimal Sample Design**—◆Onimissi Sheidu, Bureau of Labor Statistics
- 8:50 a.m. **Comparing New Final Demand Producer Price Indexes with Other Government Price Indexes**—◆Jonathan Weinhagen, Bureau of Labor Statistics
- 9:05 a.m. **10 Years of Comparative Results: Chained vs. Regular CPI-U**—◆Owen Shoemaker, Bureau of Labor Statistics

- 9:20 a.m. **Enhancing the Quality of Price Index Estimates Combining Updated Weights: A More Representative Sample Design and a Different Aggregation Structure**—◆Daniele Toninelli, University of Bergamo; Zdenek Patak, Statistics Canada; Martin Beaulieu, Statistics Canada
- 9:35 a.m. **The Consumer Price Index of GBA (Buenos Aires Metropolitan Area)**—Norberto Itzcovich, INDEC; Sebastián Ignacio González, INDEC; ◆Pablo Ezequiel Faifman, INDEC
- 9:50 a.m. **Evaluating the Consumer Price Index Using Nielsen's Scanner Data**—◆Jenny FitzGerald, Bureau of Labor Statistics
- 10:05 a.m. **Feasible Methods to Estimate Disease-Based Price Indexes**—◆Ralph Bradley, Bureau of Labor Statistics

## 317 CC-515c Modeling and Methods for Time-Dependent Data—Contributed Papers

SSC

Chair(s): Joseph Beyene, McMaster University

- 8:35 a.m. **Likelihood Inferences for Longitudinal Bivariate Multinomial Mixed Models**—◆Bingrui Sun, Memorial University of Newfoundland; Brajendra Sutradhar, Memorial University of Newfoundland
- 8:50 a.m. **Joint Trajectory Model for Parallel-Process Data with Distal Outcome**—◆Depeng Jiang, University of Manitoba; Robert Tate, University of Manitoba
- 9:05 a.m. **Analysis of Mis-Measured Longitudinal Count Data and Its Application to Epidemiology**—◆Yunqi Ji, Memorial University; Zhaozhi Fan, Memorial University
- 9:20 a.m. **Generalized Quasi-Likelihood Method in Quantile Regression for Longitudinal Data**—◆Xiaoming Lu, Memorial University of Newfoundland
- 9:35 a.m. **Modeling of Multinomial Data with Excess Zeros**—◆Gary Sneddon, Mount Saint Vincent University
- 9:50 a.m. **Spacing and Shape of Peaks in Nonparametric Spectrum Estimates**—◆Charlotte Haley; David Thomson, Queen's University
- 10:05 a.m. **A New Hybrid Estimation Method for the Generalized Pareto Distribution**—◆Chunlin Wang, University of Waterloo; Gemai Chen, University of Calgary

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 318 ■ Clustering and Classification— Contributed Papers

Section on Statistical Learning and Data Mining

Chair(s): Dehan Kong, North Carolina State University

- 8:35 a.m. **Malware Detection Using Nonparametric Bayesian Clustering and Classification Techniques**—◆Yimin Kao, North Carolina State University; Brian J. Reich, North Carolina State University; Curtis Storlie, Los Alamos National Laboratory
- 8:50 a.m. **The Population Goal of Modal Clustering**—◆Jose E. Chacon, Universidad De Extremadura
- 9:05 a.m. **Distinctness Evaluation of Unknown Clustering Structure**—◆Ewa Nowakowska, Institute of Computer Science, PAS
- 9:20 a.m. **Semi-Supervised Model-Based Clustering with Regularized Covariance Matrix Estimation**—◆Brad Price, University of Minnesota; Charles J. Geyer, University of Minnesota; Adam J. Rothman, University of Minnesota
- 9:35 a.m. **Unsupervised Learning: Assessing Cluster Significance Through a Combination of Cross-Validation and Resampling**—◆Werner Stuetzle, University of Washington
- 9:50 a.m. **Time Course Classification of Treatment Response for Psoriatic Patients**—◆Joel Correa Da Rosa, Rockefeller University; James G. Krueger, Rockefeller University; Mayte Suarez-Farinas, Rockefeller University
- 10:05 a.m. **Estimation of Logistic Regression Parameter with Partially Labeled Data**—◆Keiji Takai, Kansai University

## 319 Topics on Variable Selection— Contributed Papers

Section on Statistical Learning and Data Mining

Chair(s): Wen Shi, The University of North Carolina

- 8:35 a.m. **Variable Selection for Varying-Coefficient Models via the Elastic Net Regularization**—◆Hidetoshi Matsui, Kyushu University; Toshihiro Misumi, Astellas Pharma Inc.
- 8:50 a.m. **Screen and Clean on Ising Model**—◆Qi Zhang, University of Pittsburgh; Jiashun Jin, Carnegie Mellon University
- 9:05 a.m. **Variable Selection in Measurement Error Models via Least Squares Approximation**—◆Guangning Xu, North Carolina State University; Len Stefanski, North Carolina State University
- 9:20 a.m. **Controlling the Local False Discovery Rate in the Adaptive Lasso**—◆Joshua Sampson, DCEG, National Cancer Institute; Nilanjan Chatterjee, National Cancer Institute; Raymond J. Carroll, Texas A&M University; Samuel Mueller, University of Sydney

- CC-525a 9:35 a.m. **Using Machine Learning to Identify Best Treatment Subgroup Characteristics**—◆Barry Eggleston, RTI International; Georgiy Bobashev, RTI International; Nikhil Garge, RTI International

- 9:50 a.m. **Bayesian Variable Selection for Skewed and Heteroscedastic Error**—Yuanyuan Tang, Florida State University; ◆Debajyoti Sinha, Florida State University; Yiyuan She, Florida State University; Stuart Lipsitz, Brigham and Women's Hospital
- 10:05 a.m. **Alternatives to Penalization for Sparse Models**—◆Sarah Emerson, Oregon State University

## 320 ■ New Methods for Missing Data Analysis— Contributed Papers

Section on Statistics in Epidemiology

Chair(s): Allen Heller, Bayer HealthCare Pharmaceuticals

- 8:50 a.m. **Does Imputation Increase Statistical Power?**—◆Wenyaw Chan, The University of Texas Health Science Center at Houston; Xiaoying Yu, The University of Texas Health Science Center at Houston; Elaine Symanski, The University of Texas Health Science Center at Houston
- 9:05 a.m. **How Can We Combine Data Sets With an Unequal Number of Categories?**—◆Stef van Buuren, Netherlands Organization for Applied Scientific Research
- 9:05 a.m. **Imputation of Missing Longitudinal fMRI Data**—◆Maria Josefsson; Anders Lundquist, Umea University,
- 9:20 a.m. **A Multiple Imputation Strategy for Sequential Multiple Assignment Randomized Trials**—◆Susan Shortreed, Group Health Research Institute; Eric Laber, North Carolina State University; Joelle Pineau, McGill University; Susan Murphy, University of Michigan
- 9:35 a.m. **Estimation of Phylogenetic Clustering Rates in the Presence of Missing Data**—◆Nicole Carnegie, Harvard University; Rui Wang, Harvard School of Public Health; Victor DeGruttola, Harvard University; Vladimir Novitsky, Harvard School of Public Health
- 9:50 a.m. **Nonparametric Survival Function Estimation in the Presence of Uncertain Endpoints by Using an Internal Validation Subsample**—◆Jarcy Zee, University of Pennsylvania Perelman School of Medicine; Sharon X. Xie, University of Pennsylvania Perelman School of Medicine
- 10:05 a.m. **Computational Techniques to Recover Missing Data from Available Information in Gene Expression Data**—◆Mortaza Jamshidian, California State University at Fullerton; Amol Kumar, California State University at Fullerton

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

### 321 CC-516c Methods and Applications in Biomedical Data and Clinical Trials, Part 1—Contributed

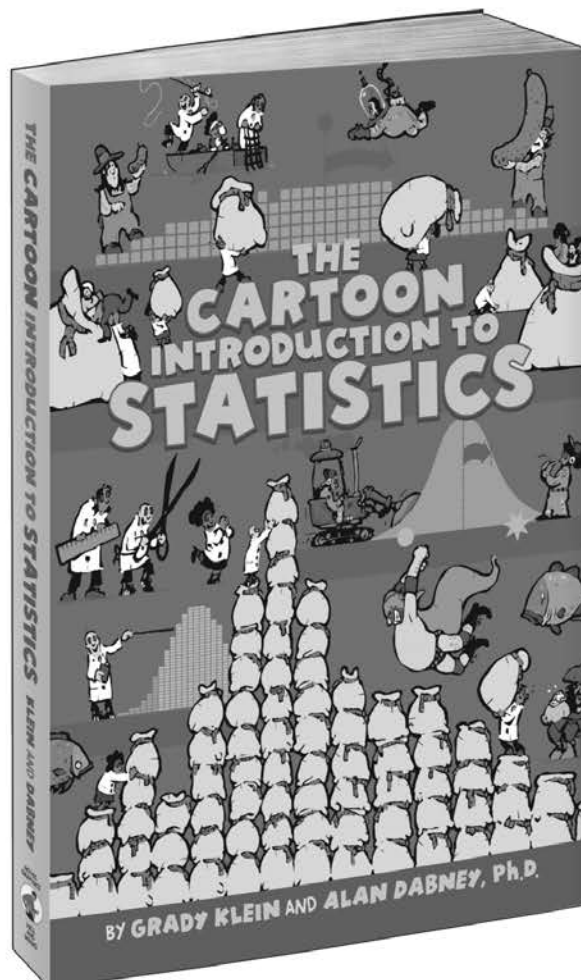
Biopharmaceutical Section, Biometrics Section, Scientific and Public Affairs Advisory Committee

Chair(s): Lisa LaVange, FDA/CDER

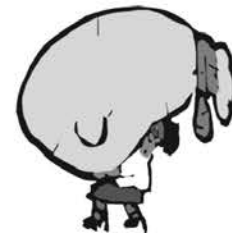
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|-----------|---|------------|---|
| 8:35 a.m. | <b>Pitfalls in Assessing Relative Efficacy Across Trials—</b><br>◆Xiao Sun, Merck   | 9:15 a.m.  | <b>Single-Arm Phase IIa Oncology Clinical Trials with Sample Size Adaptation—</b> ◆Bob Zhong, Johnson & Johnson   |
| 8:40 a.m. | <b>Methods to Compare the Myeloproliferative Neoplasm Symptom Assessment Form (MPN-SAF) Across Nine Linguistic Translations—</b> ◆Amylou Dueck, Mayo Clinic; Jeff Sloan, Mayo Clinic; Ruben Mesa, Mayo Clinic   | 9:20 a.m.  | <b>Detailed Description of Derivation and Display of Delinquent and Delayed Data—</b> William Coar, Axio Research; ◆David Kerr, Axio Research   |
| 8:45 a.m. | <b>What Is the Probability of Detecting Large Treatment Effects in Randomized Controlled Trials: An Empirical Study—</b> ◆Branko Miladinovic, University of South Florida Center for Evidence-based Medicine; Henian Chen, University of South Florida; Tea Reljic, University of South Florida Center for Evidence-based Medicine; Ruina He, University of South Florida; Benjamin Djulbegovic, University of South Florida Center for Evidence-based Medicine | 9:30 a.m.  | <b>Analysis of Semi-Continuous Longitudinal Physical Activity Data—</b> ◆Peter John De Chavez, Northwestern University; Lei Liu, Northwestern University; Bonnie Spring, Northwestern University Feinberg School of Medicine; Juned Siddique, Northwestern University |
| 8:50 a.m. | <b>Analysis of Binary Data Arising from a Prospective Cluster Randomized Study on the Diagnosis of Chronic Obstructive Pulmonary Disease Using Overdispersed Binomial Models—</b> ◆Santosh Sutradhar, Novartis; Valentina Bayer Zubek, Boehringer Ingelheim Pharmaceuticals, Inc.   | 9:35 a.m.  | <b>Mixed-Effects Models with Skewed Distributions for Time-Varying HIV Viral Decay Rate—</b> ◆Yangxin Huang, University of South Florida; Ren Chen, University of South Florida   |
| 8:55 a.m. | <b>Strategy in Dichotomizing a Continuous Biomarker for Survival Data Analysis—</b> ◆Dung-Tsa Chen, Moffitt Cancer Center; Ying-Lin Hsu, National Chung Hsing University; Po-Yu Huang, National Chung Hsing University  | 9:40 a.m.  | <b>Bayesian Nonlinear Regression for Neutralization Assays Using 4- and 5-Parameter Growth Curves—</b> ◆James Slaughter, Vanderbilt University; John T. Bates, Vanderbilt University; James E. Crowe, Vanderbilt University   |
| 9:00 a.m. | <b>M&amp;N, Wald, and Skellam: Who Excels in Rare-Event, Small-Sample, Interval Estimation of Risk Differences?—</b> ◆Oliver Bautista, Merck Sharp & Dohme Corp.; Josh Chen, Merck; Ivan S. F. Chan, Merck Research Laboratories  | 9:45 a.m.  | <b>Linear Regression Models with Epsilon Skew Gamma Error Term—</b> ◆Ebtisam Abdulah, University of Arkansas at Little Rock; Hassan Elsalloukh, University of Arkansas at Little Rock   |
| 9:05 a.m. | <b>Two-Sample Test for Differences in Survival at a Fixed Time Point with Small Sample Sizes—</b> ◆Michael Fay, National Institute of Allergy and Infectious Diseases; Michael Proschan, National Institutes of Health; Erica H. Brittain, National Institute of Allergy and Infectious Diseases  | 9:50 a.m.  | <b>Prior-Robust Designs for Nonlinear Models—</b> ◆Sydney Akapame; John J. Borkowski, Montana State University-Bozeman  |
| 9:10 a.m. | <b>Extension of Interval Design to Finding Maximum Tolerated Combinations of Two Anti-Cancer Agents—</b> ◆Lixin Han, Pfizer Inc.; Stephanie Green, Pfizer Inc.  | 9:55 a.m.  | <b>Early Detection of Cardiovascular Signals: A Simulation Study About Power Enhancement—</b> ◆Jing Huang; Ouhong Wang, Amgen, Inc.; Mike Hale, Amgen, Inc.   |
|           |   | 10:00 a.m. | <b>Comparison of Permutation Tests and GEE Methods for Group-Randomized Trials with Count Data—</b> ◆Ping Xu, Axio Research Coporation; Brian Leroux, University of Washington  |
|           |   | 10:05 a.m. | <b>Comparing Candidate General Surrogates of Protection—</b> ◆Erin Gabriel, Fred Hutchinson Cancer Research Center; M. Elizabeth Halloran, Fred Hutchinson Cancer Research Center   |
|           |   | 10:10 a.m. | <b>Logistic Regression for Dichotomized Counts—</b> ◆John Preisser, The University of North Carolina; Kalyan Das, University of Calcutta; John Stamm, The University of North Carolina  |
|           |   | 10:15 a.m. | <b>Analysis of Left-Censored Multiplex Immunoassay Data: A Unified Approach—</b> ◆Elizabeth Hill, Medical University of South Carolina; Elizabeth Slate, Florida State University   |

# THE CARTOON INTRODUCTION TO STATISTICS—TIMELY, AUTHORITATIVE, AND PERFECT FOR STUDENTS

**"IT'S A WELL-KEPT SECRET THAT STATISTICS IS FUN, RELEVANT TO EVERYONE, AND INTELLECTUALLY REWARDING. GRADY KLEIN AND ALAN DABNEY HAVE LET THE CAT OUT OF THE BAG WITH THEIR APPROACHABLE AND HUMOROUS JOURNEY THROUGH THE FUNDAMENTAL IDEAS THAT MAKE STATISTICS INDISPENSABLE IN TODAY'S DATA-RICH WORLD."** —JOHN STOREY, Princeton University



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## Special Presentation 10:30 a.m.–12:20 p.m.

### 322 CC-710a **Introductory Overview Lecture: Inference from Complex Sample Surveys: Past Controversies, Current Orthodoxies, Future Paradigms—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): Frauke Kreuter, University of Maryland  
Chair(s): Frauke Kreuter, University of Maryland

- 10:35 a.m. **Inference from Complex Sample Surveys: Past Controversies, Current Orthodoxies, Future Paradigms**—◆ Roderick J. Little, University of Michigan
- 11:55 a.m. Disc: Ray Chambers, National Institute for Applied Statistics Research Australia (NIASRA)
- 12:15 p.m. **Floor Discussion**

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

### 323 CC-510c **Neuroimaging Statistics: A Memorial Session for Keith Worsley—Invited**

ENAR, Section on Statistics in Imaging, SSC

Organizer(s): Armin Schwartzman, Harvard School of Public Health  
Chair(s): Philip Reiss, New York University

- 10:35 a.m. **Keith Was (Almost) Right**—◆ Robert J. Adler, Technion
- 11:00 a.m. **Detecting Sparse Cone Alternatives for Gaussian Random Fields**—◆ Jonathan Taylor, Stanford University
- 11:25 a.m. **The Interplay Between Random Field Theory and Permutation Inference Methods**—◆ Thomas Nichols, University of Warwick
- 11:50 a.m. **Inferring Anatomical Connectivity from Cortical Thickness**—◆ Moo K. Chung, University of Wisconsin
- 12:15 p.m. **Floor Discussion**

### 324 CC-519b **Developments in Markov Chain Monte Carlo Methodology—Invited**

IMS, SSC, Section on Statistical Computing

Organizer(s): James M. Flegal, University of California at Riverside  
Chair(s): Galin Jones, University of Minnesota

- 10:35 a.m. **Ergodicity of Adaptive MCMC Algorithms**—◆ Jeffrey S. Rosenthal, University of Toronto
- 11:05 a.m. **Embedding Combinatorial Structures as Gibbs Distributions for Faster Approximation of Normalizing Constants**—◆ Mark Lawrence Huber, Claremont McKenna College
- 11:35 a.m. **Convergence Rates for Hierarchical Gibbs Samplers**—◆ Neal Madras, York University
- 12:05 p.m. **Floor Discussion**

### 325 CC-520b **Modern Nonparametric and High-Dimensional Statistics—Invited**

IMS, Statistical Learning and Data Mining Section, Biometrics Section

Organizer(s): Han Liu, Princeton University  
Chair(s): Lie Wang, Massachusetts Institute of Technology

- 10:35 a.m. **Simple Tiered Classifiers**—◆ Peter Gavin Hall, University of Melbourne; Jinghao Xue, University College London; Yingcun Xia, National University of Singapore
- 11:05 a.m. **Sparse PCA: Optimal Rates and Adaptive Estimation**—◆ Tony Cai, University of Pennsylvania
- 11:35 a.m. **Statistical Inference in Compound Functional Models**—◆ Alexandre Tsybakov, CREST-ENSAE
- 12:05 p.m. **Floor Discussion**

### 326 CC-513b **Critical Aspects of Dose-Finding in Drug Development—Invited**

Biopharmaceutical Section, Biometrics Section

Organizer(s): David I. Ohlssen, Novartis  
Chair(s): David I. Ohlssen, Novartis

- 10:35 a.m. **Contribution of Different Design Components to the Efficiency of Response-Adaptive Dose-Ranging Studies**—◆ Vladimir Dragalin, Aptiv Solutions
- 11:00 a.m. **Leveraging Longitudinal Data in Dose-Finding Studies**—◆ Chyi-Hung Hsu, Janssen Research & Development; Jose Carlos Pinheiro, Janssen Research & Development
- 11:25 a.m. **Sizing a Phase IIb Trial: Using the Predictive Values from a Nonlinear Model**—◆ Jerry John Weaver, Novartis Pharmaceuticals Corporation
- 11:50 a.m. Disc: Yanming Yin, FDA
- 12:10 p.m. **Floor Discussion**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 327 CC-520c **Analytics and Data Visualization in Professional Sports—Invited** 329 CC-518 **Recent Advances in the Design of Multi-Stratum Experiments—Invited**

Section on Statistics in Sports, Section on Statistical Graphics, Section on Statistical Computing

Organizer(s): Elaine Allen, University of California at San Francisco

Chair(s): Julia E. Seaman, University of California at San Francisco

10:35 a.m. **Disability-Adjusted Player Days: Epidemiology and Analytics in Baseball**—◆Elaine Allen, University of California at San Francisco; Julia E. Seaman, University of California at San Francisco

11:00 a.m. **Openwar: An Open Source System for Overall Player Performance in Major League Baseball**—◆Benjamin S. Baumer, Smith College; Shane T. Jensen, The Wharton School; Gregory Matthews, University of Massachusetts

11:25 a.m. **Geek or Sheik: Is Data in Sports Just for Super Fans?**—◆Ryan Zander, Sportvision

11:50 a.m. **Analytics for Fantasy Basketball**—◆George Recck, Babson College

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

## 328 CC-516d **The Secret Weapon of the Dark Knight Against the Joker: Statistical Methods for Big and Massive Data Sets—Invited**

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

Organizer(s): Xingye Qiao, Binghamton University; Lingsong Zhang, Purdue University

Chair(s): Xingye Qiao, Binghamton University

10:35 a.m. **Modeling Visual Cortex V4 in Naturalistic Conditions with Invariant and Sparse Image Representations**—◆Bin Yu, University of California at Berkeley; Julien Mairal, Inria, Grunobel; Yuval Benjamini, University of California at Berkeley; Michael Oliver, University of California at Berkeley; Ben Willmore, University of Oxford Jack Gallant, University of California at Berkeley

11:00 a.m. **Recent Research on Deep Learning for AI**—◆Yoshua Bengio, University of Montréal

11:25 a.m. **Working with Massive and Raw Data for Power Grid Maintenance in NYC**—◆David Madigan, Columbia University; Cynthia Rudin, Massachusetts Institute of Technology; Rebecca Passonneau, Columbia University; Axinia Radeva, Columbia University; Steve Jerome, Consolidated Edison; Delfina Isaac, Consolidated Edison

11:50 a.m. **Bayesian Manifold Learning**—◆David B. Dunson, Duke University

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

Section on Physical and Engineering Sciences, Quality and Productivity Section

Organizer(s): Peter Goos, University of Antwerp

Chair(s): Bradley A. Jones, SAS Institute, JMP Division

10:35 a.m. **Fractional Factorial Designs for Multistep Processes**—Jose Gregorio Ramirez, Amgen, Inc.; Murat Kulahci, Technical University of Denmark; ◆Randall David Tobias, SAS Institute

11:00 a.m. **Constructing General Orthogonal Fractional Factorial Split-Plot Designs**—◆Eric D Schoen, TNO, Department of Quality and Safety; Bagus Sartono, IPB; Peter Goos, University of Antwerp

11:25 a.m. **Use and Construction of Hasse Diagrams for Industrial Experiments Involving Restricted Randomization**—◆Heiko Grossmann, Queen Mary University of London

11:50 a.m. **Optimal Split-Plot Designs for Fixed-Effect and Variance-Component Estimation**—◆Peter Goos, University of Antwerp; Kalliopi Mylona, University of Southampton; Bradley A. Jones, SAS Institute, JMP Division

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

## 330 CC-511a **Environmental Degradation, Health Care, and Education: Risk Topics of Global Interest—Invited**

Section on Risk Analysis, Mental Health Statistics Section, Section on Statistics and the Environment, Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee, Statistics Without Borders

Organizer(s): Alexandra Kapatou, American University

Chair(s): Duane L. Steffey, Exponent

10:35 a.m. **Malnutrition-Environmental Degradation, Risk Tradeoffs with Special Emphasis on Wheat Protein Forecasting**—◆Michael E. Tarter, University of California at Berkeley

11:05 a.m. **Adjustment of Health Care Risk Estimates Based on Observational Data**—◆Kenneth Lopiano, SAMSI; Robert L. Obenchain, Risk Benefit Statistics LLC

11:35 a.m. **Improving Risk Literacy Through Supplemental Instruction**—◆Alexandra Kapatou, American University

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

## 331 CC-516e **Standardizing Methods for Margin and Uncertainty Analysis in Engineering Applications—Invited**

Section on Statistics in Defense and National Security, Section on Physical and Engineering Sciences

Organizer(s): Alix Robertson, Sandia National Laboratories

Chair(s): Kathleen Diegert, Sandia National Laboratories

10:35 a.m. **Relating Margin to Engineering Performance—**  
 ◆ Rene Lynn Bierbaum, Sandia National Laboratories

10:55 a.m. **A Tolerance Interval Approach for Physical Simulation Quantification of Margins and Uncertainties—**◆ Justin T. Newcomer, Sandia National Laboratories

11:15 a.m. **Construction and Use of Tolerance Bounds Based on Binary Data to Assess Margin and Uncertainty—**  
 ◆ Alix Robertson, Sandia National Laboratories; Edward V. Thomas, Sandia National Laboratories

11:35 a.m. **Methods for QMU Using Computational Simulation When Resources Are Limited—**◆ Brian Milne Rutherford, Sandia National Laboratories

11:55 a.m. **Statistical Engineering Case Studies for Weapon System Reliability—**◆ Joseph Davis Warfield, The Johns Hopkins University

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

## 332 CC-710b **Medallion Lecture V—Invited**

IMS, Section on Statistics and the Environment, Scientific and Public Affairs Advisory Committee

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

Chair(s): David Brillinger, University of California at Berkeley

10:35 a.m. **Pointing in New Directions—**◆ Peter Guttorp, University of Washington; Aila Särkkä, Chalmers Technical University; Thordis Thorarinsdottir, Norwegian Computing Center  
 Disc: Bruce Smith, Dalhousie University

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

## Invited Panels 10:30 a.m.–12:20 p.m.

### 333 CC-516b **● Educating Future Leaders in Statistics and Maximizing the Likelihood of Leadership: Perspectives from and on Women in Statistics—Invited**

Caucus for Women in Statistics, Statistics Without Borders

Organizer(s): Yulia R. Gel, University of Waterloo

Chair(s): Amanda L. Golbeck, University of Montana

**Panelists:** ◆ Sally Morton, University of Pittsburgh  
 ◆ Cynthia Clark, USDA  
 ◆ Sallie Ann Keller, University of Waterloo  
 ◆ Roy Welsh, Massachusetts Institute of Technology  
 ◆ Sylvia Esterby, University of British Columbia  
 ◆ Kelly Zou, Pfizer Inc.

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

### 334 CC-515b **Measuring Relationships in U.S. Federal Household Surveys—Invited**

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

Organizer(s): Brian A. Harris-Kojetin, U.S. Office of Management and Budget

Chair(s): Brian A. Harris-Kojetin, U.S. Office of Management and Budget

**Panelists:** ◆ Jamie Lewis Thomas, U.S. Census Bureau  
 ◆ Paul J. Scanlon, National Center for Health Statistics  
 ◆ Virginia Caine, National Center for Health Statistics

11:35 a.m. Disc: Kimber Bogard, Institute of Medicine/National Research Council

11:55 a.m. Disc: Gary J. Gates, University of California at Los Angeles School of Law

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



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# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

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

### 335 CC-511d

#### ■ Novel Approaches for Modeling Variance in Longitudinal Studies—Topic-Contributed

Health Policy Statistics Section, Survey Research Methods Section, Section on Statistics in Epidemiology

Organizer(s): Juned Siddique, Northwestern University

Chair(s): Warren Comulada, University of California at Los Angeles Center for Community Health

10:35 a.m. **Methods for Studying Variability as a Predictor of Health Status**—◆Michael Elliott, University of Michigan; Bei Jiang, University of Michigan; Naisyin Wang, University of Michigan

10:55 a.m. **Bayesian Mixed-Effects Location Scale Models for the Analysis of Objectively Measured Physical Activity Data from a Lifestyle Intervention Trial**—◆Juned Siddique, Northwestern University; Donald Hedeker, University of Illinois at Chicago; Bonnie Spring, Northwestern University Feinberg School of Medicine

11:15 a.m. **Exploring the Relations Among Different Levels of Intraindividual Variability and Longitudinal Change in an Intensive Measurement Burst Design Study**—◆Philippe Rast, University of Victoria

11:35 a.m. **A Location Scale Item Response Theory (IRT) Model for Analysis of Ordinal Questionnaire Data**—◆Donald Hedeker, University of Illinois at Chicago; Robin Mermelstein, University of Illinois at Chicago; Hakan Demirtas, University of Illinois at Chicago

11:55 a.m. **Detangling the Effect Between Rate of Change and Within-Subject Variability in Longitudinal Risk Factors and Associations with a Binary Health Outcome**—◆Mary Sammel, University of Pennsylvania

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

### 336 CC-525b

#### Endogeneity, Systems, and Markets—Topic-Contributed

Section on Statistics in Marketing

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

Chair(s): Nino Hardt, The Ohio State University, Fisher College of Business

10:35 a.m. **Modeling Choice Interdependence in a Social Network**—◆Anocha Aribarg, University of Michigan; Yves Atchade, University of Michigan; Jing Wang, McKinsey-Beijing

10:55 a.m. **Dealing with Endogeneity in Models of Discrete Choice Games**—◆Ayse Yesim Orhun, University of Michigan

11:15 a.m. **Modeling Endogeneity in the Formation of Trust Relationships Online**—◆William Rand, Center for Complexity in Business; Hossam Sharara, Google; Lise Getoor, University of Maryland

11:35 a.m. **Using Hidden Markov Models to Identify Job Seekers from Social Network Data**—◆Peter Ebbes, HEC Paris; Oded Netzer, Columbia University

11:55 a.m. **Quantifying the Spillover Effects of Customer Satisfaction**—◆Xiaojing Dong, Santa Clara University; Pradeep Chingtagunta, The University of Chicago

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

### 337 CC-511b

#### ■ Statistics in Forensic Science—Topic-Contributed

Committee of Representatives to AAAS, Ad Hoc Advisory Committee on Forensic Science, Section on Statistics in Defense and National Security, Section on Physical and Engineering Sciences, Scientific and Public Affairs Advisory Committee

Organizer(s): Christopher Saunders, South Dakota State University

Chair(s): Matthew Schofield, University of Kentucky

10:35 a.m. **On Desiderata for Score-Based Likelihood Ratios for Forensic Evidence**—◆Christopher Saunders, South Dakota State University; John J. Miller, George Mason University

10:55 a.m. **A Quality Metric for Assessing Quality of Individual Minutiae in Latent Fingerprints**—◆Karen Kafadar, Indiana University; Adele Peskin, NIST-Boulder; Elham Tabassi, NIST-Gaithersburg

11:15 a.m. **A Similarity Score for Fingerprint Images**—◆Donald Gantz, George Mason University; Mark A. Walch, Gannon Technologies Group; Daniel T. Gantz, Gannon Technologies Group; John J. Miller, George Mason University

11:35 a.m. **Alternative Measures of Association Quality in Algorithmic Toolmark Identification**—◆Nicholas Petraco, City University of New York, John Jay College of Criminal Justice

11:55 a.m. Disc: Hal S. Stern, University of California

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

## 338 CC-512f **● Fresh Perspectives on Causal Inference— Topic-Contributed**

Section on Statistics in Epidemiology, Biometrics Section  
 Organizer(s): Susan Gruber, Harvard School of Public Health  
 Chair(s): Susan Gruber, Harvard School of Public Health

- 10:35 a.m. **The Estimation of Direct and Indirect Causal Effects in the Presence of Misclassified Binary Mediator**—◆ Linda Valeri, Harvard University; Tyler J. VanderWeele, Harvard School of Public Health
- 10:55 a.m. **A Stochastic Intervention Approach to Causal Mediation in a Survival Setting**—◆ Wenjing Zheng, University of California at Berkeley; Mark Van der Laan, University of California at Berkeley
- 11:15 a.m. **Determining the Predictors for Negative HIV Outcomes Under a Suppressive ART Regime**—◆ Mireille Schnitzer, Harvard School of Public Health; Judith J. Lok, Harvard School of Public Health; Ronald J. Bosch, Harvard School of Public Health
- 11:35 a.m. **Variable Importance and Prediction Methods for Longitudinal Problems with Missing Variables**—◆ Ivan Diaz, University of California at Berkeley; Alan Hubbard, University of California at Berkeley; Anna Decker, University of California at Berkeley; Mitch Cohen, University of California at San Francisco
- 11:55 a.m. **Evaluating Treatment Effectiveness Under Model Misspecification: A Comparison of Targeted Maximum Likelihood Estimation with Bias-Corrected Matching**—◆ Noemi Kreif, London School of Hygiene and Tropical Medicine; Susan Gruber, Harvard School of Public Health; Rosalba Radice, Birkbeck, University of London; Richard Grieve, London School of Hygiene and Tropical Medicine; Jasjeet S. Sekhon, University of California at Berkeley
- 12:15 p.m. **Floor Discussion**

## 339 CC-510d **■ Design of Confirmatory Clinical Trials with Flexibility and Adaptability: Case Studies and Discussions—Topic-Contributed**

Biopharmaceutical Section, Mental Health Statistics Section, Biometrics Section, International Indian Statistical Association  
 Organizer(s): Yili Lu Pritchett, Astellas Pharma Global Development, Inc.  
 Chair(s): Qi Tang, AbbVie

- 10:35 a.m. **Confirmatory Enrichment Design: Adequate and Well-Controlled Trials with Population Selection**—◆ Scott M. Berry, Berry Consultants
- 10:55 a.m. **Adaptive Sample Size Re-Estimation for Time-to-Event Confirmatory Studies with Application to the Design of a CV/Renal Outcome Study**—◆ Yili Lu Pritchett, Astellas Pharma Global Development, Inc.; Hui Tang, AbbVie

- 11:15 a.m. **Information-Based Sample Size Re-Estimation for Longitudinal Trials**—◆ Jing Zhou, The University of North Carolina at Chapel Hill; Yue Shentu, Merck; Jiajun Liu, Regeneron Pharmaceuticals, Inc.; Keaven Anderson, Merck Research Laboratories
- 11:35 a.m. **Practical Comparison of Sample Size Re-Estimation and Group Sequential Designs: Case Studies**—◆ William Prucka, Eli Lilly and Company
- 11:55 a.m. Disc: Cyrus Mehta, Cytel Inc.
- 12:15 p.m. **Floor Discussion**

## 340 CC-514c **Statistical Methods for Identification of Biosignatures of Treatment Response— Topic-Contributed**

Mental Health Statistics Section, Biometrics Section  
 Organizer(s): Melanie M. Wall, Columbia University  
 Chair(s): Yuanjia Wang, Columbia University

- 10:35 a.m. **Canonical K-Means Clustering for Constructing Moderator Importance Plots**—◆ Thaddeus Tarpey, Wright State University; Eva Petkova, New York University
- 10:55 a.m. **Modeling Strategies for Developing Treatment Response Indices**—◆ Eva Petkova, New York University
- 11:15 a.m. **Model Selection Criteria Based on Computationally Intensive Estimators of the Expected Optimism**—◆ Joseph Cavanaugh, University of Iowa
- 11:35 a.m. **Functional Data Analytic Approaches to Identifying Biosignatures Based on Imaging Data**—◆ R. Todd Ogden, Columbia University
- 11:55 a.m. Disc: Melanie M. Wall, Columbia University
- 12:15 p.m. **Floor Discussion**

## 341 CC-513a **■ Daily Predictions of Key Estimates and Models to Detect Nonsampling Errors in Census Bureau Household Surveys— Topic-Contributed**

Survey Research Methods Section  
 Organizer(s): Reid Rottach, US Census Bureau  
 Chair(s): Edwin Robison, Bureau of Labor Statistics

- 10:35 a.m. **Challenges Faced in the Daily Modeling of Survey Responses**—◆ Reid Rottach, U.S. Census Bureau; Mahdi Sundukchi, U.S. Census Bureau; Norilsa Toribio, U.S. Census Bureau
- 10:55 a.m. **Monitoring Key Estimates and Costs from the National Health Interview Survey Throughout the Realignment of Census Bureau Regional Offices**—◆ Norilsa Toribio, U.S. Census Bureau; Reid Rottach, U.S. Census Bureau



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 11:15 a.m. **The Effect of the U.S. Census Bureau Realignment on the National Crime Victimization Survey and the Consumer Expenditure Quarterly Interview Survey**—◆ Lindsay Longsine, U.S. Census Bureau; Danielle Castelo, U.S. Census Bureau
- 11:35 a.m. **Applications of Statistical Models That Detect Daily Changes Using Key Estimates from the American Community Survey Due to the U.S. Census Bureau Regional Office Restructure**—◆ Lindsay McMillan, U.S. Census Bureau; Robyn Sirkis, U.S. Census Bureau
- 11:55 a.m. **Demographic Data-Monitoring System: Technology Used to Track Survey Quality**—◆ Andre Harper, U.S. Census Bureau; Brian Dumbacher, U.S. Census Bureau
- 12:15 p.m. **Floor Discussion**

## 342 CC-511c ■ ● **Current Research on Students' Attitudes Toward Statistics—Topic-Contributed**

Section on Statistical Education

Organizer(s): Marjorie Bond, Monmouth College

Chair(s): Michael Posner, Villanova University

- 10:35 a.m. **Psychometric Properties of the Turkish Version of the Survey of Attitudes Toward Statistics**—◆ Esma Emmioglu, Simon Fraser University
- 10:55 a.m. **The Effect of Conceptualization and Content Perception on Affect and Difficulty Subscales of the Survey of Attitudes Toward Statistics**—◆ Marjorie Bond, Monmouth College; Susan Perkins, Northwest Nazarene University; Caroline Ramirez, University of the Pacific
- 11:15 a.m. **Examining Introductory Students' Attitudes in a Randomization-Based Curriculum**—◆ Joshua Beemer, California Polytechnic State University at San Luis Obispo
- 11:35 a.m. **Comparing Apples with Apples: Assessing Student Attitudes in the Presence of Regression to the Mean**—◆ Anne Michele Millar, Mount Saint Vincent University; Bethany White, Western University
- 11:55 a.m. Disc: Candace Schau, CS Consultants, LLC
- 12:15 p.m. **Floor Discussion**

## 343 CC-515c ■ ● **Stories of Pioneer Statisticians: Impacts of Statistics in Early-Phase Drug Development—Topic-Contributed**

International Chinese Statistical Association

Organizer(s): Ray Liu, Millennium: The Takeda Oncology Company

Chair(s): Ray Liu, Millennium: The Takeda Oncology Company

- 10:35 a.m. **Preclinical to Human Translation: Correctable Errors?**—◆ Mandy Bergquist, GlaxoSmithKline
- 10:55 a.m. **Efficient Design and Analysis for Tumor Xenograft Efficacy Studies**—◆ Gregory Hather, Millennium: The Takeda Oncology Company; Ray Liu, Millennium: The Takeda Oncology Company; Syamala Bandi, Millennium: The Takeda Oncology Company; Wen Chyi Shyu, Millennium: The Takeda Oncology Company; Mark Manfredi, Millennium: The Takeda Oncology Company; Arijit Chakravarty, Millennium: The Takeda Oncology Company; Jill Donelan, Millennium: The Takeda Oncology Company
- 11:15 a.m. **Making an Impact with Customized and Automated Statistical Solutions: A Successful Example**—◆ Lei Zhou, Amgen, Inc.; Cheng Su, Amgen, Inc.; Michael Eschenberg, Amgen, Inc.
- 11:35 a.m. **Efficient Outlier Identification in Lung Cancer Study**—◆ Shibing Deng, Pfizer Inc.
- 11:55 a.m. **On the Development of a New Framework for the Joint Analysis of Genomic and Pharmacological Data**—◆ Haisu Ma, Yale University; Ray Liu, Millennium: The Takeda Oncology Company
- 12:15 p.m. **Floor Discussion**

## 344 CC-516a ■ **The World of Statistical Analysis Professionals—Topic-Contributed**

Section for Statistical Programmers and Analysts, WNAAR

Organizer(s): Nancy Wang, Celerion

Chair(s): Nancy Wang, Celerion

- 10:35 a.m. **Working in Biostatistics and Data Programming Management in an Early Phase—Focused CRO**—◆ Tamara Cuddy, Celerion
- 10:55 a.m. **Career and Collaboration Opportunities at SAS**—◆ John Castelloe, SAS Institute
- 11:15 a.m. **Advanced Analytics and Leadership for Statistical Programmers at Eli Lilly**—◆ Jyoti Rayamajhi, Eli Lilly and Company
- 11:35 a.m. **Then and Now: A Career as a Statistician in Three Different Industries**—◆ Mark Matthews, Inventiv Health Clinical
- 11:55 a.m. **Statistics in Operational Risks**—◆ Colin Chen, Wells Fargo
- 12:15 p.m. **Floor Discussion**



## 345 SBSS Student Paper Travel Award Winners II—Topic-Contributed

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

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

Chair(s): Jean A. Roayaei, National Institutes of Health, National Cancer Institute

- 10:35 a.m. **Nonparametric Bayesian Inference for Mean Residual Life Functions in Survival Analysis**—◆ Valerie Poynor
- 10:55 a.m. **Spatial Regression Modeling for Compositional Data with Many Zeros**—◆ Thomas Leininger, Duke University; Alan E. Gelfand, Duke University; Jenica Allen, University of Connecticut; John Silander, Jr., University of Connecticut
- 11:15 a.m. **Heteroscedastic CAR Models for Areal Referenced Temporal Processes with an Application to California Asthma Hospitalization Data**—◆ Harrison Quick, University of Minnesota; Bradley P. Carlin, University of Minnesota; Sudipto Banerjee, University of Minnesota
- 11:35 a.m. **Locally Adaptive Bayesian Covariance Regression**—◆ Daniele Durante, University of Padua; Bruno Scarpa, University of Padua; David B. Dunson, Duke University
- 11:55 a.m. **Posterior Convergence Rates for Estimating Large Precision Matrices Using Graphical Models**—◆ Sayantan Banerjee, North Carolina State University; Subhashis Ghosal, North Carolina State University
- 12:15 p.m. **Floor Discussion**

## 346 Savage Award Finalist—Topic-Contributed

International Society for Bayesian Analysis (ISBA)

Organizer(s): Shane Reese, Brigham Young University

Chair(s): Alexandra M. Schmidt, Universidade Federal do Rio de Janeiro

- 10:35 a.m. **Small Areas, Benchmarking, and Political Battles: Today's Novel Demands in Small-Area Estimation**—◆ Rebecca C. Steorts, Carnegie Mellon University
- 10:55 a.m. **Dependent Completely Random Measures and Statistical Applications**—◆ Bernardo Nipoti, University of Turin and Collegio Carlo Alberto
- 11:15 a.m. **Bayesian Shrinkage in High Dimensions**—◆ Anirban Bhattacharya, Duke University
- 11:35 a.m. **Floor Discussion**

CC-520d

## 347 Recent Advances in Financial and Economic Statistics—Topic-Contributed

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

Organizer(s): Jian Zou, Indiana University-Purdue University Indianapolis

Chair(s): Xia Wang, University of Cincinnati

- 10:35 a.m. **Matching Quantiles Estimation**—◆ Qiwei Yao, London School of Economics
- 10:55 a.m. **Optimal Sparse Volatility Matrix Estimation for High-Dimensional Ito Processes with Measurement Errors**—◆ Minjing Tao, University of Wisconsin-Madison; Yazhen Wang, University of Wisconsin-Madison; Harrison Zhou, Yale University
- 11:15 a.m. **Large Portfolio Allocation Using High-Frequency Financial Data**—◆ Jian Zou, Indiana University-Purdue University Indianapolis; Yichao Wu, North Carolina State University
- 11:35 a.m. **What's Beneath the Surface? Option Pricing with Multifrequency Latent States**—◆ Laurent Calvet, HEC Paris; Marcus Fearnley, HEC Paris; Adlai Fisher, University of British Columbia; Markus Leippold, University of Zurich
- 11:55 a.m. **Ensemble Subsampling for Imbalanced Multivariate Two-Sample Tests**—◆ Lisha Chen, Yale University; Wei Dou, Massachusetts Institute of Technology; Zhihua Qiao, JPMorgan Chase
- 12:15 p.m. **Floor Discussion**

CC-524a

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

### 348 ■ Teaching Through Collaboration: Lessons from Clinical and Translational Science for Biostatisticians and Teachers of Statistics in the Health Sciences—Topic-Contributed

Section on Teaching of Statistics in the Health Sciences

Organizer(s): Misrak Gezmu, National Institutes of Health/National Institute of Allergy and Infectious Diseases

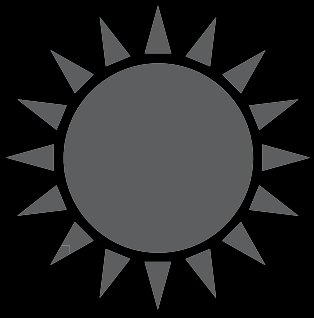
Chair(s): Laura Lee Johnson, National Center for Complementary and Alternative Medicine

- Panelists:** ◆ Christopher Lindsell, University of Cincinnati  
◆ Leah Welty, Northwestern University  
◆ Melissa Begg, Columbia University  
◆ Thomas Love, Case Western Reserve University  
◆ Mary Putt, University of Pennsylvania

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

CC-510a

CC-520a



# SAVE THE DATE

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*Innovations and Best Practices for the  
Applied Statistician***

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**2014**



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

349 CC-512c  
**■ Frontiers in Statistical Genetics and Genomics—Contributed**

Biometrics Section, Scientific and Public Affairs Advisory Committee  
Chair(s): Janet Sinsheimer, University of California at Los Angeles

- 10:35 a.m. **Fast and Robust Association Testing for High-Throughput Testing**—◆Fred Wright, The University of North Carolina; Yihui Zhou, The University of North Carolina at Chapel Hill
- 10:50 a.m. **An Intuitive Correspondence Measure for Compositional Data with Applications in Understanding Metagenomic Systems**—◆Z. John Daye, University of Arizona; Lingling An, University of Arizona
- 11:05 a.m. **Regularization Methods for High-Dimensional Instrumental Variables Regression with an Application to Genetical Genomics**—◆Wei Lin, University of Pennsylvania; Rui Feng, University of Pennsylvania; Hongzhe Li, University of Pennsylvania
- 11:20 a.m. **Functional Linear Models for Association Analysis of Quantitative Traits**—◆Ruzong Fan, National Institutes of Health; Yifan Wang, National Institutes of Health; Momiao Xiong, The University of Texas; James L. Mills, NICHD, National Institutes of Health; Alexander F. Wilson, NHGRI, National Institutes of Health; Joan E. Bailey-Wilson, NHGRI, National Institutes of Health
- 11:35 a.m. **Consistency of Principal Component Scores in High-Dimensional Data**—◆Kristoffer Hellton, University of Oslo; Magne Thoresen, Institute of Basic Medical Sciences, University of Oslo
- 11:50 a.m. **On Estimating the Age-Dependent Population Attributable Fractions from Population-Based Case-Control Data**—◆Wei Zhao
- 12:05 p.m. **A Comprehensive Analytical Pipeline for a Genome-Wide Association Study of Bronchopulmonary Dysplasia: From SNP to Copy Number Variation and from Gene to Pathway**—◆Hui Wang, Stanford University; Krystal R. St. Julien, Stanford School of Medicine; David K. Stevenson, Stanford School of Medicine; Thomas J. Hoffmann, University of California at San Francisco; John S. Witte, University of California at San Francisco; Laura C. Lazzeroni, Stanford University; Mark A. Krasnow, Stanford School of Medicine; Cele C. Quaintance, Stanford School of Medicine; John W. Oehlert, Stanford School of Medicine; Laura L. Jelliffe-Pawłowski, California Genetic Disease Screening Program; Jeffrey B. Gould, Stanford School of Medicine; Gary M. Shaw, Stanford School of Medicine; Hugh O’Brodivich, Stanford School of Medicine

350 CC-512d  
**Joint Model of Longitudinal and Survival Data—Contributed**

Biometrics Section  
Chair(s): Susan Stewart, University of California at Davis

- 10:35 a.m. **Joint Model of Multiple Longitudinal Processes and Survival Outcome**—◆Lili Yang, Indiana University School of Medicine; Sujuan Gao, Indiana University School of Medicine
- 10:50 a.m. **An Application of the Mediation Effect on Multivariate Survival Model with Time-Varying Covariates**—◆Yii-Chieh Huang, Kaiser Permanente; Karen J. Coleman, Kaiser Permanente; Corinna Koebnick, Kaiser Permanente; Kristi Reynolds, Kaiser Permanente; Anny H. Xiang, Kaiser Permanente; Mary Helen Black, Kaiser Permanente; Sami Alskaf, Kaiser Permanente
- 11:05 a.m. **Modeling Left-Truncated and Right-Censored Survival Data with Longitudinal Covariates**—◆Yu-Ru Su, National Cheng Kung University; Jane-Ling Wang, University of California at Davis
- 11:20 a.m. **Alternative Conditional Estimation of Time-Dependent and Nonlinear Effects of Covariates on the Hazard**—◆Willy Wynant, McGill University; Michal Abrahamowicz, McGill University; Amel Mahboubi, McGill University
- 11:35 a.m. **Joint Structure Selection and Estimation in Time-Varying Coefficient Cox Model**—◆Wei Xiao, North Carolina State University; Wenbin Lu, North Carolina State University
- 11:50 a.m. **A Joint Survival-Longitudinal Modelling Approach for the Dynamic Prediction of Rehospitalization in Telemonitored Chronic Heart Failure Patients**—◆Edmund Njeru Njagi, I-Biostat, Hasselt University; Dimitris Rizopoulos, Erasmus MC; Geert Molenberghs, Universiteit Hasselt & Katholieke Universiteit Leuven; Paul Dendale, Jessa Hospital, Heart Centre Hasselt; Koen Willekens, Katholieke Universiteit Leuven
- 12:05 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 351 CC-520f ■ Ambient Exposure to Air Pollution and Health: Statistical Issues and Modeling Approaches—Contributed

Section on Statistics and the Environment, Health Policy Statistics Section  
Chair(s): Jenna Krall, The Johns Hopkins University

- 10:35 a.m. **Spatio-Temporal Patterns and Variation of Common PM Metals**—◆Boubakari Ibrahimou, Western Kentucky University and University of South Florida; Yiliang Zhu, University of South Florida
- 10:50 a.m. **Impact of Monitoring Network Design on Exposure Prediction and Measurement Error**—◆Adel Lee; Lianne Sheppard, University of Washington
- 11:05 a.m. **Bias in CMAQ Prediction for Ozone Concentration**—◆Ryan Durden, North Carolina State University; Sarah Cummings, North Carolina State University
- 11:20 a.m. **Bias Analysis for the Use of Spatially Predicted Air Pollution Exposures in Linear Models of Air Pollution Health Effects**—◆Stacey Alexeeff, Harvard University; Raymond J. Carroll, Texas A&M University; Brent A. Coull, Harvard School of Public Health
- 11:35 a.m. **A Novel Principal Component Analysis for Spatially Misaligned Multivariate Air Pollution Data**—◆Roman Jandarov, University of Washington; Adam Szpiro, University of Washington
- 11:50 a.m. **The Association Between Air Pollutants and Birth Weight Using Various Buffer Sizes**—◆Keita Ebisu, Yale University; Kathleen Belanger, Yale University; Michelle Bell, Yale University
- 12:05 p.m. **Investigating the Health Risks Associated with Long-Term Exposure to Coarse PM**—◆Helen Louise Powell, Johns Hopkins Bloomberg School of Public Health; Roger D. Peng, The Johns Hopkins University

## 352 CC-521ab Nonparametric Regression—Contributed

Section on Nonparametric Statistics, Korean International Statistical Society

Chair(s): Dawn B. Woodard, Cornell University

- 10:35 a.m. **Penalized Regression Spline Modeling of Dose-Response Functions and Its Application to Monitoring Malaria Drug Resistance in Drug Assays**—◆Samiha Sarwat; Jaroslaw Harezlak, Indiana University Fairbanks School of Public Health; Clarissa Valim, Harvard School of Public Health
- 10:50 a.m. **Efficiently Estimating the Error Distribution Function in Nonparametric Regression with Responses Missing at Random**—◆Justin Chown, Texas A&M University; Ursula U. Mueller, Texas A&M University

- 11:05 a.m. **Bayesian Semiparametric Inference for Frailty Model Using Levy Process Priors with Example**—◆Avik Halder, Queen's University; Glen Takahara, Queen's University
- 11:20 a.m. **A Nonparametric Method for Assessment of Interactions in a Survival Analysis Regression Model Based on Right-Censored Data**—◆MinJae Lee; Mohammad Rahbar, University of Texas Health Science Center
- 11:35 a.m. **Partially Linear Additive Quantile Regression with Missing Covariates**—◆Ben Sherwood, University of Minnesota
- 11:50 a.m. **Iteratively Reweighted Generalized Rank-Based Method in Mixed Models**—◆Yusuf Bilgic, State University of New York at Geneseo; Joseph McKean, Western Michigan University
- 12:05 p.m. **Constrained Spline Regression in the Presence of Correlated Errors**—◆Huan Wang, Colorado State University; Mary Meyer, Colorado State University; Jean Opsomer, Colorado State University

## 353 CC-512e Modeling Clinical Trial Data: PK and Other Applications—Contributed

Biopharmaceutical Section, Biometrics Section

Chair(s): John Han, Janssen Research & Development

- 10:35 a.m. **Unified Assessment of QTc and PK Concentration Data in a Thorough QTc Study Using an Index Set, Indexed by Monotonic Order of PK Concentrations**—◆Anura Abeyratne, Astellas Pharma Global Development, Inc
- 10:50 a.m. **Assessment on Efficiency of Drug Delivery via ET(p) Under Nonlinear Mixed Effects Models**—◆Qianqiu Li, Janssen Research & Development; Kedar Gokhale, Janssen Research & Development; Chao Wang, Janssen Research & Development; Dhammika Amaratunga, Janssen Research & Development
- 11:05 a.m. **On Optimal Model-Based Design of Pharmacokinetic/Pharmacodynamic Studies**—◆Sergei Leonov, AstraZeneca
- 11:20 a.m. **Model-Based Power Calculations for Clinical Pharmacology Studies with Illustration Using SAS Proc Power**—◆Peng Sun, GlaxoSmithKline
- 11:35 a.m. **Generalized Response Surface Models for Assessing Synergistic Effects of Three or More Drugs**—◆John Oleynick, Janssen Research and Development; Yong Lin, University of Medicine and Dentistry of New Jersey; Dirk Moore, University of Medicine and Dentistry of New Jersey; Weichung Joe Shih, University of Medicine and Dentistry of New Jersey

- 11:50 a.m. **Generalized Optimal Design for Two-Arm, Randomized Phase II Clinical Trials with Endpoints from the Single Parameter Exponential Family**—◆Wei Jiang, University of Kansas Medical Center; Jonathan Mahnken, University of Kansas Medical Center; Jianghua He, University of Kansas Medical Center; Matthew S. Mayo, University of Kansas Medical Center
- 12:05 p.m. **Adjusting for Partially Missing Baseline Measurements with Nonlinear Models in Randomized Trials**—◆Chunyao Feng, Amgen, Inc.; Chunlei Ke, Amgen, Inc.

## 354 CC-525a **■ Multivariate SPC and Profile Monitoring—Contributed**

Quality and Productivity Section  
 Chair(s): Sharad Prabhu, SAS Institute

- 10:35 a.m. **Multivariate JS-Type Control Charts**—◆Hsiuying Wang, National Chiao Tung University
- 10:50 a.m. **Results of the Development of a Nonparametric Signed-Rank MEWMA Control Chart for Monitoring Location Process**—◆Jamil Zeinab, University of Northern Colorado; Jay Schaffer, University of Northern Colorado
- 11:05 a.m. **Performance of Processes with Multiple Variables**—◆Amitava Mitra, Auburn University
- 11:20 a.m. **Profile Monitoring Using Artificial Neural Network**—◆Yi-Hua Wang; Jen Tang, Purdue University
- 11:35 a.m. **Cluster-Based Profile Monitoring in Phase I Analysis**—◆Yajuan Chen, Virginia Tech; Jeffrey B. Birch, Virginia Tech; William H. Woodall, Virginia Tech
- 11:50 a.m. **Floor Discussion**

## 355 CC-510b **■ Statistical Issues in Noninferiority Trials—Contributed**

Biopharmaceutical Section, Biometrics Section, Korean International Statistical Society  
 Chair(s): Anna Nevius, FDA/CVM

- 10:35 a.m. **Covariate Effect on Constancy Assumption in Noninferiority Clinical Trials**—◆Siyun Xu, Boston University; Kerry Barker, Pfizer Inc.; Sandeep Menon, Pfizer Inc.; Ralph D'Agostino, Sr., Boston University
- 10:50 a.m. **Misspecification of Event Rates and Sample Size Re-Evaluations in Noninferiority Trials**—◆Hwasoon Kim, The University of Alabama at Birmingham; Jeff M. Szychowski, The University of Alabama at Birmingham

- 11:05 a.m. **Choosing a Noninferiority Margin for NI Trials in Infectious Disease Therapeutic Area**—◆Jing Zhao, BMS; Seth Thompson, Merck
- 11:20 a.m. **Determine the Primary Endpoint in Infection Disease Studies**—◆Chunzhang Wu, Astellas Pharma Global Development, Inc.
- 11:35 a.m. **Two Approaches to Noninferiority Margin Derivation**—◆Kaihong Jiang, Sanofi; Xuezhou Mao, Columbia University; William Stager, Consultant; Hui Quan, Sanofi; Marilyn Maroni, Sanofi
- 11:50 a.m. **A Comparison of Group Sequential Strategies for Three-Arm Noninferiority Trials**—◆Toshimitsu Ochiai, Shionogi & Co., Ltd.; Toshifumi Sugitani, Osaka University Graduate School of Medicine; Yuko Ohno, Osaka University Graduate School of Medicine; Toshimitsu Hamasaki, Osaka University Graduate School of Medicine
- 12:05 p.m. **A Ranking Procedure of Significance Among Combined Noninferiority Studies Using Liapounov's Central Limit Theorem (LCLT)**—◆Jagannath Ghosh, PROUnlimited at Novartis; Mohamed Mubasher, Research and Scientific Publications Center

## 356 CC-524b **■ Financial Time Series Analysis—Contributed**

Business and Economic Statistics Section, International Chinese Statistical Association  
 Chair(s): Carlos Carvalho, The University of Texas

- 10:35 a.m. **A Review of Tests for Randomness in Time Series Data**—◆Boris Iglewicz, Temple University; Alicia Graziosi Strandberg, Temple University
- 10:50 a.m. **Statistical Inference in Infinite-Order Cointegrated Vector Autoregressive Processes Under Uncorrelated but Dependent Errors**—◆Chafik Bouhaddioui, United Arab Emirates University
- 11:05 a.m. **Forecasting Multivariate Realized Stock Market Volatility: PCA or MFA?**—◆Xiaohang Wang, The University of Hong Kong; Jianhua Zhao, Yunnan University of Finance and Economics; Philip L.H. Yu, The University of Hong Kong
- 11:20 a.m. **Prior Specification in Multivariate Regime-Switching Lognormal Models**—◆Brian Hartman, University of Connecticut; David Engler, Brigham Young University
- 11:35 a.m. **Testing the Economic Value of Asset Return Predictability**—◆Michael McCracken, Federal Reserve Bank St. Louis



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

11:50 a.m. **Bootstrap Prediction Intervals for Conditional Heteroscedastic Models with Seasonally Varying Unconditional Variance**—◆Malaka Thilakarathne, Missouri University of Science & Technology; V. A. Samaranyake, Missouri University of Science and Technology

12:05 p.m. **Fitting Heavy-Tailed Nonlinear (Pareto) Autoregressive Time-Series Models**—◆Marcel Carcea; Robert Serfling, The University of Texas at Dallas

## 357 **Statistical Methodologies in Consulting—Contributed** CC-519a

Section on Statistical Consulting

Chair(s): James J. Grady, University of Connecticut Health Center

10:35 a.m. **On Sample Size Consideration in Nested Biological Data**—◆Borko Jovanovic, Northwestern University-Feinberg School of Medicine; Hariharan Subramanian, Northwestern University; Irene Helenowski, Northwestern University; Alfred Rademaker, Northwestern University; Angela Fought, Northwestern University; Hemant Roy, Northwestern University; Vadim Backman, Northwestern University

10:50 a.m. **Increasing Body Mass Index, Blood Pressure, and Acanthosis Nigricans Abnormalities in School-Age Children**—◆Xiaohui Wang, The University of Texas Pan American; Debra Otto, The University of Texas Pan American; Viola Garza, The University of Texas Pan American; Lilia Fuentes, The University of Texas Pan American; Pamela Sullivan, The University of Texas Pan American; Doreen Garza, The University of Texas Pan American; David Salazar, The University of Texas Pan American

11:05 a.m. **Statistical Approach for Prediction, Validation, and Creation of a Simple Score: An Application to a Neurocritical Care Study**—◆Jayawant Mandrekar, Mayo Clinic

11:20 a.m. **Using Logistic Regression for Inferences on Adjusted Estimates of Relative Risk in Randomized Comparative Trials**—◆William Johnson, Pennington Biomedical Research Center; William H. Replegle, University of Mississippi Medical Center; Hongmei Han, Pennington Biomedical Research Center

11:35 a.m. **Hidden Additivity in Complete Block Designs**—◆Jason Osborne, North Carolina State University; Christopher Franck, Virginia Tech

11:50 a.m. **A Regression Approach to Penalty Analysis to Assess the Relative Importance of JAR Attributes**—◆Jason Parcon, PepsiCo

12:05 p.m. **Marginalizable Conditional Model for Clustered Binary Data**—◆Rui Zhang; Gary Chan, University of Washington

## 358 **Teaching Outside the Box, Ever So Slightly—Contributed** CC-512ab

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

Chair(s): Pat Humphrey, Georgia Southern University

10:35 a.m. **Introducing Statistical Inference with Resampling Methods (Part 1)**—◆Allan Rossman, Cal Poly at San Luis Obispo; Robin Lock, St. Lawrence University

10:50 a.m. **Introducing Statistical Inference with Resampling Methods (Part 2)**—◆Robin Lock, St. Lawrence University; Allan Rossman, Cal Poly at San Luis Obispo

11:05 a.m. **A Case Study on the Use of History in Statistics Classes: The Fisher-Neyman Dispute**—◆Ilhan Izmirlı, George Mason University

11:20 a.m. **Why We Should Expose Students to Data of Questionable Quality, and How to Make Them Work to Obtain It**—◆William H. Rybolt, Babson College

11:35 a.m. **Introductory Statistics Students' Achievement in s Flipped-Concept Classroom Using Active Learning**—◆Natasha Gerstenschlager, Middle Tennessee State University; Ginger Rowell, Middle Tennessee State University; Nancy McCormick, Middle Tennessee State University; Lisa Green, Middle Tennessee State University; Jeremy Strayer, Middle Tennessee State University; Scott McDaniel, Middle Tennessee State University; Brandon Hanson, Middle Tennessee State University

11:50 a.m. **Teaching PhD Students How to Teach**—◆Kari Lock Morgan, Duke University

12:05 p.m. **Teaching Students How to Assess News Items That Have Statistical Content**—◆Alan Izenman, Temple University

## 359 CC-512g **■ Methods and Applications in Diagnostic Tests—Contributed**

Section on Statistics in Epidemiology

Chair(s): Zhiwei Zhu, SCOR Global Life Americas

- 10:35 a.m. **A Model for Combining Case-Control and Cohort Studies in Systematic Reviews of Diagnostic Tests—**◆Yulun Liu, The University of Texas School of Public Health; Yong Chen, The University of Texas School of Public Health; Jing Ning, The University of Texas MD Anderson Cancer Center; Haitao Chu, University of Minnesota School of Public Health; Janice Cormier, The University of Texas MD Anderson Cancer Center
- 10:50 a.m. **An Implement Method for Adjusted-AUC with Regarding Variance Estimate—**◆Chong Yau Fu, Institute of Public Health, National Yang-Ming University; Hsin-Yi Huang, Institute of Public Health, National Yang-Ming University
- 11:05 a.m. **Derivatives of Raman Spectra for Breast Cancer Diagnosis—**◆Richard Charnigo, University of Kentucky; Jing Guo, University of Kentucky; Cidambi Srinivasan, University of Kentucky; Ramachandra Dasari, Massachusetts Institute of Technology; Maryann Fitzmaurice, Case Western Reserve University; Abigail Haka, Cornell University
- 11:20 a.m. **Design of Repeated Sampling for Disease Detection Problem—**◆Yinan Fang, Iowa State University; Chong Wang, Iowa State University
- 11:35 a.m. **Estimation from a Two-Stage Biomarker Study Allowing Early Termination for Futility—**◆Shanshan Zhao, Fred Hutchinson Cancer Research Center; Ziding Feng, Fred Hutchinson Cancer Research Center
- 11:50 a.m. **A Weighted Generalized Score Statistic for Comparison of Predictive Values of Diagnostic Tests—**◆Andrzej Kosinski, Duke University
- 12:05 p.m. **Using Incident Cases to Evaluate Prognostic Markers with Time-Varying Performance—**◆Aastha Bansal, University of Washington; Patrick Heagerty, University of Washington

## 360 CC-512h **■ Propensity Score and Sensitivity Analysis in Observational Studies—Contributed**

Section on Statistics in Epidemiology

Chair(s): Susan Shortreed, Group Health Research Institute

- 10:35 a.m. **Evaluation of Propensity Score Methods for Multiple Treatment Groups—**◆Lucia Mirea, Maternal-Infant Care Research Centre; Junmin Yang, Maternal-Infant Care Research Centre; Prakesh Shah, Maternal-Infant Care Research Centre; Shoo Lee, Maternal-Infant Care Research Centre

- 10:50 a.m. **Comparing the Performance of Various Disease Risk Scores, Propensity Scores, Multivariate Logistic Regression, and Log-Binomial Regression Using Simulation—**◆In-Lu Liu, Kaiser Permanente; Jiaxiao Shi, Kaiser Permanente; Wansu Chen, Kaiser Permanente
- 11:05 a.m. **Validation of Propensity Score Calibration Method to Control for Unmeasured Confounding in Time-to-Event Analyses—**◆Rebecca Burne, McGill University; Michal Abrahamowicz, McGill University
- 11:20 a.m. **Doubly Robust Testing and Estimation of Model-Adjusted Effect-Measure Modification with Complex Survey Data—**◆Babette Brumback, University of Florida; Hao Zheng, SunTrust Bank; Xiaomin Lu, University of Florida; Erin Bouldin, University of Washington; Michael Cannell, University of North Texas Health Science Center; Elena Andresen, Oregon Health and Science University
- 11:35 a.m. **Genetic Association Test Based on Nonparametric Stratification of Propensity Scores—**◆Yaji Xu, Yale University; Yuan Jiang, Oregon State University; Chi Song, Yale University; Heping Zhang, Yale University
- 11:50 a.m. **Estimating Effect of Time-Dependent Treatment in Observational Studies—**◆Pallavi Mishra-Kalyani, Emory University; Brent Johnson, Emory University; Qi Long, Department of Biostatistics
- 12:05 p.m. **Heterogeneity, Sensitivity, Resistance, Effectiveness—**◆Lev Sverdlov

## 361 CC-522bc **High-Dimensional Inference—Contributed**

IMS

Chair(s): Alexandra Chouldechova, Stanford University

- 10:35 a.m. **Marginal Empirical Likelihood and Sure Independence Feature Screening—**◆Jinyuan Chang, Peking University; Cheng Yong Tang, University of Colorado Denver; Yichao Wu, North Carolina State University
- 10:50 a.m. **James-Stein Estimation for P Bigger Than N and Unknown Covariance Matrix—**◆Didier Chetelat, Cornell University; Martin T. Wells, Cornell University
- 11:05 a.m. **Adaptive Threshold Estimation by FDR—**◆Wenhua Jiang, Soochow University; Cun-Hui Zhang, Rutgers University
- 11:20 a.m. **Statistical Inference When Fitting Simple Models to High-Dimensional Data—**◆Lukas Steinberger, University of Vienna; Hannes Leeb, University of Vienna
- 11:35 a.m. **Estimating Bias-Corrected Mutual Information for Analysis of Large Complex Data Sets—**◆Susan Wilson, ANU & UNSW; Chris Pardy, University of New South Wales

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

11:50 a.m. **Bootstrap Inference for High-Dimensional Data—**  
◆Guoqing Diao, George Mason University; Anand Vidyashankar, George Mason University

12:05 p.m. **Sequential Tests of Multiple Hypotheses Controlling False Discovery Rate—**◆Jay Bartroff, University of Southern California; Jinlin Song, University of Southern California

## 362 CC-515a Novel Spatial Methods for Neuroimaging Data—Contributed

Section on Statistics in Imaging, Korean International Statistical Society  
Chair(s): Daniel Rowe, Marquette University

10:35 a.m. **An Evaluation of Independent Component Analyses with an Application to Resting State fMRI—**  
◆Benjamin Risk; David Matteson, Cornell University; David Ruppert, Cornell University; Ani Eloyan, Johns Hopkins Bloomberg School of Public Health; Brian Caffo, The Johns Hopkins University

10:50 a.m. **Bayesian Probit Model with Spatially Varying Coefficients and Its Application to Functional Magnetic Resonance Imaging—**◆Fengqing (Zoe) Zhang, Northwestern University; Wenxin Jiang, Northwestern University; Patrick C.M. Wong, Northwestern University; Ji-Ping Wang, Northwestern University

11:05 a.m. **Identifying Functional Co-Activation Patterns in Neuroimaging Studies via Poisson Graphical Models—**Wenqiong Xue, Emory University; ◆Jian Kang, Emory University; DuBois Bowman, Emory University; Tor D. Wager, University of Colorado, Boulder; Jian Guo, Harvard University

11:20 a.m. **Population Inference for Differential Functional Brain Connectivity—**◆Manjari Narayan, Rice University; Genevera Allen, Rice University

11:35 a.m. **A Bayesian Vector Autoregressive Approach to Joint Connectivity and Activation Analysis in fMRI—**  
◆Zhe Yu, University of California at Irvine; Hernando Ombao, University of California at Irvine; Wesley K. Thompson, University of California at San Diego; Robert E. Kass, Carnegie Mellon University

11:50 a.m. **Spatial-Temporal Models for Image Data Analyses—**  
◆Chun-Jung Huang, University of California at Davis; Laurel Beckett, University of California at Davis; Danielle Harvey, University of California at Davis

12:05 p.m. **Alternative-Based Thresholding for Pre-Surgical fMRI—**◆Beatrijs Moerkerke, Ghent University; Joke Durnez, Ghent University; Andreas Bartsch, University of Heidelberg; Thomas Nichols, University of Warwick

## 363 CC-511f Advances in Missing Data Imputation—Contributed

Survey Research Methods Section  
Chair(s): Meena Khare, NCHS/CDC

10:35 a.m. **A Proposed Revision of Wage Imputation Methods for the Occupational Employment Statistics Survey—**◆Jane Osburn, Bureau of Labor Statistics

10:50 a.m. **An Innovative Multiple Imputation Method to Accommodate Complex Sample Design Features—**  
◆Hanzhi Zhou, University of Michigan

11:05 a.m. **Quantile Estimation After Multiple Imputation—**  
◆Joerg Drechsler, Institute for Employment Research (IAB); Robin Mitra, University of Southampton

11:20 a.m. **Nonrespondent Subsample Multiple Imputation in Two-Phase Sampling for Nonresponse—**◆Nanhua Zhang, University of South Florida; Henian Chen, University of South Florida; Michael Elliott, University of Michigan

11:35 a.m. **Comparison of Imputation Techniques for Item Missing Data in the Survey of Income and Program Participation—**◆Sarah McMillan, U.S. Census Bureau

11:50 a.m. **Evaluating and Redesigning Imputation Methodologies for the 2015 American Housing Survey—**◆George Carter, U.S. Department of Housing and Urban Development; Brian Shaffer, U.S. Census Bureau

12:05 p.m. **Making Inference from Multiply Imputed Data Sets Using Mixture Distributions—**◆Sana Rashid, University of Southampton; Robin Mitra, University of Southampton; Russell J. Steele, McGill University

## 364 CC-520e Bayesian Theory and Methods—Contributed

Section on Bayesian Statistical Science, Korean International Statistical Society

Chair(s): Lynn Lin, Fred Hutchinson Cancer Research Center

10:35 a.m. **A Note on DIC Justification—**◆Shouhao Zhou, The University of Texas MD Anderson Cancer Center

10:50 a.m. **On the Birnbaum Argument for the Strong Likelihood Principle—**◆Deborah Mayo, Virginia Tech

11:05 a.m. **On the Geometry of Bayesian Inference: Bayes Meets Hilbert—**◆Garritt Page, Pontificia Universidad Catolica De Chile; Miguel de Carvalho, Pontificia Universidad Catolica de Chile; Jose Quinlan, Pontificia Universidad Catolica de Chile

11:20 a.m. **Bayesian Inference via the Blended Paradigm—**  
◆John Lewis, The Ohio State University; Steven MacEachern, The Ohio State University; Yoonkyung Lee, The Ohio State University

- 11:35 a.m. **Full Robustness to Outliers in a Bayesian Simple Linear Regression Model**—◆Philippe Gagnon, Université de Montréal; Alain Desgagné, UQAM
- 11:50 a.m. **Approximate Bayesian Inference for Double-Robust Estimation**—◆Daniel Graham, Imperial College London; David A. Stephens, McGill University; Emma McCoy, Imperial College London
- 12:05 p.m. **General Inequalities for Gibbs Posterior with Nonadditive Empirical Risk**—◆Cheng Li, Northwestern University; Wenxin Jiang, Northwestern University; Martin A. Tanner, Northwestern University

## 365 CC-511e Topics in Complex Survey Data Analysis— Contributed

Survey Research Methods Section  
Chair(s): Trent Buskirk, Nielsen

- 10:35 a.m. **On the Choice of Tuning Constants for Winsorized Estimators**—◆David Haziza, Université de Montréal; Cyril Favre-Martinoz, CREST/ENSAI; Jean-Francois Beaumont, Statistics Canada
- 10:50 a.m. **Setting M-Estimation Parameters for Detection and Treatment of Influential Values**—◆Mary Mulry, Federal Employee; Broderick Oliver, U.S. Census Bureau; Stephen Kaputa, U.S. Census Bureau
- 11:05 a.m. **Aggregating Comparable Categorical Responses to the Unit of Observation in Employer Surveys**—◆Jeremy Pickreign, NORC at the University of Chicago
- 11:20 a.m. **On the Effects of Degree-Day Base Temperatures on Estimates of Residential Energy End Uses**—◆Edgardo Cureg, U.S. Energy Information Administration
- 11:35 a.m. **The Estimation Methodology of the 2011 National Household Survey**—◆Francois Verret, Statistics Canada
- 11:50 a.m. **Calculating Adjusted Survival Functions for Complex Sample Survey Data and Application to Vaccination Coverage Studies with National Immunization Survey (NIS)**—◆Zhen Zhao, Centers for Disease Control and Prevention; Philip J. Smith, Centers for Disease Control and Prevention; David Yankey, Centers for Disease Control and Prevention; Kirk Wolter, NORC at the University of Chicago; Kennon Copeland, NORC
- 12:05 p.m. **Using Mixture Distributions to Predict Radio Listening**—◆William Waldron, Arbitron

## 366 CC-514a Dimension Reduction and Variable Selection— Contributed

Section on Statistical Learning and Data Mining, Korean International Statistical Society  
Chair(s): BOWEI XI, Purdue University

- 10:35 a.m. **Regularization and Estimation in Regression with Cluster Variables**—◆Qingzhao Yu, Louisiana State University Health Sciences Center; Bin Li, Louisiana State University
- 10:50 a.m. **On the Effect of Centering Kernels in Kernel PCA**—◆Zhiyu Liang, The Ohio State University; Yoonkyung Lee, The Ohio State University
- 11:05 a.m. **Two-Sample Tests for High-Dimensional Binary Data**—◆Amanda Peterson, University of Maryland, Baltimore County; Junyong Park, University of Maryland, Baltimore County
- 11:20 a.m. **Model Selection for Poisson Regression via Association Rules Analysis**—◆Pannapa Changpetch, Bentley University; Dennis Kon-Jin Lin, Penn State University
- 11:35 a.m. **Measurement Error Correction in High-Dimensional GLMs**—◆Øystein Sørensen, Institute of Basic Medical Sciences, University of Oslo; Arnaldo Frigessi, Institute of Basic Medical Sciences, University of Oslo; Magne Thoresen, Institute of Basic Medical Sciences, University of Oslo
- 11:50 a.m. **Variable Selection with Multiply Imputed Data When Considering Interaction Effects**—◆Aya Mitani, Stanford University; Allison W. Kurian, Stanford University; Amar K. Das, Dartmouth University; Manisha Desai, Stanford University
- 12:05 p.m. **A Mean Field Variational Bayes to the Selection of Linear Models**—◆John Ormerod

## 367 CC-514b New Methods for Classification—Contributed

Section on Statistical Learning and Data Mining  
Chair(s): Chong Zhang, The University of North Carolina at Chapel Hill

- 10:35 a.m. **Probability-Enhanced Sufficient Dimension Reduction for Binary Classification**—◆Seung Jun Shin, North Carolina State University; Yichao Wu, North Carolina State University; Hao Helen Zhang, North Carolina State University; Yufeng Liu, The University of North Carolina
- 10:50 a.m. **Macrolevel Discriminant Analysis: An Extension of Linear Discriminant Analysis for Nested Data**—◆Jose-Miguel Yamal, The University of Texas School of Public Health; E. Neely Atkinson, The University of Texas MD Anderson Cancer Center; Getie Zewdie, The University of Texas School of Public Health; Dennis Cox, Rice University



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 11:05 a.m. **Multi-TGDR: An Extension of the Threshold Gradient Descent Regularization for Multiclass Classification of Microarray Experiments**—◆Mayte Suarez-Farinas, Rockefeller University; Suyan Tian, First Hospital of the Jilin University
- 11:20 a.m. **An Algorithm for Binary and Multi-Class Cancer Classification and Informative Genes Selection**—◆Haiyan Wang, Kansas State University
- 11:35 a.m. **On the Characterization of a Class of Fisher-Consistent Loss Functions and Its Application to Boosting for Hierarchical Outcomes**—◆Matey Neykov, Harvard University; Tianxi Cai, Harvard University
- 11:50 a.m. **Evaluating Discriminant Performance of a Semi-Supervised Linear Discriminant Analysis Against a Supervised One for Heteroscedastic Normal Populations**—◆Kenichi Hayashi, Osaka University Graduate School of Medicine
- 12:05 p.m. **High-Dimensional Quadratic Discriminant Analysis: A Convex Optimization Approach**—◆Lucy Xia, Princeton University; Tracy Ke, Princeton University; Jianqing Fan, Princeton University
- 11:05 a.m. **Using Thresholding Difference-Based Estimators for Variable Selection in Partial Linear**—◆June Luo, Clemson University
- 11:10 a.m. **SPReM: Sparse Projection Regression Model for High-Dimensional Linear Regression**—◆Qiang Sun, The University of North Carolina at Chapel Hill; Hongtu Zhu, The University of North Carolina at Chapel Hill; Yufeng Liu, The University of North Carolina; Joseph G. Ibrahim, The University of North Carolina at Chapel Hill
- 11:15 a.m. **Locally Epistatic Relationship Matrices for Genome-Wide Association and Prediction**—◆Deniz Akdemir, Cornell University
- 11:20 a.m. **Variable Selection for Big Data via Bagging Adaptive Lasso and Precision Shrinking**—◆Cory Lanker, Iowa State University of Science and Technology; Wen Zhou, Iowa State University; Max Morris, Iowa State University; Stephen Bruce Vardeman, Iowa State University; Huaiqing Wu, Iowa State University
- 11:30 a.m. **A Multivariate Single Index Model for Longitudinal Data with Application in Clinical Investigation**—◆Jingwei Wu, Indiana University School of Medicine; Wanzhu Tu, Indiana University School of Medicine
- 11:35 a.m. **Overall Power Calculation for High-Dimensional Design**—◆Yueh-Yun Chi, University of Florida; Matthew J. Gribbin, MedImmune; Jacqueline J. Johnson, The University of North Carolina; Keith E. Muller, University of Florida
- 11:40 a.m. **Clustering to Strengthen a Categorical Instrument**—◆Douglas Lehmann, University of Michigan; Yun Li, University of Michigan; Yi Li, University of Michigan
- 11:45 a.m. **Variable Selection for High-Dimensional Multivariate Outcomes**—◆Tamar Sofer, Harvard School of Public Health; Lee Dicker, Rutgers University; Tamar Sofer, Harvard School of Public Health
- 11:50 a.m. **Empirical Bayesian Incorporation of Method Selection Into Massive Multiple Testing Analyses**—◆Stanley Pounds, St. Jude Children's Research Hospital; Cuilan L. Gao, University of Tennessee at Chattanooga; Shesh Nath Rai, University of Louisville; Demba Fofana, University of Memphis
- 11:55 a.m. **Manifold Regression for Functional Data**—◆Andrew Farris, University of California at Davis; Hans-Georg G. Müller, University of California at Davis
- 12:00 p.m. **Domain-Interaction Functional Regression Models for Functions with Varying Domains**—◆Jonathan Gellar, Johns Hopkins Bloomberg School of Public Health; Elizabeth Colantuoni, Johns Hopkins Bloomberg School of Public Health; Dale Needham, Johns Hopkins School of Medicine; Ciprian M. Crainiceanu, The Johns Hopkins University

## 368 CC-516c Methods and Applications in High-Dimensional Data, Part 1—Contributed

Section on Statistical Learning and Data Mining, Biometrics Section  
Chair(s): J. S. Marron, The University of North Carolina

- 10:35 a.m. **Delving into Megadata: Evolving Challenges**—◆Turkan Gardenier, Pragmatica Corp.; John Stark Gardenier, Independent
- 10:40 a.m. **Composite Large-Margin Classifiers with Latent Subclasses**—◆Guanhua Chen, The University of North Carolina at Chapel Hill; Yufeng Liu, The University of North Carolina; Michael R. Kosorok, The University of North Carolina at Chapel Hill
- 10:45 a.m. **A Robust Likelihood Ratio Test for Testing Equal Means in the Presence of Unequal Variance**—◆Achut Adhikari, University of Northern Colorado
- 10:50 a.m. **Simultaneous Sparse Estimation of Canonical Vectors in the  $P \gg N$  Setting**—◆Irina Gaynanova, Cornell University; James Booth, Cornell University; Martin T. Wells, Cornell University
- 10:55 a.m. **Statistical Modeling of Genomic Words and Motifs**—◆Guozhu Zhang, Bioinformatics Research Center, North Carolina State University; Stephen Sauchi Lee, University of Idaho
- 11:00 a.m. **Creating Gains Tables and Lift Charts Using R**—◆Craig Rolling, University of Minnesota



- 12:05 p.m. **Risk Prediction from Electronic Health Record Data: A Naïve Bayes Approach**—◆Julian Wolfson, University of Minnesota
- 12:10 p.m. **A Flexible Correlation Structure for Joint Modeling of Multivariate Ordinal Medication Adherence Data**—◆Abdus Wahed, University of Pittsburgh; Zhen Jiang, FDA
- 12:15 p.m. **Identifying Epigenomic Biomarkers for Anticancer Drug Responses by Integrating Gene Expression and DNA Methylation Profiles**—◆Zhibao Mi, VA; Kui Shen, University of Pittsburgh; Nan Song, the NSABP Foundation, Inc.

- 6 **M&N, Wald, and Skellam: Who Excels in Rare-Event, Small-Sample, Interval Estimation of Risk Differences?**—◆Oliver Bautista, Merck Sharp & Dohme Corp; Josh Chen, Merck; Ivan S. F. Chan, Merck Research Laboratories
- 7 **Two-Sample Test for Differences in Survival at a Fixed Time Point with Small Sample Sizes**—◆Michael Fay, National Institute of Allergy and Infectious Diseases; Michael Proschan, National Institutes of Health; Erica H. Brittain, National Institute of Allergy and Infectious Diseases
- 8 **Extension of Interval Design to Finding Maximum Tolerated Combinations of Two Anti-Cancer Agents**—◆Lixin Han, Pfizer Inc.; Stephanie Green, Pfizer Inc.
- 9 **Single-Arm Phase IIa Oncology Clinical Trials with Sample Size Adaptation**—◆Bob Zhong, Johnson & Johnson
- 10 **Detailed Description of Derivation and Display of Delinquent and Delayed Data**—William Coar, Axio Research; ◆David Kerr, Axio Research
- 11 **Analysis of Semi-Continuous Longitudinal Physical Activity Data**—◆Peter John De Chavez, Northwestern University; Lei Liu, Northwestern University; Bonnie Spring, Northwestern University Feinberg School of Medicine; Juned Siddique, Northwestern University
- 12 **Mixed-Effects Models with Skewed Distributions for Time-Varying HIV Viral Decay Rate**—◆Yangxin Huang, University of South Florida; Ren Chen, University of South Florida
- 13 **Bayesian Nonlinear Regression for Neutralization Assays Using 4- and 5-Parameter Growth Curves**—◆James Slaughter, Vanderbilt University; John T. Bates, Vanderbilt University; James E. Crowe, Vanderbilt University
- 14 **Linear Regression Models with Epsilon Skew Gamma Error Term**—◆Ebtisam Abdulah, University of Arkansas at Little Rock; Hassan Elsalloukh, University of Arkansas at Little Rock
- 15 **Prior-Robust Designs for Nonlinear Models**—◆Sydney Akapame, John J. Borkowski, Montana State University-Bozeman
- 16 **Early Detection of Cardiovascular Signals: A Simulation Study About Power Enhancement**—◆Jing Huang; Ouhong Wang, Amgen, Inc.; Mike Hale, Amgen, Inc.
- 17 **Comparison of Permutation Tests and GEE Methods for Group-Randomized Trials with Count Data**—◆Ping Xu, Axio Research Coporation; Brian Leroux, University of Washington
- 18 **Comparing Candidate General Surrogates of Protection**—◆Erin Gabriel, Fred Hutchinson Cancer Research Center; M. Elizabeth Halloran, Fred Hutchinson Cancer Research Center

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

### 369 CC-220bc Methods and Applications in Biomedical Data and Clinical Trials, Part 2— Contributed Poster Presentations

Biopharmaceutical Section, Biometrics Section, Scientific and Public Affairs Advisory Committee

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

- 1 **Pitfalls in Assessing Relative Efficacy Across Trials**—◆Xiao Sun, Merck
- 2 **Methods to Compare the Myeloproliferative Neoplasm Symptom Assessment Form (MPN-SAF) Across Nine Linguistic Translations**—◆Amylou Dueck, Mayo Clinic; Jeff Sloan, Mayo Clinic; Ruben Mesa, Mayo Clinic
- 3 **What Is the Probability of Detecting Large Treatment Effects in Randomized Controlled Trials: An Empirical Study**—◆Branko Miladinovic, University of South Florida Center for Evidence-based Medicine; Henian Chen, University of South Florida; Tea Reljic, University of South Florida Center for Evidence-based Medicine; Ruina He, University of South Florida; Benjamin Djulbegovic, University of South Florida Center for Evidence-based Medicine
- 4 **Analysis of Binary Data Arising from a Prospective Cluster Randomized Study on the Diagnosis of Chronic Obstructive Pulmonary Disease Using Overdispersed Binomial Models**—◆Santosh Sutradhar, Novartis; Valentina Bayer Zubek, Boehringer Ingelheim Pharmaceuticals, Inc.
- 5 **Strategy in Dichotomizing a Continuous Biomarker for Survival Data Analysis**—◆Dung-Tsa Chen, Moffitt Cancer Center; Ying-Lin Hsu, National Chung Hsing University; Po-Yu Huang, National Chung Hsing University

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 19 **Logistic Regression for Dichotomized Counts**—  
◆ John Preisser, The University of North Carolina;  
Kalyan Das, University of Calcutta; John Stamm,  
The University of North Carolina
- 20 **Analysis of Left-Censored Multiplex Immunoassay  
Data: A Unified Approach**—◆ Elizabeth Hill, Medical  
University of South Carolina; Elizabeth Slate, Florida  
State University

- 7 **A Generalization to the Family of Discrete  
Distributions**—Tareq F. Khan, Jahangirnagar University;  
Mian Adnan, Jahangirnagar University; Asif Shams Adnan,  
Jahangirnagar University
- 8 **Some Comments on Anderson Graphs for Classic  
Order-4 Magic Squares**—◆ George Styan, McGill University
- 9 **Eyebrow Shape Analysis by Using a Modified Functional  
Curve Procrustes Distance**—◆ Yishi Wang, The University  
of North Carolina at Wilmington; Cuixian Chen, The  
University of North Carolina at Wilmington; Yaw Chang,  
The University of North Carolina at Wilmington

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

370 CC-220bc  
**Contributed Oral Poster Presentations:  
ENAR—Contributed Poster Presentations**  
ENAR, Korean International Statistical Society  
Chair(s): Joyee Ghosh, University of Iowa

- 1 **Large Sample Randomization Inference of Causal  
Effects in the Presence of Interference**—◆ Lan Liu,  
The University of North Carolina at Chapel Hill; Michael G.  
Hudgens, The University of North Carolina at Chapel Hill
- 2 **Uncertainty in Pilot Parameter Estimates:  
A Comparison of Methods to Size Full Trials**—  
◆ Elizabeth Handorf, Fox Chase Cancer Center; Eric A. Ross,  
Fox Chase Cancer Center
- 3 **Using Regression Discontinuity Designs to Enhance  
Power in Propensity Score Analysis**—◆ T. Mark Beasley,  
The University of Alabama at Birmingham
- 4 **Efficient Estimation of the Regression Parameter in  
Forward and Backward Recurrence Time Data Using  
the Accelerated Failure Time Model**—◆ Pourab Roy,  
The University of North Carolina at Chapel Hill; Michael R.  
Kosorok, The University of North Carolina at Chapel Hill;  
Jason Fine, The University of North Carolina Chapel Hill
- 5 **Identifying Gene-Gene Interaction Using RNA-  
Sequencing Data**—◆ Kwang-Youn Kim,  
Northwestern University

371 CC-220bc  
**Contributed Oral Poster Presentations:  
IMS—Contributed Poster Presentations**  
IMS  
Chair(s): Joyee Ghosh, University of Iowa

- 6 **Nonparametric Estimation of Optimal Retention  
for Reinsurance Under Tail Risk Criterion**—  
◆ Desale Habtzghi, University of Akron; Dale Borowiak,  
The University of Akron

372 CC-220bc  
**Contributed Oral Poster Presentations:  
Korean International Statistical Society—  
Contributed Poster Presentations**  
Korean International Statistical Society  
Chair(s): Joyee Ghosh, University of Iowa

- 10 **A Comparative Study on Semiparametric Estimation in  
Partially Linear Single-Index Model**—◆ Young-Ju Kim,  
Kangwon National University
- 11 **A Case Study on Predicting Transcription Factors and  
Gene Networks**—◆ Dongseok Choi, Oregon Health and  
Science University; Lauren Hayashi, Oregon Health and Science  
University; Kathryn Carr, Oregon Health and Science University;  
Mary J. Kelley, Oregon Health and Science University; Ted S.  
Acott, Oregon Health and Science University

373 CC-220bc  
**Contributed Oral Poster Presentations:  
Quality and Productivity Section—  
Contributed Poster Presentations**  
Quality and Productivity Section  
Chair(s): Joyee Ghosh, University of Iowa

- 12 **A Distribution-Free Procedure for Removing  
Multivariate Outliers**—◆ Robert Mason, Southwest  
Research Institute; Youn-Min Chou, The University of Texas  
at San Antonio; John C. Young, Retired
- 13 **Process Control with Quality Gradations and  
Classification Errors**—◆ William S. Griffith, University of  
Kentucky; Michelle L. Smith, Eastern Kentucky University
- 14 **Pareto Front Optimization for Multiple Process or  
Product Responses in the Presence of Model Parameter  
Uncertainty**—◆ Jessica Chapman, St. Lawrence University;  
Lu Lu, Los Alamos National Laboratory; Christine Anderson-  
Cook, Los Alamos National Laboratory

374 CC-220bc  
**Contributed Oral Poster Presentations:  
 Section on Bayesian Statistical Science—  
 Contributed Poster Presentations**

Section on Bayesian Statistical Science  
 Chair(s): Joyee Ghosh, University of Iowa

- 15 **Using Bayesian Hierarchical Model to Detect Related Multiple SNPs Within Multiple Genes to Disease Risk—**◆Lewei Duan
- 16 **Bayesian Multilevel Modeling for Calculating Small-Area Estimates of Diagnosed Diabetes, Obesity, and Physical Inactivity Prevalence in Puerto Rico—**◆Elizabeth Ely, Centers for Disease Control and Prevention; Theodore J. Thompson, Centers for Disease Control and Prevention; Ed F. Tierney, Centers for Disease Control and Prevention; Roberta H. Hilsdon, Centers for Disease Control and Prevention; Deborah B. Rolka, Centers for Disease Control and Prevention
- 17 **Flexible Multivariate Imputation Modeling Based on Copulas and Dirichlet Processes—**◆Patrick Joyce, U.S. Census Bureau; Joseph Schafer, U.S. Census Bureau; Joshua Tokle, U.S. Census Bureau
- 18 **Bayesian Network Analysis: HIV Spread in Indian Community—**◆Daniel P. Heard, Duke University
- 19 **A Semiparametric Bayesian Clustering Method with Application to Zernike Aberration Coefficients of Eyes—**◆Xin Tong, University of South Carolina; Hongmei Zhang, University of South Carolina
- 20 **Bayesian Estimation of Precision and Genetic Gain Due To Selection in Barley Trials—**◆Murari Singh, ICARDA; Adnan Al- Yassin, ICARDA; Siraj Osman Omer Mohamed, ICARDA
- 21 **Biosimilar Sample Size Estimation by Leveraging Well-Established Information—**◆William Atkinson, PPDI; Phil Young, PPDI
- 22 **Bayesian Sample-Size Determination for Studies with Censored Cost-Effectiveness—**◆Daniel Beavers, Wake Forest School of Medicine; James D. Stamey, Baylor University
- 23 **Bayesian Evaluation of Informative Hypotheses in Multidimensional Scaling—**◆Kensuke Okada, Senshu University
- 24 **Bayesian Decisive Prediction of the Future Optimal Cut-Off Score in Direct Marketing Using BLINEX Loss—**◆Martin Levy, University of Cincinnati; Daling Wen, Genworth

375 CC-220bc  
**Contributed Oral Poster Presentations:  
 Section on Physical and Engineering Sciences—  
 Contributed Poster Presentations**

Section on Physical and Engineering Sciences  
 Chair(s): Joyee Ghosh, University of Iowa

- 25 **Reduced Major Axis Regression to Improve Oil and Gas Pipeline Integrity—**◆William Harper; Neil A. Bates, Det Norske Veritas (Canada) Ltd.
- 26 **A Bayesian Approach to Model Criticism in Pedestrian Accident Reconstruction—**◆Gary Davis, University of Minnesota
- 27 **Applications of Resampling and Bootstrap Methods to Estimate Prediction Intervals for Nonlinked Replicates in Method Comparison Studies—**◆Maya Sternberg, Centers for Disease Control and Prevention; Sharon Flores, Centers for Disease Control and Prevention
- 28 **Evolutionary Algorithms and Swarm Intelligence to Solve Problems Applied to Complex Problems, Big Data, and Underground Mining Engineering—**◆Douglas Moreira; Sylvie Nadeau, Université du Québec - École de Technologie Supérieure; Barthélemy Ateme-Nguema, Université du Québec en Abitibi-Témiscamingue
- 29 **Bayesian Analysis of Nonstationary Composite Gaussian Process Models—**◆Casey Davis; Christopher Hans, The Ohio State University; Thomas Santner, The Ohio State University
- 30 **Teaching Measurement, Data Analysis, Experiments, and Modeling for Engineering Students—**◆Paul Stephenson, Grand Valley State University; Chris Plouff, Grand Valley State University; Diann Reischman, Grand Valley State University; John G. Gabrosek, Grand Valley State University; David Zeitler, Grand Valley State University
- 31 **An Analysis of Motorcycle Fatality Risk Factors in Ohio—**◆Peter W. Hovey, University of Dayton; Deogratias Eustace, University of Dayton; Vamsi K. Indupuru, Western Union

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 376 CC-220bc
- Contributed Oral Poster Presentations:  
Section on Statistical Computing—  
Contributed Poster Presentations**  
Section on Statistical Computing  
Chair(s): Joyee Ghosh, University of Iowa
- 32 **Using Quantitative Content Analysis Followed by Principal Components Analysis and Factor Scoring to Identify Themes in Media Content: A Demonstration Using Pre- and Post-9/11 Text**—◆ Brenda Osuna, University of Southern California; Reagan Rose, University of Southern California
- 33 **Restricted Scheffe Method Using Minimal Cone Approach in Multiple Comparisons**—Yimin Zhang, Oklahoma State University; Melinda McCann, Oklahoma State University
- 34 **Estimating Average Treatment Effect with Treatment Switching in Observational Studies**—◆ Chunhao Tu, University of New England; Woon Yuen Koh, University of New England
- 35 **Introductory Statistics: Alternate Sequence Etext**—◆ John G. Gabrosek, Grand Valley State University; Paul Stephenson, Grand Valley State University
- 36 **Reconstruction of Biological Networks Using Differential Equation Models**—◆ James Henderson, University of Michigan
- 37 **Comparison of Means in Skewed Distributions**—◆ Evren Ozkip; Ahmet Sezer, Anadolu University; Berna Yazici, Anadolu University
- 38 **Evaluation of a Survey Using Ordinal Logistic Regression**—◆ Berna Yazici, Anadolu University; Ozlem Alpu, Eskisehir Osmangazi University; Ozlem Oktal, Anadolu University; Zerrin Sungur, Anadolu University
- 39 **Independent Approximate Draws from High-Dimensional Intractable Probability Distributions**—◆ Andrew Olsen, The Ohio State University; Radu Herbei, The Ohio State University
- 40 **Addressing Overdispersion Using Finite Mixtures with a Regression Linked to the Mean**—◆ Andrew Raim, University of Maryland, Baltimore County; Nagaraj Neerchal, University of Maryland, Baltimore County
- 41 **Similar Items for New Shops**—◆ A. Santos, Etsy
- 42 **Computer-Aided Simulation Design**—◆ Kasturi Talapatra, North Carolina State University; Eric Laber, North Carolina State University; Len Stefanski, North Carolina State University
- 43 **Comparison of One-Sided Tolerance Limits in Random Effects**—◆ Jie Peng, St. Ambrose University; Kalimuthu Krishnamoorthy, University of Louisiana at Lafayette
- 44 **Bootstrapping Time Series Data**—◆ Maher Qumsiyeh, University of Dayton; Robert Deis, University of Dayton
- 45 **Generalized P-Value in Regression Analysis**—◆ Seray Mankir, Anadolu University; Berna Yazici, Anadolu University
- 46 **Quantile Regression Using a General Class of Probability Distributions**—◆ Fasil Nebebe, Concordia University; Tak Mak, Concordia University
- 47 **An R Framework for Simulation Experiments**—◆ David C. Cooper, GlaxoSmithKline
- 48 **Markov Chain Monte Carlo with Linchpin Variables**—◆ Felipe Acosta Archila, University of Minnesota; Galin Jones, University of Minnesota
- 49 **Comparison of Bootstrapping Method with the Delta Method for Estimating Standard Errors of Relative Risks in the Assessment of Pneumococcal Serotype Replacement**—◆ Abanti Sanyal; Richard E. Thompson, The Johns Hopkins University; Milo A. Puhan, The Johns Hopkins University; Eunice W. Kagucia, The Johns Hopkins University; Daniel R. Feikin, The Johns Hopkins University
- 50 **Statistical Hypothesis Testing Using Robustified Likelihood Function for Location Parameter**—◆ Yichen Qin, The Johns Hopkins University; Carey E. Priebe, The Johns Hopkins University
- 51 **Monte Carlo Maximum Likelihood for the Two-Stage Hierarchical Model**—◆ Christina Knudson, University of Minnesota
- 377 CC-220bc
- Contributed Oral Poster Presentations:  
Section on Statistical Learning and Data  
Mining—Contributed**  
Section on Statistical Learning and Data Mining  
Chair(s): Joyee Ghosh, University of Iowa
- 52 **Prediction of Future Cost for Congestive Heart Failure Patients Using Heavy-Tailed Data**—◆ Jun Han, Elsevier / MEDai
- 53 **Robust Data Mining and Variable Selection via Stochastic Gradient Boosting**—◆ Chamont Wang, College of New Jersey; Leonardo Auslender, Cisco; Jana Gevertz, The College of New Jersey
- 54 **The Super Learner for Estimating Nonlinear Associations in the Cox Regression Model**—◆ Elizabeth Malloy, American University; Philip Gautier, Purdue University; Cynthia Cook, American University; Melissa K. Bergeron, Freddie Mac
- 55 **Insight Discovery for Decision Tree Models**—◆ Jane Chu, IBM; Jing Shyr, IBM; Weicai Zhong, IBM
- 56 **Robust Variable Selection for Functional Regression Models**—◆ Jasdeep Pannu
- 57 **Variable Selection for Optimal Treatment Regime**—◆ Na Zhang, North Carolina State University; Howard Bondell, North Carolina State University; Eric Laber, North Carolina State University



- 58 **A Robust Variable Selection Method for Grouped Data**—◆Kristin Lilly, Auburn University; Nedret Billor, Auburn University
- 59 **Use of Non-Negative Matrix Factorization to Understand Exercise Effects on Metabolites**—◆Douglas A. Marsteller, PepsiCo; S. Stanley Young, National Institute of Statistical Sciences; K. Eric Milgram, PepsiCo; John V. St. Peter, PepsiCo; Mark A. Pirner, PepsiCo
- 60 **Group Lasso in Functional Logistic Regression**—◆Jessica Godwin, Auburn University; Nedret Billor, Auburn University
- 61 **Longitudinal Trajectory Cluster Analysis: How Many Groups Are There?**—◆Alyssa B. Dufour, Hebrew SeniorLife & Harvard Medical School; L. Adrienne Cupples, Boston University; Timothy Heeren, Boston University; David R. Gagnon, Boston University
- 62 **Model-Based Classifications of High-Throughput Data Review, Design, and Application to a Cancer Clinical Study**—◆A.C. Cambon, University of Louisville; Shesh Nath Rai, University of Louisville
- 63 **Inference for Supervised Learning: Regression Trees and CLTs**—◆Lucas Mentch, Cornell University; Giles Hooker, Cornell University
- 64 **Survival Trees for Discrete Failure Times**—◆Matthias Schmid, University of Erlangen-Nuremberg; Helmut Küchenhoff, University of Munich; Gerhard Tutz, University of Munich

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## Speaker with Lunch 12:30 p.m.–1:50 p.m.

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- 378 **Economic Outlook Luncheon (Fee Event)—Speaker with Lunch** CC-524c  
Business and Economic Statistics Section  
Organizer(s): John M. Abowd, Chair, Business and Economic Statistics Section
- TL08 **Will Western Labor Markets Ever Recover from the Great Recession?**—◆Thomas Lemieux, University of British Columbia

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## Roundtables with Lunch 12:30 p.m.–1:50 p.m.

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- 379 **Biometrics Section P.M. Roundtable Discussion (Fee Event)** CC-517d  
Biometrics Section  
Organizer(s): Jonathan S. Schildcrout, Vanderbilt University
- TL09 **Recent Advances in Joint Models for Longitudinal and Time-to-Event Data**—◆Dimitris Rizopoulos, Erasmus MC
- 380 **Biopharmaceutical Section P.M. Roundtable Discussion (Fee Event)** CC-517d  
Biopharmaceutical Section  
Organizer(s): Ivan S. F. Chan, Merck Research Laboratories
- TL10 **Globalization of Clinical Trials: The Development of Treatments and Preventative Products for Diseases and Allergies**—◆Tammy Massie, FDA/CBER
- TL11 **Role of Statisticians in Pharmaceutical/Medical Device Industry**—◆Nfii Ndikintum, inVentiv Health Clinical
- 381 **Health Policy Statistics Section P.M. Roundtable Discussion (Fee Event)** CC-517d  
Health Policy Statistics Section  
Organizer(s): Juned Siddique, Northwestern University
- TL12 **How to Succeed as an Academic Statistician in a Nonstatistics or Biostatistics Department**—◆Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health
- TL13 **How to Write a Successful Statistics Book**—◆Sophia Rabe-Hesketh, University of California at Berkeley; Anders Skrondal, Norwegian Institute of Public Health
- 382 **Quality and Productivity Section P.M. Roundtable Discussion (Fee Event)** CC-517d  
Quality and Productivity Section  
Organizer(s): Ming Li, GE Global Research
- TL14 **Achieving Process Excellence Using Design of Experiments**—◆Daksha Chokshi, Pratt & Whitney Rocketdyne

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 383 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

TL15 **The Role of Bayesian Analysis for an Emerging Class of Complex Data: Object Data**—◆ Jeffrey S. Morris, The University of Texas MD Anderson Cancer Center

## 384 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

TL16 **Case Studies in Graphics: The Best Plot I Ever Made**—◆ Elizabeth Schiferl, The Lubrizol Corporation

## 385 CC-517d Section on Statistical Computing P.M. Roundtable Discussion (Fee Event)

Section on Statistical Computing, Section for Statistical Programmers and Analysts  
Organizer(s): Nicholas John I. Lewin-Koh, Genentech

TL17 **The Practical Aspects of Doing Statistics on Large Data Sets**—◆ Joseph Rickert

## 386 CC-517d Section on Statistical Consulting P.M. Roundtable Discussion (Fee Event)

Section on Statistical Consulting  
Organizer(s): Nicholas Pajewski, Wake Forest University

TL18 **Mentoring Applied Statisticians**—  
◆ Marlene Egger, University of Utah, DFPM

## 387 CC-517d Section on Statistical Education P.M. Roundtable Discussion (Fee Event)

Section on Statistical Education  
Organizer(s): Ming-Wen An, Vassar College

TL19 **Lessons Learned from a Decade of Online Teaching**—  
◆ Michelle G. Everson, University of Minnesota

TL20 **Using Simulation to Improve Students' Understanding in Statistical Theory**—◆ Elena G. Rantou (Randou), George Mason University

TL21 **'Big Data' Data Sets for Undergraduate Applied Statistics Courses**—◆ John McKenzie, Babson College

## 388 CC-517d Section on Statistics and the Environment P.M. Roundtable Discussion (Fee Event)

Section on Statistics and the Environment  
Organizer(s): Mevin Hooten, Colorado State University

TL22 **Modeling Diseases in Wildlife**—  
◆ Jennifer Hoeting, Colorado State University

## 389 CC-517d Section on Statistics in Epidemiology P.M. Roundtable Discussion (Fee Event)

Section on Statistics in Epidemiology  
Organizer(s): Madhuchhanda Mazumdar, Weill Cornell Medical College

TL23 **Bayesian Disease Mapping: Opportunities, Challenges, and New Frontiers in an Information- and Data-Rich Era**—◆ Ying MacNab, University of British Columbia

## 390 CC-517d Social Statistics Section P.M. Roundtable Discussion (Fee Event)

Social Statistics Section  
Organizer(s): Michael Sinclair, NORC

TL24 **Blending Probability and Non-Probability Samples Using Calibration Techniques**—◆ Charles DiSogra, Abt SRBI; Curtiss L. Cobb, GfK

TL25 **Extracting Social Science Insights from Social Media**—◆ Martin Barron, NORC At the University of Chicago

## 391 CC-517d Survey Research Methods Section P.M. Roundtable Discussion (Fee Event)

Survey Research Methods Section  
Organizer(s): Karol Krotki, RTI International

TL26 **Practical Guidelines for Dual-Frame RDD Survey Methodology**—◆ Mansour Fahimi, Marketing Systems Group

## Special Presentation 2:00 p.m.–3:50 p.m.

### 392 CC-710a Introductory Overview Lecture: Big Data— 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 Statistical Graphics, Section on Statistical Computing, Section on Statistics in Epidemiology

Organizer(s): Ping Ma, University of Illinois at Urbana-Champaign  
Chair(s): Ping Ma, University of Illinois at Urbana-Champaign

- 2:05 p.m. **The Relative Size of Big Data**—◆ Bin Yu, University of California at Berkeley
- 2:55 p.m. **Divide and Recombine (D&R) with RHIPE for Large Complex Data**—◆ William S. Cleveland, Purdue University
- 3:45 p.m. **Floor Discussion**

## Invited Sessions 2:00 p.m.–3:50 p.m.

### 393 CC-512ab Recent Developments for Disease Diagnosis, Risk Prediction, and Treatment Selection Using Biomarkers—Invited

ENAR, Statistical Learning and Data Mining Section, Biometrics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Huaihou Chen, New York University  
Chair(s): Douglas Gunzler, Case Western Reserve University

- 2:05 p.m. **Predictive Accuracy of Covariates for Event Times**—◆ Donglin Zeng, The University of North Carolina; Li Chen, University of Kentucky; Danyu Lin, University of North Carolina
- 2:30 p.m. **Locally Smoothed Statistical Learning for Age-Dependent Classification and Disease Risk Prediction**—Huaihou Chen, New York University; Tianle Chen, Columbia University; Donglin Zeng, The University of North Carolina; ◆ Yuanjia Wang, Columbia University

- 2:55 p.m. **Latent Class Regression Model for Assessment of Diagnostic Tests in the Absence of a Gold Standard, with Accommodation for Covariate Information**—◆ Zheyu Wang, University of Washington; Xiao-Hua Andrew Zhou, University of Washington
- 3:20 p.m. **Identifying Subpopulations with Differential Risk Benefit Profiles**—◆ Tianxi Cai, Harvard University
- 3:45 p.m. **Floor Discussion**

### 394 CC-511c ■ Biased Epidemiological Study Designs: Opportunities and Challenges—Invited

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

Organizer(s): Jonathan S. Schildcrout, Vanderbilt University  
Chair(s): Jonathan S. Schildcrout, Vanderbilt University

- 2:05 p.m. **Likelihood-Based Analysis of Longitudinal Data from Outcome-Dependent Sampling Designs**—◆ John Neuhaus, University of California at San Francisco; Alastair Scott, University of Auckland; Chris J. Wild, University of Auckland; Yannan Jiang, University of Auckland; Charles McCulloch, University of California at San Francisco
- 2:30 p.m. **Robust Outcome-Dependent Sampling for Continuous- and Counted-Response Longitudinal Data**—◆ Paul J. Rathouz, University of Wisconsin School of Medicine and Public Health; Lee McDaniel, University of Wisconsin-Madison; Jonathan S. Schildcrout, Vanderbilt University
- 2:55 p.m. **The Impact of Exposure Misclassification and Exposure-Biased Sampling on Power for Detecting Gene-by-Environment Interactions in Case-Control Studies**—◆ Bhramar Mukherjee, University of Michigan
- 3:20 p.m. **Analysis of Covariate Subsampling Designs Based on Continuous Longitudinal Data**—◆ Patrick Heagerty, University of Washington; Jonathan S. Schildcrout, Vanderbilt University; Paul J. Rathouz, University of Wisconsin School of Medicine and Public Health
- 3:45 p.m. **Floor Discussion**



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209-1725 St. Laurent Blvd.  
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**The SSC invites you all to a**

# **RECEPTION**

**Tuesday, August 6,  
5:30-7:30 pm**

**Mardi 6 août,  
17h30 à 19h30**

**La SSC vous y convie tous !**

LOCATION/ LIEU:

Intercontinental Hotel I-Chez Plume





## 395 CC-510c ● **Sampling and Resampling Methods for Random Network Inference and Estimation—Invited**

SSC, Statistical Learning and Data Mining Section, Section on Statistics in Epidemiology

Organizer(s): Yulia R. Gel, University of Waterloo

Chair(s): Yulia R. Gel, University of Waterloo

- 2:05 p.m. **Topics in Nonparametric Inference for Network Models**—◆Peter Bickel, University of California at Berkeley
- 2:30 p.m. **Perturbed Random Graphs in the Human Microbiome**—◆Susan Holmes, Stanford University
- 2:55 p.m. **Patchwork Sampling and Resampling on Random Networks**—◆Mary E. Thompson, University of Waterloo, Canada; Yulia R. Gel, University of Waterloo; L. Leticia Ramirez Ramirez, Instituto Tecnológico Autónomo de México; Vyacheslav Lyubchich, University of Waterloo, Canada
- 3:20 p.m. **Estimating Network Statistics Through Nonparametric Denoising**—◆Prakash Balachandran, Boston University; Eric Kolaczyk, Boston University; Edo Airolidi, Harvard University
- 3:45 p.m. **Floor Discussion**

## 396 CC-520d ■ **New Directions in Spatial Statistics and Computation in the 21st Century—Invited**

Section on Statistics and the Environment, Statistical Learning and Data Mining Section, Section on Statistical Computing

Organizer(s): Debashis Mondal, The University of Chicago

Chair(s): Veronica Berrocal, School of Public Health, University of Michigan

- 2:05 p.m. **Spline Models for the Analysis of Spatio-Temporal Count Data**—◆Jon Wakefield, University of Washington; Cici Bauer, Brown University
- 2:35 p.m. **Bayesian Computing with R-INLA: Some Recent Developments**—◆Håvard Rue, NTNU
- 3:05 p.m. **Matrix-Free Computations for Gaussian Markov Random Fields and Related Spatial Processes on Regular Lattice**—◆Debashis Mondal, The University of Chicago
- 3:35 p.m. **Floor Discussion**

## 397 CC-516c ■ ● **Causal Inference and Data Analysis from a Missing Data Perspective: Honoring Donald B. Rubin's Contributions to Statistics on His 70th Birthday—Invited**

Survey Research Methods Section, Mental Health Statistics Section, SSC, Section on Statistics in Epidemiology

Organizer(s): Fabrizia Mealli, University of Florence

Chair(s): Nathaniel Schenker, National Center for Health Statistics

- 2:05 p.m. **What Statistical Problems Are Not Missing-Data Problems?**—◆Xiao-Li Meng, Harvard University
- 2:25 p.m. **Joint Modeling of Incomplete Data with Mixed Variable Types Using Latent-Variable Models**—◆Thomas R. Belin, University of California at Los Angeles
- 2:45 p.m. **Regression Discontinuity Designs and Potential Outcomes**—◆Guido Imbens, Stanford University
- 3:05 p.m. **The Role of Covariates and Secondary Outcomes in Causal Studies with Intermediate Variables**—◆Fabrizia Mealli, University of Florence
- 3:25 p.m. Disc: Roderick J. Little, University of Michigan
- 3:40 p.m. **Floor Discussion**

## 398 CC-520b ■ **Taming Big Data with Matrix and Tensor Decomposition Methods—Invited**

Section on Nonparametric Statistics, Statistical Learning and Data Mining Section, Section on Statistical Computing

Organizer(s): George Luta, Georgetown University

Chair(s): Genevera Allen, Rice University

- 2:05 p.m. **Sparse Low-Rank Models for the Integration of Multiple Data Types**—◆Eric Frazer Lock, Duke University
- 2:25 p.m. **Regularized Matrix Decomposition and Its Applications**—◆Jianhua Z. Huang, Texas A&M University
- 2:45 p.m. **Exploring Brain Activation Networks with Matrix Volume**—◆Vadim Zippunikov, Johns Hopkins Bloomberg School of Public Health; Ani Eloyan, Johns Hopkins Bloomberg School of Public Health; Brian Caffo, The Johns Hopkins University
- 3:05 p.m. **Multi-Block Tensor Decompositions: From Canonical Correlation Analysis to Linked Multiway Component Analysis**—◆Andrzej Cichocki, Brain Science Institute RIKEN; Guoxu Zhou; Qibin Zhao; George Luta, Georgetown University
- 3:25 p.m. Disc: Peter David Hoff, University of Washington
- 3:45 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 399 **Recent Developments in High-Dimensional Statistical Learning—Invited**

Section on Statistical Learning and Data Mining, SSC, Biometrics Section  
Organizer(s): Yichao Wu, North Carolina State University  
Chair(s): J. S. Marron, The University of North Carolina

- 2:05 p.m. **Data Enrichment for Linear Regression Models—**  
Aiyou Chen, Google; ◆ Art B. Owen, Stanford University; Minghui Shi, Google
- 2:30 p.m. **Maximum Likelihood Estimation of a Directed Acyclic Gaussian Graph—**Yiping Yuan, University of Minnesota; ◆ Xiaotong Shen, University of Minnesota; Wei Pan, University of Minnesota
- 2:55 p.m. **Variable Selection in Kernel-Based Nonparametric Regression—**◆ Len Stefanski, North Carolina State University; Kyle White, North Carolina State University; Yichao Wu, North Carolina State University
- 3:20 p.m. **Sufficient Dimension Reduction in Binary Classification—**Seung Jun Shin, North Carolina State University; ◆ Yichao Wu, North Carolina State University; Hao Helen Zhang, University of Arizona; Yufeng Liu, The University of North Carolina
- 3:45 p.m. **Floor Discussion**

## 400 **■ Spatial Extremes, Max-Stable Processes, and Beyond—Invited**

IMS  
Organizer(s): Stilian A. Stoev, University of Michigan  
Chair(s): Stilian A. Stoev, University of Michigan

- 2:05 p.m. **A Model for Extremes on a Regular Spatial Lattice—**◆ Dan Cooley, Colorado State University; Grant B Weller, Colorado State University
- 2:30 p.m. **Fully Bayesian Inference for Spatial Extremes Using Hierarchical Extreme Value Processes—**Brian J. Reich, North Carolina State University; ◆ Ben Shaby, University of California at Berkeley
- 2:55 p.m. **Spatial Extremes: Inference and Some Thoughts Beyond Max-Stability—**◆ Jenny Wadsworth, Ecole Polytechnique Federale de Lausanne; Jonathan Tawn, Lancaster University
- 3:20 p.m. Disc: Montserrat Fuentes, North Carolina State University
- 3:40 p.m. **Floor Discussion**

## 401 **■ Painting a Picture of Life in the United States—Invited**

Section on Statistical Graphics, Section on Statistical Education, Section on Statistical Computing, Scientific and Public Affairs Advisory Committee  
Organizer(s): Heike Hofmann, Iowa State University  
Chair(s): Dianne H. Cook, Iowa State University

- 2:05 p.m. **The Statistical Atlas of the 1870 Census and Other Early Census Visualization—**◆ Howard R. Hogan, U.S. Census Bureau
- 2:25 p.m. **Visualizing Census Tables—**◆ Richard M. Heiberger, Temple University; Naomi B. Robbins, NBR; Edward J. Mulrow, NORC at the University of Chicago
- 2:45 p.m. **Picturing Life in the U.S.—**◆ Heike Hofmann, Iowa State University; Jay Emerson, Yale University
- 3:05 p.m. **From Tables to Tableaus: Changing the Analytical Culture of a Large Organization—**◆ Eric C. Newburger, U.S. Census Bureau
- 3:25 p.m. **Mapping the United States—**◆ Michael R. Ratcliffe, U.S. Census Bureau
- 3:45 p.m. **Floor Discussion**

## 402 **■ Quantile Linear Modeling: An Introduction for the Working Statistician—Invited**

Section on Statistical Consulting, International Chinese Statistical Association  
Organizer(s): Ralph G. O'Brien, Case Western Reserve University  
Chair(s): Jonathan Mahnken, The University of Kansas Medical Center

- 2:05 p.m. **Quantile Linear Modeling: A Primer for the Working Statistician—**◆ Jarrod Dalton, Cleveland Clinic Foundation
- 2:45 p.m. **Quantile Linear Modeling: A Primer for the Working Statistician (Part 2)—**◆ Ralph G. O'Brien, Case Western Reserve University
- 3:25 p.m. **Floor Discussion**

## 403 Medallion Lecture VI—Invited

IMS

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

Chair(s): David Madigan, Columbia University

- 2:05 p.m. **The Mathematics of Causal Inference—**  
◆ Judea Pearl, University of California at Los Angeles
- 3:30 p.m. Disc: Thomas S. Richardson, University of Washington
- 3:40 p.m. Disc: Eric Tchetgen Tchetgen, Harvard University
- 3:50 p.m. **Floor Discussion**

## Invited Panels 2:00 p.m.–3:50 p.m.

## 404 ■ A Celebration of J. Stuart Hunter's Contributions to Technometrics and Statistics— Invited

Technometrics, Section on Physical and Engineering Sciences

Organizer(s): Hugh A. Chipman, Acadia University

Chair(s): Hugh A. Chipman, Acadia University

- Panelists:** ◆ David Steinberg, Tel Aviv University  
◆ Richard D. De Veaux, Williams College  
◆ Roger W. Hoerl, GE Global Research  
◆ Douglas Montgomery, Arizona State University  
◆ Bradley A. Jones, SAS Institute, JMP Division

3:35 p.m. **Floor Discussion**

## 405 ■ Questions in Cancer Research: What Are the Most Pressing Statistical Problems?—Invited

Biometrics Section, WNAR, Scientific and Public Affairs Advisory Committee

Organizer(s): Michelle Christine Dunn, National Cancer Institute

Chair(s): Stephanie Land, National Cancer Institute

- Panelists:** ◆ Gary L. Rosner, The Johns Hopkins University  
◆ Ross Prentice, Fred Hutchinson Cancer Research Center  
◆ Kim-Ahn Do, The University of Texas MD Anderson Cancer Center  
◆ Bradley McIntosh Broom, The University of Texas MD Anderson

3:35 p.m. **Floor Discussion**

## CC-710b Topic-Contributed Sessions 2:00 p.m.–3:50 p.m.

## 406 Advances in Functional Mixed Models— Topic-Contributed

Biometrics Section, International Indian Statistical Association

Organizer(s): Jingang Miao, Texas A&M University; Samiran Sinha, Texas A&M University

Chair(s): Jingang Miao, Texas A&M University

2:05 p.m. **Nonparametric Estimation for Genetic Mixture Models with Random Effects—**◆ Tanya Garcia, Texas A&M University; Yuanjia Wang, Columbia University; Yanyuan Ma, Texas A&M University

2:25 p.m. **Robust Adaptive Functional Mixed Models for Correlated Functional Data—**◆ Hongxiao Zhu, Virginia Tech; Jeffrey S. Morris, The University of Texas MD Anderson Cancer Center

2:45 p.m. **Classical and Bayesian Methods of Smooth Global Testing for Functional Linear Models—**  
◆ Dan Spitzner, University of Virginia

3:05 p.m. **Advances in Functional Mixed Models—**  
◆ Tapabrata Maiti, Michigan State University; Samiran Sinha, Texas A&M University; Ping-Shou Zhong, Michigan State University

3:25 p.m. **Functional Spectral Analysis—**◆ Robert Krafty, University of Pittsburgh; Wensheng Guo, University of Pennsylvania; Martica Hall, University of Pittsburgh

3:45 p.m. **Floor Discussion**

## 407 ■ Recent Advances in Design and Analysis of Cancer Clinical Trials—Topic-Contributed

Biopharmaceutical Section, Mental Health Statistics Section, Biometrics Section

Organizer(s): Jianchang Lin, Millennium: The Takeda Oncology Company

Chair(s): Guohui Liu, Millennium: The Takeda Oncology Company

2:05 p.m. **Clinical Trial Designs for Biomarker Research in Oncology—**◆ Sumithra Mandrekar, Mayo Clinic

2:25 p.m. **Finding the Biologically Optimal Dose with Early Efficacy Biomarkers in Phase I Cancer Clinical Trials—**◆ Rui Qin, Mayo Clinic

2:45 p.m. **A Dose-Escalation Design for Combination Cancer Therapies—**◆ Jenny Zhang, Gilead Sciences

3:05 p.m. **Improving Median Progression-Free Survival Methods Through Design or Analysis—**◆ Keaven Anderson, Merck Research Laboratories; Honghong Zhou, Merck Research Laboratories

3:25 p.m. Disc: William Rosenberger, George Mason University

3:45 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 408** **CC-520e**
- Recent Developments in Bayesian Health Policy Statistics—Topic-Contributed**
- Section on Bayesian Statistical Science, Health Policy Statistics Section, International Society for Bayesian Analysis (ISBA), Scientific and Public Affairs Advisory Committee
- Organizer(s): Bradley P. Carlin, University of Minnesota  
Chair(s): Joseph S. Koopmeiners, University of Minnesota
- 2:05 p.m. **Bayesian Methods Developments in Microsimulation**—◆ Laura Hatfield, Harvard Medical School
- 2:25 p.m. **Random Effects Old and New: It Affects Your Simulation Design**—◆ James Hodges, University of Minnesota
- 2:45 p.m. **Adaptive Adjustment of the Randomization Ratio Using Historical Control Data**—◆ Brian Hobbs, The University of Texas MD Anderson Cancer Center; Bradley P. Carlin, University of Minnesota; Daniel J. Sargent, Mayo Clinic
- 3:05 p.m. **A Bayesian Hierarchical Model for Network Meta-Analysis with Selection Bias**—◆ Jing Zhang, University of Minnesota School of Public Health; Bradley P. Carlin, University of Minnesota; Hwanhee Hong, University of Minnesota; James Neaton, University of Minnesota; Guoxing (Greg) Soon, FDA; Beth A. Virnig, University of Minnesota School of Public Health; Haitao Chu, University of Minnesota School of Public Health
- 3:25 p.m. **Composite Kaplan-Meier and Commensurate Bayesian Models for Combining Historical and Progressively Accruing Survival Information**—◆ Ted Lystig, Medtronic, Inc.; Thomas Murray, University of Minnesota; Brian Hobbs, The University of Texas MD Anderson Cancer Center; Bradley P. Carlin, University of Minnesota
- 3:45 p.m. **Floor Discussion**
- 409** **CC-510b**
- Statistical Methods with Applications in Biological and Epidemiological Research—Topic-Contributed**
- International Indian Statistical Association, WNAR, Section on Statistics in Epidemiology
- Organizer(s): Anindya Bhadra, Purdue University  
Chair(s): Rubin Wei, Texas A&M University
- 2:05 p.m. **Bayesian Joint Modeling of Zero-Inflated Panel Count and Severity Outcomes**—◆ Elizabeth Juarez-Colunga, University of Colorado Denver; Giovanni Silva, Technical University of Lisbon; Charmaine Dean, University of Western Ontario
- 2:25 p.m. **Statistical Methods for Noninferiority Trials**—◆ Saman Muthukumarana, University of Manitoba
- 2:45 p.m. **Survival Trees and Forest for Thyroid Cancer Prognostication**—◆ Mousumi Banerjee, University of Michigan; Daniel Muenz, University of Michigan; Megan Haymart, University of Michigan
- 3:05 p.m. **Joint Estimation of Multiple Bivariate Densities of Protein Backbone Angles Using an Adaptive Exponential Spline Family**—◆ Mehdi Maadooliat, Marquette University; Lan Zhou, Texas A&M University; Jianhua Z. Huang, Texas A&M University; Xin Gao, King Abdullah University of Science and Technology
- 3:25 p.m. **Screening Strategies for High-Dimensional Multiple Predictor, Multiple Response Data with an Application in Genomics**—◆ Anindya Bhadra, Purdue University; Mehdi Maadooliat, Marquette University; Mohsen Pourahmadi, Texas A&M University; Veera Baladandayuthapani, The University of Texas MD Anderson Cancer Center
- 3:45 p.m. **Floor Discussion**
- 410** **CC-516d**
- ● Analysis of Mixed Type of Data and Multiple Traits—Topic-Contributed**
- Biometrics Section, SSC, WNAR
- Organizer(s): Gang Zheng, National Heart, Lung and Blood Institute  
Chair(s): Zhaohai Li, George Washington University
- 2:05 p.m. **Gaussian Copula Mixed Models for Non-Gaussian Correlated Data**—◆ Alex de Leon, University of Calgary; Beilei Wu, University of Calgary; Niroshan Withanage, University of Calgary
- 2:25 p.m. **Assessment of Biomarker Prediction Accuracy Under Marker-Dependent Sampling**—Xiaofei Wang, Duke University Medical Center; ◆ Junling Ma, Shanghai University of Finance and Economics; Stephen George, Duke University Medical Center
- 2:45 p.m. **Genetic Association with Multiple Traits in the Presence of Population Stratification**—◆ Qizhai Li, Academy of Mathematics and Systems Science, CAS; Ting Yan, George Washington University; Yuanzhang Li, Walter Reed Army Institute of Research; Zhaohai Li, George Washington University; Gang Zheng, National Heart, Lung and Blood Institute
- 3:05 p.m. **Combining Dependent P-Values Using Generalizations of Gamma Distribution with Applications to Multi-Trait Association**—◆ Gang Zheng, National Heart, Lung and Blood Institute; Qizhai Li, Academy of Mathematics and Systems Science, CAS
- 3:25 p.m. **Secondary Analysis of Longitudinal Trait in Genetic Association Studies**—◆ Huilin Li, New York University
- 3:45 p.m. **Floor Discussion**



411 CC-513b  
**Regulatory Challenges in Nonclinical Biostatistics—Topic-Contributed**

Biopharmaceutical Section, Biometrics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Priya Kulkarni, Genentech Inc

Chair(s): Priya Kulkarni, Genentech Inc

- 2:05 p.m. **A Predictive Distribution Approach to QbD: Going Beyond the Flaw of Averages to Assess Risk—**  
◆ John Peterson, GlaxoSmithKline
- 2:25 p.m. **Perspectives on Pooling as Described in the ICH Q1E Guidance—**◆ Stan Altan; Jyh-Ming Shoung, Janssen Research & Development; Yan Shen, Janssen Research & Development; Areti Manola, Janssen Research & Development
- 2:45 p.m. **The Posterior Probability of Passing a Compendial Standard—**◆ David LeBlond, CMStats; Linas Mockus, Purdue University
- 3:05 p.m. **Statistical Challenges Arising in Tech Transfers of Lyophilized Biologics and Improvements Made Using a Finite-Sample Chebyshev Inequality and a Lognormal Sum Approximation—**  
◆ Lisa Bernstein, Genentech
- 3:25 p.m. Disc: Bert Gunter, Genentech Inc.
- 3:45 p.m. **Floor Discussion**

412 CC-511b  
**Forecasting Macroeconomic Trends—Topic-Contributed**

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

Organizer(s): Gian Luigi Mazzi, Eurostat - European Commission

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

- 2:05 p.m. **U.S. Fiscal Policy: Ex Ante and Ex Post—**  
◆ Simon van Norden, HEC Montréal; Dean Croushore, University of Richmond
- 2:25 p.m. **Modeling Trends, Cyclical Movements, and Turning Points of the Chinese Economy—**◆ Ataman Ozyildirim, The Conference Board; Harry X. Wu, Institute of Economic Research, Hitotsubashi University
- 2:45 p.m. **Probability Forecasting for Inflation Warnings from the Federal Reserve—**◆ Shaun Vahey, ANU; Anthony Garratt, Birkbeck, University of London; James Mitchell, Warwick University
- 3:05 p.m. **Forecasting Macroeconomic Trends—**◆ Gabriel Perez Quiros, Bank of Spain; Javier Perez Garcia, Bank of Spain; Joan Paredes, European Central Bank
- 3:25 p.m. **Floor Discussion**

413 CC-519a  
**Selections from Statistical Inference from SAMSI Massive Data Program—Topic-Contributed**

Section on Statistical Learning and Data Mining, SSC, Biometrics Section, Section on Statistical Computing, Scientific and Public Affairs Advisory Committee Organizer(s): Naomi S. Altman, Penn State University; Yufeng Liu, The University of North Carolina  
 Chair(s): Naomi S. Altman, Penn State University

- 2:05 p.m. **Bayesian Large-Scale Multiple Testing for Time Series Data—**Xia Wang, University of Cincinnati; ◆ Ali Shojaie, University of Washington; Jian Zou, Indiana University-Purdue University Indianapolis
- 2:25 p.m. **Adaptively Weighted Large Margin Classifiers for Sufficient Dimension Reduction—**◆ Andreas Artemiou, Michigan Technological University; Yufeng Liu, The University of North Carolina
- 2:45 p.m. **Large-Margin Classifier Selection via Decision Boundary Stability—**◆ Wei Sun, Purdue University; Guang Cheng, Purdue University; Yufeng Liu, The University of North Carolina
- 3:05 p.m. **Variable Selection for Support Vector Machine on High Dimensions—**◆ Xiang Zhang, North Carolina State University; Lan Wang, University of Minnesota; Runze Li, Penn State University; Yichao Wu, North Carolina State University
- 3:25 p.m. **Floor Discussion**

414 CC-524b  
**The ‘Third’ Course in Applied Statistics for Undergraduates—Topic-Contributed**

Section on Statistical Education

Organizer(s): Paul Roback, St. Olaf College

Chair(s): Amy Wagaman, Amherst College

- 2:05 p.m. **Statistics Without the Normal Distribution—**  
◆ Monnie McGee, Southern Methodist University
- 2:25 p.m. **Nonlinear, Non-Normal, Non-Independent? A Course About Models for Situations When Classical Regression Assumptions Don’t Apply—**  
◆ Alison Gibbs, University of Toronto
- 2:45 p.m. **Are Undergraduates Ready for Generalized Linear Models and Correlated Data Methods?—**  
◆ Paul Roback, St. Olaf College
- 3:05 p.m. **Teaching Data Mining and Predictive Analytics to Undergraduates—**◆ Brant Deppa, Winona State University
- 3:25 p.m. Disc: Julie Legler, St. Olaf College
- 3:45 p.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

415

## ■ ● Challenges and New Developments in Imaging with Large Data Sets—Topic-Contributed

Section on Statistics in Imaging, Mental Health Statistics Section, Section on Statistical Computing

Organizer(s): Garvesh Raskutti, SAMSI

Chair(s): Timothy Johnson, University of Michigan

2:05 p.m. **Compressive Inference**—◆ Weihong Guo, CWRU; Garvesh Raskutti, SAMSI; Jiayang Sun, Case Western Reserve University; Grace Yi Wang, SAMSI; Dan Yang, SAMSI

2:25 p.m. **Light Curve Analysis for Classification with Astronomical Data**—◆ Ashish Mahabal, Caltech; Julian Faraway, University of Bath; Jiayang Sun, Case Western Reserve University; Xiaofeng Wang, Cleveland Clinic Lerner Research Institute; Yi Wang, SAMSI/Duke University; Lingsong Zhang, Purdue University

2:45 p.m. **Forgery Detection in Paintings**—◆ Yi Wang, SAMSI/Duke University; Ingrid Daubechies, Duke University; Gungor Polatkan, Princeton University; Sina Jafarpour, Yahoo! Research

3:05 p.m. **Image Analysis of High-Resolution and High-Throughput Experiments**—◆ Daniela Ushizima, LBNL; Andrea Bianchi, Universidade Federal de Ouro Preto; Hari Krishnan, LBNL

3:25 p.m. **Predictive Modeling with High-Dimensional Colorimetric Image Data for Lung Cancer Detection**—◆ Xiaofeng Wang, Cleveland Clinic Lerner Research Institute; Peter J. Mazzone, Cleveland Clinic Foundation

3:45 p.m. **Floor Discussion**

416

## Advances in G-Estimation of Structural Nested Models and Structural Equation Models—Topic-Contributed

Section on Statistics in Epidemiology, SSC, Biometrics Section

Organizer(s): Alisa J. Stephens, University of Pennsylvania

Chair(s): Alisa J. Stephens, University of Pennsylvania

2:05 p.m. **Estimating Cumulative Failure Risk Under Hypothetical Interventions on Time-Varying Treatments in Complex Observational Studies**—◆ Jessica G. Young, Harvard School of Public Health

2:25 p.m. **Exploring the Finite-Sample Properties of Inverse Probability Weighted and G Estimation of a Structural Nested Failure Time Model Under Positivity Violations**—◆ Ashley Isaac Naimi, McGill University; Stephen R. Cole, The University of North Carolina at Chapel Hill; Erica E. M. Moodie, McGill University; Jay Kaufman, McGill University

CC-513a

2:45 p.m. **Structural Nested Mean Model for Clustered Outcomes**—◆ Jiwei He, University of Pennsylvania; Marshall M. Joffe, University of Pennsylvania

3:05 p.m. **Restricted Estimation for More Efficient Causal Inference in Longitudinal Studies**—◆ Edward H. Kennedy, University of Pennsylvania; Marshall M. Joffe, University of Pennsylvania

3:25 p.m. **Sequential G-Estimation and SEM: Viable Alternatives to Inverse Probability Weighting in Structural Nested Direct Effect Models**—◆ Tom Loeys, Ghent University (Belgium); Stijn Vansteelandt, Ghent University; Beatrijs Moerkerke, Ghent University

3:45 p.m. **Floor Discussion**

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## Adaptive Monte Carlo Methods for Bayesian Computation—Topic-Contributed

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

Organizer(s): Scott C. Schmidler, Duke University

Chair(s): Le-Minh Ho, Yale University

2:05 p.m. **Adaptive Energy Partitioning for Generalized Wang-Landau Sampling**—◆ Jianyu Wang, Duke University; Scott C. Schmidler, Duke University

2:25 p.m. **Monte Carlo Confidence Intervals**—◆ Yves Atchade, Statistics Department, University of Michigan

2:45 p.m. **Locally Adaptive Markov Chain Monte Carlo**—◆ Anthony Lee, University of Warwick; Christophe Andrieu, University of Bristol; Arnaud Doucet, University of Oxford

3:05 p.m. **Score and Observed Information Matrix Estimation in State-Space Models Using Sequential Monte Carlo**—◆ Pierre Etienne Jacob, National University of Singapore; Arnaud Doucet, University of Oxford; Sylvain Rubenthaler, CNRS Nice

3:25 p.m. **Comparing the Efficiency of Adaptive MCMC Algorithms**—◆ Scott C. Schmidler, Duke University

3:45 p.m. **Floor Discussion**

CC-518

## 418 CC-512e **Current Research and Evaluation Topics in the American Community Survey— Topic-Contributed**

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

Organizer(s): Frauke Kreuter, University of Maryland

Chair(s): Alfred Navarro, U.S. Census Bureau

- 2:05 p.m. **Using Publically Available Administrative Data to Improve Direct Estimates of Income and Poverty from the American Community Survey—**  
◆Richard Griffin, U.S. Census Bureau
- 2:25 p.m. **Coverage of American Indian and Alaska Native Persons and of the Population in American Indian and Alaska Native Areas in the American Community Survey—**  
◆Michael Beaghen, U.S. Census Bureau; John Matthew Jordan, U.S. Census Bureau
- 2:45 p.m. **Investigation of Anomalies in Derived Standard Errors for Estimates from the American Community Survey Public Use Microdata File—**  
◆Sirius Fuller, U.S. Census Bureau; Karen E. King, U.S. Census Bureau
- 3:05 p.m. **Several Approaches to Modeling the Characteristics of Undeliverable-as-Addressed Addresses in the American Community Survey—**  
◆Kristen Cyffka, U.S. Census Bureau; Steven P. Hefter, U.S. Census Bureau
- 3:25 p.m. **Sample Representivity in the American Community Survey—**  
◆Don Keathley, U.S. Census Bureau; Steven P. Hefter, U.S. Census Bureau
- 3:45 p.m. **Floor Discussion**

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## **Topic-Contributed Panels 2:00 p.m.–3:50 p.m.**

## 419 CC-515b **2013 International Year of Statistics: The Time Is Now to Become an ASA Accredited Professional Statistician—Topic-Contributed**

Accreditation Committee, International Indian Statistical Association,  
Statistics Without Borders

Organizer(s): Judy-Anne W. Chapman, NCIC Clinical Trials Group

Chair(s): Theresa Utlaut, Intel Corporation

- Panelists:** ◆Judy-Anne W. Chapman, NCIC Clinical Trials Group  
◆Mary Batcher, Ernst and Young  
◆Janet McDougall, McDougall Scientific

3:45 p.m. **Floor Discussion**

## 420 CC-516e **Teaching Online in the Health Sciences— Topic-Contributed**

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

Organizer(s): Jeff M. Szychowski, The University of Alabama  
at Birmingham

Chair(s): T. Mark Beasley, The University of Alabama of Birmingham

- Panelists:** ◆Jeff M. Szychowski, The University of Alabama  
at Birmingham  
◆Andres Azuero, The University of Alabama at  
Birmingham  
◆Kendra K. Schmid, University of Nebraska  
Medical Center  
◆Bonnie Dumas, Medical University of South Carolina

3:45 p.m. **Floor Discussion**

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## **Topic-Contributed Poster Presentations 2:00 p.m.–3:50 p.m.**

## 421 CC-220bc **Topic-Contributed Poster Presentations: SPA Competition—Topic-Contributed**

Scientific and Public Affairs Advisory Committee

Organizer(s): Susmita Datta, University of Louisville;

Daniel F. McCaffrey, ETS

Chair(s): Susmita Datta, University of Louisville;

Daniel F. McCaffrey, ETS

Biometrics Section

- Blood Pressure and Cholesterol Control in Hypertensive Hypercholesterolemic Patients—**  
◆Jiexiang Li, College of Charleston; Brent Egan, MUSC

Section on Statistical Computing

- Skewness of Maximum Likelihood Estimators in Beta Regression Model—**  
◆Tiago Magalhaes, University of Sao Paulo; Denise Botter, University of Sao Paulo; Monica Sandoval, University of Sao Paulo
- Promotion Time Cure Rate Model with Bivariate Random Effects—**  
◆Diego Gallardo, University of Sao Paulo; Heleno Bolfarine, University of Sao Paulo; Antonio Carlos Pedrosa-de-Lima, University of Sao Paulo

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## Biopharmaceutical Section

- 4 **Comparative Effectiveness Research Using Meta-Analysis to Evaluate and Summarize Diagnostic Accuracy**—◆ Kelly Zou, Pfizer Inc.; Ching-Ray Yu, Pfizer Inc.; Ye Tan, Pfizer Inc; Martin O. Carlsson, Pfizer Inc.

## Section on Nonparametric Statistics

- 5 **Statistics Aids in Development of Personalized Modules to Improve Medication Adherence**—◆ Yan Wang, Fielding School of Public Health, University of California at Los Angeles; Asya Spears, Fielding School of Public Health, University of California at Los Angeles; Honghu Liu, School of Dentistry, University of California at Los Angeles

## Biometrics Section

- 6 **Evaluation of Approaches to Analyzing Clustered Data When the Number of Clusters and Cluster Size Are Small: A Simulation Study**—◆ Jiayan Huang, University of Pennsylvania; Gui-shuang Ying, University of Pennsylvania

## SSC

- 7 **Estimating Nonhomogeneous Intensity Matrices in Continuous Time Multi-State Markov Models**—◆ Gerald Lebovic, St. Michael's Hospital; George Tomlinson, University Health Network; Patrick Brown, University of Toronto; James Stafford, University of Toronto
- 8 **MCMC Clustering and Its Convergence Issues**—◆ Namdar Homayounfar, Masoud Asgharian, McGill University; Vahid Partovi Nia, École Polytechnique Montréal

## Section on Bayesian Statistical Science

- 9 **Meta-Analysis Data Extraction**—◆ Shemra Rizzo, University of California at Los Angeles; Robert E Weiss, University of California at Los Angeles; Raj R. Makkar, Cedars-Sinai Heart Institute

## Government Statistics Section

- 10 **Implications of Coarse Data Allocation Methods for Flood Mitigation Analysis**—◆ James Howard, UMBC/Kore Federal

## Biometrics Section

- 11 **Inference of Bioequivalence for Log-Normal Distributed Data with Unspecified Variances**—◆ Siyan Xu, Boston University; Steven Hua, Pfizer Research; Ronald Menton, Pfizer Inc.; Kerry Barker, Pfizer Inc.; Sandeep Menon, Pfizer Inc.; Ralph D'Agostino, Sr., Boston University; Mo Pei, Boston University

## Survey Research Methods Section

- 12 **Approximate Test for Comparing Parameters of Several Inverse Hypergeometric Distributions**—◆ Lei Zhang, Mississippi State Department of Health; Hongmei Han, Pennington Biomedical Research Center; William Johnson, Pennington Biomedical Research Center

## Section on Statistics in Epidemiology

- 13 **Identifying and Estimating a Non-Constant Hazard Ratio with Time-Varying Covariates Using Cox Regression Models**—◆ Miranda Kroehl, Colorado School of Public Health; Brittini Frederiksen, Colorado School of Public Health; Jill Norris, Colorado School of Public Health; Anna Baron, University of Colorado Denver

## Biopharmaceutical Section

- 14 **Quality-Adjusted Survival Analysis Under Therapeutic Setting**—◆ Suddhasatta Acharyya, Novartis Pharmaceuticals Corporation; Ren He, University of California at Los Angeles

## Health Policy Statistics Section

- 15 **Implications of Diabetes on Dental Costs in an Insured Population**—◆ Monica Chaudhari, Axio Research; William E. Barlow, Cancer Research and Biostatistics; Robert J. Reid, Group Health Research Institute; Ronald Inge, Washington Dental Service

## Section on Statistics in Epidemiology

- 16 **How Biomarker Collection Date Influence Death Rates**—◆ Ngoc Ho

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## Contributed Sessions 2:00 p.m.–3:50 p.m.

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CC-514c

### Functional Analysis and Mixed Models— Contributed

Biometrics Section

Chair(s): David Ikle, Rho Federal Systems Division

- 2:05 p.m. **Penalized Function-on-Function Regression**—◆ Andrada Ivanescu, East Carolina University; Ana-Maria Staicu, North Carolina State University; Fabian Scheipl, Ludwig-Maximilians-Universität München; Sonja Greven, Ludwig-Maximilians-Universität München
- 2:20 p.m. **Functional Principal Components Mixture Regression with Application to CT Image Data**—◆ Lucy Robinson, Drexel University; Sriram Balasubramanian, Drexel University; Silpa Reddy, Drexel University
- 2:35 p.m. **Small Sample Behavior of Generalized Linear Mixed Models with Complex Experiments**—◆ Julie Couton, University of Nebraska; Walt W. Stroup, University of Nebraska-Lincoln
- 2:50 p.m. **Hypothesis Testing Using Small Samples of Repeated Measures Data**—◆ Xueliang Pan; Xiaobai Li, The Ohio State University; David Jarjoura, The Ohio State University



- 3:05 p.m. **Optimal Predictions in Mixed-Effects Hurdle Models**—◆Eva Cantoni, University of Geneva; Joanna Mills Flemming, Dalhousie University; Alan Welsh, Centre for Mathematics and its Applications, Australian National University
- 3:20 p.m. **Effects and Detection of Random-Intercept Misspecification in Generalized Linear Mixed Models**—◆Shun Yu, University of South Carolina-Columbia; Xianzheng (Shan) Huang, University of South Carolina-Columbia
- 3:35 p.m. **Optimal Estimation for the Functional Cox Model**—◆Simeng Qu, Purdue University; Xiao Wang, Purdue University

## 423 CC-515c Measurement Error and Missing Data— Contributed

Biometrics Section, Korean International Statistical Society  
Chair(s): Ji-Hyun Lee, Moffitt Cancer Center

- 2:05 p.m. **Non-Gaussian Berkson Errors in Bioassay**—◆Alaa Althubaiti, King Saud University for Health Sciences; Alexander Donev, University of Manchester
- 2:20 p.m. **Association Between Intake of Added Sugars and Discretionary Fats with Nutrient Intakes for Children and Adolescents Ages 4–18 Years Old**—◆Brenna Curley, Iowa State University; Alicia Carriquiry, Iowa State University
- 2:35 p.m. **Semiparametric Partial Area Under the ROC Curve Estimation Using Test-Dependent Sampling**—◆Bethany Horton, The University of North Carolina at Chapel Hill; Haibo Zhou, The University of North Carolina at Chapel Hill
- 2:50 p.m. **Analysis Strategies for Planned Missing Data in an Oral Health Study**—◆Lauren Harrell, University of California at Los Angeles
- 3:05 p.m. **A Penalized Likelihood Approach for Selection Model with Nonignorable Missing Data**—◆Chi-hong Tseng, University of California at Los Angeles; Robert Elashoff, University of California at Los Angeles; Gang Li, University of California at Los Angeles
- 3:20 p.m. **Estimating a Three-Level Contextual Effects Model Given Error-Prone Measures of Contextual Variables and Missing Data**—◆Yongyun Shin, Virginia Commonwealth University
- 3:35 p.m. **Floor Discussion**

## 424 CC-520a Nonparametric Distribution Estimation— Contributed

Section on Nonparametric Statistics  
Chair(s): Luo Xiao, The Johns Hopkins University

- 2:05 p.m. **Computing Confidence Intervals for Log-Concave Densities**—◆Mahdis Azadbakhsh, York University; Hanna Jankowski, York University; Xin Gao, York University
- 2:20 p.m. **Asymptotics for Lr-Norm of ARCH(p) Innovation Density Estimators**—◆Fuxia Cheng, Illinois State University
- 2:35 p.m. **A Stochastic Representation for the Lp-Norm Symmetric Distribution and Its Applications**—◆Jiajuan Liang, University of New Haven
- 2:50 p.m. **Estimation of Distributions with the New Better Than Used in Expectation Property**—◆Ganesh Malla, Xavier University; Hari Mukerjee, Wichita State University; Edgardo Lorenzo, University of Puerto Rico at Mayagüez
- 3:05 p.m. **Nonparametric Inference About a Density's Mode via the Log-Concave Shape Constraint**—◆Charles Doss, University of Washington; Jon Wellner, University of Washington
- 3:20 p.m. **Nonparametric Estimation of Phylogenetic Tree Distributions**—◆Grady Weyenberg, University of Kentucky
- 3:35 p.m. **Doubly Robust Estimators of Treatment-Specific Survival Distributions in Observational Studies with Stratified Sampling**—◆Xiaofei Bai, North Carolina State University; Anastasios (Butch) Tsiatis, North Carolina State University; Sean M. O'Brien, Duke University Medical Center

## 425 CC-512d Reliability Modeling—Contributed

Section on Physical and Engineering Sciences, Quality and Productivity Section  
Chair(s): Michael Crotty, SAS Institute

- 2:05 p.m. **Optimal Classification Policy for Highly Reliable Products**—◆Chien-Yu Peng, Institute of Statistical Science, Academia Sinica
- 2:20 p.m. **Some Aspects of Series System Reliability Estimation**—◆Emmanuel Yashchin, IBM Corporation
- 2:35 p.m. **Carryover Effects in Repairable Systems**—◆Candemir Cigsar
- 2:50 p.m. **Hazard Rate and Mean Residual Life Functions of Discrete Distributions**—◆Pushpa Gupta, University of Maine

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 3:05 p.m. **Discrete Frailty Models in Survival Analysis**—  
◆ Ramesh Gupta, University of Maine
- 3:20 p.m. **Likelihood Ratio Tests in Two Gamma Populations for Equality of Shape Parameters**—◆ Ram Tripathi, University of Texas at San Antonio; Jerome P. Keating, The University of Texas at San Antonio

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## ■ Statistical Process Control (SPC)—Contributed

Quality and Productivity Section, Section on Statistical Graphics, Korean International Statistical Society

Chair(s): Sarah Kalicin, Intel Corporation

- 2:05 p.m. **Monitoring Change Point for Diffusion Parameter Based on Discretely Observed Sample from SDE Models**—◆ Meihui Guo, National Sun Yat-Sen University; Sangyeol Lee, Seoul National University
- 2:20 p.m. **SPC Charts for Monitoring Process Variability for Stationary Process Data**—◆ Nien-Fan Zhang, NIST; Adam L. Pintar, NIST
- 2:35 p.m. **A Generalized Statistical Control Chart for Over- or Under-Dispersed Data**—◆ Kimberly Sellers, Georgetown University
- 2:50 p.m. **A GLR Control Chart for Monitoring the Process Mean with Sequential Sampling**—◆ Yiming Peng, Virginia Tech; Marion Reynolds, Virginia Tech
- 3:05 p.m. **A GLR Chart for Monitoring a Proportion with Autocorrelation**—◆ Ning Wang, Virginia Tech; Marion Reynolds, Virginia Tech
- 3:20 p.m. **Another Look at Run-Length Distributions**—  
◆ Wei Wang, Penn State University; Dennis Kon-Jin Lin, Penn State University
- 3:35 p.m. **SPC Data Visualization of Seasonal Data**—  
◆ Annie Dudley Zangi, SAS Institute; Diane K. Michelson, SAS Institute

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## ■ ● Statistical Considerations in Multi-Regional Trials—Contributed

Biopharmaceutical Section, Biometrics Section

Chair(s): Bruce Binkowitz, Merck

- 2:05 p.m. **Random Effects Design for Multiregional Trials**—  
◆ Fei Chen, Janssen Research & Development; Gordon Lan, Janssen Pharmaceutical Companies of Johnson & Johnson; Jose Carlos Pinheiro, Janssen Research & Development
- 2:20 p.m. **Bayesian Hierarchical Modeling for Cost Effectiveness in Multinational Clinical Trials**—  
◆ Ruifeng Xu, Merck; John R. Cook, Merck
- 2:35 p.m. **Assessing the Consistency of the Treatment Effects in Noninferiority Multi-Region Global Trials**—  
◆ Kathy Zhang, Amgen, Inc.

- 2:50 p.m. **Biased Interim Results Due to Regional Difference**—◆ Jun Zhao, Merck; Gang Li, Johnson & Johnson

- 3:05 p.m. **Assessing Consistent Treatment Effect Under a Discrete Random Effect Model in a Multiregional Clinical Trial**—◆ Hsiao-Hui Tsou, National Health Research Institutes; Jung-Tzu Liu, National Health Research Institutes; Chi-Tian Chen, National Health Research Institutes; Yi-Hsuan Lai, National Health Research Institutes; Wan-Jung Chang, National Health Research Institutes; Chinfu Hsiao, National Health Research Institutes; Gordon Lan, Janssen Pharmaceutical Companies of Johnson & Johnson

- 3:20 p.m. **Statistical Issues in Multiregional Clinical Trials**—  
◆ Suvajit Samanta, Merck Research Laboratory

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## Statistical Methods for Longitudinal Studies—Contributed

Biopharmaceutical Section, Biometrics Section

Chair(s): Joseph C. Cappelleri, Pfizer Inc.

- 2:05 p.m. **Phase II/III Seamless Adaptive Dose-Selection Design for Longitudinal Patient Data**—◆ Caitlyn Ellerbe, Medical University of South Carolina; Jordan Elm, Medical University of South Carolina; Viswanathan Ramakrishnan, Medical University of South Carolina; Bruce Turnbull, Cornell University; Stacia DeSantis, The University of Texas Health Sciences; Edward Jauch, Medical University of South Carolina; Valerie Durkalski, Medical University of South Carolina
- 2:20 p.m. **Quasi-Likelihood-Based Focused Information Criterion and Frequentist Model Averaging for Longitudinal Data**—◆ Hui Yang, Chinese Academy of Sciences; Hua Liang, University of Rochester
- 2:35 p.m. **Mixed Effects Historical Varying Coefficient Model for Evaluating Dose Response in Flexible Dose Trials**—◆ Toshihiro Misumi, Astellas Pharma Inc.; Sadanori Konishi, Chuo University
- 2:50 p.m. **Recurrent Event Analysis Considering Events Duration**—◆ Kuolung Hu, Amgen, Inc.
- 3:05 p.m. **Logistic Regression Classifiers with Longitudinal Data**—◆ Daniel Jeske, University of California; Jun Li, University of California; Xin Zhang, University of California; Vance Wong, Alere Corporation; Brian Noland, Alere Corporation
- 3:20 p.m. **Longitudinal Analysis of Left-Censored Serum C-Terminal Telopeptide (sCTX) Levels in Treated Women with Postmenopausal Osteoporosis**—  
◆ Matthew Austin, Amgen, Inc.; Angela Tang, Amgen, Inc; Nadia Daizadeh, Amgen, Inc
- 3:35 p.m. **Floor Discussion**

CC-512h

CC-514b

CC-514a

## 429 **■ Data Challenges in Business and Economics—Contributed**

Business and Economic Statistics Section, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society  
Chair(s): Mark Little, SAS Institute

- 2:05 p.m. **The Challenges and Opportunities for Statisticians in RFID-Sensed Big Data**—◆Heungsun Park, Hankuk University of Foreign Studies; Hyunsoo Kim, Kyonggi University
- 2:20 p.m. **Failures and Solutions in Organizing Business Analytics Resources**—◆Randy Bartlett, Blue Sigma Analytics
- 2:35 p.m. **Parsimonious Representation of Random Variables in Data Cubes**—◆Phillip Yelland, Google
- 2:50 p.m. **Fusion and Causal Analysis in the Big Marketing Data Sets**—◆Igor Mandel, Telmar, Inc.
- 3:05 p.m. **Several Numerical Techniques of Data Fusion**—◆Stan Lipovetsky, GfK Custom Research North America
- 3:20 p.m. **Using BLS Establishment Survey Data to Calculate Alternative Industry Employment Diffusion Indexes**—◆Edmond Cheng, Bureau of Labor Statistics; Racine Bell, Bureau of Labor Statistics
- 3:35 p.m. **Establishing Remote Access to Confidential German Micro Labor Market Data**—◆Joerg Heining, Institute for Employment Research (IAB); Stefan Bender, IAB (Institute for Employment Research)

## 430 **Statistical Computing: Software and Graphics—Contributed**

Section on Statistical Computing, Section on Statistical Graphics, Section for Statistical Programmers and Analysts  
Chair(s): Samuel Ventura, Carnegie Mellon University

- 2:05 p.m. **Muste: Extending R with a Whole Statistical Software Environment**—◆Reijo Sund, National Institute for Health and Welfare (THL)
- 2:20 p.m. **Relaxnet and Widenet: Extending the Glmnet R Package with Relaxation, Basis Expansions, and Aggressive Cross-Validation**—◆Stephan Ritter, University of California at Berkeley; Alan Hubbard, University of California at Berkeley
- 2:35 p.m. **Jvmr: Integration of R with Scala and Java**—◆David Dahl, Brigham Young University; Richard D. Payne, Brigham Young University; Deepthi Uppalapati,

- 2:50 p.m. **TIBCO Enterprise Runtime for R: The Challenges of Making the R Language Enterprise-Ready**—◆Stephen Kaluzny, TIBCO Software Inc.; Lou Bajuk, TIBCO Software Inc.

- 3:05 p.m. **GPUs, Linear Algebra, and Efficient Computing for Gaussian Process Models**—◆Colin Rundel, Duke University
- 3:20 p.m. **Bayesian Statistical Modeling in Python Using PyMC**—◆Christopher Fonnesbeck, Vanderbilt University; John Salvatier, University of Washington
- 3:35 p.m. **Floor Discussion**

## 431 **Extensions and Generalizations of Linear Models—Contributed**

IMS  
Chair(s): Martina Pavlicova, Columbia University

- 2:05 p.m. **On Estimation for Partial Linear Models**—◆Sucharita Ghosh, Swiss Federal Research Institute WSL
- 2:20 p.m. **Extensions of Saddlepoint-Based Bootstrap Inference with Application to the First-Order Moving Average Model**—◆Alexandre Trindade, Texas Tech University; Robert Paige, Missouri University of Science and Technology; R. Indika Wickramasinghe, Eastern New Mexico University
- 2:35 p.m. **A New Measure of Coefficient of Determination for Regression Models**—◆Chun Li, Vanderbilt University
- 2:50 p.m. **Shape-Restricted Inference for Dependent Data**—◆Pramita Bagchi, University of Michigan; Stilian A Stoev, University of Michigan; Moulinath Banerjee, University of Michigan
- 3:05 p.m. **Multivariate Linear Models with Kronecker Product and Linear Structures on the Covariance Matrices**—◆Joseph Nzabanita, Linkoping University
- 3:20 p.m. **Regularized Empirical Bayes Estimation of Normal Means**—◆Xiaoya Pang, Soochow University; Wenhua Jiang, Soochow University
- 3:35 p.m. **Testing for Nodal Correlation in Relational Data**—◆Alexander Volfovsky, University of Washington; Peter David Hoff, University of Washington

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 432 CC-511d Statistical Inference and Prediction on Complex Data—Contributed

International Chinese Statistical Association  
Chair(s): Wendy Lou, University of Toronto

2:05 p.m. **On Multilinear Principal Component Analysis of Order-Two Tensors**—◆I-Ping Tu, Academia Sinica; Hung Hung, Institute of Epidemiology and Preventive Medicine, National Taiwan University; Su-Yun Huang, Institute of Statistical Science, Academia Sinica; Peishien Wu, Institute of Statistical Science, Academia Sinica

2:20 p.m. **Shannon Entropy Over Approximate Entropy: An Adaptive Regularity Measure**—◆Wei Han, University of Pennsylvania; Abraham J. Wyner, The Wharton School

2:35 p.m. **Extrapolation of Cell Line Chemosensitivity Data for Clinical Prediction**—◆Ker-Chau Li, Institute of Statistical Science, Academia Sinica; Yi-Chiung Hsu, Institute of Statistical Science, Academia Sinica

2:50 p.m. **Information Identity in Categorical Data Analysis**—◆Philip Cheng, Institute of Statistical Science; Michelle Liou, Academia Sinica

3:05 p.m. **Correspondence Between Spectral Matting and Network Modularity**—◆Henry Horng-Shing Lu, National Chiao Tung University; Hung-Hui Juan, National Chiao-Tung University; Tung-Yu Wu, National Chiao-Tung University

3:20 p.m. **C-Optimal Designs of Experiments for Estimation in Simplex Dispersion Model**—◆Mong-Na Lo Huang, National Sun Yat-Sen University; Hsiang-Ling Hsu, Academia Sinica

3:35 p.m. **A Bootstrap Approach for Pharmaceutical Accelerated Stability Prediction**—◆Zhewen Fan, AbbVie

## 433 CC-520f Bayesian Computation and Algorithms II—Contributed

Section on Bayesian Statistical Science, Section on Statistical Computing, Korean International Statistical Society  
Chair(s): Taiyeong Lee, SAS Institute

2:05 p.m. **Bayesian Nonparametric Spectral Density Estimation**—◆Ori Rosen, University of Texas at El Paso; Sally Wood, Melbourne Business School; Robert Kohn, University of New South Wales

2:20 p.m. **Approximate Bayesian Computation for a Flexible Class of Bivariate Beta Distributions**—◆Roberto Crackel, University of California at Riverside; James M. Flegal, University of California at Riverside

2:35 p.m. **Bayesian Inference for Complex Survey Designs**—◆Lane Burgette, RAND Corporation; Terrance Savitsky, RAND Corporation

2:50 p.m. **Monitoring Joint Convergence of MCMC Samplers Using Cluster-Based Partitions**—◆Douglas VanDerwerken, Duke University; Scott C. Schmidler, Duke University

3:05 p.m. **On MCMC Procedure for Bayesian Empirical Likelihood**—◆Sanjay Chaudhuri, National University of Singapore; Teng Yin

3:20 p.m. **Bayesian Model Assessment in Factor Analysis with Incomplete Data**—◆Ren He, University of California at Los Angeles; Juwon Song, Korea University; Thomas R. Belin, University of California at Los Angeles

3:35 p.m. **Modeling Non-Gaussian Stochastic Process with Bayesian Copula Method**—◆Zhiguang Xu, The Ohio State University; Steven MacEachern, The Ohio State University; Xinyi Xu, The Ohio State University

## 434 CC-511f Response Process and Non-Response Adjustments—Contributed

Survey Research Methods Section

Chair(s): Zeynep Tuba Suzer-Gurtekin, ISR - University of Michigan

2:05 p.m. **Methods for Producing Consistent Control Totals for Benchmarking in Survey Sampling**—◆Ismael Flores Cervantes, Westat

2:20 p.m. **Two-Step Calibration of Design Weights in Survey Sampling**—◆Sarjinder Singh, Texas A&M University at Kingsville; Stephen Andrew Sedory, Texas A&M University at Kingsville

2:35 p.m. **Improved Sampling Weight Calibration by Generalized Raking with Optimal Unbiased Modification**—Avi Singh, NORC at the University of Chicago; Nadarajasundaram Ganesh, NORC at the University of Chicago; ◆Yongheng Lin, NORC at the University of Chicago

2:50 p.m. **Dealing with Nonresponse Using Follow-Up**—◆Michael Hidiroglou, Statistics Canada; Victor Estevao, Statistics Canada

3:05 p.m. **Pseudo-Population Bootstrap Methods for Imputed Survey Data**—◆Zeinab Mashreghi, Université de Montréal; Christian Léger, Université de Montréal; David Haziza, Université de Montréal

3:20 p.m. **Preserving Relationships Between Variables with MIVQUE-Based Imputation for Item Nonresponse in Surveys**—◆Brigitte Gelein, ENSAI; David Causeur, Agrocampus Ouest; David Haziza, Université de Montréal

3:35 p.m. **Standardizing Imputation Methods for the Dairy Products Program**—◆Darcy Miller, National Agricultural Statistics Service; Donnie Fike, National Agricultural Statistics Service



## 435 CC-525b Teaching Statistics in the Health Sciences: Strategies and Successes—Contributed

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

Chair(s): Felicity Enders, Mayo Clinic

- 2:05 p.m. **Lost in Translation: Effective Statistical Communication in Translational Science**—  
◆ Catherine Starnes, University of Kentucky;  
Daniel L. Starnes, University of Kentucky;  
Heather M. Bush, University of Kentucky
- 2:20 p.m. **Teaching Medical Students to Communicate Uncertainty**—◆ Philip Sedgwick, St. George's, University of London; Katherine Joekes, St. George's, University of London; Angela Hall, St. George's, University of London
- 2:35 p.m. **Can You Teach Numerical Common Sense?**—  
◆ Heather M. Bush, University of Kentucky; Candace Brancato, University of Kentucky; David Fardo, University of Kentucky; Catherine Starnes, University of Kentucky; Arnold Stromberg, University of Kentucky
- 2:50 p.m. **We Need to Teach Our Health Science Students How to Handle Missing Data**—◆ Charles Goldsmith, Simon Fraser University
- 3:05 p.m. **Development of a Course on Microsimulation of Health**—◆ Philippe Fines, Statistics Canada; Brendan T Smith, Institute for Work and Health/University of Toronto
- 3:20 p.m. **Data Sharing and the Development of the Cleveland Clinic Statistical Education Data Set Repository**—  
◆ Amy Nowacki, Cleveland Clinic

## 436 CC-511e Measuring Poverty: Challenges and New Solutions—Contributed

Social Statistics Section, Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee

Chair(s): Joseph Salvo, New York City Department of City Planning

- 2:05 p.m. **Calculating Standard Error Estimates on American Community Survey Data with Variables Imputed from Outside Sources**—◆ Daniel Scheer, NYC Center for Economic Opportunity; Mark Levitan, NYC Center for Economic Opportunity
- 2:20 p.m. **Critique of a Modification to the Census-Recommended American Community Survey Variance Estimator**—◆ Eric Grau, Mathematica Policy Research

- 2:35 p.m. **Variance Estimation of NY City Poverty Measurement: Review of a Proposed Methodology**—  
◆ Michael Cohen, Committee on National Statistics

- 2:50 p.m. **Discussion of Small-Area Estimation for the Alternative Poverty Measure**—◆ Alan Zaslavsky, Harvard University

- 3:05 p.m. **The Supplemental Poverty Measure in the Survey of Income and Program Participation**—  
◆ Kathleen Short, U.S. Census Bureau; Katherine G. Giefer, U.S. Census Bureau

- 3:20 p.m. **Small-Domain Estimation with Limitations on the Direct Estimate**—◆ Wesley Basel, U.S. Census Bureau; Jasen A Taciak, U.S. Census Bureau

- 3:35 p.m. **Spatial Modeling for Small-Area Poverty Analysis**—  
◆ Jasen A Taciak, U.S. Census Bureau; Lauren Bowers, U.S. Census Bureau; Amanda Bell Beal, U.S. Census Bureau; Dimitris Polis, U.S. Census Bureau

## 437 CC-512f Modeling and Applications to Transportation Surveys—Contributed

Government Statistics Section, Social Statistics Section, Scientific and Public Affairs Advisory Committee

Chair(s): Promod Chandhok, Bureau of Transportation Statistics

- 2:05 p.m. **Bayesian Hierarchical Model in Driving Risk Analysis Using Naturalistic Driving Study Data**—  
◆ Youjia Fang, Virginia Tech; Feng Guo, Virginia Tech Transportation Institute

- 2:20 p.m. **Evaluate Crash and Near-Crash Risk for Naturalistic Driving Data Using Recurrent Event Models**—◆ Chen Chen; Feng Guo, Virginia Tech Transportation Institute

- 2:35 p.m. **Using Structural Equation Modeling to Measure Single-Vehicle Crash Severity**—◆ Xiao Qin

- 2:50 p.m. **Examining the Effects of Driver Behavior Using Random Coefficients Modeling**—◆ Linda Boyle, University of Washington-Industrial & Systems Engineering; Yiyun Peng, University of Washington

- 3:05 p.m. **SHRP 2's Naturalistic Driving Study: A Database of Unlimited Challenges**—◆ Karin Bauer, MRIGlobal

- 3:20 p.m. **Using School Lotteries to Evaluate the Value-Added Model**—◆ Jonah Deutsch, The University of Chicago

- 3:35 p.m. **A Comparison of Statistical Methods for Standardized Estimates and Confidence Intervals with Survey Data**—◆ Yi Mu, Centers for Disease Control and Prevention



# Statistical Software for Students and Instructors

Look at this...

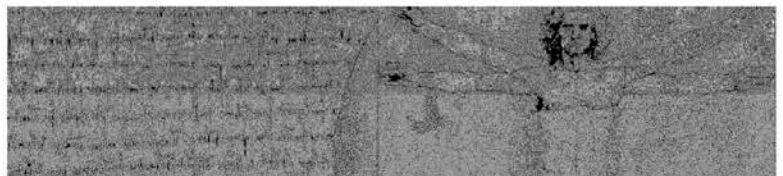
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## 438 CC-512g **Incomplete Data, Truncation, and Censoring—Contributed**

Health Policy Statistics Section  
 Chair(s): Gregory Matthews, University of Massachusetts

- 2:05 p.m. **Unbiased Estimation in the Presence of Left-Truncation and Time-Dependent Exposures—**◆ Alex Bliu, McGill University; Erica E. M. Moodie, McGill University
- 2:20 p.m. **Analysis of Onset of Dementia Data with Interval Censoring—**◆ Linbo Wang, University of Washington; Xiao-Hua Andrew Zhou, University of Washington
- 2:35 p.m. **Incorporating External Information to Assess Robustness of Comparative Effectiveness Estimates to Unobserved Confounding—**◆ Alfa Yansane, Health Policy Statistics Section; Mary Beth Landrum, Harvard Medical School
- 2:50 p.m. **Comparing Nested Regression Coefficients in Incomplete Data—**◆ Chantal Larose, University of Connecticut; Ofer Harel, University of Connecticut; Jun Yan, University of Connecticut
- 3:05 p.m. **F-Tests in Incomplete Data for Multiple Regression Set-Up—**◆ Ashok Chaurasia, University of Connecticut; Ofer Harel, University of Connecticut
- 3:20 p.m. **Analysis of Transplant Urgency and Benefit via Multiple Imputations—**◆ Fang Xiang, Novartis; Susan Murray, University of Michigan
- 3:35 p.m. **Mixed Effect Model for Missing Not at Random in Xenograft Tumor Growth Assays—**◆ Xiaoli Shirley Glasgow, Merck; George Naumov, Merck; Kuenhi Tsai, Merck

## 439 CC-522bc **Recent Advance on Network Analysis—Contributed**

Section on Statistical Learning and Data Mining, Korean International Statistical Society  
 Chair(s): Susan Wang, Boehringer Ingelheim Pharmaceutical Inc.

- 2:05 p.m. **Online Ratings: Convergence Toward a Positive Perspective?—**◆ Yaonan Zhang, Boston University; Theodoros Lappas, Boston University; Evimaria Terzi, Boston University; Eric Kolaczyk, Boston University; Mark E. Crovella, Boston University
- 2:20 p.m. **Joint Modeling of Communities and Node Features in Networks—**◆ Yuan Zhang, University of Michigan; Liza Levina, University of Michigan; Ji Zhu, University of Michigan

- 2:35 p.m. **Scalable Spectral Algorithms for Community Detection in Directed Networks—**◆ Sungmin Kim, The Ohio State University; Tao Shi, The Ohio State University
- 2:50 p.m. **Selecting the Number of Communities in Stochastic Blockmodels—**◆ Diego Franco Saldana, Columbia University; Yi Yu, University of Cambridge; Yang Feng, Columbia University
- 3:05 p.m. **The Impact of Partial Markov Bases on the Goodness-of-Fit of Network Models—**◆ Xiaolin Yang, Carnegie Mellon University; Stephen E. Fienberg, Carnegie Mellon University; Alessandro Rinaldo, Carnegie Mellon University
- 3:20 p.m. **Joint Modeling of Multiple Social Networks to Elucidate Primate Social Dynamics: Maximum Entropy Principle and Network-Based Interactions—**◆ Stephanie Chan, University of California at Davis
- 3:35 p.m. **Method of and System for Mapping SONET Performance Parameters to MPLS Quality of Service Parameters—**◆ Cheng Chen, Texas A&M University at Kingsville

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## SPEED Contributed Poster Presentations 2:00 p.m.–3:50 p.m.

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## 440 CC-220bc **Methods and Applications in High-Dimensional Data, Part 2—Contributed Poster Presentations**

Section on Statistical Learning and Data Mining, Biometrics Section  
 Chair(s): Guang Cheng, Purdue University

- 1 **Delving into Megadata: Evolving Challenges—**◆ Turkan Gardenier, Pragmatica Corp.; John Stark Gardenier, Independent
- 2 **Composite Large-Margin Classifiers with Latent Subclasses—**◆ Guanhua Chen, The University of North Carolina at Chapel Hill; Yufeng Liu, The University of North Carolina; Michael R. Kosorok, The University of North Carolina at Chapel Hill
- 3 **A Robust Likelihood Ratio Test for Testing Equal Means in the Presence of Unequal Variance—**◆ Achut Adhikari, University of Northern Colorado
- 4 **Simultaneous Sparse Estimation of Canonical Vectors in the  $P \gg N$  Setting—**◆ Irina Gaynanova, Cornell University; James Booth, Cornell University; Martin T. Wells, Cornell University
- 5 **Statistical Modeling of Genomic Words and Motifs—**◆ Guozhu Zhang, Bioinformatics Research Center, North Carolina State University; Stephen Sauchi Lee, University of Idaho

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 6 **Creating Gains Tables and Lift Charts Using R**—  
◆ Craig Rolling, University of Minnesota
- 7 **Using Thresholding Difference-Based Estimators for Variable Selection in Partial Linear**—  
◆ June Luo, Clemson University
- 8 **SPReM: Sparse Projection Regression Model for High-Dimensional Linear Regression**—◆ Qiang Sun, The University of North Carolina at Chapel Hill; Hongtu Zhu, The University of North Carolina at Chapel Hill; Yufeng Liu, The University of North Carolina; Joseph G. Ibrahim, The University of North Carolina at Chapel Hill
- 9 **Locally Epistatic Relationship Matrices for Genome-Wide Association and Prediction**—◆ Deniz Akdemir, Cornell University
- 10 **Variable Selection for Big Data via Bagging Adaptive Lasso and Precision Shrinking**—◆ Cory Lanker, Iowa State University of Science and Technology; Wen Zhou, Iowa State University; Max Morris, Iowa State University; Stephen Bruce Vardeman, Iowa State University; Huaqing Wu, Iowa State University
- 11 **A Multivariate Single Index Model for Longitudinal Data with Application in Clinical Investigation**—  
◆ Jingwei Wu, Indiana University, School of Medicine; Wanzhu Tu, Indiana University School of Medicine
- 12 **Overall Power Calculation for High-Dimensional Design**—◆ Yueh-Yun Chi, University of Florida; Matthew J. Gribbin, MedImmune; Jacqueline J. Johnson, The University of North Carolina; Keith E. Muller, University of Florida
- 13 **Clustering to Strengthen a Categorical Instrument**—  
◆ Douglas Lehmann, University of Michigan; Yun Li, University of Michigan; Yi Li, University of Michigan
- 14 **Variable Selection for High-Dimensional Multivariate Outcomes**—◆ Tamar Sofer, Harvard School of Public Health; Lee Dicker, Rutgers University; Tamar Sofer, Harvard School of Public Health
- 15 **Empirical Bayesian Incorporation of Method Selection Into Massive Multiple Testing Analyses**—  
◆ Stanley Pounds, St. Jude Children's Research Hospital; Cuilan L. Gao, University of Tennessee-Chattanooga; Shesh Nath Rai, University of Louisville; Demba Fofana, University of Memphis
- 16 **Manifold Regression for Functional Data**—◆ Andrew Farris, University of California at Davis; Hans-Georg G. Müller, University of California at Davis
- 17 **Domain-Interaction Functional Regression Models for Functions with Varying Domains**—◆ Jonathan Gellar, Johns Hopkins Bloomberg School of Public Health; Elizabeth Colantuoni, Johns Hopkins Bloomberg School of Public Health; Dale Needham, Johns Hopkins School of Medicine; Ciprian M. Crainiceanu, The Johns Hopkins University
- 18 **Risk Prediction from Electronic Health Record Data: A Naïve Bayes Approach**—◆ Julian Wolfson, University of Minnesota

- 19 **A Flexible Correlation Structure for Joint Modeling of Multivariate Ordinal Medication Adherence Data**—  
◆ Abdus Wahed, University of Pittsburgh; Zhen Jiang, FDA
- 20 **Identifying Epigenomic Biomarkers for Anticancer Drug Responses by Integrating Gene Expression and DNA Methylation Profiles**—◆ Zhibao Mi, VA; Kui Shen, University of Pittsburgh; Nan Song, the NSABP Foundation, Inc.

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## Contributed Poster Presentations 2:00 p.m.–3:50 p.m.

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441 CC-220bc  
**Contributed Oral Poster Presentations:  
Business and Economic Statistics Section—  
Contributed Poster Presentations**  
Business and Economic Statistics Section  
Chair(s): Joyee Ghosh, University of Iowa

- 17 **Empirical Studies on Market Microstructure Models**—  
◆ Feng Liu, The University of North Carolina at Chapel Hill
- 18 **Estimating the Implied Default Probability and Recovery Rate in the Investment Corporation Bond Pricing Model**—◆ Masakazu Ando, Chiba Institute of Technology; Hiroshi Tsuda, Doshisha University
- 19 **Rank-Based Estimation for Infinite Variance Autoregressive Processes with Regularly Varying Tail Probabilities**—◆ Jiening Chen, Northwestern University; Beth Andrews, Northwestern University
- 20 **An Example Using Excel Stepwise Regression to Forecast High-Risk Automobile Losses**—Kris Moore, Baylor University; ◆ Jonathan Trower, Baylor University
- 21 **Fourier-Type Estimation of the Power GARCH Model with Stable-Paretian Innovations**—◆ Simos Meintanis, National and Kapodistrian University of Athens
- 22 **Prediction Intervals for Non-Negative Series**—  
◆ Keith Ord, Georgetown University
- 23 **Marked Point Process on Stock Trade Flow**—  
◆ Mingyu Tang
- 24 **Hypothesis-Testing in Semiparametric Discrete Choice Model**—◆ Yifan Yang, University of Kentucky
- 25 **Modeling the Information Contained in the Limit Order Book**—◆ Julieta Frank, University of Manitoba; Luis Frank, University of Buenos Aires
- 26 **Quantile Regression with Heteroskedasticity and Asymmetry**—◆ David J. Mauler, Brigham Young University; James B. McDonald, Brigham Young University



442 CC-220bc  
**Contributed Oral Poster Presentations:  
 Government Statistics Section—Contributed  
 Poster Presentations**

Government Statistics Section  
 Chair(s): Joyee Ghosh, University of Iowa

- 27 **Improving the Race Edit in the Consumer Expenditure Survey**—◆ Barry P. Steinberg, Bureau of Labor Statistics; Sharon Krieger, Bureau of Labor Statistics
- 28 **Reinventing and Evaluating a Redesigned Occupational Outlook Handbook**—◆ William Mockovak, Bureau of Labor Statistics; Kristina Bartsch, Bureau of Labor Statistics
- 29 **Review of Household Demand Elasticities in Argentina**—◆ Luis Frank, University of Buenos Aires; Sebastian Maggio, University of Buenos Aires
- 30 **Testing the 'Free and Fair' Hypothesis**—◆ Ole Forsberg, Oklahoma State University
- 31 **Wage Estimation Using Data from the National Compensation Survey and the Occupational Employment Statistics Program**—◆ Michael Lettau, Bureau of Labor Statistics; Dee Zamora, Bureau of Labor Statistics
- 32 **Workflows for Reproducible Reporting for Business and Statistical Audiences: A Case Study at USDA APHIS**—◆ Marie Vendettuoli, Iowa State University; David Siev, USDA APHIS, Center for Veterinary Biologics; Heike Hofmann, Iowa State University
- 33 **Untangling the Finance Company Web: Challenges, Experiences, and Lessons Learned**—◆ Lisa Chen
- 34 **Back to the Future: Using Current Regression Variables to Forecast Forward from Historical Net Birth/Death Employment**—◆ Victoria Battista, Bureau of Labor Statistics; Nathan Clausen, Bureau of Labor Statistics
- 35 **Modeling Monthly Birth/Death by Using Sample Paradata from the Current Employment Statistics Survey**—◆ Jeremy Oreper, Bureau of Labor Statistics
- 36 **Revised National Sampling Plan for Obtaining Food Products for Nutrient Analysis**—◆ Charles Perry, NDL\BRAC\ARS; Pamela Pehrsson, NDL\BRAC\ARS; Marlon Daniel, NDL\BRAC\ARS

443 CC-220bc  
**Contributed Oral Poster Presentations:  
 Health Policy Statistics Section—Contributed  
 Poster Presentations**

Health Policy Statistics Section  
 Chair(s): Joyee Ghosh, University of Iowa

- 37 **Aggregated Versus Individual Participant Meta-Analysis to Identify Potential Moderator Factors for a Continuous Outcome**—◆ Tania B. Huedo-Medina, University of Connecticut
- 38 **Survival Analysis for the Racial Disparities in Children Asthma Patients on Emergency Room Visit**—◆ Shun Zhang, National Center for Primary Care; George Rust, National Center for Primary Care
- 39 **Effects of Offered Hospital Language Services on Health Disparities: Opportunities for New Data Collection and Analysis**—◆ Mauricio Gavilanes, AES World Languages & Cultures Institute; Mary McGraw Gross, Statistics Without Borders; Anthony Wilcox, Statistics Without Borders
- 40 **Comparison of ICD Classification Schemes in a Home Health Care Setting**—◆ Carlin Brickner, Visiting Nurse Service of New York; Timothy Peng, The Visiting Nurse Service of New York

444 CC-220bc  
**Contributed Oral Poster Presentations: Survey  
 Research Methods Section—Contributed**

Survey Research Methods Section, Korean International Statistical Society  
 Chair(s): Joyee Ghosh, University of Iowa

- 41 **Validation of Prediction Models in the Presence of Missing Data**—◆ Yuanyuan Guo, Baylor University; Dean M. Young, Baylor University
- 42 **Explore Possible Alternative AK Composite Estimators in the Current Population Survey**—◆ Khandaker Mansur, U.S. Census Bureau; Yang Cheng, U.S. Census Bureau
- 43 **How Does Online Survey Mode Affect Answers to Customer Feedback Loyalty Surveys?**—◆ Aarti Gupta, Bain & Company; Jason Lee, Bain & Company
- 44 **Imputation Methods for Surveys: A Demonstration of the Impute Procedure in Sudaan**—◆ Kimberly Ault, RTI International
- 45 **Creating Intuitive Editing Interfaces for the Survey of Consumer Finances (SCF)**—◆ Richard Windle, Federal Reserve Board
- 46 **Creating an Automated Edit and Imputation System for the Survey on Quebec Accommodation Establishment Occupancy**—◆ Catherine Fontaine, Institut De La Statistique Du Quebec/Statistics Quebec; Luc Côté, Institut De La Statistique Du Quebec/Statistics Quebec

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 47 **Estimation of Glomerular Filtration Rate in South Asians: A Study from the General Population in Pakistan**—◆ Muhammad Islam, Aga Khan University; Saleem Jesani, Aga Khan University; Andrew S. Levey, Tufts Medical Center; Rasool Bux, Aga Khan University; Lesley A. Inker, Tufts Medical Center; Nish Chaturvedi, Imperial College London; Christophe Mariat, University de Saint-Etienne; Christopher Schmid, Brown University; Tazeen H. Jafar, Aga Khan University
- 48 **Should the Proxy-Respondents Be Surveyed When Assessing the Regular Smoking Initiation Age?**—◆ Peng Zhao, University of Nebraska-Lincoln; Julia Soulakova, University of Nebraska-Lincoln; Lisa Crockett, University of Nebraska-Lincoln
- 49 **Weighting Strategy in the Social Services and Health Care Experience Project Survey**—◆ Marie-Eve Tremblay, Institut de la statistique du Quebec; Robert Courtemanche, Institut de la Statistique du Quebec
- 50 **Variance Estimation of the Design Effect**—◆ Alberto Padilla
- 51 **ARIMA and General Regression Neural Network for Forecasting Rice Production in Sri Lanka**—◆ Manjari Dissanayake; Ferry Butar Butar, Sam Houston State University
- 52 **Comparisons of K-Mean and K-Medoid General Regression Neural Network for Handling Missing Data**—◆ Janaka Suranga Peragaswaththe Liyanage, Sam Houston State University; Ferry Butar Butar, Sam Houston State University
- 53 **Comparability of Self-Rated Health Measurement Between English and Asian Languages**—◆ Matt Jans, University of California at Los Angeles Center for Health Policy Research; Sunghee Lee, University of Michigan; Mingnan Liu, University of Michigan
- 54 **Methodological Experiences from a Register-Based Census**—◆ Ingegerd Jansson, Statistics Sweden; Claes Andersson, Statistics Sweden; Peter Werner, Statistics Sweden; Anders Holmberg, Statistics Sweden; Karin Lindgren, Statistics Sweden
- 55 **On Simultaneous Interval Estimating the Relative Prevalence of Forward Shifting in Reported Regular Smoking Initiation Age**—◆ Brianna Bright, University of Nebraska-Lincoln; Julia Soulakova, University of Nebraska-Lincoln
- 56 **Imputing Ordinal Data with One Predominate Category**—◆ Darryl Creel
- 57 **Web Collection in the Quarterly Census of Employment and Wages Program**—◆ John Peters, Bureau of Labor Statistics
- 58 **Use of R-Indicators to Assess Survey Response Representativeness**—◆ Jared Coopersmith, Mathematica Policy Research; Amy Beyler, Mathematica Policy Research
- 59 **The Impact on Response Rates of Adding a Survey Supplement**—◆ Holly Shulman, Centers for Disease Control and Prevention
- 60 **Model-Based Methods for Missing Data in Surveys with Post-Stratification Information**—◆ Sahar Zangeneh, Fred Hutchinson Cancer Research Center; Roderick J. Little, University of Michigan
- 61 **Bootstrap Estimation of Variance from ROC Curve Analysis of Complex NHANES Survey Data**—◆ Rey DeCastro, CDC/National Center for Environmental Health; Yang Xia, CDC NCEH; Connie Sosnoff, CDC NCEH; Lee-Yang Wong, CDC NCEH
- 62 **2012 NHANES National Youth Fitness Survey**—◆ Vicki Burt, NCHS
- 63 **Analyzing Student Perceptions of Teaching with Quantile Regression**—◆ Kellie Keeling, University of Denver; Robert Pavur, University of North Texas
- 64 **Effects of Response Format on Race and Ethnicity Measurement in the U.S.**—◆ Randall Thomas, GfK Custom Research; Frances Barlas, ICF International; Bill Cook, Advertising Research Foundation; Wendy Gross, GfK Custom Research
- 65 **What Makes Us Exploit the Community? The Influence of Individual Characteristics on Committing Tax Evasion and Insurance Fraud**—◆ Ivar Krumpal, University of Leipzig
- 66 **Restricted Latent Class Multiple Imputation Method of Categorical Missing Data**—◆ Qiao Ma, University of Nebraska-Lincoln

## Invited Sessions

4:00 p.m.–5:50 p.m.

445

CC-517ab

### ASA Deming Lecture—Invited

Deming Lectureship Committee, International Chinese Statistical Association, International Indian Statistical Association, ASA, ENAR, WNAR, IMS, SSC, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA), Statistics Surveys Online Journal  
Chair(s): Marilyn Seastrom, National Center for Education Statistics

4:05 p.m. **Industrial Statistics: Research vs. Practice—**  
◆Vijay Nair, University of Michigan

5:35 p.m. **Floor Discussion**

446

CC-710b

### Wald Lecture I—Invited

IMS

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

Chair(s): David Siegmund, Stanford University

4:05 p.m. **Nonparametric Estimation Under Shape**  
**Constraints—**◆Piet Groeneboom, Delft University

5:35 p.m. **Floor Discussion**

## Invited Sessions

8:00 p.m.–9:30 p.m.

447

CC-517ab

### ASA President's Address and Founders and Fellows Recognition—Invited

ASA, ENAR, IMS, International Chinese Statistical Association, International Indian Statistical Association, SSC, WNAR, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA), Statistics Without Borders

Organizer(s): Marie Davidian, North Carolina State University

Chair(s): Robert Rodriguez, SAS Institute

8:00 p.m. **The International Year of Statistics: A Celebration**  
**and a Call to Action—**◆Marie Davidian,  
North Carolina State University





## WEDNESDAY, AUGUST 7

### Committee/Business Meetings & Other Activities

7:00 a.m.–8:30 a.m.	CC-521c	8:30 a.m.–10:30 a.m.	I-Saint-Jacques
<b>Conference on Statistical Practice Steering Committee Meeting</b>		<b>JSM Diversity Mentoring Program</b>	
Chair(s): LeAnna Stork, Monsanto Company		Chair(s): Sydeaka Watson, The University of Chicago	
7:00 a.m.–8:30 a.m.	I-Saint-Laurent	9:00 a.m.–2:30 p.m.	CC-220bc
<b>Brigham Young University Friends and Alumni Open House Breakfast</b>		<b>EXPO 2013</b>	
Organizer(s): H. Dennis Tolley, Brigham Young University Department of Statistics		9:00 a.m.–2:30 p.m.	CC-220bc
7:00 a.m.–8:30 a.m.	I-Saint-Jean-Baptiste	<b>ASA Marketplace</b>	
<b>Q&amp;P Executive Committee Strategic Planning Meeting</b>		9:00 a.m.–2:30 p.m.	
Chair(s): Theresa Utlaut, Intel Corporation		<b>American Statistical Association Booth #201</b>	
7:00 a.m.–8:30 a.m.	I-Saint-Paul	10:00 a.m.–11:00 a.m.	I-Saint-Jean-Baptiste
<b>Scientific and Public Affairs Advisory Committee Business Meeting</b>		<b>ACCE Debriefing Meeting</b>	
Chair(s): Clyde Tucker, American Institutes for Research		Chair(s): Amita Manatunga, Emory University	
7:00 a.m.–8:30 a.m.	I-Saint-Louis	12:00 p.m.–2:30 p.m.	I-Saint-Paul
<b>Committee on International Relations in Statistics Committee Meeting</b>		<b>ENAR 2014 Spring Meeting Planning Luncheon</b>	
Chair(s): Sonya Vartivarian, GAO		Organizer(s): Dan Heitjan, ENAR; DuBois Bowman, ENAR	
7:00 a.m.–9:00 a.m.	I-Les Huitres	12:30 p.m.–2:00 p.m.	CC-521c
<b>ASA 175th Anniversary Steering Committee</b>		<b>Committee on Meetings Business Meeting</b>	
Chair(s): Christy J. Chuang-Stein, Pfizer Inc.		Chair(s): Xuming He, University of Michigan	
7:00 a.m.–6:00 p.m.	CC-513c	12:30 p.m.–2:00 p.m.	I-Saint-Francois Xavier
<b>Speaker Management Room</b>		<b>NISS/ASA Writing Workshop for Junior Researchers (Closed)</b>	
7:00 a.m.–6:00 p.m.	CC-200 Viger Hall	Chair(s): Keith Crank	
<b>Cyber Center, Sponsored by IBM</b>		12:30 p.m.–2:00 p.m.	I-Saint-Louis
7:30 a.m.–4:30 p.m.	CC-200 Viger Hall	<b>Noether Award Committee Luncheon</b>	
<b>ASA Membership/Help Desk/Press Desk</b>		Chair(s): Pranab K. Sen, The University of North Carolina at Chapel Hill	
7:30 a.m.–4:30 p.m.	CC-200 Viger Hall	1:00 p.m.–6:30 p.m.	CC-200 Viger Hall
<b>JSM Main Registration</b>		<b>JSM Luggage Storage</b>	
8:00 a.m.–2:30 p.m.	CC-220d	2:30 p.m.–9:00 p.m.	CC-220bc
<b>Career Placement Service</b>		<b>Exhibitor Move Out</b>	
8:00 a.m.–2:30 p.m.	CC-220bc	4:00 p.m.–5:00 p.m.	CC-515b
<b>Exhibitor Lounge</b>		<b>Revised Guidelines for Undergraduate Statistics Programs (Open)</b>	
		Chair(s): Nicholas J. Horton, Smith College	
		5:00 p.m.–6:30 p.m.	I-Maisonneuve
		<b>Section on Statistics in Marketing Meeting</b>	
		Chair(s): David Schweidel, Goizueta Business School, Emory University	

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 5:30 p.m.–6:30 p.m. W-Fortifications  
**ICSA Annual Members Meeting**  
Organizer(s): Shuyen Ho, GlaxoSmithKline  
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
- 6:00 p.m.–7:00 p.m. I-Saint-Jacques  
**PStat® Reception**  
Chair(s): Lynn Palmer, American Statistical Association  
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.
- 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  
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
- 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)  
CE\_33T  
**Structural Equation Modeling Using the CALIS Procedure in SAS/STAT® Software**  
1:00 p.m.–2:45 p.m. W-Fortifications  
ASA, SAS  
Instructor(s): Yiu-Fai Yung, SAS Institute
- 6:00 p.m.–7:30 p.m. I-Saint-Francois Xavier  
**PSU Statistics Reception**  
Organizer(s): David Hunter, Penn State University  
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
- 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  
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
- 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\_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\_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

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## Roundtables with Coffee

### 7:00 a.m.–8:15 a.m.

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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

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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 McPeck, 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 Institute; 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**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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 Standards 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 Services, 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 Heterogeneous 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 Evaluation 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 Minnesota; 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

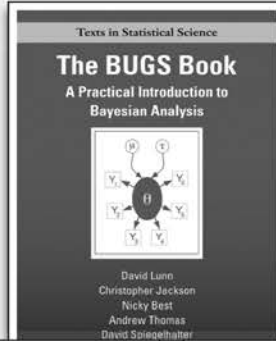
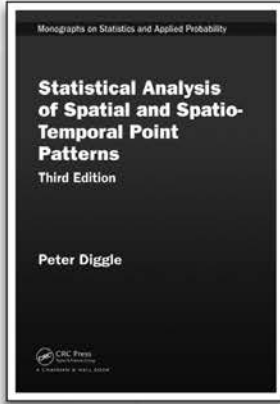
10:15 a.m. **Floor Discussion**



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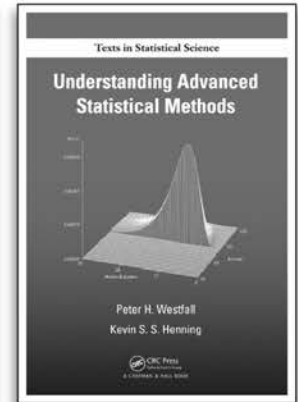
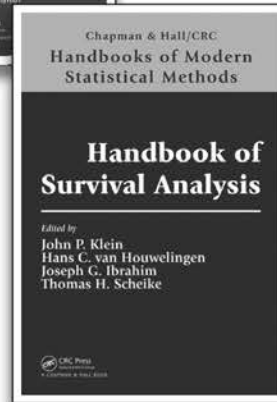
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## 470 CC-510d **Applications of Random Effects Linear Models to Personalized Medicine—Topic-Contributed**

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 Shokoochi, 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**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

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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-Universität 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**

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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**

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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**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 481 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**

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

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## 482 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

- CC-515b 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 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

CC-512f

## 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 Tecnológico Autónomo de México; 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: Vanguard, 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

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 487 **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 **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

CC-512c 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 **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. Samaranyake, 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 Bifulchi; 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



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

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 Bayesian Estimation Methods—Contributed

CC-520c

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

CC-511b

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

CC-512g

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

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

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 **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 Adragani, 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 **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

CC-515c

CC-516c

- 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 Owing 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, Johnson & 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**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

503

## ■ 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

## ■ 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**

CC-513b

505

## ■ ● 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**

CC-516d

CC-519a

506

## 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**

CC-520c



## 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**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 512 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**

CC-511a

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**

## Invited Panels

**10:30 a.m.–12:20 p.m.**

## 513 ■ 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**

CC-516e

## 515 ■ ● 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**

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

## 514 ● 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

CC-516c

## 516 ■ 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

CC-524a

CC-514b

- 11:15 a.m. **Matching Skills to Needs: Biostatistics for Health Professionals and Other Specialists**—◆ Marie Diener-West, Johns 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**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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 Empirical 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**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

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.

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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**

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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.

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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, University 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 **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 **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 **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

CC-512h

CC-514a

CC-525a

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

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 Services

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** **■ Developments in Genetic Association Studies—Contributed** **CC-512f**

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; Timonhy 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; Kunihiko 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



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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. **Antependence 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 Processes 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 Ruszczyński, 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

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## 545 CC-516a Section on Statisticians in Defense and National Security Papers 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 Adeshiyun, 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 Owing 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



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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

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

548 **Contributed Oral Poster Presentations: Section on Nonparametric Statistics—Contributed Poster Presentations** CC-220bc

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

549 **Contributed Oral Poster Presentations: Section on Statistics in Defense and National Security—Contributed Poster Presentations** CC-220bc

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 **Contributed Oral Poster Presentations: Section on Statistics in Epidemiology—Contributed Poster Presentations** CC-220bc

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

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 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 (PROMTT)**—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 Rachtel, 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

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## Speaker with Lunch 12:30 p.m.–1:50 p.m.

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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





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## 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

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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 Kiks, 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**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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; Aiyu 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, Triggitt
- 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**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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 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 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

CC-512ab

3:25 p.m. **Simultaneous and Sequential Inference of Pattern Recognition—**◆ Wenguang Sun, University of Southern California

3:45 p.m. **Floor Discussion**

## 586 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**

CC-520f

CC-521ab

## 587 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**

CC-515c



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 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, Université 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**
- 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, University 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
- 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, University 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

## 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**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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, University 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; Xuwen 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

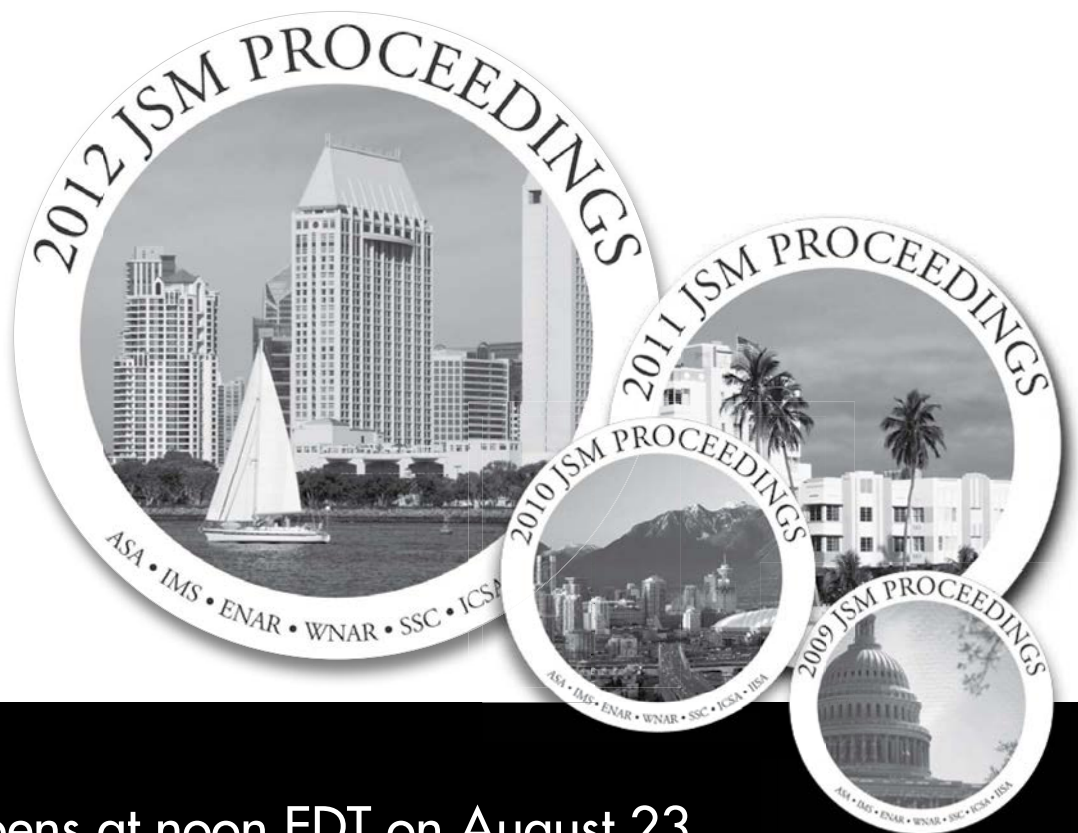


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## 600 CC-520a **■ Measurement Systems and Quality Control—Contributed**

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, Université de Montréal; Pierre Duchesne, Université de Montréal; Pierre Lafaye de Micheaux, Université 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**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 603 **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 with 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 **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 **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; Andreaana 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



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 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**



# THURSDAY, AUGUST 8

## Committee/Business Meetings & Other Activities

7:00 a.m.–10:30 a.m. CC-513c  
**Speaker Management Room**

7:30 a.m.–10:30 a.m. CC-200 Viger Hall  
**JSM Main Registration**

7:30 a.m.–10:30 a.m. CC-200 Viger Hall  
**ASA Membership/Help Desk/Press Desk**

7:30 a.m.–10:30 a.m. CC-200 Viger Hall  
**Cyber Center, Sponsored by IBM**

8:00 a.m.–9:30 a.m. CC-524c  
**Council of Sections Response Meeting**  
 Chair(s): Katherine Halvorsen, Smith College

8:00 a.m.–1:00 p.m. CC-200 Viger Hall  
**JSM Luggage Storage**

9:30 a.m.–10:30 a.m. CC-524c  
**Council of Sections Governing Board Debriefing Meeting (Closed)**  
 Chair(s): Katherine Halvorsen, Smith College

## Invited Sessions 8:30 a.m.–10:20 a.m.

613 CC-510c  
**Modern Nonparametric Theory for Functional and Time Series Data—Invited**

Section on Nonparametric Statistics, Statistical Learning and Data Mining Section

Organizer(s): Xiao Wang, Purdue University

Chair(s): Xiao Wang, Purdue University

8:35 a.m. **Modeling Multiple Correlated Functional Outcomes with Spatially Heterogeneous Shape Characteristics**—◆David Ruppert, Cornell University; Kunlaya Soiaporn, Cornell University; Raymond J. Carroll, Texas A&M University

9:00 a.m. **Nonparametric Regression with Rescaled Autoregressive Errors**—◆Michael Levine, Purdue University; Jose E. Figueroa-Lopez, Purdue University

9:25 a.m. **Oracally Efficient Estimation of ARMA Model in the Presence of Trend**—Qin Shao, University of Toledo; ◆Lijian Yang, Michigan State University

9:50 a.m. **On Gaussian Oracle Inequalities for Structured Selection in Nonparametric Cox Model**—◆Jelena Bradic, University of California at San Diego; Rui Song, North Carolina State University

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

614 CC-511a  
**Special Applications of Multiple Imputation—Invited**

ENAR, Biometrics Section, Section on Statistics in Epidemiology

Organizer(s): Manisha Desai, Stanford University

Chair(s): Sujata Patil, Memorial Sloan-Kettering Cancer Center

8:35 a.m. **Multiple Imputation of Heaped Longitudinal Cigarette Count Data**—◆Sandra D. Griffith, Cleveland Clinic; Saul Shiffman, University of Pittsburgh; Yimei Li, The Childrens' Hospital of Philadelphia; Daniel F. Heitjan, University of Pennsylvania

9:00 a.m. **Multiple Imputation in the Presence of Derived Variables**—◆Manisha Desai, Stanford University; Aya Mitani, Stanford University; Thomas Robinson, Stanford University

9:25 a.m. **Multiple Imputation for Nonignorable Missingness: Evaluating Alternative Nonresponse Bias Adjustment Cells**—◆Rebecca Roberts Andridge, The Ohio State University College of Public Health; Katherine Jenny Thompson, U.S. Census Bureau

9:50 a.m. **Maximum Likelihood Imputation**—◆Paul T. von Hippel, The University of Texas

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



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 615 CC-519a 617 CC-510a ■ ● **JCGS Selections: Lassoing the Year of Statistics Into an Elastic Net—Invited** ■ ● **Bayesian Asymptotics in ‘Big’ Models—Invited**

JCGS—Journal of Computational and Graphical Statistics, Section on Statistical Graphics, Section on Statistical Computing

Organizer(s): Richard A. Levine, San Diego State University

Chair(s): Richard A. Levine, San Diego State University

- 8:35 a.m. **Consistent Variable Selection via Penalized Credible Regions and Confidence Sets**—◆Howard Bondell, North Carolina State University; Funda Gunes, North Carolina State University; Brian J. Reich, North Carolina State University
- 9:05 a.m. **On the Semi-Supervised Joint-Trained Elastic Net**—◆Mark V. Culp, West Virginia University
- 9:35 a.m. **A Sparse-Group Lasso, Computation, and GPUs**—◆Noah Simon, Stanford University
- 10:05 a.m. **Floor Discussion**

## 616 CC-520d ■ ● **Robust Inference in Time Series Analysis and Econometrics—Invited**

Business and Economic Statistics Section, SSC, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Organizer(s): Xiaofeng Shao, University of Illinois at Urbana-Champaign

Chair(s): Xiaofeng Shao, University of Illinois at Urbana-Champaign

- 8:35 a.m. **Asymptotic F Test in a GMM Framework with Cross Sectional Dependence**—Yixiao Sun, University of California at San Diego; ◆Min Seong Kim, Ryerson University
- 8:55 a.m. **Heteroscedasticity and Autocorrelation Robust Structural Change Detection**—◆Zhou Zhou, University of Toronto
- 9:15 a.m. **Bootstrap Prediction Intervals for Factor Models**—◆Silvia Goncalves, Université de Montréal
- 9:35 a.m. **Cluster Covariance Matrix Estimation for Quantile Regression Models**—◆Andreas Hagemann, University of Notre Dame
- 9:55 a.m. **Local Generalized Empirical Likelihood Under Nonstandard Conditions**—◆Ke-Li Xu, Texas A&M University
- 10:15 a.m. **Floor Discussion**

IMS, International Society for Bayesian Analysis (ISBA)

Organizer(s): Debdeep Pati, Florida State University

Chair(s): Anirban Bhattacharya, Duke University

- 8:35 a.m. **Frequentist Analysis of Posteriors for Sparse Priors**—◆Aad van der Vaart, Leiden University
- 8:55 a.m. **On Shrinkage Priors in High Dimensions**—◆Debdeep Pati, Florida State University; Anirban Bhattacharya, Duke University; Natesh S. Pillai, Harvard University; David B. Dunson, Duke University
- 9:15 a.m. **Bayes Procedures for Adaptive Inference in Nonparametric Inverse Problems**—◆Bartek Knapik, CEREMADE, Université Paris-Dauphine & CREST-ENSAE
- 9:35 a.m. **On Nonparametric Bernstein-Von Mises Theorems**—◆Ismael Castillo, CNRS
- 9:55 a.m. **Some Results on the One-Way ANOVA Model with an Increasing Number of Groups**—◆Feng Liang, University of Illinois at Urbana-Champaign; Bin Li, University of Illinois at Urbana-Champaign
- 10:15 a.m. **Floor Discussion**

## 618 CC-519b ■ ● **Statistics and the Supreme Court—Invited**

Scientific and Public Affairs Advisory Committee

Organizer(s): Mary W. Gray, American University

Chair(s): Mary W. Gray, American University

- 8:35 a.m. **Supreme Court Rulings Implementing the Sixth Amendment Right to an ‘Impartial’ Jury**—◆Joseph B. Kadane, Carnegie Mellon University
- 8:55 a.m. **Statistics and Voter ID Laws**—◆David A. Marker, Westat
- 9:15 a.m. **Do Courts Employ the Appropriate Biostatistical Measures? Examples from Recent Legal Cases**—◆Joseph L. Gastwirth, George Washington University; Qing Pan, George Washington University
- 9:35 a.m. **Variability in Punitive Damages: Empirically Assessing Exxon Shipping Co. v. Baker**—◆Martin T. Wells, Cornell University
- 9:55 a.m. **Disc: Jonas Anderson, American University**
- 10:15 a.m. **Floor Discussion**

## 619 CC-516c ● **The SAMSI Program on Massive Data Sets—Invited**

Statistical and Applied Mathematical Sciences Institute, Section on Statistics and the Environment, Scientific and Public Affairs Advisory Committee

Organizer(s): Richard L. Smith, SAMSI

Chair(s): Snehalata Huzurbazar, Statistical and Applied Mathematical Sciences Institute

- 8:35 a.m. **Statistical Methods in Astronomy—**  
◆ Tamas Budavari, The Johns Hopkins University
- 9:00 a.m. **Exploratory and Inferential Methods for Massive Data—**◆ Naomi S. Altman, Penn State University; Wei Luo, Penn State University; Garvesh Raskutti, SAMSI
- 9:25 a.m. **A Bird's-Eye View of the Carbon Cycle: Spatiotemporal Tools for Constraining the CO2 Budget from Atmospheric Observations—**  
◆ Anna M. Michalak, Carnegie Institute for Science
- 9:50 a.m. Disc: Richard L. Smith, SAMSI
- 10:15 a.m. **Floor Discussion**

## 620 CC-511f ■ **Recent Work in Causal Inference with Longitudinal Cohort Studies of HIV-Infected Patients—Invited**

Section on Statistics in Epidemiology, SSC, Biometrics Section, Korean International Statistical Society

Organizer(s): Jessica G. Young, Harvard School of Public Health

Chair(s): Jessica G. Young, Harvard School of Public Health

- 8:35 a.m. **Marginal Structural Cox Models with Case-Cohort Sampling—**◆ Hana Lee, The University of North Carolina at Chapel Hill; Michael G. Hudgens, The University of North Carolina at Chapel Hill; Jianwen Cai, The University of North Carolina at Chapel Hill; Stephen R. Cole, The University of North Carolina at Chapel Hill
- 9:00 a.m. **Comparing Different Methods for Assessing When to Start Treatment—**◆ Bryan E. Shepherd, Vanderbilt University; Nate Mercaldo, Vanderbilt University
- 9:25 a.m. **Marginal Structural Competing Risk Models: Analysis of the Canadian HIV/HCV Coinfection Cohort Data—**◆ David A. Stephens, McGill University
- 9:50 a.m. **Floor Discussion**

## 621 CC-516d **Recent Advances in Bayesian Computation—Invited**

Section on Statistical Computing

Organizer(s): Dawn B. Woodard, Cornell University

Chair(s): James M. Flegal, University of California at Riverside

- 8:35 a.m. **An Adaptive Exchange Algorithm for Sampling from Distribution with Intractable Normalizing Constants—**◆ Faming Liang, Texas A&M University
- 9:00 a.m. **Efficiency of Markov Chain Monte Carlo for Bayesian Computation—**◆ Dawn B. Woodard, Cornell University
- 9:25 a.m. **Scalable Inference for Hierarchical Topic Models—**  
◆ John W. Paisley, University of California at Berkeley
- 9:50 a.m. **Augmented Particle Filters—**◆ Yuguo Chen, University of Illinois at Urbana-Champaign
- 10:15 a.m. **Floor Discussion**

## 622 CC-710b **Medallion Lecture VII—Invited**

IMS

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

Chair(s): Peter Bickel, University of California at Berkeley

- 8:35 a.m. **A Priori Analysis of Complex Models—**  
◆ Yaacov Ritov, The Hebrew University of Jerusalem
- 9:35 a.m. Disc: Jayanta K. Ghosh, Purdue University
- 9:55 a.m. Disc: Larry Brown, University of Pennsylvania
- 10:15 p.m. **Floor Discussion**

## 623 CC-710a **New Developments in Small Area Estimation—Invited**

ASA, Survey Research Methods Section, SSC, Section on Statistics in Epidemiology

Organizer(s): Gauri Sankar Datta, University of Georgia and U.S. Bureau of the Census

Chair(s): Rebecca Steorts, Carnegie Mellon University

- 8:35 a.m. **Nonparametric Small-Area Estimation—**  
◆ Mahmoud Torabi, University of Manitoba; Farhad Shokoohi, University of Manitoba
- 9:00 a.m. **Benchmarked Empirical Bayes Small-Area Estimators Under Multiplicative Models—**  
◆ Malay Ghosh, University of Florida

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 9:25 a.m. **Small-Area Estimation Method with Covariates Subject to Measurement Error**—◆ Gauri Sankar Datta, University of Georgia and U.S. Census Bureau; Brunero Liseo, University of La Sapienza; Serena Arima, University of Rome, La Sapienza
- 9:50 a.m. **Blending Domain Estimates from Two Victimization Surveys with Possible Bias**—◆ Sharon Lohr, Westat; J. Michael Brick, Westat
- 10:15 a.m. **Floor Discussion**

## Invited Panels

**8:30 a.m.–10:20 a.m.**

624 CC-516b  
**■ Challenges in Evaluation of Correlates of Protection and Immunobridging in Vaccine Trials—Invited**

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

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

Chair(s): Tammy Massie, CBER/FDA

- Panelists:** ◆ Peter Gilbert, University of Washington and Fred Hutchinson Cancer Research Center  
◆ Ivan S. F. Chan, Merck Research Laboratories  
◆ Ghideon Ghebregiorgis, CBER/FDA  
◆ Catherine Njue, Health Canada  
◆ Wasima Rida, Biostatistics Consultant

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

625 CC-516e  
**■ Helpful Tools for Successful Online Teaching—Invited**

Section on Statistical Education, Section on Teaching of Statistics in the Health Sciences, Statistics Without Borders

Organizer(s): Jamis J. Perrett, Monsanto Company

Chair(s): Chris J. Malone, Winona State University

- Panelists:** ◆ Jamis J. Perrett, Monsanto Company  
◆ Michelle G. Everson, University of Minnesota  
◆ Beth Chance, California Polytechnic State University  
◆ Webster West, North Carolina State University

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

## Topic-Contributed Sessions

**8:30 a.m.–10:20 a.m.**

626 CC-511c  
**■ Integrative Data Analysis of Longitudinal Studies—Topic-Contributed**

Biometrics Section, Mental Health Statistics Section, Survey Research Methods Section

Organizer(s): Scott M. Hofer, University of Victoria

Chair(s): Scott M. Hofer, University of Victoria

8:35 a.m. **Integrative Analysis of Longitudinal Studies of Aging (IALSA): A Collaborative Network for Parallel and Pooled Data Analysis of Within-Person Change**—◆ Andrea Piccinin, University of Victoria

8:55 a.m. **Harmonizing Individual Participant Data for Collaborative Research: How Should We Foster Such an Agenda?**—◆ Isabel Fortier, Research Institute of the McGill University Health Center

9:15 a.m. **Multilevel Item Response Theory: Modeling Changing Measurement Structures in Longitudinal Studies**—◆ Robert Wirth, Vector Psychometric Group, LLC

9:35 a.m. **Practical Issues with Aggregate and Individual-Level Meta-Analytic Methods for Combining Results from Longitudinal Studies**—◆ Ryan Williams, University of Memphis; Terri Pigott, Loyola University Chicago

9:55 a.m. Disc: Patrick Shrout, New York University

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

627 CC-518  
**■ ● Uncertainty and Robustness in Design and Modeling of Simulations—Topic-Contributed**

Quality and Productivity Section, Section on Physical and Engineering Sciences

Organizer(s): Benjamin A. Haaland, Centre for Quantitative Medicine, Office of Clinical Sciences, Duke-NUS

Chair(s): Benjamin A. Haaland, Centre for Quantitative Medicine, Office of Clinical Sciences, Duke-NUS

8:35 a.m. **Design for Computer Experiments with Qualitative and Quantitative Factors**—◆ Chunfang Lin, Queen's University; Xinwei Deng, Virginia Tech; Ying Hung, Rutgers University

8:55 a.m. **Multi-Objective Design Optimization for Computer Experiments**—◆ Werner Mueller, Johannes-Kepler-University Linz

9:15 a.m. **Adaptive Latin Hypercube Designs for Computer Experiments**—◆ Ying Hung, Rutgers University

- 9:35 a.m. **Statistical Analysis Integrating Complex Computer Models and Actual Measurements**—◆ Yasuo Amemiya, IBM T.J. Watson Research Center; Youngdoek Hwang, IBM Watson Research Center; Huijing Jiang, IBM T.J. Watson Research Center
- 9:55 a.m. **Density-Based Partitioning for K-Fold Cross-Validation**—◆ Lulu Kang, Illinois Institute of Technology
- 10:15 a.m. **Floor Discussion**

## 628 CC-516a **Statistical Methods for the Analysis of High-Dimensional Data from Matched Case Control Studies—Topic-Contributed**

Section on Statistical Learning and Data Mining, WNAR, Biometrics Section, Section on Statistics in Epidemiology

Organizer(s): Raji Balasubramanian, Division of Biostatistics and Epidemiology

Chair(s): John Staudenmayer, University of Massachusetts

- 8:35 a.m. **Variable Importance in Matched Case Control Studies in Settings of High-Dimensional Data**—◆ Raji Balasubramanian, Division of Biostatistics and Epidemiology; E. Andres Houseman, Oregon State University; Brent A. Coull, Harvard School of Public Health; Michael Lev, Massachusetts General Hospital; Lee Schwamm, Massachusetts General Hospital; Rebecca A. Betensky, Harvard School of Public Health
- 8:55 a.m. **Variable Selection and Prediction Using a Nested, Matched Case-Control Study: Application to Hospital-Acquired Pneumonia in Stroke Patients**—◆ Jing Qian, University of Massachusetts; Payabvash, Massachusetts General Hospital; Andre Kemmling, Massachusetts General Hospital; Michael Lev, Massachusetts General Hospital; Lee Schwamm, Massachusetts General Hospital; Rebecca A. Betensky, Massachusetts General Hospital
- 9:15 a.m. **Bayesian Variable Selection Methods for Matched Case-Control Studies**—◆ Josephine Asafu-Adjei, Harvard School of Public Health; Mahlet Tadesse, Georgetown University; Brent A. Coull, Harvard School of Public Health; Raji Balasubramanian, Division of Biostatistics and Epidemiology; Rebecca A. Betensky, Harvard School of Public Health
- 9:35 a.m. **Integration of Biological Information in the Analysis of High-Dimensional Matched Case-Control Data**—◆ Mahlet Tadesse, Georgetown University; Josephine Asafu-Adjei, Harvard School of Public Health; Raji Balasubramanian, Division of Biostatistics and Epidemiology; Brent A. Coull, Harvard School of Public Health; Rebecca A. Betensky, Harvard School of Public Health
- 9:55 a.m. Disc: E. Andres Houseman, College of Public Health and Human Sciences, Oregon State University
- 10:15 a.m. **Floor Discussion**

## 629 CC-520f **Challenges and Progress in Large-Scale Multiple Testing—Topic-Contributed**

Mental Health Statistics Section, Biometrics Section

Organizer(s): Hongyuan Cao, The University of Chicago

Chair(s): Wenguang Sun, University of Southern California

- 8:35 a.m. **Graphical Model-Based Multiple Testing with Applications to Genome-Wide Association Studies**—◆ Chunming Zhang, University of Wisconsin-Madison; Jie Liu, University of Wisconsin-Madison; Page David, University of Wisconsin-Madison
- 8:55 a.m. **Multi-Scale Multiple Testing for Region Detection with Application to Genomic Copy Number Change in Population Analyses**—◆ Nezamoddin N. Kachouie, Florida Institute of Technology; Armin Schwartzman, Harvard School of Public Health; Xihong Lin, Harvard School of Public Health
- 9:15 a.m. **Large-Scale Multiple Testing for Spatially Clustered Data**—◆ Hongyuan Cao, The University of Chicago; Yunda Zhong, The University of Chicago; Wei Biao Wu, The University of Chicago
- 9:35 a.m. **Multiple Testing for Differential Expression Using RNA-Seq Data**—◆ Dan Nettleton, Iowa State University
- 9:55 a.m. **Time Course Models for RNA Sequencing Data**—◆ Andrew Jaffe, Lieber Institute for Brain Development
- 10:15 a.m. **Floor Discussion**

## 630 CC-512g **Recent Applications of Statistical Discrete Models and Inference in Biology—Topic-Contributed**

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

Organizer(s): Luis E. Carvalho, Boston University

Chair(s): Eric Kolaczyk, Boston University

- 8:35 a.m. **Recent Applications of Statistical Discrete Models and Inference in Biology**—◆ Charles Lawrence, Brown University; Luan Lin, Mt. Sinai Med Center; Bryce Richards, Brown University
- 8:55 a.m. **RNA Profiling: A New Approach to ‘Denoising’ Secondary Structure Prediction**—◆ Christine Heitsch, Georgia Institute of Technology
- 9:15 a.m. **Modeling Structural RNA Families Using Covariance Models**—◆ Eric Nawrocki, Howard Hughes Medical Institute



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

9:35 a.m. **An Integrative Bayesian Modeling Approach to Imaging Genetics**—◆ Francesco Stingo, The University of Texas MD Anderson Cancer Center; Michele Guindani, The University of Texas MD Anderson Cancer Center; Marina Vannucci, Rice University; Vince Calhoun, University of New Mexico

9:55 a.m. **Bayesian Centroid Inference and Characterization of Posterior Spaces with Applications in Motif-Finding**—◆ Luis E. Carvalho, Boston University

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

## 631 CC-511d ■ ● **Recent Advances in Methodology for CNS Clinical Trials—Topic-Contributed**

Biopharmaceutical Section, Mental Health Statistics Section, Biometrics Section

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

Chair(s): H. M. James Hung, FDA

8:35 a.m. **Assessing Impairment Risk Produced by Use of a CNS Drug When Normal Ranges Are Uncertain**—◆ Eugene Laska, Nathan Kline Institute, New York University School of Medicine

8:55 a.m. **Interim Monitoring of Longitudinal Outcomes in Clinical Trials**—◆ Michael McDermott, University of Rochester Medical Center; Xueya Cai, University of Rochester Medical Center

9:15 a.m. **Recent Advances in Design and Methodology in Psychiatric Clinical Trials**—◆ Peiling Yang, FDA

9:35 a.m. **Study Designs and Ability to Deal with Missing Data and Yield Interpretations**—◆ Ralph D'Agostino, Sr., Boston University

9:55 a.m. **Fisherian Evidential Approach for Adaptive Doubly Randomized Withdrawal Designs**—◆ Qing Liu, Johnson & Johnson

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

## 632 CC-520c ■ ● **Theories and Applications of Paradata in a Mixed Mode Data Collection—Topic-Contributed**

Survey Research Methods Section, Social Statistics Section

Organizer(s): Asaph Young Chun, U.S. Census Bureau

Chair(s): Howard R. Hogan, U.S. Census Bureau

8:35 a.m. **Might a Social Integration Navigator Guide Response Propensity Models in Nonresponse Follow-Up?**—Asaph Young Chun, U.S. Census Bureau; ◆ Kevin Zajac, U.S. Census Bureau

8:55 a.m. **When Do 'Do It Yourself-DIYers' Really Do It Themselves? Using Paradata to Explore the Preference for Self-Completion Modes**—◆ Sara Zuckerbraun, RTI; Melissa Hobbs, RTI International; Angela Greene, RTI International; Lauren Harris-Kojetin, National Center for Health Statistics; Manisha Sengupta, National Center for Health Statistics

9:15 a.m. **Model-Based Mode of Data Collection Switching from Internet to Mail in the American Community Survey**—◆ John Chesnut, U.S. Census Bureau

9:35 a.m. **Using Paradata to Understand Panel Effects in the Current Population Survey**—◆ John Dixon, Bureau of Labor Statistics

9:55 a.m. **Opening the Box: What We Already Know and Don't Know Yet About the Response Process in the European Social Survey**—◆ Ineke Stoop, SCP

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

## 633 CC-520b ■ **New Paradigms for Missing Data Methods in Social and Economic Surveys—Topic-Contributed**

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

Organizer(s): Yves Thibaudeau, U.S. Census Bureau

Chair(s): Benjamin M. Reist, U.S. Census Bureau

8:35 a.m. **A Study of Data-Collection Rules Involving Real-Time Imputation for Adaptive Survey Design**—◆ Darcy Steeg Morris, U.S. Census Bureau; Yves Thibaudeau, U.S. Census Bureau

8:55 a.m. **Extending Imputation Techniques to Fill Gaps in Longitudinal Surveys to Dynamic Imputation**—◆ Sharon O'Donnell, U.S. Census Bureau; Yves Thibaudeau, U.S. Census Bureau

9:15 a.m. **Multivariate Linear Mixed-Effects Models for Missing Data Applied to a Business Survey**—◆ Joanna Fane Lineback, U.S. Census Bureau; Joseph Schafer, U.S. Census Bureau

9:35 a.m. **Building a Complete History for Respondents in Longitudinal Surveys Through Imputation**—◆ Yves Thibaudeau, U.S. Census Bureau; Sharon O'Donnell, U.S. Census Bureau

9:55 a.m. Disc: Louis-Paul Rivest, Université Laval

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

## 634 CC-511e **Challenges and Advances in Evaluation of Clinical Trials—Topic-Contributed**

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

Organizer(s): Weihua Cao, Center for Devices & Radiological Health, FDA; Yonghong Gao, U.S. Department of Health and Human Services  
 Chair(s): Martin P. Ho, FDA/CDRH

- 8:35 a.m. **Some Practical Issues with the Use of Composite Endpoints in Clinical Trials**—◆ Weihua Cao, Center for Devices & Radiological Health, FDA; Nelson Lu, Center for Devices & Radiological Health, FDA
- 8:55 a.m. **Statistical Considerations and Approaches on Using OUS Data to Support a Pre-Market Application of Medical Devices**—◆ Nelson Lu, Center for Devices & Radiological Health, FDA; Yunling Xu, FDA/CDRH
- 9:15 a.m. **Sample Size Re-Estimation in Confirmatory Studies**—◆ Min Lin
- 9:35 a.m. **Adaptive Enrichment Design in Clinical Trial**—◆ Yonghong Gao, U.S. Department of Health and Human Services
- 9:55 a.m. **Design Considerations in Testing Superiority and Noninferiority Hypotheses for a Set of Secondary Endpoints**—◆ Heng Li, FDA; Vandana Mukhi, FDA/CDRH
- 10:15 a.m. **Floor Discussion**

## 635 CC-515a **Statistical Methods for Assessing Hospital Performance: Risk-Adjusted Clinical Outcome Reporting—Topic-Contributed**

Section for Statistical Programmers and Analysts, Health Policy Statistics Section, Mental Health Statistics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Milan C. Seth, University of Michigan, BMC2 Clinical Collaborative  
 Chair(s): Nancy J. Petersen, Department of Veterans Affairs

- 8:35 a.m. **Random Forest Models for Patient-Level Clinical Risk Prediction in Risk-Adjusted Hospital Outcome Reporting**—◆ Milan C. Seth, University of Michigan, BMC2 Clinical Collaborative; Hitinder Gurm, University of Michigan
- 8:55 a.m. **Probability of Being Above a Percentile Cut-Point as a Metric for Facility Profiling and Payment**—◆ Michael Shwartz, Boston University; James F. Burgess, Jr, Center for Organization, Leadership and Management Research; Erol A. Pekoz, School of Management, Boston University; Cindy L. Christiansen, School of Public Health, Boston University; Boris Kader, Center for Health Quality, Outcomes and Economic Research; Amy Rosen, Center for Organization, Leadership and Management Research; Dan Berlowitz, Center for Health Quality, Outcomes and Economic Research

- 9:15 a.m. **Using the Lehman Family of ROC Curves to Evaluate Proxy Measures of Post-Operative Complications**—◆ Andrew Mullard, Michigan Surgical Quality Collaborative
- 9:35 a.m. Disc: Nick Salkowski, Chronic Disease Research Group
- 9:55 a.m. Disc: Peggy McLaughlin, University of Michigan Medical School
- 10:15 a.m. **Floor Discussion**

## 636 CC-522bc **Real-World Approaches to the Knotty Problems of Outliers, Faulty Values, and Covariates in Complex Sampling Designs—Topic-Contributed**

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

Organizer(s): Andrea Lamas, USDA/National Agricultural Statistics Service  
 Chair(s): Andrea Lamas, USDA/National Agricultural Statistics Service

- 8:35 a.m. **Analysis on Generalized Variance Function Estimators from Complex Sample Surveys**—◆ MoonJung Cho, Bureau of Labor Statistics
- 8:55 a.m. **Weights Adjustment in Project TALENT: A New Look at the AIR High School Survey**—◆ Zhulin He, National Institute of Statistical Sciences; Alan F. Karr, National Institute of Statistical Sciences; Michael Cohen, American Institutes for Research; Danielle Battle, American Institutes for Research; Deanna Lyter Achorn, American Institutes for Research; Alexander D. McKay, American Institutes for Research
- 9:15 a.m. **Multiple Imputation of Missing or Faulty Values Under Linear Constraints**—◆ Hang Joon Kim, Duke University and NISS; Jerry Reiter, Duke University; Quanli Wang, Duke University; Lawrence Cox, National Institute of Statistical Sciences; Alan F. Karr, National Institute of Statistical Sciences
- 9:35 a.m. **Using Internet Panel Surveys for Behavioral Health Surveillance**—◆ Carol Plerannonzi, Centers for Disease Control and Prevention; Carol Gotway Crawford, Centers for Disease Control and Prevention; Catherine A. Okoro, Centers for Disease Control and Prevention; Satvinder Dhingra, Centers for Disease Control and Prevention and Northrop Grumman; Haci Akcin, Centers for Disease Control and Prevention; Guixiang Zhao, Centers for Disease Control and Prevention; Derek Ford, Centers for Disease Control and Prevention and Northrop Grumman
- 9:55 a.m. **Numerical Impact of Topcoding on CE Microdata Utility**—◆ Daniel Yang, Bureau of Labor Statistics; Daniell Toth, Bureau of Labor Statistics
- 10:15 a.m. **Floor Discussion**

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 637 CC-520e ■ Bayesian Bioinformatics—Topic-Contributed

International Indian Statistical Association, International Society for Bayesian Analysis (ISBA), WNAR, Korean International Statistical Society

Organizer(s): Sounak Chakraborty, University of Missouri-Columbia

Chair(s): Bertrand Clarke, University of Miami

- 8:35 a.m. **Estimation and Testing of Gene Expression Heterosis**—◆ Tieming Ji, University of Missouri-Columbia; Peng Liu, Iowa State University; Dan Nettleton, Iowa State University
- 8:55 a.m. **Survival Prediction and Variable Selection with Simultaneous Shrinkage and Grouping Priors for Gene Expression Microarray Data**—◆ Sounak Chakraborty, University of Missouri-Columbia; Kyu Ha Lee, Harvard School of Public Health; Jianguo Sun, University of Missouri-Columbia
- 9:15 a.m. **Bayesian Variable Selection in Linear Mixed Models with Shrinkage Priors**—◆ Mingan Yang, Central Michigan University
- 9:35 a.m. **Bayesian Sparse Graphical Models for Classification with Application to Protein Expression Data**—◆ Rajesh Talluri, The University of Texas MD Anderson Cancer Center
- 9:55 a.m. **Bayesian Hierarchical Multi-Subject Multiscale Analysis of Functional MRI Data**—◆ Marco Ferreira, University of Missouri; Nilotpal Sanyal, University of Missouri
- 10:15 a.m. **Floor Discussion**

## 638 CC-525a ■ New Approaches to Disclosure-Safe Dissemination of Medicare Claims Data—Topic-Contributed

Survey Research Methods Section, Social Statistics Section, Health Policy Statistics Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Avi Singh, NORC at the University of Chicago

Chair(s): Stephen Cohen, National Science Foundation

- 8:35 a.m. **Data Entrepreneurs' Synthetic PUF: A Working PUF as an Alternative to Traditional Synthetic and Nonsynthetic PUFs**—Tzy-Chyi Yu, NORC at the University of Chicago; Joshua M. Borton, NORC at the University of Chicago; ◆ A.M. Crego, NORC at the University of Chicago; Avi Singh, NORC at the University of Chicago; Micheal Davern, NORC; Elizabeth Hair, NORC at the University of Chicago
- 8:55 a.m. **The CMS Public Use File Reidentification Experience**—◆ Susan Hinkins, NORC; Patrick Baier, NORC; Fritz J. Scheuren, NORC at the University of Chicago

9:15 a.m. **Aggregate-Level PUF with High Data Confidentiality and Analytic Utility for Descriptive Analyses from Medicare Claims Data**—◆ Erkan Erdem, IMPAQ International LLC; Avi Singh, NORC at the University of Chicago; Joshua M. Borton, NORC at the University of Chicago

9:35 a.m. **Query-Based PUF for Disclosure-Safe Remote Analysis from Medicare Claims Microdata**—Avi Singh, NORC at the University of Chicago; ◆ Joshua M. Borton, NORC at the University of Chicago; Micheal Davern, NORC; A. T.-C. Yu, NORC at the University of Chicago

9:55 a.m. Disc: Jerry Reiter, Duke University

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

## 639 CC-512e ■ Recent Improvements in Inference for Evolutionary Models—Topic-Contributed

Biometrics Section, WNAR

Organizer(s): Benjamin Redelings, Duke University

Chair(s): Marc A. Suchard, University of California at Los Angeles

8:35 a.m. **On Measuring Dependence of Objects Related by a Tree**—◆ Alexander V. Alekseyenko, New York University School of Medicine, Center for Health Informatics and Bioinformatics; Marc A. Suchard, University of California at Los Angeles; Nick Goldman, EMBL-European Bioinformatics Institute

8:55 a.m. **Approximate Conditional Independence of Separated Subtrees and Phylogenetic Inference**—◆ Bret Larget, University of Wisconsin-Madison

9:15 a.m. **Erasing Errors Due to Alignment Ambiguity When Estimating Positive Selection**—◆ Benjamin Redelings, Duke University

9:35 a.m. **A Phylogenetic Latent Liability Model for Assessing Correlations in Phenotype Evolution**—◆ Gabriela Cybis, University of California at Los Angeles; Janet Sinsheimer, University of California at Los Angeles; Philippe Lemey, KU Leuven; Marc A. Suchard, University of California at Los Angeles

9:55 a.m. **Continuous Phylogeographic Diffusion with Drift**—◆ Mandev Gill, University of California at Los Angeles; Marc A. Suchard, University of California at Los Angeles

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

640 CC-512c  
**Recent Developments in Ranked-Set Sampling—Topic-Contributed**

Section on Nonparametric Statistics, Korean International Statistical Society

Organizer(s): Omer Ozturk, The Ohio State University

Chair(s): Asuman Turkmen, The Ohio State University

- 8:35 a.m. **CDF-Based Goodness-of-Fit Tests for Ranked-Set Sampling**—◆ Jesse Frey, Villanova University; Le Wang, Villanova University
- 8:55 a.m. **Estimation of Finite Population Mean Using Partially Ordered Set Samples**—◆ Omer Ozturk, The Ohio State University
- 9:15 a.m. **Using Ranked-Set Sampling in Group-Randomized Studies**—◆ Xinlei Wang, Southern Methodist University; Johan Lim, Seoul National University; Lynne Stokes, Southern Methodist University
- 9:35 a.m. **Estimation and Classification for Finite Mixture Models Under Ranked-Set Sampling**—◆ Armin Hatefi, University of Manitoba; Mohammad Jafari Jozani, University of Manitoba; Djemel Ziou, Université de Sherbrooke
- 9:55 a.m. **Nonparametric Confidence and Tolerance Intervals for Quantiles with Randomized Nomination Sampling**—◆ Mohammad Nourmohammadi, University of Manitoba; Mohammad Jafari Jozani, University of Manitoba; Brad Johnson, University of Manitoba
- 10:15 a.m. **Floor Discussion**

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

641 CC-515b  
**Evolution of Federal Statistical Agency Disclosure Review Boards—Topic-Contributed**

Government Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Eve E. Powell-Griner, National Center for Health Statistics, CDC

Chair(s): Jean-Louis Tambay, Statistics Canada

- Panelists:**
- ◆ Marilyn Seastrom, National Center for Education Statistics
  - ◆ Michael Buso, U.S. Bureau of Labor Statistics
  - ◆ Eve E. Powell-Griner, National Center for Health Statistics, Centers for Disease Control and Prevention
  - ◆ Michael Hawes, U.S. Department of Education
  - ◆ Christopher Warren Chapman, Bureau of Labor Statistics

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

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

642 CC-512f  
**Large-Scale Hypothesis Testing—Contributed**

Biometrics Section, International Chinese Statistical Association

Chair(s): Paula K. Roberson, University of Arkansas

- 8:35 a.m. **Adaptive Procedures Controlling False Discoveries Under Dependence**—◆ Li He, Merck Research Laboratories; Sanat K. Sarkar, Temple University
- 8:50 a.m. **Clusterwise False Discovery Rate Control in Spatial Data**—◆ Alexandra Chouldechova, Stanford University
- 9:05 a.m. **High-Dimensional Equivalence Testing Using Shrinkage Variance Estimators**—◆ Yue Qi; Jing Qiu, University of Missouri; Xiangqin Cui, The University of Alabama
- 9:20 a.m. **Large-Scale Multiple-Testing Under Dependence with Approximate Posterior-Likelihood**—◆ Sairam Rayaprolu; Zhiyi Chi, University of Connecticut
- 9:35 a.m. **A Two-Step Hierarchical Hypothesis Set Testing Framework, with Applications to Gene Expression Data on Ordered Categories**—◆ Yihan Li, Penn State University; Debashis Ghosh, Penn State University
- 9:50 a.m. **The Projack: A Resampling Approach for Prediction of Ranked Effect Sizes and Estimation of Normal Means**—◆ Yihui Zhou, The University of North Carolina at Chapel Hill; Fred Wright, The University of North Carolina
- 10:05 a.m. **Truncated and Weighted Transformation Methods for Combining P-Values**—◆ Zheyang Wu, WPI; Tiejun Tong, Hong Kong Baptist University

643 CC-513b  
**Discriminant Analysis and Prediction—Contributed**

Biometrics Section

Chair(s): Bahman Shafii, University of Idaho

- 8:35 a.m. **Estimation of Misclassification Rates in Discriminant Analysis with Normal Populations**—◆ Alice Hinton, The Ohio State University; Haikady Nagaraja, The Ohio State University
- 8:50 a.m. **Impact of Correlation on Predictive Ability of a Biomarker**—◆ Olga Demler, BWH; Michael Pencina, Boston University; Ralph D'Agostino Sr., Boston University
- 9:05 a.m. **Clustering and Classification of Multiple Sequences**—◆ Asif Shams Adnan, Jahangirnagar University; Mian Adnan, Jahangirnagar University; M. Shamsuddin, Dhaka



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 9:20 a.m. **Random Forest Variable Selection Among Correlated Variables**—◆Joy Toyama; Christina Kitchen, University of California at Los Angeles
- 9:35 a.m. **Statistical Methods to Assess Heterogeneity Effects in a Randomized Clinical Trial**—◆Alok Dwivedi, Texas Tech University Health Sciences Center; Luis A. Alvarado, Texas Tech University Health Sciences Center; Patrick Tarwater, Texas Tech University Health Sciences Center; Rakesh Shukla, University of Cincinnati; Sada Nand Dwivedi, All India Institute of Medical Sciences; Rebecca A. Pasillas, Texas Tech University Health Sciences Center
- 9:50 a.m. **Power Comparisons for Testing Nested Models Using Limited-Information Statistics**—◆Mark Reiser, Arizona State University
- 10:05 a.m. **Flexible Semiparametric Hierarchical Spatial Models**—◆Aaron Porter, The University of Missouri; Scott H. Holan, University of Missouri; Christopher K. Wikle, University of Missouri

## 644 CC-512d Nonparametric Methods for Complex Data—Contributed

Section on Nonparametric Statistics

Chair(s): David Matteson, Cornell University

- 8:35 a.m. **Shape-Constrained Nonparametric Maximum Likelihood Estimation for Interval-Censored Data**—◆Clifford Anderson-Bergman, University of California at Irvine
- 8:50 a.m. **Correcting the Bias of Variable Selections in Cost-Sensitive Learning**—◆Hongjuan Liu; Bei Zhou, Johnson & Johnson Pharmaceutical R&D
- 9:05 a.m. **Inference for Nonstationary Self-Exciting Point Processes**—◆Feng Chen, The University of New South Wales; Peter Gavin Hall, University of Melbourne
- 9:20 a.m. **Implementation of Parametric and Nonparametric Models for Genomic-Assisted Selection in Plant Breeding**—◆Reka Howard, Iowa State University; Alicia Carriquiry, Iowa State University; William Beavis, Iowa State University
- 9:35 a.m. **Breakpoint Detection of Nonstationary Time Series Using Wild Binary Segmentation**—◆Karolos Korkas; Piotr Fryzlewicz, London School of Economics
- 9:50 a.m. **A Review of Mixture Varying Coefficient Models for Longitudinal Data**—◆Xianming Tan, MUHC RI BCF
- 10:05 a.m. **An Analysis of Approaches Used in Estimating Age of Children and Adults**—◆John T. Wulu, ICE Health Service Corps

## 645 CC-512ab Wildlife and Ecological Abundance Data—Contributed

Section on Statistics and the Environment, SSC, Scientific and Public Affairs Advisory Committee

Chair(s): Keita Eloisu, Yale University

- 8:35 a.m. **A Sequential Fixed-Size Confidence Interval Estimation for Positive Parameters with Applications in Statistical Ecology**—◆Swarnali Banerjee, University of Connecticut; Nitis Mukhopadhyay, University of Connecticut
- 8:50 a.m. **Modeling Density Dependence in Population Growth Rates**—◆Quinn Payton
- 9:05 a.m. **Binomial Mixture Models for Urban Ecological Monitoring Studies Using American Community Survey Demographic Covariates**—◆Guohui Wu, University of Missouri; Scott H. Holan, University of Missouri; Charles Nilon, University of Missouri; Christopher K. Wikle, University of Missouri
- 9:20 a.m. **A Bayesian Hierarchical Population Dynamics Model to Integrate North American Mourning Dove Band-Recovery and Harvest Surveys**—◆Mark Otto, U.S. Fish and Wildlife Service; Todd Sanders, U.S. Fish and Wildlife Service
- 9:35 a.m. **Estimating the Effect of Groundfish Abundance and Other Spatial Covariates on Northern Fur Seal Behavior**—◆Ruth Joy, Simon Fraser University; Rick Routledge, Simon Fraser University
- 9:50 a.m. **Mapping the Distribution, Abundance, and Risk Assessment of Marine Birds in the Northwest Atlantic**—◆Earvin Balderama, North Carolina State University; Beth Gardner, North Carolina State University; Brian J. Reich, North Carolina State University
- 10:05 a.m. **A Bayesian Analysis of Daily Weir Counts for Estimating Chinook Salmon Escapement**—◆Margaret Short, University of Alaska, Fairbanks; Jim Jasper, Alaska Department of Fish and Game

## 646 CC-513a Challenges of Endpoint Definitions and Interpretation—Contributed

Biopharmaceutical Section, Mental Health Statistics Section

Chair(s): Christie Clark, Baxter Medical Products

- 8:35 a.m. **Validity of Responder Analysis Using Continuous Endpoints**—◆Davis Gates, Merck; Tulin Shekar, Merck
- 8:50 a.m. **Assessment of Clinical Meaningfulness Based on Absolute and Relative Measures of Effect**—◆Qi Jiang, Amgen, Inc.; Steven Snapinn, Amgen, Inc.

- 9:05 a.m. **Patient Year Method for Clinical Outcome in Left Ventricular Assist Device Trial—**  
◆ Hong Wang, HeartWare Inc; Wei Xu, HeartWare; Kevin Najarian, HeartWare
- 9:20 a.m. **Application of the FDA's Snapshot Algorithm to the Statistical Review of Etravirine for the Treatment of HIV—**◆ Fraser Smith, U.S. Food and Drug Administration
- 9:35 a.m. **Floor Discussion**

## 647 CC-514a ■ Decisionmaking in Biopharmaceutical Development—Contributed

Biopharmaceutical Section  
Chair(s): Maggie Wang, PPD Inc

- 8:35 a.m. **Statistical Methods for Benefit Risk Assessment—**  
◆ Lanju Zhang, AbbVie; Bo Yang, AbbVie
- 8:50 a.m. **A Comparison of Sample Size Estimation Procedures Using Cost-Effective Methods—**◆ Sibabrata Banerjee, Allergan, Inc.
- 9:05 a.m. **Evaluating Regression to the Mean of Treatment Effect from Phase II to Phase III—**◆ Jianliang Zhang, Medimmune Inc.
- 9:20 a.m. **A Novel Design for Decision Rules Based on Statistical Testing Strategies in a Definitive Go/No-Go Clinical Study—**◆ Ming Zhou, Amylin Pharma., LLC (a Bristol-Myers Squibb Co.); Larry Z. Shen, Amylin Pharma., LLC (a Bristol-Myers Squibb Co.)
- 9:35 a.m. **Data-Monitoring Committees in China—**Kent Koprowicz, Axio Research LLC; ◆ Tingting Li, Axio Research; Xiaohui Huang, Axio Research; Ping Xu, Axio Research Coporation
- 9:50 a.m. **Building Efficient Comparative Effectiveness Trials Through Adaptive Designs, Utility Functions, and Accrual Rate Optimization: Finding the Sweet Spot—**◆ Byron Gajewski, University of Kansas Medical Center; Scott M. Berry, Berry Consultants; Mamatha Pasnoor, University of Kansas Medical Center; Mazen Dimachkie, University of Kansas Medical Center; Laura Herbelin, University of Kansas Medical Center; Richard Barohn, University of Kansas Medical Center
- 10:05 a.m. **Floor Discussion**

## 648 CC-514b ■ Methods and Applications in Survival Data Analysis—Contributed

Section on Statistics in Epidemiology, Health Policy Statistics Section  
Chair(s): Kevin Keen, University of Northern British Columbia

- 8:35 a.m. **Estimating Survival Probabilities Based on Complex Survey Data with Mortality Follow-Up—**Barry Graubard, National Cancer Institute; ◆ Victoria Landsman, Ontario Institute for Cancer Research
- 8:50 a.m. **Nested Frailty Cox Models with Time-Dependent Covariates: Application to Dairy Cow Data—**  
◆ Adel Elghafghuf; Henrik Stryhn, University of Prince Edward Island; Simon Dufour, University of Montréal; Kristen Reyher, University of Bristol; Ian Dohoo, University of Prince Edward Island
- 9:05 a.m. **Estimating Survival Functions to Distinguish Health Care--Associated Infection Recurrence Among Hospital ICUs—**◆ Jonathan R. Edwards, Centers for Disease Control and Prevention
- 9:20 a.m. **Modelling Survival After Diagnosis of a Specific Disease Based on Case Surveillance Data—**  
◆ Ruiguang Song, Centers for Disease Control and Prevention; Gengsheng Qin, Georgia State University; Kathleen McDavid Harrison, Centers for Disease Control and Prevention; Xinjian Zhang, Centers for Disease Control and Prevention; H. Irene Hall, Centers for Disease Control and Prevention
- 9:35 a.m. **A Spline-Based Flexible Model for Comparing the Cumulative Effects of Time-Dependent Exposures on Survival Outcomes—**  
◆ Chenkun Wang, Indiana University
- 9:50 a.m. **Estimating Time-Varying Effects with Penalized Splines for Recurrent Event Data—**◆ Leila Amorim, Universidade Federal da Bahia; Jianwen Cai, The University of North Carolina at Chapel Hill; Donglin Zeng, The University of North Carolina
- 10:05 a.m. **Modeling the Duration of Effects of Antibiotic Exposures on the Risk of Clostridium Difficile Infection (CDI): A Comparison of Methods—**  
◆ Kevin Brown; David Fisman, University of Toronto; Rahim Moineddin, University of Toronto; Nick Daneman, University of Toronto



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# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

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## Topics in Genomics with Applications to Association Studies—Contributed

ENAR, WNAR

Chair(s): Xiaochen Cai, Columbia University

- 8:35 a.m. **A Randomized MicroRNA Microarray Study and Its Evaluation of Normalization**—◆ Li-Xuan Qin, Memorial Sloan-Kettering Cancer Center; Qin Zhou, Memorial Sloan Kettering Cancer Center
- 8:50 a.m. **Evaluation of Illumina 450K Methylation Chip Using Technical Replicates**—◆ Maitreyee Bose, University of Minnesota; Weihua Guan, University of Minnesota; James Pankow, University of Minnesota
- 9:05 a.m. **Measuring Co-Binding Among Transcription Factors**—◆ Yingying Wei, JHSPH; Hongkai Ji, The Johns Hopkins University
- 9:20 a.m. **Integrative Analysis of -Seq Data Sets for a Comprehensive Understanding of Regulatory Roles of Repetitive Regions**—◆ Xin Zeng, University of Wisconsin-Madison; Sunduz Keles, University of Wisconsin-Madison
- 9:35 a.m. **Integration of Encode Data to Understand the Regulatory Mechanism of Disease-Associated Variants Identified in GWAS**—◆ Dongjun Chung, Yale University; Hongyu Zhao, Yale University
- 9:50 a.m. **Weighted Pseudolikelihood for Analysis of Multiple Secondary Outcomes in Genetic Association Studies**—◆ Elizabeth Schifano, University of Connecticut; Tamar Sofer, Harvard School of Public Health; David C. Christiani, Harvard School of Public Health; Xihong Lin, Harvard School of Public Health
- 10:05 a.m. **A Bayesian Model for Poisson Processes for Power Prediction with ChIP-Seq Data**—◆ Chen Zuo, University of Wisconsin-Madison; Sunduz Keles, University of Wisconsin-Madison

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## Methods and Applications in Modeling Infectious Diseases—Contributed

Section on Statistics in Epidemiology

Chair(s): Jimmy Efrid, East Carolina Heart Institute

- 8:35 a.m. **Agent-Based Models for Combinations of Biomedical and Behavioral Interventions for HIV Prevention**—◆ David Boren, University of California at Los Angeles; Ron Brookmeyer, University of California at Los Angeles
- 8:50 a.m. **Space-Time Models for Aggregated Infectious Disease Data with Different Strains**—◆ Cici Bauer, Brown University
- 9:05 a.m. **Analyzing Spatially Aggregated Infectious Disease Data Using Time-Varying Individual-Level Models**—◆ Lin Zhang, University of Guelph; Rob Deardon, University of Guelph

CC-511b

- 9:20 a.m. **Models for Hantavirus Incidence in Chile**—◆ Elaine O. Nsoesie, Children's Hospital Informatics Program, Children's Hospital Boston; Sumiko R. Mekaru, Children's Hospital Informatics Program, Children's Hospital Boston; John S. Brownstein, Children's Hospital Informatics Program, Children's Hospital Boston
- 9:35 a.m. **Predictive Models of HIV Survival**—◆ Georgiy Bobashev, RTI International; Jacob Norton, North Carolina State University; Olga Tousova, Pavlov Medical University
- 9:50 a.m. **Estimating Disease Transmission Rates Using Susceptible-Infected-Recovered (SIR) Models**—◆ Long H. Ngo, Harvard Medical School; David S. Yassa, Beth Israel Deaconess Medical Center & Harvard Medical School; Sharon Wright, Beth Israel Deaconess Med Center & Harvard Medical School; Baevin Carbery, Beth Israel Deaconess Medical Center
- 10:05 a.m. **Statistical Prediction for Virginia Lyme Disease Emergence Based on Spatial-Temporal Count Data**—◆ Yuanyuan Duan, Virginia Tech; Jie Li, Virginia Tech; Yili Hong, Virginia Tech; Korine N. Kolivras, Virginia Tech; Stephen P. Prisley, Virginia Tech; James B. Campbell, Virginia Tech; David N. Gaines, Virginia Department of Health

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## High-Dimensional Modeling—Contributed

IMS

Chair(s): Rui Zhang

- 8:35 a.m. **On Variable Selection Using Additive Conditional Independence**—◆ Kuang-Yao Lee, Yale University; Bing Li, Penn State University; Hongyu Zhao, Yale University
- 8:50 a.m. **Fast Stagewise Algorithms for Approximate Regularization Paths**—◆ Ryan Tibshirani
- 9:05 a.m. **Adaptive Composite M-Estimation for Partially Overlapping Models**—◆ Sunyoung Shin, The University of North Carolina at Chapel Hill; Jason Fine, The University of North Carolina at Chapel Hill; Yufeng Liu, The University of North Carolina
- 9:20 a.m. **Selection of Shrinkage Estimators for Prediction Out-of-Sample**—◆ Nina Huber; Hannes Leeb, University of Vienna
- 9:35 a.m. **UPS Delivers Optimal Phase Diagram in High-Dimensional Variable Selection**—◆ Pengsheng Ji, University of Georgia; Jiashun Jin, Carnegie Mellon University
- 9:50 a.m. **Projective Method for Dimension Reduction with Multivariate Responses**—◆ Armine Bagyan, Penn State University; Arkady Tempelman, Penn State University; Bing Li, Penn State University
- 10:05 a.m. **Residual Variance and the Signal-to-Noise Ratio in High-Dimensional Linear Models**—◆ Lee Dicker, Rutgers University

CC-512h

## 652 CC-510b Nonparametric and Semiparametric Bayesian Methods—Contributed

Section on Bayesian Statistical Science

Chair(s): Lane Burgette, RAND Corporation

- 8:35 a.m. **Computational Techniques for High-Dimensional Nonparametric Bayes**—◆ Anjishnu Banerjee
- 8:50 a.m. **Detecting Local Two-Sample Differences with Divide-Merge Optional Polya Trees: A Genetic Association Study Application**—◆ Jacopo Soriano, Duke University; Li Ma, Duke University
- 9:05 a.m. **Locally Adaptive Bayes Nonparametric Regression via Nested Gaussian Processes**—◆ Bin Zhu, Biostatistics Branch, DCEG, NCI; David B. Dunson, Duke University
- 9:20 a.m. **A Bayesian Semiparametric Approach to the Instrumental Variables Problem with a Binary Treatment or Outcome**—◆ Jessica Pruszynski, Medical College of Wisconsin; Purushottan Laud, Medical College of Wisconsin; Rodney Sparapani, Medical College of Wisconsin; Robert E. McCulloch, The University of Chicago Booth School of Business
- 9:35 a.m. **Gaussian Process–Based Semiparametric Bayesian QTL Mapping for Longitudinal Data**—◆ Wonil Chung, The University of North Carolina at Chapel Hill; Fei Zou, The University of North Carolina at Chapel Hill
- 9:50 a.m. **A Semiparametric Bayesian Model for Longitudinal Data: The Cluster Memory Dirichlet Process Mixture Model**—◆ Robert E. Weiss, University of California at Los Angeles; Yuda Zhu, Genentech
- 10:05 a.m. **Floor Discussion**

## 653 CC-510d Bayesian Clinical Trials—Contributed

Section on Bayesian Statistical Science, Biopharmaceutical Section, Korean International Statistical Society

Chair(s): Jeremy Gaskins, University of Florida

- 8:35 a.m. **Microarray Gene Expression of Two Prostate Cancer Cell Lines Using Bayesian Clustering Algorithm**—◆ Jean A. Roayaei, NIH, National Cancer Institute
- 8:50 a.m. **On the Probability of a Successful Trial in Clinical Research**—◆ Adina Soaita, Pfizer Inc; Robb Muirhead, Muirhead Consulting
- 9:05 a.m. **Use of Probability of Success to Improve Study Planning and Forecast Probability of Noninferiority**—◆ Peter Hu, Bristol-Myers Squibb

- 9:20 a.m. **Expediting Clinical and Translational Research via Bayesian Instrument Development**—◆ Yu Jiang, University of Kansas Medical Center; Diane K. Boyle, University of Kansas School of Nursing; Marjorie J. Bott, University of Kansas School of Nursing; Jo A. Wick, University of Kansas Medical Center; Qing Yu, University of Kansas Medical Center; Byron Gajewski, University of Kansas-Medical Center
- 9:35 a.m. **A Test Based on Monte Carlo Simulations for Biomarker-Adaptive Threshold Design**—◆ Yafeng Zhang, University of California at Los Angeles; Glen Laird, Bristol-Myers Squibb
- 9:50 a.m. **Bayesian Inference for Causal Quantities via the Instrumental Variable Approach with a Binary Outcome and a Binary Treatment**—◆ Rodney Sparapani, Medical College of Wisconsin; Purushottan Laud, Medical College of Wisconsin; Jessica Pruszynski, Medical College of Wisconsin; Robert E. McCulloch, The University of Chicago Booth School of Business
- 10:05 a.m. **Bayesian Inference for Longitudinal Mediation Analysis**—◆ Chanmin Kim, University of Florida; Michael Daniels, The University of Texas at Austin; Jason Roy, University of Pennsylvania

## 654 CC-521ab Health Care and Health Policy Statistics—Contributed

Health Policy Statistics Section, Mental Health Statistics Section

Chair(s): Bassam Dahman, Virginia Commonwealth University

- 8:35 a.m. **Longitudinal Design Options for the Medical Expenditure Panel Survey Insurance Component**—◆ Steven Cohen, AHRQ
- 8:50 a.m. **Estimating Health Care Demand for an Aging Population: A Flexible and Robust Bayesian Joint Model**—◆ Satrajit Roychoudhury, Novartis Pharmaceuticals Corporation; Arnab Mukherjee, Indian Institute of Management Bangalore; Pulak Ghosh, Indian Institute of Management Bangalore; Sarah Brown, University of Sheffield
- 9:05 a.m. **Properties of HCAHPS (Patient Experience) Scores in the Centers for Medicare and Medicaid Services' Hospital Value-Based Purchasing Program**—◆ Marc Elliott, RAND Corporation; William G. Lehrman, CMS; Christopher Cohea, HSAG; Elizabeth Goldstein, CMS; Laura A. Giordano, HSAG
- 9:20 a.m. **Sample Size Determination in Health Care Quality Surveys**—◆ Thao Duong, UCI; Hal S. Stern, University of California
- 9:35 a.m. **Are Provider Communication Constructs and Their Structural Relationships the Same Across English and Spanish?**—◆ Gerald Arnold, American Board of Internal Medicine; Rebecca Baranowski, American Board of Internal Medicine
- 9:50 a.m. **Floor Discussion**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 655 CC-515c ■ Statistical Learning Methods for Complex Data—Contributed

Section on Statistical Learning and Data Mining, Section on Statistical Computing, Health Policy Statistics Section

Chair(s): Clayton Barker, SAS Institute

- 8:35 a.m. **Recent Advances in Claims Data--Based Total Health Care Cost Prediction**—◆ Donghui Wu, Elsevier/MEDai Inc.; Emad El-Sebakhy, Elsevier/MEDai Inc.; Krassimir Latinski, Elsevier/MEDai; Jun Han, Elsevier / MEDai; Ognian Asparouhov, Elsevier/MEDai Inc.
- 8:50 a.m. **Simultaneous Selection of Designs and Models for Optimal Forecasting in Possibly Misspecified Polynomial Regressions**—◆ Hsiang-Ling Hsu, Academia Sinica; Mong-Na Lo Huang, National Sun Yat-sen University; Ching-Kang Ing, Institute of Statistical Science Academia Sinica, Taiwan
- 9:05 a.m. **Quantifying the Decreasing Variability of English Spelling Over Time Using Edit Distances**—◆ Roger Bilisoly, Central Connecticut State University
- 9:20 a.m. **A Statistical Approach for the Recognition of Extended Radio Sources in Large-Area Sky Surveys**—◆ Martin Silerio-Vazquez, Iowa State University; Heinz Andernach, University of Guanajuato; Carlos Rodríguez, University of Guanajuato; Johan Van Horebeek, Center for Research in Mathematics
- 9:35 a.m. **Ranking and Recommending Adwords Opportunities**—◆ Shuohui (Andy) Chen, Google
- 9:50 a.m. **Regression Trees in a Longitudinal Data Setting and Their Application in a Metabolite Expression Neuroimaging Study**—◆ Madan Kundu, Indiana University School of Medicine; Jaroslaw Harezlak, Indiana University Fairbanks School of Public Health
- 10:05 a.m. **ROC-Based Random Forest**—◆ Bowen Song, Stony Brook University; Yang Zhao, Stony Brook University; Wei Zhu, Stony Brook University; Zhengrong Liang, Stony Brook University

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

### 656 CC-520d ■ Computational Advertising: Statistical Learning at SAMSI—Invited

Section on Statistical Learning and Data Mining, Biometrics Section, Section on Statistical Computing, Scientific and Public Affairs Advisory Committee

Organizer(s): David Banks, Duke University

Chair(s): Ilse Ipsen, SAMSI and North Carolina State University

- 10:35 a.m. **Can We Use an Equilibrium Model to Interpret the Auction Data?**—◆ Xiaoming Huo, Georgia Institute of Technology
- 11:00 a.m. **Principled Regularization for Matrix Factorization**—◆ Robert M. Bell, AT&T Labs-Research; Suhrid M. Balakrishnan, AT&T Labs-Research
- 11:25 a.m. **Bid Optimization and Inventory Scoring**—◆ Claudia Perlich, Media6Degrees
- 11:50 a.m. Disc: Deepak Agarwal, LinkedIn
- 12:10 p.m. **Floor Discussion**

### 657 CC-710a ■ ● Long Memory: Foundations and Outlook—Invited

IMS, SSC, International Indian Statistical Association

Organizer(s): Jan Beran, University of Konstanz

Chair(s): Jan Beran, University of Konstanz

- 10:35 a.m. **Goodness-of-Fit Tests for Long Memory Moving-Average Marginal Density**—◆ Hira Lal Koul, Michigan State University; Nao Mimoto, Michigan State University; Donatas Surgailis, Vilnius University
- 10:55 a.m. **Estimation of Fractional Models for Panel Data**—◆ Peter Michael Robinson, London School of Economics
- 11:15 a.m. **Long Memory and Aggregation**—◆ Donatas Surgailis, Vilnius University
- 11:35 a.m. **Summation Theory for Linear Processes Driven by a Martingale Difference Noise**—◆ Liudas Giraitis, Queen Mary, University of London
- 11:55 a.m. **Modeling Financial Data with Heavy Tails and Long Memory**—◆ Rafal Kulik, University of Ottawa
- 12:15 p.m. **Floor Discussion**

658 CC-516d  
**● ● Statistical Methodologies in Complex Biomedical Data Analysis—Invited**

ENAR, Statistical Learning and Data Mining Section, Biometrics Section  
 Organizer(s): Peter X.K. Song, University of Michigan  
 Chair(s): Peter X.K. Song, University of Michigan

- 10:35 a.m. **Statistical Models for High-Dimensional Compositional Data with Applications to Microbiome Data**—◆ Hongzhe Li, University of Pennsylvania
- 11:00 a.m. **Multiple Change-Point Detection and Analysis of Chromosome Copy Number Variations**—◆ Heping Zhang, Yale University
- 11:25 a.m. **Informing Genome-Wide Association Studies by Incorporating Gene Expression and Network Data**—◆ Li Hsu, Fred Hutchinson Cancer Research Center
- 11:50 a.m. **Ultrahigh Dimensional Time Course Feature Selection**—◆ Yi Li, University of Michigan; Peirong Xu, East China Normal University; Lixing Zhu, Hong Kong Baptist University
- 12:15 p.m. **Floor Discussion**

659 CC-516c  
**■ ● Estimating the Heritability of Complex Diseases: Recent Developments—Invited**

Section on Statistics in Epidemiology, Biometrics Section, Scientific and Public Affairs Advisory Committee  
 Organizer(s): Malka Gorfine, Technion - Israel Institute of Technology  
 Chair(s): Tanya Garcia, Texas A&M University

- 10:35 a.m. **Estimating the Heritability of Complex Diseases: Recent Developments**—◆ Thomas Scheike, University of Copenhagen
- 11:00 a.m. **Heritability Estimation Based on Survival Data**—◆ Malka Gorfine, Technion - Israel Institute of Technology; Li Hsu, Fred Hutchinson Cancer Research Center
- 11:25 a.m. **The Mystery of Missing Heritability: The Role of Rare Variants**—◆ Or Zuk, The University of Chicago
- 11:50 a.m. **Solving the Missing Heritability Problem: A Whole-Genome Estimation Approach**—◆ Jian Yang, The University of Queensland
- 12:15 p.m. **Floor Discussion**

660 CC-511f  
**● Frontiers in Longitudinal and Survival Data Analysis—Invited**

Biometrics Section, SSC, Section on Statistics in Epidemiology, Korean International Statistical Society  
 Organizer(s): Gang Li, University of California at Los Angeles  
 Chair(s): Haiqun Lin, Yale University

- 10:35 a.m. **Bayesian Influence Measures for Joint Models of Longitudinal and Survival Data**—◆ Joseph G. Ibrahim, The University of North Carolina; Hongtu Zhu, The University of North Carolina at Chapel Hill; Niansheng Tang, Yunnan University; Yueh-Yun Chi, University of Florida
- 11:00 a.m. **Explained Variation in Nonlinear Models with Applications to Survival Analysis**—Gang Li, University of California at Los Angeles; ◆ Xiaoyan Wang, University of California at Los Angeles
- 11:25 a.m. **Standard Error Estimation for the Joint Analysis of Survival and Longitudinal Data**—◆ Paul David Baines, University of California at Davis; Jane-Ling Wang, University of California at Davis; Cong Xu, University of California at Davis
- 11:50 a.m. **Joint Modeling of Survival Time and Longitudinal Outcomes with Flexible Random Effects**—◆ Jianwen Cai, The University of North Carolina at Chapel Hill; Jaeun Choi, Harvard Medical School; Donglin Zeng, The University of North Carolina; Andy Olshan, The University of North Carolina at Chapel Hill
- 12:15 p.m. **Floor Discussion**

661 CC-710b  
**■ ● Patterns and Extremes: Developments and Review of Spatial Data Analysis—Invited**

IMS, International Indian Statistical Association, Section on Statistics and the Environment  
 Organizer(s): Sucharita Ghosh, Swiss Federal Research Institute WSL  
 Chair(s): Sucharita Ghosh, Swiss Federal Research Institute WSL

- 10:35 a.m. **Multivariate Max-Stable Spatial Processes**—◆ Marc G. Genton, KAUST; Simone Padoan, Bocconi University of Milan; Huiyan Sang, Texas A&M University
- 10:55 a.m. **Approximate Bayesian Computing for Spatial Extremes**—◆ Robert James Erhardt, Wake Forest University; Richard Smith, The University of North Carolina at Chapel Hill
- 11:15 a.m. **Some Recent Developments on the Modeling of Massive Dimensional Nonstationary Data Sets**—◆ Rajarshi Guhaniyogi, Duke University; Andrew Oliver Finley, Michigan State University; Sudipto Banerjee, University of Minnesota; Alan E. Gelfand, Duke University

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 11:35 a.m. **Spatial Statistics and Cosmology: Measuring Dark Matter Distortions of the Cosmic Microwave Background**—◆Ethan Berger Anderes, University of California at Davis
- 11:55 a.m. Disc: Dan Cooley, Colorado State University
- 12:15 p.m. **Floor Discussion**

## 662 CC-510a ■ Recent Advances in the Analysis of Mixed-Mode Survey Data—Invited

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

Organizer(s): Jae-Kwang Kim, Iowa State University

Chair(s): Minsun Riddles, Iowa State University and Westat

- 10:35 a.m. **An Imputation Approach for Analyzing Mixed-Mode Surveys**—◆Jae-Kwang Kim, Iowa State University; Seunghwan Park, Seoul National University; Seo-young Kim, Statistics Korea
- 11:05 a.m. **Estimating Mode Effects Without Bias: A Randomized Experiment to Compare Mode Effects Between Face-to-Face Interviews and Web Surveys**—◆Douglas Rivers, Stanford University; Lynn Vavreck, University of California at Los Angeles
- 11:35 a.m. **Analyses of a Mixed-Mode ABS Nationwide Survey of Trust and Confidence**—◆Danna Moore, Washington State University; Danna Moore, Washington State University
- 12:05 p.m. **Floor Discussion**

## 663 CC-512ab ■ ● Big Data, Big Impact When Statistics Matter—Invited

Biometrics Section, Statistical Learning and Data Mining Section, WNAR, International Indian Statistical Association, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee

Organizer(s): Ching-Ti Liu, Boston University

Chair(s): Ching-Ti Liu, Boston University

- 10:35 a.m. **Linkage Disequilibrium-Based Subset Selection Approach for Rare Variants Analysis in Sequence Data**—◆Sanjay Shete, The University of Texas MD Anderson Cancer Center; Rajesh Talluri, The University of Texas MD Anderson Cancer Center
- 11:00 a.m. **Multi-Cohort, Network-Guided Regression Approach for Genetic Interaction Detection**—◆Josee Dupuis, Boston University School of Public Health; Chen Lu, Boston University School of Public Health; Eric Kolaczyk, Boston University

- 11:25 a.m. **Network-Based Integrative Analysis and Marker Selection with Ultrahigh Dimensional Data**—◆Shuangge Ma, Yale University
- 11:50 a.m. **Comparison of Co-Expression Measures: Mutual Information, Correlation, and Model-Based Indices**—◆Steve Horvath, University of California at Los Angeles; Lin Song, University of California at Los Angeles
- 12:15 p.m. **Floor Discussion**

## 664 CC-511b ■ Challenges and Opportunities for Combining Data and Rare Variants—Invited

WNAR, Biometrics Section, Section on Statistics in Epidemiology

Organizer(s): Sharon Lutz, University of Colorado

Chair(s): Carl Langefeld, Wake Forest University

- 10:35 a.m. **Combining Rare Variants From Families and Unrelateds**—◆David Fardo, University of Kentucky; Iuliana Ionita-Laza, Columbia University
- 11:00 a.m. **'Location, Location, Location': A Spatial Approach for Rare-Variant Analysis and an Application to a Study on Nonsyndromic Cleft Lip with or Without Cleft Palate**—Heide Fier, University of Bonn; Sungho Won, Chung-Ang University; Dmitry Prokopenko, University of Bonn; Kerstin Ludwig, University of Bonn, Bonn, Germany; Rolf Fimmers, University of Bonn; Edwin Silverman, Harvard Medical School; Marcello Pagano, Harvard University; Elisabeth Mangold, University of Bonn; ◆Christoph Lange, Harvard School of Public Health
- 11:25 a.m. **Strategies for Detecting Allele-Specific Imbalance by Modifying Rare Variant Association Methods**—◆Sharon Lutz, University of Colorado; Tasha E. Fingerlin, University of Colorado Anschutz Medical Campus
- 11:50 a.m. **Integrating Family-Specific Linkage Scores in Case-Control Tests of Association**—◆Tasha E. Fingerlin, University of Colorado Anschutz Medical Campus; Anna L. Peljto, University of Colorado Anschutz Medical Campus; Sharon Lutz, University of Colorado
- 12:15 p.m. **Floor Discussion**

## 665 CC-511a Singular Learning: Model Selection for Non- Regular Statistical Models—Invited

Host Chapter-Montreal, SSC, Statistical Learning and Data Mining Section, Council of Chapters

Organizer(s): Russell J. Steele, McGill University

Chair(s): David A Stephens, McGill University

10:35 a.m. **A Bayesian Information Criterion for Singular Models**—◆ Mathias Drton, University of Washington; Martyn Plummer, International Agency for Research on Cancer

11:00 a.m. **Model Selection Criteria of Singular Statistical Models**—◆ Sumio Watanabe, Tokyo Institute of Technology

11:25 a.m. **Asymptotic Inference for Gaussian Hidden Tree Models**—◆ Piotr Zwiernik, University of California at Berkeley

11:50 a.m. Disc: Russell J. Steele, McGill University

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

## 666 CC-519b ● Innovations in Methods and Models Applied to Spatial Environmental Data Sets from Around the World—Invited

Section on Statistics and the Environment, Statistical Learning and Data Mining Section, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee, Statistics Without Borders

Organizer(s): Daniel A. Griffith, The University of Texas at Dallas

Chair(s): Murali Haran, Penn State University

1:00 a.m. **Multivariate Spatial Data Fusion for Global Remote Sensing Data Sets**—◆ Hai Minh Nguyen, Jet Propulsion Laboratory; Matthias Katzfuss, Universität Heidelberg; Noel Cressie, National Institute for Applied Statistics Research Australia; Amy Braverman, Jet Propulsion Laboratory

2:00 a.m. **Implementing Gaussian Spatial Autoregressive Models for Massive Georeferenced Data Sets: An Example from Peru**—◆ Daniel A. Griffith, The University of Texas at Dallas

3:00 a.m. **Scalable Maximum Likelihood Calculations for Gaussian Processes**—◆ Mihai Anitescu, Argonne National Laboratory; Michael L Stein, The University of Chicago; Jie Chen, Argonne National Laboratory

4:00 a.m. **Time-Structured PCA for Describing Modes of Variability in Large Global Climate Data Sets**—◆ Cari Kaufman, University of California at Berkeley; Ben Shaby, University of California at Berkeley

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

## Invited Panels 10:30 a.m.–12:20 p.m.

### 667 CC-516b

#### ■ ● Diverse Applications of Statistics: Are We Doing Enough in Creating Visibility?—Invited

Committee on Applied Statisticians, Scientific and Public Affairs Advisory Committee

Organizer(s): Amarjot Kaur, Merck Research Labs

Chair(s): Jennifer Gauvine, Glaxo SmithKline

**Panelists:** ◆ Jim Rosenberger, Penn State University

◆ Roger Lewis, Harbor University of California at Los Angeles Medical Center

◆ Amit Bhattacharyya, GlaxoSmithKline

◆ Robert Rodriguez, SAS Institute

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

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

### 668 CC-511e

#### ■ Recent Methodological Advances in Social Network Analysis—Topic-Contributed

International Chinese Statistical Association, Health Policy Statistics Section, Section on Statistics in Epidemiology

Organizer(s): Sudeshna Paul, Emory University

Chair(s): Sudeshna Paul, Emory University

10:35 a.m. **Measuring Homophily in Network Data**—◆ Sergiy Nesterko, Harvard University; Joseph Blitzstein, Harvard University

10:55 a.m. **Network Construction for Sampled Ego-Centric Data**—◆ Ravi Goyal, Harvard University; Victor DeGruttola, Harvard University; Joseph Blitzstein, Harvard University

11:15 a.m. **Advances in Model-Assisted Inference from Respondent-Driven Sampling Data**—◆ Krista J. Gile, University of Massachusetts, Amherst

11:35 a.m. **Intrusion as (Anti)Social Communication: Characterization and Detection**—◆ Natallia Katenka, University of Rhode Island

11:55 a.m. **Testing of and Modeling Dependencies Between a Network and Nodal Attributes**—◆ Bailey Fosdick, University of Washington; Peter David Hoff, University of Washington

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



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 669 CC-513b 671 CC-510b ■ Estimation and Inference Involving Missing Data—Topic-Contributed

Biometrics Section, SSC, Section on Statistics in Epidemiology, Korean International Statistical Society

Organizer(s): Zonghui Hu, National Institutes of Health

Chair(s): Zonghui Hu, National Institutes of Health

- 10:35 a.m. **Fractional Hot Deck Imputation for Robust Parameter Estimation Under Missing at Random**—◆ Shu Yang, Iowa State University; Jae-Kwang Kim, Iowa State University
- 10:55 a.m. **A Hidden Markov Model for Nonignorable Non-Monotone Missing Longitudinal Data for Medical Studies of Quality of Life**—◆ Kaijun Liao, Hisun Pharmaceutical Co., Ltd.
- 11:15 a.m. **Multiple Imputation Methods for Multivariate One-Sided Tests with Missing Data**—◆ Tao Wang; Lang Wu, The University of British Columbia
- 11:35 a.m. **Estimating Optimal Treatment Regimes from a Classification Perspective**—◆ Baqun Zhang, Northwestern; Anastasios (Butch) Tsiatis, North Carolina State University; Marie Davidian, North Carolina State University; Min Zhang, University of Michigan; Eric Laber, North Carolina State University
- 11:55 a.m. **Selection of Valid Instruments in Mendelian Randomization**—◆ Hyunseung Kang, The Wharton School; Tony Cai, University of Pennsylvania; Dylan S. Small, University of Pennsylvania
- 12:15 p.m. **Floor Discussion**

## 670 CC-512f ■ Highlights from the Conference on Data Analysis—Topic-Contributed

Section on Physical and Engineering Sciences, Section on Statistics in Defense and National Security

Organizer(s): Kary Myers, Los Alamos National Laboratory

Chair(s): Sandy Thompson, Pacific Northwest National Laboratory

- 10:35 a.m. **Inference for the Central Direction of Random Rotations in  $SO(3)$** —◆ Bryan Stanfill, Iowa State University; Ulrike Genschel, Iowa State University; Heike Hofmann, Iowa State University
- 10:55 a.m. **Data Analysis for Strange Attractors**—◆ Michael Luvalle
- 11:15 a.m. **Local Structure Graph Models**—◆ Emily Casleton, Iowa State University; Mark Kaiser, Iowa State University; Dan Nordman, Iowa State University
- 11:35 a.m. **An Approach for Predictive Fault Isolation in High-Performance Computing Systems**—◆ David Robinson, Sandia National Laboratories; Jon Stearley, Sandia National Laboratories
- 11:55 a.m. **Using Synthetic Tool Marks in a Likelihood Ratio Test for Forensic Comparisons**—◆ Amy Hoeksema
- 12:15 p.m. **Floor Discussion**

## 671 CC-510b ■ ● Developments in Survey Weight Calibration and Estimation—Topic-Contributed

Survey Research Methods Section, Section on Statistics in Epidemiology

Organizer(s): Michael D. Larsen, The George Washington University

Chair(s): Phil Kott, RTI International

- 10:35 a.m. **Calibration-Weighting Methods for Complex Surveys**—◆ Changbao Wu, University of Waterloo; Wilson Wen Lu, Acadia University
- 10:55 a.m. **Longitudinal Survey Weight Calibration with Estimated Totals**—◆ Siyu Qing, George Washington University; Michael D. Larsen, The George Washington University
- 11:15 a.m. **Some Thinking on Calibration Applications for Multipurpose Estimations**—◆ Yan Liu, Statistics of Income/IRS; Yuqi Liu, The George Washington University
- 11:35 a.m. **A Design Effect Measure for Calibration Weights in Single-Stage Samples**—◆ Kimberly Henry, Statistics of Income, IRS; Richard Valliant, University of Michigan and University of Maryland
- 11:55 a.m. **Floor Discussion**

## 672 CC-512c ■ Dynamic Modeling in Tobacco Control Policy—Topic-Contributed

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

Organizer(s): Antonio Paredes, FDA

Chair(s): Antonio Paredes, FDA

- 10:35 a.m. **A Dynamic Population Model for Estimating All-Cause Mortality Due to Lifetime Exposure History**—◆ Annette M. Bachand, Environ, Colorado State University; Sandra Sulsky, Environ
- 10:55 a.m. **Opinion Dynamics Modeling in Tobacco Control Policy**—◆ Patrick D. Finley, Sandia National Laboratories; Thomas W. Moore, Sandia National Laboratories; Gregory J. Lambert, Sandia National Laboratories; Ryan Hammer, Sandia National Laboratories; Taylor E. Berger, Sandia National Laboratories; Nancy S. Brodsky, Sandia National Laboratories; Ben Apellberg, Center for Tobacco Products; Bridget Ambrose, Center for Tobacco Products/FDA; Danny Lee, Center for Tobacco Products/FDA; Antonio Paredes, FDA; George Rochester, Center for Tobacco Products/FDA; Robert J. Glass, Sandia National Laboratories

11:15 a.m. **Population Structure Modeling to Evaluate Substitution and Dual Use of Tobacco Products in Response to Changing Policies**—◆Eric Vugrin, Sandia National Laboratories; Steve Verzi, Sandia National Laboratories; Nancy S. Brodsky, Sandia National Laboratories; Ben Apelberg, Center for Tobacco Products; Antonio Paredes, FDA; George Rochester, Center for Tobacco Products/FDA; Brian Rostron, Center for Tobacco Products; Robert J. Glass, Sandia National Laboratories

11:35 a.m. **A Population Dynamic Model for Smoking Prevalence, Mortality Prediction**—  
◆Tom Lu, FDA/CTP

11:55 a.m. **Population Modeling Framework for Evaluating Tobacco Regulation and Policy**—◆George Rochester, Center for Tobacco Products/FDA

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

## 673 CC-514c ■ Bioequivalence (BE), History, and Developing Ideas—Topic-Contributed

Biopharmaceutical Section

Organizer(s): Lihui Zhao, Novartis Oncology

Chair(s): Lihui Zhao, Novartis Oncology

10:35 a.m. **Bioequivalence Criteria Applied to Dose Proportionality**—◆Brian Smith, Amgen, Inc.

10:55 a.m. **Reference-Scaled Average Bioequivalence (SABE)**—  
◆L. Endrenyi, University of Toronto; Laszlo Tothfalusi, Semmelweis University

11:15 a.m. **Multiplicity in Bioequivalence Trials: Multiple Formulation and Multiple Stage Designs**—Lihui Zhao, Novartis Oncology; ◆Cheng Zheng, Novartis Oncology; Jixian (Jason) Wang, Novartis Oncology

11:35 a.m. Disc: Byron Jones, Novartis

11:55 a.m. **Floor Discussion**

## 674 CC-516a ■ ● Analyzing Exposure-Adjusted Incident Data in the Clinical Trial Setting—Topic-Contributed

Biometrics Section, Biopharmaceutical Section

Organizer(s): Jing Xu and Huyuan Yang, Millennium Pharmaceuticals, Inc.

Chair(s): Mingxiu Hu, Millennium: The Takeda Oncology Company

10:35 a.m. **Confidence Intervals for an Exposure-Adjusted Incidence Rate Difference with Applications to Clinical Trials**—◆Junyuan Wang, BMS; G. Frank Liu, Merck Research Labs; Ken Liu, Merck; Shavely Duane, Merck

10:55 a.m. **Likelihood-Based Methods for Exposure-Adjusted Incidence Data Analysis in Clinical Trials**—  
◆Jing Xu, Millennium Pharmaceuticals, Inc.

11:15 a.m. **Nonparametric Approaches for Exposure-Adjusted Incidence Data Analysis in Clinical Trials**—  
◆Huyuan Yang, MPI

11:35 a.m. **Methods in Analyzing Exposure-Adjusted Incidence Rates in Phase III Clinical Trial: Case Study**—  
◆Serap Sankoh, Millennium Pharmaceuticals, Inc.

11:55 a.m. Disc: Guoxing (Greg) Soon, FDA

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

## 675 CC-520c ■ Advances in Time Series Analysis—Topic-Contributed

Business and Economic Statistics Section

Organizer(s): Gian Luigi Mazzi, Eurostat - European Commission

Chair(s): Antonio Matas Mir, European Central Bank

10:35 a.m. **State Space Models for Temporal Distribution and Benchmarking**—◆Benoit Quenneville, Statistics Canada; Susie Fortier, Statistics Canada; Frederic Picard, Statistics Canada

10:55 a.m. **Statistical Procedures for Reconciling Time Series of Large Systems of Accounts Subject to Low-Frequency Benchmarks**—◆Baoline Chen, Bureau of Economic Analysis; Tommaso Di Fonzo, The National Institute for Statistics (Istat); Marco Marini, International Monetary Fund

11:15 a.m. **The Distribution of Unit Root Test Statistics After Seasonal Adjustment**—◆Tomás Del Barrio Castro, University of The Balearic Islands

11:35 a.m. **State Space Model for the UK Labour Force Survey**—◆Duncan Elliott, Office for National Statistics; Ping Zong, Office for National Statistics

11:55 a.m. **The First-Order Seasonal Autoregressive Model as a Fundamental Model for Moving Seasonality and Model-Based Seasonal Adjustment**—  
◆David Findley, U.S. Census Bureau; Demetra Lytras, U.S. Census Bureau

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

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

676 CC-518  
◆ ● **Bayesian Approach to Multiple Models: Selection, Networks, Comparisons, and Examples—Topic-Contributed**  
Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), Korean International Statistical Society  
Organizer(s): Weiwei Cui, National Institute of Statistical Sciences  
Chair(s): Weiwei Cui, National Institute of Statistical Sciences

10:35 a.m. **Bayesian Inference of Multiple Gaussian Graphical Models**—◆Christine Peterson, Rice University; Francesco Stingo, The University of Texas MD Anderson Cancer Center; Marina Vannucci, Rice University

10:55 a.m. **Objective Bayes Variable Selection for Well-Formulated Models**—◆Daniel Taylor Rodriguez, University of Florida; Nikolay Bliznyuk, University of Florida; Linda Young, University of Florida; Andrew Womack, University of Florida

11:15 a.m. **Nonparametric Bayesian Modeling for Density Estimation of Sea Turtle Nesting Locations Along Juno Beach in Florida**—◆Ming Wang, Emory; Lance A. Waller, Emory University; Jian Kang, Emory University

11:35 a.m. **A Bayesian Test of Independence in a Two-Way Contingency Table Under Two-Stage Cluster Sampling with Covariates**—◆Dilli Bhatta, Worcester Polytechnic Institute

11:55 a.m. **Intrinsic Analysis of Gaussian and Latent Gaussian Data**—◆Andrew Womack, University of Florida

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

677 CC-520b  
◆ ● **Innovative Applications of Statistics in the Nursing Sciences—Topic-Contributed**

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

Organizer(s): Matthew J. Hayat, Rutgers University

Chair(s): Matthew J. Hayat, Rutgers University

10:35 a.m. **Data Management Best Practice Guidelines for Nursing Students and Researcher**—◆Jesse Chittams, University of Pennsylvania; Alexandra L. Hanlon, University of Pennsylvania School of Nursing

10:55 a.m. **Dealing with Excess Zeros and Highly Skewed Distributions in Nursing Research**—◆Melinda Higgins, Emory University

11:15 a.m. **Using the Inverse Transform to Specify Contrasts in Regression and Latent Curve Structural Equation Models**—◆Thomas Templin, Wayne State University

11:35 a.m. **Causal Inference with Observational Data with Regression Discontinuity Design**—◆Patricia Eckardt, Stony Brook University

11:55 a.m. **Hierarchical Generalized Linear Models for Time Trends and Seasonality in Nursing-Sensitive Outcomes**—◆Jianghua He, University of Kansas Medical Center; Vincent Staggs, University of Kansas Medical Center; Sandra Bergquist-Beringer, University of Kansas Medical Center; Nancy Dunton, University of Kansas Medical Center

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

678 CC-520e  
◆ ● **Theory and Applications of Human Interaction in Visual Analytics—Topic-Contributed**

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

Organizer(s): Matthew R. Williams, USDA - National Agricultural Statistics Service

Chair(s): Wendy Barboza, USDA/NASS

10:35 a.m. **Interactive Data Analysis and Model Exploration: A Visual Analytics Approach**—◆Remco Chang, Tufts University

10:55 a.m. **Human in the Loop: Iterative, Interactive Visual Model Refinement**—◆Eli T. Brown, Tufts University

11:15 a.m. **Visual Analytics for Survey Statistics: Interactive Benchmarking and Calibration**—◆Matthew R. Williams, USDA - National Agricultural Statistics Service

11:35 a.m. **Theory and Applications of Human Interaction in Visual Analytics**—◆Scotland Charles Leman, Virginia Tech

11:55 a.m. **Visual to Parametric Interaction Algorithm**—◆Xinran Hu, Virginia Tech; Scotland Charles Leman, Virginia Tech; Leanna House, Virginia Tech; Dipanya Maiti, Virginia Tech; Chris North, Virginia Tech; Lauren Bradel, Virginia Tech

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

679 CC-512g  
◆ ● **Joint Modeling of Mixed Outcomes in Health Services Research—Topic-Contributed**

Health Policy Statistics Section, International Indian Statistical Association, Mental Health Statistics Section, Scientific and Public Affairs Advisory Committee, Section on Statistics in Epidemiology

Organizer(s): Joseph Gardiner, Michigan State University

Chair(s): Elizabeth Schifano, University of Connecticut

10:35 a.m. **Joint Analysis of Repeatedly Observed Mixed Discrete and Continuous Outcomes via Copula Models**—◆Beilei Wu, University of Calgary; Alex de Leon, University of Calgary

10:55 a.m. **A Test for Constancy of Incremental Incidence Rates in a Long-Term Retrospective or Prospective Safety Study**—◆Girish Aras, Amgen, Inc.; Jingyuan Yang, Amgen, Inc.

- 11:15 a.m. **Bivariate Copula Random-Effects Model for Loss and Cost**—◆Xiaoqin Tang, Geisinger Health System; Zhehui Luo, Michigan State University; Joseph Gardiner, Michigan State University
- 11:35 a.m. **Shrinkage Nonparametric Estimation of Median Survival Time from Censored Data with Applications to Multicenter Studies**—◆Mohammad Rahbar, The University of Texas Health Science Center; Xuan Zhang, The University of Texas Health Science Center at Houston; Sangchoon Jeon, Yale School of Nursing
- 11:55 a.m. **Analysis of Joint Models for Mixed Outcomes: Some Capabilities with SAS Software**—◆Joseph Gardiner, Michigan State University
- 12:15 p.m. **Floor Discussion**

## 680 CC-515b **Methods for Assessing Environmental Factors on Reproductive Outcomes—Topic-Contributed**

Section on Statistics in Epidemiology, Section on Statistics and the Environment, Scientific and Public Affairs Advisory Committee  
 Organizer(s): Alexander C. McLain, University of South Carolina  
 Chair(s): Vanda Lourenco, CMA, FCT - Universidade Nova de Lisboa

- 10:35 a.m. **The Current Duration Approach to Analysing Time-to-Pregnancy: Direct Validation Using an Imbedded Prevalent Cohort Study**—◆Niels Keiding, University of Copenhagen; Ditte Norbo Sorensen, University of Copenhagen; Remy Slama, Inserm, Institut Albert Bonniot (U 823); Beatrice Ducot, Inserm U1018; Jean Bouyer, Inserm U1018
- 10:55 a.m. **Semiparametric Models for Clustered Survival Data with Random Cluster Size**—Amita Manatunga, Emory University; ◆Shuling Liu, Emory University; Limin Peng, Emory University
- 11:15 a.m. **Semiparametric Grouped Backward Recurrence Cox Model for the Analysis of Current Duration Data with Preferential Reporting**—◆Alexander C. McLain, University of South Carolina; Marie Thoma, Centers for Disease Control and Prevention; Rajeshwari Sundaram, National Institute of Child Health and Human Development; Germaine M. Buck Louis, National Institute of Child Health and Human Development

- 11:35 a.m. **Assessing the Association Between Time-to-Pregnancy and Woman-Specific Menstrual Cycle Length Mean and Variability Using a Bayesian Hierarchical Model**—◆Kirsten Lum, Johns Hopkins Bloomberg School of Public Health; Germaine M. Buck Louis, National Institute of Child Health and Human Development; Thomas A. Louis, Johns Hopkins Bloomberg School of Public Health; Rajeshwari Sundaram, National Institute of Child Health and Human Development
- 11:55 a.m. **Accounting for Biological Variability in Assessing Human Fecundity**—◆Rajeshwari Sundaram, National Institute of Child Health and Human Development
- 12:15 p.m. **Floor Discussion**

## 681 CC-522bc **Smoothing Splines and Applications—Topic-Contributed**

Section on Nonparametric Statistics, Korean International Statistical Society  
 Organizer(s): Shawn Ni, University of Missouri-Columbia  
 Chair(s): Dongchu Sun, University of Missouri

- 10:35 a.m. **A Bayesian Spatio-Functional Clustering Model Based on Wavelet Smoothing, with Application to Climate Change Study**—Zhen Zhang, Michigan State University; ◆Chae Young Lim, Michigan State; Tapabrata Maiti, Michigan State University
- 10:55 a.m. **Smoothing with Cauchy Process Priors and Cauchy Errors**—◆Paul Speckman, University of Missouri-Columbia
- 11:15 a.m. **Smoothing Splines for Multivariate Time Series Data**—◆Shawn Ni, University of Missouri-Columbia; Dongchu Sun, University of Missouri
- 11:35 a.m. **Partial Informative Normal and Bayesian Smoothing Splines**—◆Sifan Liu, University of Missouri-Columbia; Dongchu Sun, University of Missouri
- 11:55 a.m. **Applying Fully Bayesian Spline Smoothing to Estimate Yield Curves**—◆Xiaojun Tong, University of Missouri-Columbia; Zhuoqiong He, University of Missouri-Columbia; Dongchu Sun, University of Missouri; Shawn Ni, University of Missouri-Columbia
- 12:15 p.m. **Floor Discussion**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

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

682 CC-516e

### ■ Teaching Clinical Trials to Nonstatisticians— Topic-Contributed

Section on Teaching of Statistics in the Health Sciences

Organizer(s): Susan Elizabeth Telke, University of Minnesota-Twin Cities

Chair(s): Lynn Eberly, University of Minnesota-Twin Cities

- Panelists:** ◆ Richard Holubkov, University of Utah Pediatrics  
◆ Susan Elizabeth Telke, University of Minnesota-Twin Cities  
◆ Marianne Bertolet, University of Pittsburgh  
◆ Christopher Assaid, Merck

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

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

683 CC-513a

### ■ Advances in Methods for Biological Data— Contributed

Biometrics Section

Chair(s): Jasmin Divers, Wake Forest University

- 10:35 a.m. **Comparisons of Normalization Methods for Relative Quantification in Real-Time Polymerase Chain Reaction**—◆ Yi-Ting Hwang, National Taipei University; Yu-Hui Su, National Taipei University; Harn-Jing Terng, Advpharma Inc.; Hsun-Chih Kuo, Department of Statistics, National Chengchi University
- 10:50 a.m. **Inferring History of Evolution Using Massive Data of Single-Nucleotide Polymorphism**—◆ Yongliang Zhai, University of British Columbia; Alexandre Bouchard-Côté, University of British Columbia
- 11:05 a.m. **Estimation of an Index of Phylogenetic Correlation Using Bootstrap Simulation Technique**—◆ Bahman Shafii, University of Idaho; William James Price, University of Idaho
- 11:20 a.m. **Gene-Association Studies with Fewer Model Specifications: Application to Study of HIV/AIDS Pharmacogenomics**—◆ Valentine Wanga, Vanderbilt University

- 11:35 a.m. **Admixture Analysis of Human Eye Color**—◆ Kaustubh Adhikari, University College London; Andres Ruiz-Linares, University College London
- 11:50 a.m. **A Dirichlet Process Gaussian Mixture Model–Based Genotype Calling Method for Illumina Beadarray Data**—◆ Gengxin Li, Wright State University; Hongyu Zhao, Yale University; Joel Gelernter, Yale University
- 12:05 p.m. **Integrated Method Leveraging Across Omics Data Sets for Uncovering Functional Mechanisms in the Post-GWAS Era**—◆ Yian Chen, Moffitt Cancer Center & Research Institute

684 CC-512e

### Hypothesis Testing—Contributed

Biometrics Section

Chair(s): Trent L. Lalonde, University of Northern Colorado

- 10:35 a.m. **Sequential Testing of the Empirical Positive and Negative Predictive Value Curves with Unknown Prevalence**—◆ Joseph S. Koopmeiners, University of Minnesota; Ziding Feng, Fred Hutchinson Cancer Research Center
- 10:50 a.m. **Estimation and Evaluation of Optimal Thresholds for the Believe the Positive Sequential Testing Strategy**—Amber Wilk, Virginia Commonwealth University; ◆ Donna McClish, Virginia Commonwealth University
- 11:05 a.m. **Unbiased Small Sample Size Determination for Major Statistical Parameters**—◆ Eugene Demidenko, Dartmouth Medical School
- 11:20 a.m. **Testing and Sample Size for Polygonal One-Sided Hypotheses on Bivariate Binary Outcomes**—◆ Menggang Yu, University of Wisconsin; Ziyue Liu, Indiana University-Purdue University Indianapolis
- 11:35 a.m. **Simultaneous Inference of Method Agreement and Rater Reliability Through General Clustered Repeated-Measures Data**—◆ Shasha Bai, The Ohio State University; Abigail Shoben, The Ohio State University; Haikady Nagaraja, The Ohio State University
- 11:50 a.m. **Two Group Comparisons Using Mean-Based Tests Derived from Zero-Inflated Gamma and Zero-Inflated Log-Normal Models**—◆ Elizabeth Mills, University of Iowa; Jeffrey D. Dawson, The University of Iowa
- 12:05 p.m. **Floor Discussion**

## 685 CC-521ab Nonparametric Methods for Complex Models— Contributed

Section on Nonparametric Statistics

Chair(s): Ursula U. Mueller, Texas A&M University

- 10:35 a.m. **A Nonparametric Estimator for the Kolmogorov Canonical Measure via the Empirical Characteristic Function**—◆Guillermo Basulto-Elias, Iowa State University; Miguel Nakamura-Savoy, Center for Research in Mathematics; Víctor Manuel Pérez-Abreu, Center for Research in Mathematics
- 10:50 a.m. **Small Sample Properties of JR Estimators**—◆John Kloke, University of Wisconsin; Joseph McKean, Western Michigan University
- 11:05 a.m. **Effect of Kurtosis on Efficiency of Multivariate Medians**—◆Jin Wang, Northern Arizona University
- 11:20 a.m. **Semi-Stable Non-Gaussian Laws Arising in Sampling of Finite Point Processes**—◆Ritwik Chaudhuri, The University of North Carolina at Chapel Hill; Vladas Pipiras, The University of North Carolina at Chapel Hill
- 11:35 a.m. **Nonparametric Empirical Bayes and Variance Estimation**—◆Marc Coram, Stanford University
- 11:50 a.m. **Nonparametric Estimation in a Bandit Problem with Covariates**—◆Wei Qian, University of Minnesota; Yuhong Yang, University of Minnesota
- 12:05 p.m. **2-Stage Semiparametric Estimation of Target Locations**—◆Nirupam Chakrabarty, University of Michigan, Ann Arbor; Moulinath Banerjee, University of Michigan; George Michailidis, University of Michigan

## 686 CC-511c Statistical Methods for Adaptive Designs— Contributed

Biopharmaceutical Section, Biometrics Section

Chair(s): Olga Marchenko, Quintiles

- 10:35 a.m. **Adaptive Designs for Dose-Ranging Studies Based on Group-Sequential Methods**—◆Yevgen Tymofyeyev, Janssen Research & Development of Johnson & Johnson; Jose Carlos Pinheiro, Janssen Research & Development
- 10:50 a.m. **Stage-Wise Optimal Adaptive Dose Study Design**—◆Gang Jia, Merck
- 11:05 a.m. **Futility Analysis in a Phase II Clinical Trial**—◆Bo Jin, Pfizer Inc.
- 11:20 a.m. **Strategies Considered in Designing an FTIH Trial**—◆Yu Lou, GlaxoSmithKline; Jianjun Gan, GlaxoSmithKline
- 11:35 a.m. **An Adaptive Approach: Seamless Phase IIa/IIb and Enhanced Dose-Finding Study**—◆Jiacheng Yuan, Novartis; Herbert Pang, DU School of Medicine; Tiejun Tong, Hong Kong Baptist University

- 11:50 a.m. **Optimal Timing for Interim Analysis in Phase 2 Drug Development: A Real Options Approach**—◆Ouhong Wang, Amgen, Inc.

- 12:05 p.m. **Multi-Stage Clinical Trial Design with Multidimensional Mixed Endpoints**—◆Peng Huang, The Johns Hopkins University; Ming Tan, Georgetown University Medical Center

## 687 CC-514b Methods for Evaluating Diagnostic Tests and/or Agreement—Contributed

Biopharmaceutical Section

Chair(s): Beimar Iriarte, Abbott Diagnostics

- 10:35 a.m. **Quantifying an Agreement Study**—◆Jason Liao, Novartis Pharmaceuticals Corporation
- 10:50 a.m. **Two-Phase Study Design: Weighting Considerations**—◆Shoshana Daniel, Covance
- 11:05 a.m. **Study Design Considerations for Estimation of Agreement with Contributions of Variability to Establish Reliability in a Medical Device Pivotal Study**—◆Mat D. Davis, Theorem Clinical Research; Jeffrey L. Joseph, Theorem Clinical Research
- 11:20 a.m. **Confidence Interval Estimation for Sensitivity to the Early Disease Stage Based on Empirical Likelihood**—◆Tuochuan Dong, State University of New York at Buffalo; Lili Tian, University at Buffalo
- 11:35 a.m. **A Robust Bayesian Estimate of the Concordance Correlation Coefficient**—◆Dai Feng, Merck; Richard Baumgartner, Merck; Vladimir Svetnik, Merck
- 11:50 a.m. **Mixtures of Normal Distributions, Revisited**—◆Spencer Lourens, University of Iowa; Ying J. Zhang, University of Iowa
- 12:05 p.m. **Assessing Intra- and Inter-Rater Device Reliability in a Rare Disease**—◆Avital Cnaan, Children's National Medical Center; Tina Duong, Children's National Medical Center; Fengming Hu, Children's National Medical Center

## 688 CC-514a Novel Regression Methods—Contributed

Biopharmaceutical Section

Chair(s): Jeff Maca, Quintiles

- 10:35 a.m. **Optimal Designs for Bivariate Dose: Response Experiments**—◆Manel Wijesinha, Penn State University
- 10:50 a.m. **Testing Effect of a Drug Using Multiple Models for the Dose-Response**—◆Corine Baayen, H. Lundbeck A/S; Philip Hougaard, Lundbeck
- 11:05 a.m. **A Surprising Bias in Functional Data Analysis and Its Solution**—◆Junshui Ma, Merck; Vladimir Svetnik, Merck

# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

- 11:20 a.m. **A New Sigmoid-Shaped Regression Model with Bounded Responses**—◆ Nancy Flournoy, University of Missouri-Columbia; HaiYing Wang, IMS
- 11:35 a.m. **A Cox Regression Model with Isotonic Regressors with Change-Point Problems: Addressing a Clinical Question**—◆ D. Das Purkayastha, Novartis
- 11:50 a.m. **Dose-Response Modeling in Phase II Dose-Finding Studies**—◆ Jiahui Li, Janssen Research & Development; Ming-Chun Hsu, Janssen Research & Development
- 12:05 p.m. **Evaluating Surrogate Endpoints: A New Trial-Level Surrogacy Metric Based on Concordance of Significance of Treatment Effects**—◆ Qian Shi; Lindsay A. Renfro, Mayo Clinic; Daniel J. Sargent, Mayo Clinic

## 689 CC-525b

### ■ Evaluating Robustness and Instrumentation in Economic Problems—Contributed

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

Chair(s): Zhou Zhou, University of Toronto

- 10:35 a.m. **Estimation and Evaluating of Right Tail Risk**—◆ Min Deng, University of Maryville of St. Louis
- 10:50 a.m. **The Continuous Hidden Threshold Mixed Skew-Symmetric Distribution**—◆ Rachid Belhachemi, American University in Cairo; Mohammed Bouaddi, American University in Cairo
- 11:05 a.m. **Reality Checks for a Distributional Assumption: The Case of Benford's Law**—◆ William Goodman, University of Ontario Institute of Technology
- 11:20 a.m. **A Further Look at Multiple Comparisons with Normal Mixtures**—◆ Mary Whiteside, The University of Texas at Arlington; Mark Eakin, The University of Texas at Arlington
- 11:35 a.m. **Robust Inference in Sample-Selection Models**—◆ Mikhail Zhelonkin; Marc G. Genton, KAUST; Elvezio Ronchetti, University of Geneva
- 11:50 a.m. **Linear Instrumental Variables Model Averaging Estimation**—◆ Luis Filipe Martins, ISCTE-LUI; Vasco Gabriel, University of Surrey
- 12:05 p.m. **Maximum Likelihood Estimation and Inference in DSGE Model with Possible Weak Identification**—◆ Linchun Chen, University of California at San Diego

## 690 CC-520f

### Topics in Statistical Computing—Contributed

Section on Statistical Computing, Korean International Statistical Society

Chair(s): Georges Monette, York University

- 10:35 a.m. **Parametric Test of Equality of Several Frequency Distributions or Contingency Tables/Matrices or Markov Chains**—◆ Mian Adnan, Jahangirnagar University; M. Shamsuddin, Dhaka; Asif Shams Adnan, Jahangirnagar University
- 10:50 a.m. **Assessing Variability of RNA Molecule Crystallizations**—◆ Ryan Rahrig, Ohio Northern University
- 11:05 a.m. **Robust Fitting of a Three-Parameter Weibull Model for Contaminated Survival Data with Optional Censoring**—◆ Jingjing Yang, Rice University; David Scott, Rice University
- 11:20 a.m. **The Computation of Bivariate Normal and T Probabilities, with Application to Comparisons of Three Normal Means**—◆ Jongphil Kim, H. Lee Moffitt Cancer Center & Research Institute
- 11:35 a.m. **A Test for Skewness Within the Univariate and Multivariate Epsilon Skew Laplace Distributions**—◆ Jose Guardiola, Texas A&M University at Corpus Christi; Hassan Elsalloukh, University of Arkansas at Little Rock; Howraa Al Mousawi, Arkansas Department of Health
- 11:50 a.m. **Hypothesis Testing for Coefficient of Variation in an Inverse Gaussian Population**—◆ Debaraj Sen, Concordia University; Yogendra P. Chaubey, Concordia University; Krishna K. Saha, Central Connecticut State University
- 12:05 p.m. **Floor Discussion**

## 691 CC-525a

### Probability and Statistical Theory—Contributed

IMS

Chair(s): Ryan Tibshirani

- 10:35 a.m. **Strong Consistency of Set-Valued Frechet Sample Mean in Metric Spaces**—◆ Cedric Ginestet, Boston University
- 10:50 a.m. **Weak Law of Large Number and the Central Limit Theorem in Lorentz-Bochner Spaces**—◆ Eddy Kwessi, Trinity University
- 11:05 a.m. **A Family of Circular Distributions Related to Wrapped Cauchy Distributions via Brownian Motion**—◆ Shogo Kato, Institute of Statistical Mathematics; M.C. Jones, The Open University

- 11:20 a.m. **Memory Depth Identification for Real-Valued Processes**—◆ Zsolt Talata, University of Kansas; Roberto Oliveira, IMPA
- 11:35 a.m. **On the Nile Problem by Sir Ronald Fisher**—◆ Yaakov Malinovsky, University of Maryland, Baltimore County; Abram M. Kagan, University of Maryland
- 11:50 a.m. **The Limit Distribution of the Supremum-Error of Grenander-Type Estimators**—◆ Hendrik Lopuhaa, Delft University of Technology; Cecile Durot, University of Nanterre; Vladimir Kulikov, ASR Nederland
- 12:05 p.m. **A New Family of Unimodal Skew-Symmetric Distributions with Mode-Invariance**—◆ Toshihiro Abe, Tokyo University of Science; Hironori Fujisawa, The Institute of Statistical Mathematics

- 11:50 a.m. **Vertically Shifted Mixture Models for Clustering Longitudinal Data**—◆ Brianna Heggeseth, Williams College; Nicholas Jewell, University of California at Berkeley
- 12:05 p.m. **Piecewise Spline to Compare Weight Gain Pattern Before and After Diagnosis of Asthma of Children Ages Less Than 5 Years**—Md Jobayer Hossain, Nemours Biomedical Research A.I. DuPont Children Hospital; ◆ Li Xie, Johns Hopkins Bloomberg School of Public Health; Weili Lai, University of Delaware; Iman Sharif, A.I. DuPont Children Hospital; H Timothy Bunnell, Nemours Biomedical Research; Timothy T. Wysocki, Nemours Biomedical Research A.I. DuPont Children Hospital

## 692 ■ Meta-Analysis and Clustered Data Analysis—Contributed

CC-515c

Section on Statistics in Epidemiology  
Chair(s): Li Qin, Yale University

- 10:35 a.m. **Handling Both-Armed Zero-Events Studies in Meta-Analysis: A Simulation Study**—◆ Ji Cheng, St. Joseph's Healthcare Hamilton /McMaster University; Eleanor Pullenayegum, McMaster University; John K. Marshall, McMaster University, Department of Medicine; Lehana Thabane, St Joseph's Healthcare Hamilton
- 10:50 a.m. **Likelihood-Based Meta-Analysis: Conditional vs. Unconditional Approaches**—◆ Jingjing Yan, The Ohio State University; Eloise E. Kaizar, The Ohio State University; Steven MacEachern, The Ohio State University
- 11:05 a.m. **An Alternative Pseudolikelihood Method for Multivariate Random-Effects Meta-Analysis When the Within-Study Correlations Are Unknown**—◆ Chuan Hong, The University of Texas School of Public Health; Yong Chen, The University of Texas School of Public Health; Richard Riley, University of Birmingham
- 11:20 a.m. **Design Effects in Three-Level Studies**—◆ Tina Cunningham, Eastern Virginia Medical School; Robert E. Johnson, Vanderbilt University
- 11:35 a.m. **State-Space Time-Series Clustering and Inference Using Discrepancies Based on the Kullback-Leibler Information and the Mahalanobis Distance**—◆ Eric Foster, University of Iowa; Joseph Cavanaugh, University of Iowa

## 693 Recent Advances in Image Analysis—Contributed

CC-512d

Section on Statistics in Imaging  
Chair(s): Ivor Cribben, University of Alberta School of Business

- 10:35 a.m. **OASIS Is Automated Statistical Inference for Segmentation with Applications to Multiple Sclerosis Lesion Segmentation in MRI**—◆ Elizabeth Sweeney, The Johns Hopkins University; Russell Shinohara, University of Pennsylvania; Navid Shiee, Henry M. Jackson Foundation; Farrah Mateen, The Johns Hopkins University; Avni Chudgar, Harvard Medical School; Jennifer Cuzzocreo, Johns Hopkins; Peter Calabresi, Johns Hopkins; Dzung Pham, Henry M. Jackson Foundation; Daniel Reich, National Institute of Neurological Disorders & Stroke; Ciprian M. Crainiceanu, The Johns Hopkins University
- 10:50 a.m. **Clustering Tree-Structured Data on Manifold**—◆ Hongyu Miao, University of Rochester
- 11:05 a.m. **Statistical Modeling and Analysis of the Echo Envelope Distributions in Medical Ultrasound Imaging**—◆ Kaisheng Song, University of North Texas
- 11:20 a.m. **Separation of Several Aliased Images to Increase Volume Speed**—◆ Daniel Rowe, Marquette University
- 11:35 a.m. **On the Optimality of Extended Maximal Length Linear Feedback Shift Register Sequences**—◆ Ming-Hung Kao, Arizona State University
- 11:50 a.m. **Processing Blurred Images with Random Data**—◆ Walid Sharabati, KFUPM; Mohamed Al-Gebeily, King Fahd University of Petroleum and Minerals
- 12:05 p.m. **Floor Discussion**



# GENERAL PROGRAM SCHEDULE

● Themed Session ■ Applied Session ◆ Presenter CC-Palais des congrès de Montréal W-Le Westin Montréal I-International Montréal

## 694 CC-519a **Bayesian Genomics and Genetics—Contributed**

Section on Bayesian Statistical Science, International Chinese Statistical Association, WNAR

Chair(s): Naveen Naidu Narisetty, University of Michigan

- 10:35 a.m. **Biological Pathway Selection Through Bayesian Integrative Modeling**—◆Lingling Zheng, Duke University; Joseph Lucas, Duke University
- 10:50 a.m. **A Latent Factor Model with a Mixture of Sparse and Dense Components for Gene Expression Data with Confounders**—◆Chuan Gao, Institute for Genome Sciences and Policy; Barbara Engelhardt, Duke University
- 11:05 a.m. **Poisson Mixture Models for Next-Generation RNA Sequencing Data**—◆Qiwei Li, Rice University; Marina Vannucci, Rice University; Heng Lian, Nanyang Technological University
- 11:20 a.m. **Hidden Markov Random Field Models for Genome-Wide Analyses**—◆Jie Shen, University of California at Irvine; Hal S. Stern, University of California; Fabio Macciardi, University of California at Irvine
- 11:35 a.m. **Bayesian Kernel-Based Modeling and Selection of Genetic Pathways and Genes for Cancer**—◆Zhenyu Wang, University of Missouri-Columbia; Sounak Chakraborty, University of Missouri-Columbia; Jianguo Sun, University of Missouri-Columbia
- 11:50 a.m. **A Bayesian Model for the Identification of Obesity-Associated Gut Microbial Compositions**—◆Fan Xia, The University of Hong Kong; Wing Kam Fung, The University of Hong Kong; Hongzhe Li, University of Pennsylvania
- 12:05 p.m. **Floor Discussion**

## 695 CC-511d **Nonresponse and Total Survey Error—Contributed**

Survey Research Methods Section, Social Statistics Section, Statistics Without Borders, Korean International Statistical Society

Chair(s): Sylvia Dohrmann, Westat

- 10:35 a.m. **Assessment of Total Survey Error for the 2011 National Immunization Survey**—◆Wei Zeng, NORC at the University of Chicago; Kirk Wolter, NORC at the University of Chicago; Benjamin Skalland, NORC at the University of Chicago; Vicki Pineau, NORC at the University of Chicago; Carla Black, Centers for Disease Control and Prevention; Christina Dorell, Centers for Disease Control and Prevention; Meena Khare, NCHS/CDC
- 10:50 a.m. **Exploring Organizational Characteristics and Design Features Affecting Nonresponse in Surveys of Nonprofit Organizations**—◆Ashley Bowers, Indiana University; Beth Gazley, Indiana University; Chelsea Killam, ASAE Foundation; Sharon Moss, ASAE Foundation

11:05 a.m. **Reducing Survey Nonresponse Through Enhanced Administrative Cooperation: An Experience in Korea**—◆Eun Hee Choi, Dongguk University; Sun-Woong Kim, Dongguk University; Sung Jun Hong, Dongguk University; Sun Young Lee, Dongguk University

11:20 a.m. **Simulation Approach for Determining Use of Mahalanobis Distance to Reduce Nonresponse Bias**—◆Jennifer Cooney, RTI International; Peter Siegel, RTI International; Melissa Cominole, RTI International; Bryan Shepherd, RTI International

11:35 a.m. **Predicting Proxy Status in Nonresponse Follow-Up Workload**—◆Andrew Keller, U.S. Census Bureau

11:50 a.m. **Will They Answer the Phone if They Know It Is Us? Using Caller ID to Improve Response Rates**—◆Nancy Dickey, USDA/NASS; Heather Ridolfo, USDA/NASS; Jeff Boone, USDA/NASS

12:05 p.m. **Treatment of Outcome-Related Nonresponse in an International Literacy Survey**—◆Wendy Van de Kerckhove, Westat; Leyla Mohadjer, Westat; Tom Krenzke, Westat

## 696 CC-510c **Analysis of Social Networks—Contributed**

Social Statistics Section, International Chinese Statistical Association, Section on Statistics in Marketing, Section on Statistics in Epidemiology, Scientific and Public Affairs Advisory Committee, Korean International Statistical Society

Chair(s): James Treat, U.S. Census Bureau

10:35 a.m. **Link Prediction and the Effect of Missing Data on Social Networks**—◆Taniecea Arceneaux, U.S. Census Bureau; Burton H. Singer, University of Florida, Emerging Pathogens Institute

10:50 a.m. **Dynamic Social Network Analysis Using Separable Temporal Exponential Random Graph Models**—◆Gregory J. Lambert, Sandia National Laboratories; Patrick D. Finley, Sandia National Laboratories; Thomas W. Moore, Sandia National Laboratories

11:05 a.m. **Using Egocentric Data to Explore Size and Diversity of Social Networks Among Lesbian, Gay, Bisexual, and Transgender (LGBT) Older Adults**—◆Elena Erosheva, University of Washington; Hyun-Jun Kim, University of Washington; Charles A. Emlet, University of Washington; Karen I. Fredriksen-Goldsen, University of Washington

11:20 a.m. **Partnership Duration Analysis with Dynamic Social Network Using Separable Temporal Exponential Random Graph Model**—◆Ke Li, University of Washington; Martina Morris, University of Washington

11:35 a.m. **A Social Network Analysis of Alcohol-Impaired Drivers in Maryland—An Egocentric Approach: Applications of Logistic Regression and Poisson Regression**—◆Ashraf Ahmed, Morgan State University; Andrew Farkas, Morgan State University; Kenneth Beck, University of Maryland

11:50 a.m. **Statistical Models for Networks Resilient to Targeted Attacks**—◆Jingfei Zhang, University of Illinois; Yuguo Chen, University of Illinois at Urbana-Champaign

12:05 p.m. **Use of General Transit Feed Specification (GTFs) Data in Analyzing Transportation Barriers Faced by Housing Voucher Holders**—◆Peter K. Kwok, NORC at the University of Chicago; Julia Rotondo, NORC at the University of Chicago

## 697 CC-510d Collection and Linkage Challenges in Data Acquisition—Contributed

Government Statistics Section, Social Statistics Section

Chair(s): Kennon Copeland, NORC

10:35 a.m. **Evaluation and Comparison of Probabilistic Linkage Procedures for the Quarterly Census of Employment and Wages**—◆Mark Kaminski, Bureau of Labor Statistics

10:50 a.m. **Self-Assessed Housing Values in the American Community Survey: An Exploratory Evaluation Using Linked Real Estate Records**—◆W. Kingkade, U.S. Census Bureau

11:05 a.m. **Testing Record Linkage Production Data Quality**—◆K. Bradley Paxton, ADI, LLC

11:20 a.m. **Testing the Collection of Occupational Requirements Data**—◆Gwyn R. Ferguson, Bureau of Labor Statistics

11:35 a.m. **Shared Understanding and Data Quality in the SCF**—◆Jesse Bricker, Federal Reserve Board; Arthur Kennickell, Federal Reserve Board

11:50 a.m. **Comparing Nonresponses in SIPP and SIPP-EHC Data: Participation in Government Social Safety Net Programs**—◆Jeongsoo Kim, U.S. Census Bureau

12:05 p.m. **The NCS Data Linkage Program: Linkage of Household Environmental Lab Results to Environmental Extant Data**—◆Michael Sinclair, NORC; Ned English, NORC; Christina Park, Eunice Kennedy Shriver National Institute of Child Health and Human Development

## 698 CC-512h Advances in Measurement, Modeling, and Inferences—Contributed

SSC, Korean International Statistical Society

Chair(s): Yogendra P. Chaubey, Concordia University

10:35 a.m. **Shrinkage Estimation and Lasso in Linear Model with Unknown Change-Points**—◆Fuqi Chen, University of Windsor; Sévérien Nkurunziza, The University of Windsor

10:50 a.m. **Average Width Optimality of Simultaneous Confidence Bands in Simple Linear Regression**—◆Jianan Peng, Acadia University

11:05 a.m. **Techniques for the Construction of Robust Regression Designs**—◆Maryam Daemi, University of Alberta; Douglas P. Wiens, University of Alberta

11:20 a.m. **A Goodness of Fit Test for Measurement Systems Analysis**—◆Vahid Partovi Nia, École Polytechnique Montréal; Masoud Asgharian, McGill University; Samuel Basetto, École Polytechnique de Montréal

11:35 a.m. **Bayesian Clustering Using MCMC Sampling**—◆Mahroo Vahidpour, École Polytechnique de Montréal; Vahid Partovi Nia, École Polytechnique de Montréal

11:50 a.m. **Imprecise Truncated Poisson Regression for Predictive Inference**—◆Chel Hee Lee, University of Saskatchewan; Mikelis Bickis, University of Saskatchewan

12:05 p.m. **The Skew Generalized Secant Hyperbolic Extension (SGSHE): An Introduction**—◆David Vaughan, Wilfrid Laurier University

## 699 CC-520a Teaching the Fundamentals—Contributed

Section on Statistical Education

Chair(s): Jamis J. Perrett, Monsanto Company

10:35 a.m. **Teaching Statistics as Art and Science Involves Asking the Right Questions**—◆Peter Van Ness, Yale University School of Medicine

10:50 a.m. **Significance Testing and Measures of Belief**—◆Andrew Neath, SIU Edwardsville

11:05 a.m. **Teaching Data Analysis in R Through the Lens of Reproducibility**—◆Mine Cetinkaya-Rundel, Duke University

11:20 a.m. **Classroom Participation for Subliminal Impact in Surveys**—◆Edward Mansfield, The University of Alabama

11:35 a.m. **Diversity, Variability, and the Probable Error: Building Intuition**—◆Robert Jernigan, American University

11:50 a.m. **Assessing the Effectiveness of Normal Probability Plots**—◆John Walker, Cal Poly at San Luis Obispo

12:05 p.m. **Alternative Approaches to Demonstrate Regression Diagnostics in an Introductory Regression Class**—◆Robert Pavur, University of North Texas; Kellie Keeling, University of Denver

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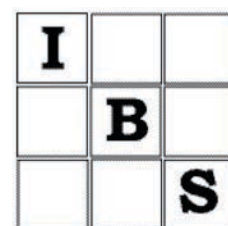
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Phone: (703) 684-1221

Fax: (703) 684-6456

[asainfo@amstat.org](mailto:asainfo@amstat.org)

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International Biometric Society  
12100 Sunset Hills Road,  
Suite 130  
Reston, VA 20190  
Phone: (703) 437-4377  
Fax: (703) 435-4390  
[enar@enar.org](mailto:enar@enar.org)  
[www.enar.org](http://www.enar.org)

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**Business Office**

WNAR Membership Services  
Cancer Research and Biostatistics  
1730 Minor Ave., Suite 1900  
Seattle, WA 98101-1468  
[wnar@crab.org](mailto:wnar@crab.org)  
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Elyse R. Gustafson,  
Executive Director  
P.O. Box 22718  
Beachwood, OH 44122  
Phone: (216) 295-2340  
Toll Free (U.S.): (877) 557-4674  
Fax: (216) 295-5661  
[ims@imstat.org](mailto:ims@imstat.org)  
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Tim Swartz

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Statistical Society of Canada  
209-1725 St. Laurent Blvd.  
Ottawa, ON Canada K1G 3V4  
Phone: (613) 733-2662  
Fax: (613) 733-1386  
[admin@ssc.ca](mailto:admin@ssc.ca)  
[www.ssc.ca](http://www.ssc.ca)



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OICSA, Jiann-Ping Hsu  
Jiann-Ping Hsu College of Public Health  
Georgia Southern University  
P.O. Box 8015  
Statesboro, GA 30460  
Phone: (912) 478-1277  
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**Business Office**  
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Subrata Kundu / Sudip Bose,  
Treasurers  
Department of Statistics  
The George Washington  
University  
2140 Pennsylvania Ave., NW  
Washington, DC 20052  
*kundu@gwu.edu*  
*sudip@gwu.edu*  
*www.intindstat.org*



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