

Seattle, Washington | August 8–13, 2015

JSM 2015

PROGRAM BOOK

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NEED TO KNOW

Convention Housing

Sheraton Seattle Hotel (HQ)	(206) 621-9000
Grand Hyatt Seattle	(206) 774-1234
Hyatt at Olive 8	(206) 695-1234
Homewood Suites Seattle	(206) 682-8282
Motif Seattle	(206) 971-8000
Hilton Seattle	(206) 624-0500
Crowne Plaza Hotel Seattle	(206) 464-1980
Fairmont Olympic Hotel	(206) 621-1700
Renaissance Seattle Hotel	(206) 583-0300
Seattle University (Economy Housing)	(206) 296-5620
W Hotel Seattle	(206) 264-6000
Warwick Hotel	(206) 443-4300

Policies

ELECTRONIC DEVICES

All cell phones and other electronic devices should be silenced before attending any session or meeting.



SMOKING

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



VIDEOTAPING

Using video equipment during any JSM session or event is prohibited.



RECYCLING

Please use the paper, plastic, and aluminum trash containers located throughout the Washington State Convention Center.

Also, participating in the towel and linen programs at area hotels makes a significant difference in the amount of energy and water used.

Finally, place JSM badges and badge holders in one of the designated bins in the registration area when leaving.



JSM App ▲

Download the official JSM 2015 app! Get last-minute updates, create your own schedule, play the JSM Challenge for prizes, and more. Available on Google Play and the App Store; free.

WiFi

COMPLIMENTARY WIFI AT THE WASHINGTON STATE CONVENTION CENTER

Network: JSM2015
No password needed

COMPLIMENTARY WIFI AT THE SHERATON SEATTLE HOTEL

Network: Sheraton-Seattle-Meeting-Room
Password: JSM2015

Emergency Telephone Messages

In case of emergency, messages may be left during registration hours by calling (206) 219-4503. Messages will be posted at the Cyber Center, located in the registration area.

Assistance for Those with Disabilities

Please contact a staff member at the Help Desk in the registration area of the Washington State Convention Center if you have a disability that may impede your participation.

Child Care

KiddieCorp is the official child care provider for JSM 2015. Arrangements should have been made in advance. Please contact KiddieCorp at (858) 455-1718 or info@kiddiecorp.com with any questions or to check possible availability.

JSM Proceedings

Eligibility guidelines and author instructions for JSM 2015 presenters are available at www.amstat.org/meetings/jsm/2015/proceedings.cfm. The submission site will open on August 27, 2015, and close on October 2, 2015.

JSM 2016

The 2016 Joint Statistical Meetings will be held in Chicago, Illinois, July 30 – August 4 at McCormick Place. Check out the details at Booth # 514 in the exhibit hall.

Membership

Information about the ASA, WNAR, IMS, SSC, ICSA, 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-ATRIUM LOBBY

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

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 S-SECOND FLOOR

Saturday	7:30 a.m. – 6:00 p.m.
Sunday	7:30 a.m. – 1:30 p.m.

SPEAKER MANAGEMENT ROOM CC-604

Speakers are required to check in four 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.

Saturday	12:00 p.m. – 6:00 p.m.
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 SERVICE CC-HALL 4A

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)

EXPO 2015 CC-HALL 4B

Visit publishers, software companies, and recruiters. See state-of-the-art products designed for the statistical community.

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- ATRIUM LOBBY

There are 15 terminals with Internet access available for your emailing needs, as well as three printers.

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 2015) CC-HALL 4B

The ASA Marketplace is your store for the official JSM 2015 T-shirt and other JSM and ASA souvenirs.

Sunday	1:00 p.m. – 6:00 p.m., 8:30 p.m. – 10:30 p.m.
Monday – Tuesday	9:00 a.m. – 5:30 p.m.
Wednesday	9:00 a.m. – 2:30 p.m.

SEATTLE RESTAURANT & TOURISM INFORMATION CENTER CC-UPPER PIKE STREET LOBBY

Operated by Visit Seattle, this center provides extensive information and referrals for restaurants and sightseeing. Stop by the desk and pick up current maps and travel information.

Sunday	9:00 a.m. – 5:00 p.m.
Monday – Wednesday	9:00 a.m. – 6:00 p.m.

Meetings Conduct Policy

As a professional society, the American Statistical Association (ASA) is committed to providing an atmosphere that encourages the free expression and exchange of ideas. Consistent with this commitment, it is the policy of the ASA that all participants in ASA activities will enjoy a welcoming environment free from unlawful discrimination, harassment, and retaliation. All participants in ASA activities also agree to comply with all rules and conditions of the activities, which are subject to change without notice.

Please read the complete Conduct Policy before attending: www.amstat.org/meetings/jsm/2015/registration.cfm.

Questions?

New to JSM? Find a JSM docent to help you learn the ropes. JSM docents are experienced JSM attendees wearing purple ribbons on their badges who can help you make the most of your experience.



NEED TO KNOW

Spotlight Seattle

Spotlight Seattle is an exciting new addition to the JSM EXPO! With a variety of events throughout the week, we give you a little taste of the city in case you are too busy to get away from the convention center.



Sunday, August 9

1:00 P.M. – SPOTLIGHT SEATTLE KICK-OFF

Find out what this new area is all about. Bring a pen and be prepared to make it known you were at JSM 2015!

3:30 P.M. – TASTE OF THE MARKET

Get a taste of what is available at the Pike Place market with light samples (while supplies last).

Monday, August 10

9:00 A.M. – SEATTLE INSIDER TIPS

Whether you are here for the first time or have explored Seattle before, find out what Seattle has to offer and enter to win cool prizes, too!

10:00 A.M. – JSM COFFEE HOUSE

Sponsored by **SANOFI**

Refresh with a cup of coffee or tea and take this chance to tag the wall!

11:00 A.M. – 3:00 P.M. – JSM PHOTO BOOTH

Stop by and create memories with your friends with fun stats and Seattle props!

1:30 P.M. – POPCORN BREAK

Sponsored by **XLSTAT**

3:30 P.M. – NORTHWEST MICROBREW TASTING BAR

Sponsored by **Capital One**

Taste local microbrews (while supplies last).



Tuesday, August 11

10:00 A.M. – JSM COFFEE HOUSE

Grab a cup of coffee and take a break with some live local Seattle entertainment. Also check out information about area nightspots and live music venues.

1:30 P.M. – POPCORN BREAK

Sponsored by **XLSTAT**

3:30 P.M. – NORTHWEST WINE TASTING BAR

Don't miss this chance to taste local wines (while supplies last).



Wednesday, August 12

10:00 A.M. – JSM COFFEE HOUSE

1:30 P.M. – POPCORN BREAK

Sponsored by **XLSTAT**





Special Events

First-Time Attendee Orientation & Reception

Sunday, August 9, 12:30 p.m. – 2:00 p.m. CC-6A

Join fellow first-timers at this orientation reception and learn how to become involved at JSM. Hear about the benefits of membership and get tips about the conference.

Opening Mixer,

Sponsored by Fred Hutch & Westat

Sunday, August 9, 8:30 p.m. – 10:30 p.m. CC-Hall 4B

All conference attendees are encouraged to come together for the kick-off social event of JSM.

JSM Student Mixer, Sponsored by Monsanto

Monday, August 10, 6:00 p.m. – 8:00 p.m.

S-Metropolitan A

The Student Mixer provides an opportunity for students to join their contemporaries for a fun-filled time.

ASA Longtime Member Reception (by invitation only), Sponsored by RTI International & Westat

Monday, August 10, 6:30 p.m. – 7:30 p.m.

S-Metropolitan B

This annual reception is held to honor ASA members who have shown dedication to the association for 35 years or more.

JSM Dance Party

Tuesday, August 11,
9:30 p.m. – 12:00 a.m.
S-Metropolitan

A fun highlight of JSM, the dance party is held after the ASA Presidential Address and Founders & Fellows Recognition. There are snacks, a cash bar, and a live band.



Late-Breaking Sessions

SESSION 147

Late-Breaking Session I:
The VA Secretary Bans a
Statistics Book

Monday, August 10

10:30 a.m. – 12:20 p.m.

CC-Ballroom 6E

SESSION 462

Late-Breaking Session II: Meeting
the Challenges of a Pandemic:
The Statistical Aspects of Dealing
with Ebola

Wednesday, August 12

8:30 a.m. – 10:20 p.m.

CC-Ballroom 6E

Introductory Overview Lectures

SESSION 46

Personalized Medicine

Sunday, August 9

4:00 p.m. – 5:50 p.m.

CC-4C2

SESSION 102

New Perspectives in Spatial and
Spatio-Temporal Data Analysis

Monday, August 10

8:30 a.m. – 10:20 a.m.

CC-Ballroom 6E

SESSION 282

Statistical Issues in
Computational Neuroscience

Tuesday, August 11

8:30 a.m. – 10:20 a.m.

CC-Ballroom 6E

SESSION 461

Recent Advances in Machine
Learning and Data Mining

Wednesday, August 12

8:30 a.m. – 10:20 a.m.

CC-4C2

#JSM2015

Join the Joint Statistical Meetings conversation by using #JSM2015 on social media. Also follow the official ASA social media accounts for news, pictures, or last-minute updates.



www.facebook.com/AmstatNews



www.twitter.com/AmstatNews



www.instagram.com/AmstatNews

JSM Challenge

Participate in our first-ever JSM Challenge via the JSM 2015 app! Earn points for each question and task you complete!

The challenge runs from Saturday through Thursday. Prizes will be awarded to the top five participants on the leaderboard within the JSM app as of noon on Thursday.



Prizes include:

- Noise-cancelling headphones
- Fitbit Flex
- Roku 3
- Jambox Bluetooth Speaker
- Apple iPad Air 2

Don't miss out on the opportunity to have fun and win one of these great prizes!

Download the JSM App on **Google Play** or the **App Store**.

Speakers!

NEED TO UPLOAD YOUR PRESENTATION?

At least 30 minutes prior to your session, find a speaker management kiosk or visit the Speaker Management Room **CC-604** to upload your presentation.

Speaker Management Kiosks sponsored by:



FEATURED SPEAKERS

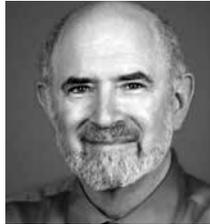


ASA President's Invited Address

Monday, August 10,
4:00 p.m. CC-Ballroom
6ABC

*The Role of Analysis
in Supporting Strategic
Decisions*

Christine H. Fox,
Johns Hopkins
University Applied
Physics Laboratory



ASA Presidential Address and Founders & Fellows Recognition

Tuesday, August 11,
8:00 p.m. CC-Ballroom
6ABC

*Statistics: Making
Better Decisions*

David Morganstein,
Westat



ASA Deming Lecture

Tuesday, August 11,
4:00 p.m. CC-Ballroom
6ABC

*Reliability: The Other
Dimension of Quality*

William Q. Meeker, Iowa State
University



COPSS Fisher Lecture

Wednesday, August 12,
4:00 p.m. CC-Ballroom
6ABC

*R.A. Fisher and the
Statistical ABCs*
Stephen Fienberg,
Carnegie Mellon
University



IMS Presidential Address and Awards Ceremony

Monday, August 10,
8:00 p.m. CC-Ballroom
6E

*Some Thoughts
About the Relations
Between Statistics and
Probability Theory*

Erwin Bolthausen,
University of
Zurich



IMS Medallion Lecture I

Sunday, August 9, 2:00
p.m. CC-4C2

*Computational
Tradeoffs in Statistical
Estimation*

John Lafferty,
The University of
Chicago



IMS Medallion Lecture II

Monday, August 10,
2:00 p.m. CC-Ballroom
6E

*Causal Discovery
with Confidence Using
Invariance Principles*

Nicolai Meinshausen,
ETH Zurich



IMS Medallion Lecture III

Tuesday, August 11,
2:00 p.m. CC-Ballroom
6E

*Recent Developments
in Machine Learning
for Personalized
Medicine*

Michael Kosorok,
The University of
North Carolina at
Chapel Hill

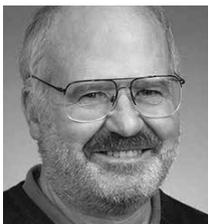


IMS Medallion Lecture IV

Wednesday, August
12, 2:00 p.m. CC-
Ballroom 6E

*Spectral Clustering,
with Applications in
Gene Microarrays and
Social Networks*

Jiashun Jin,
Carnegie Mellon
University



Le Cam Lecture

Monday, August 10,
10:30 a.m. CC-4C3

*Maximum Likelihood
in Modern Times:
The Ugly, the Bad,
and the Good*

Jon Wellner,
University of
Washington



Wald Lecture I

Tuesday, August 11,
4:00 p.m. CC-Ballroom
6E

*Sequential
Decision-Making
and Personalized
Treatment: The
Future Is Now!*

Susan A. Murphy,
University of
Michigan

Wald Lecture II

Wednesday, August
12, 10:30 a.m. CC-
Ballroom 6E

*Offline Data Analysis
Methods and Learning
Algorithms for
Constructing Mobile
Treatment Policies*

Susan A. Murphy,
University of
Michigan

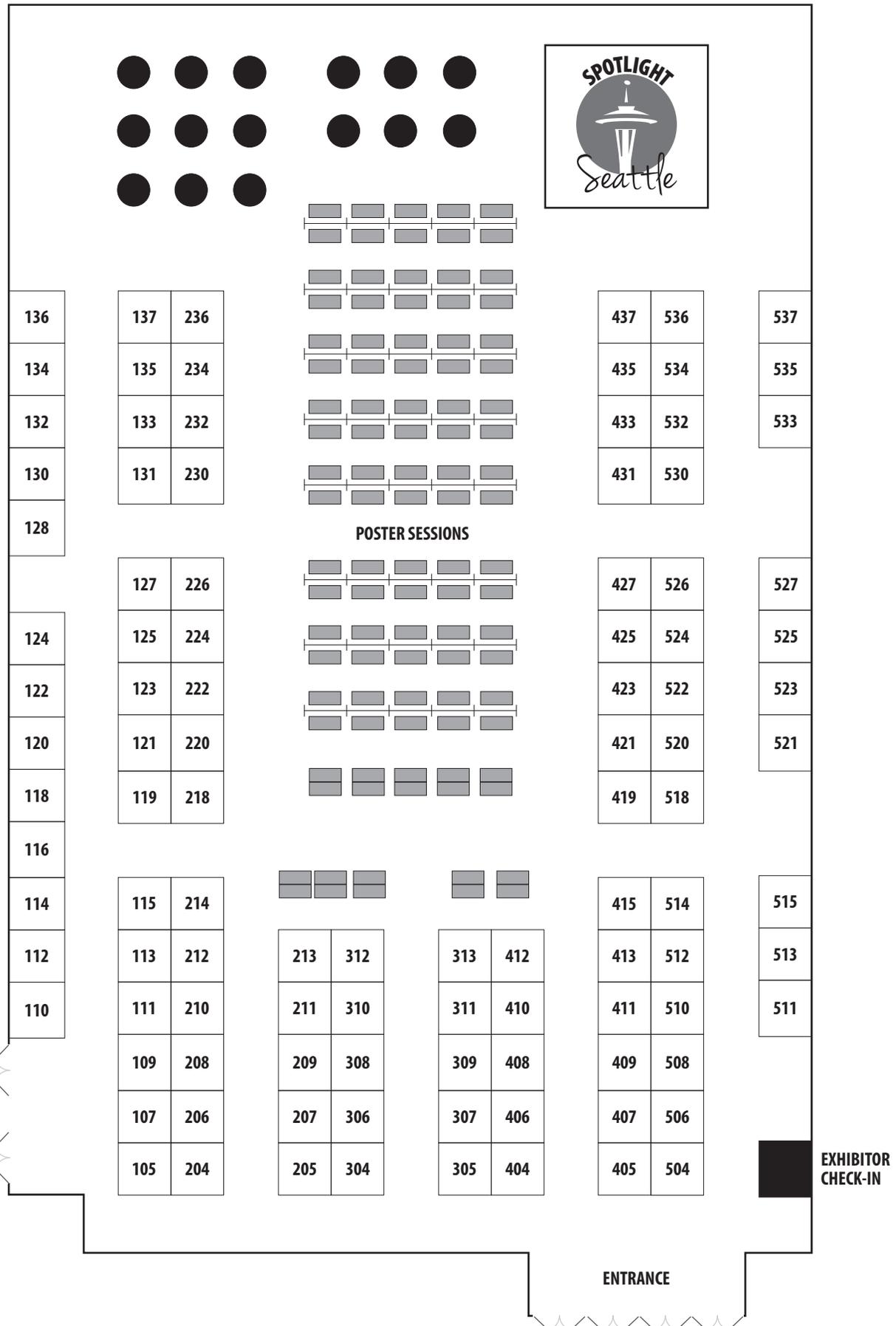
Wald III

Thursday, August 13,
10:30 a.m. CC-4C2

*Continual, Online
Learning in Sequential
Decision-Making*

Susan A. Murphy,
University of
Michigan

JSM EXPO Hall 4B



WHO'S WHO AT THE EXPO 2015



AAAS Science & Technology Policy Fellowships	222	The AAAS science and technology policy fellowships provide scientists and engineers with a unique opportunity to apply their knowledge and skills to national and international issues, while learning first-hand about establishing and implementing policy.
Advanced Clinical, LLC	121	Advanced Clinical is a global clinical outsourcing organization built around delivering a truly better clinical trial experience. For more than 20 years, Advanced Clinical has been providing global full-service CRO, FSP, and strategic staffing solutions.
American Institutes for Research	211	The American Institutes for Research (AIR) is a leading behavioral and social science research organization. We pride ourselves in conducting high-impact, high-stakes projects for significant federal, state, and private organizations.
American Mathematical Society	415	The American Mathematical Society fulfills its mission through programs and services that promote research and scholarship in the mathematical sciences, strengthen mathematics education, and foster awareness of and appreciation for mathematics.
American Statistical Association (ASA)	504, 506	Come visit the ASA exhibit booth! Participate in our JSM Challenge and be entered to win daily prizes. Make sure to visit every day to see what we have to offer! Learn what the American Statistical Association is all about.
Aptech Systems, Inc.	115	Aptech Systems is a supportive team of experts dedicated to the success of the worldwide GAUSS user community. From physics to finance, Aptech is committed to helping people achieve their goals by offering flexible products and applications.
Axio Research, LLC	306	At Axio, we focus on delivering timely and thoughtful analysis to help clients address scientific questions confidently and efficiently.
Berry Consultants	533	Berry Consultants is a statistical consulting company specializing in the Bayesian approach that is radically changing the way research is done throughout the medical industry in both device and drug development.
Bureau of Economic Analysis (BEA)	209	The Bureau of Economic Analysis (BEA) is one of the world's leading statistical agencies, recognized throughout the United States and around the world as a key source for the best and most comprehensive economic statistics available.
Bureau of Labor Statistics (BLS)	118	The Bureau of Labor Statistics is the federal government's principal fact-finding agency in the field of labor economics and statistics. Visit our booth for free information and a demo of our data query tools.
CRC Press/Taylor & Francis Group	105, 107, 109, 204, 206	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.
California University of Pennsylvania	125	



WHO'S WHO AT THE EXPO 2015

Cambridge University Press	425, 427	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	236	Cengage Learning is a leading educational content, software, and services company for the K-12, higher education, professional, and library markets with operations in more than 20 countries around the world.
Cytel, Inc.	431, 530	Cytel is shaping the future of drug development. Best known for our pioneering work in adaptive clinical trials, we leverage our statistical expertise toward cutting-edge trial design and implementation software.
Deloitte Consulting, LLP	423	Deloitte analytics creates value for clients by helping them transform data and make power-informed decisions. Spanning Deloitte's portfolio of businesses, our analytics professionals work with organizations to help identify and address their requirements.
Elsevier BV	226	Elsevier publishes world-class statistics content, from journals and books to online solutions. Visit booth #226 to discover our latest issues, pick up giveaways, and more!
Fred Hutchinson Cancer Research Center	113	Fred Hutchinson, home of 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.	527	Frontline Systems (Solver.com) is democratizing analytics through our free tools for statistical analysis, optimization, and simulation/risk analysis in Excel Online and Google Sheets; our powerful XLMiner data mining; text mining; and predictive analytics.
GCE Solutions, Inc.	210	GCE Solutions is a global service provider specializing in "clinical services." Since 2006, we have been proud to serve pharma in diverse therapeutic areas and different aspects of clinical trials. Key services: biostatistics, SAS programming, data management
GenPro International, Inc.	232	GenPro is a CRO with a mission to provide the highest-quality services in areas of biostatistics, statistical programming, medical writing, and regulatory submissions to clients in pharmaceutical, biotechnology, and medical device industries.
Gilead Sciences	520	Gilead is a science-driven organization with a focus on providing therapies that continually improve the quality of life for patients who have unmet medical needs.
Green Key Resources	207	Green Key Resources is one of the fastest-growing professional recruitment firms offering a complete portfolio of staffing solutions, including permanent placement, temporary and contract staffing, executive search, and payroll services.
Hawkes Learning	230	With more than 30 years of experience specializing in mathematics courseware, Hawkes Learning provides the best learning tools to help students succeed. Hawkes' unique approach to mastery learning motivates students and promotes grade improvement.

WHO'S WHO AT THE EXPO 2015



IBM	212, 214	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.
Institute of Mathematical Statistics (IMS)	511	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.
JMP Software from SAS	404, 406, 408	JMP® statistical discovery software from SAS is the tool of choice for scientists, engineers, and other data explorers worldwide. JMP links dynamic data visualization with powerful statistics, in memory and on the desktop.
JSM 2016	514	From the towering skyscrapers of the Loop to the city's colorful mosaic of unique neighborhoods, Chicago buzzes with energy and excitement. While attending JSM 2016, you will find world-class dining, shopping, entertainment, and hotels.
Liberty Mutual Insurance	534	At Liberty Mutual Insurance, doing the right thing is essential to all we do. A talented and diverse workforce has helped us become a global property and casualty insurance leader.
Marketplace	508, 510, 512	Make sure to stop by the JSM EXPO to visit the onsite ASA Store. Don't miss your chance to grab a statistical T-shirt or souvenir! We also offer children's clothing and onesies for even the youngest of statisticians.
MathWorks	537	
University of Michigan Program in Survey Methodology	127	The University of Michigan Program in Survey Methodology seeks to train future generations of survey methodologists. The program offers doctorate and master of science degrees and a certificate through the University of Michigan.
Minitab	311, 313	Minitab® is the leading software for statistics education, used at more than 4,000 colleges and universities worldwide. Its user-friendly design helps students learn statistical concepts.
North Carolina State University Department of Statistics	112	North Carolina State University's Department of Statistics is committed to providing outstanding training both on campus and worldwide. We offer traditional statistics doctorate, master's, and undergraduate degrees.
NCSS, Inc.	305, 307	NCSS is showing new versions of our statistical software and PASS, our power analysis and sample size software. PASS is recognized the world over as the leader in sample size software, since it offers calculations for more than 650 statistical tests.
National Science Foundation	110	The National Science Foundation Division of Mathematical Sciences (DMS) supports innovative research in all areas of the mathematical and statistical sciences. Most awards support individuals or small groups of investigators working with students and post-docs.
National Security Agency	524, 526	The National Security Agency/Central Security Service (NSA/CSS) leads the U.S. government in cryptology that encompasses both signals intelligence (SIGINT) and information assurance (IA) products and services and enables computer network operations (CNO).

New this year!



The JSM OPENING MIXER will take place in the **EXPO!**

Calling all attendees!!

The kick-off event of JSM is
Sunday at 8:30 in the EXPO!

Preview the EXPO and all-new
SPOTLIGHT Seattle while
mingling with other attendees
and exhibitors.



Westat[®]

Special thanks to Westat
for their support of this event

WHO'S WHO AT THE EXPO 2015



Oxford University Press	124	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 and Analysis of Longitudinal Data.
Penfield Search Partners	535	We are a seasoned team of specialists with knowledge of the influencers, thought leaders, and decision-makers in the industry. Our strength is our niche expertise in biostatistics, statistical programming, health economics, market access, and outcomes research.
Penn State World Campus of The Pennsylvania State University	224	Penn State World Campus, backed by more than a century of distance education and 15+ years of outstanding online instruction, offers more than 100 programs, awarding degrees and transcripts identical to those earned by on-campus students.
Personify	536	Personify is an award-winning, global (20 countries/ 5 continents) recruitment solutions provider. We continue to make a splash in the statistics industry with our subject-matter experts and the analytics behind the recruiting process.
Piazza Technologies, Inc.	137	Piazza is a completely free, easy-to-use Q&A platform used by 30,000 professors and 700,000 students to eliminate redundant student email and increase course engagement. Students spend on average 3 hours per day on Piazza, which is used by 1,000 universities.
Project Euclid	114	Project Euclid is a not-for-profit online publishing service that provides access to journals, monographs, and conference proceedings in the fields of theoretical and applied mathematics and statistics.
Provalis Research	532	Provalis Research is a world-leading developer of text analytics software with groundbreaking qualitative and quantitative analysis programs such as QDA Miner, an innovative mixed-methods qualitative data analysis software, and WordStat, a powerful add-on.
Revolution Analytics	421	Revolution Analytics is the leading commercial provider of software and services based on open source R for statistical computing. The Revolution R product and services suite delivers high performance, productivity, and enterprise readiness.
Royal Statistical Society	234	The Royal Statistical Society was founded in 1834 and is one of the world's leading organizations promoting the importance of statistics and data. The society is a professional body for all statisticians and data analysts, wherever they may live.
RStudio	435, 437	RStudio has a mission to provide the most widely used open source and enterprise-ready professional software for the R statistical computing environment. These tools will further the use of R in the field of data science.
SAS Institute EDU	411, 413	SAS Global Academic Program supports teaching and learning in education through workshops and the sharing of SAS' teaching materials. Works with institutions such as high schools, community colleges, colleges, and universities.
SAS Institute R&D	405, 407, 409	SAS will exhibit its analytical software for statistics, data mining, text analytics, econometrics, and statistical quality control. Please visit the SAS booth to learn more about recent and upcoming software, including SAS/STAT and SAS/ETS releases.
SAS Institute PUBS	410, 412	Information, Resources, and Opportunities



WHO'S WHO AT THE EXPO 2015

SIAM	515	The mission of SIAM's book program is to make relevant research accessible and to promote the interaction between applied mathematics and other disciplines such as statistics, engineering, science, and computing. Visit our booth for 20-30% discounts.
STAT-HAWKERS	128	STAT-HAWKERS: Come and learn about a new concept introduced by five researchers in survey sampling. 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.
Salford Systems	419	Salford Systems is a pioneering, award-winning analytics software developer. Salford introduced the world to gradient boosting (TreeNet®), RandomForests®, CART® decision tree, and MARS® spline regression.
Springer	218, 220	Visit the Springer booths to get further acquainted with an abundant selection of top-notch titles by award-winning authors. Plus, we have giveaways, contests, and more! Follow us on Twitter-@SpringerStats.
StataCorp LP	308, 310, 312	Stata statistical software provides everything research professionals need for statistical analysis, data management, graphics, and statistical programming.



New
to *JSM?*

Find a JSM docent to help you learn the ropes. JSM docents are experienced JSM attendees who can help you make the most of your experience.

WHO'S WHO AT THE EXPO 2015



Statistical Society of Canada (SSC)	513	The SSC's mission is to promote the development of statistical methodology and encourage the highest possible standards for statistical education and practice in Canada.
Statistics & Data Corp (SDC)	131	SDC is committed to providing experienced teams who will take ownership of your needs and are positively engaged in your projects. We deliver leading-edge statistical analysis and data management services to pharmaceutical, biotechnology, and medical device companies.
Statistics.com	309	The Institute for Statistics Education at Statistics.com is a pioneer and the leading provider of online education in statistics with 100+ courses in introductory and advanced analytics and statistics, including certificate programs.
The Lotus Group, LLC	116	The Lotus Group is a recruiting firm that specializes in statistician, programming, and data management positions within the pharmaceutical industry. We pride ourselves in serving as a strong bridge between top-quality candidates and our solid company clients.
U.S. Census Bureau	433	The U.S. Census Bureau measures America's people, places, and economy. We produce economic and demographic statistics on business, industry, income, poverty, population, housing, transportation, and more.
USDA/NASS	119	USDA's National Agricultural Statistics Service (NASS) disseminates data on every facet of U.S. agriculture. The agency conducts hundreds of surveys and issues 400 reports annually. NASS also conducts the Census of Agriculture every five years.
University of Washington Department of Biostatistics	111	The UW Department of Biostatistics is a recognized leader in the statistical sciences. It's a center of excellence for development and application of statistical methodology across the health sciences and has partnerships with Fred Hutchinson Cancer Research Center.
Valesta Clinical Research Solutions	213	Valesta Clinical Research Solutions is a proven industry leader in placing skilled clinical research professionals at all career levels in project-based, contract-to-hire, and direct-hire opportunities.
W.H. Freeman & Company	205	Macmillan Higher Education publishes high-quality textbooks, including titles in introductory statistics, business statistics, and statistics for life sciences. See a live demonstration of homework platform LaunchPad.
Westat	304	Westat, an employee-owned corporation, has provided research services to federal and state government agencies and private organizations since 1963.
Wiley	521, 523, 525	Wiley publishes a vast array of leading text, journal, and digital content in statistics. We publish more than 20 statistics journals and partner with leading societies. Visit our booth to browse our titles and discuss publishing with us.
Wolfram Research	518	Wolfram has been defining the computational future for more than 25 years. As the creators of Mathematica, WolframAlpha, and the Wolfram Language, we are the leader in developing technology and tools that inject sophisticated computation and knowledge.
XLSTAT	522	XLSTAT is a modular statistical software that uses MS Excel as its interface. User-friendly, intuitive, and boasting excellent customer service, XLSTAT software makes teachers' and students' lives easier.

FIFTH SEATTLE SYMPOSIUM IN BIOSTATISTICS: BIOMARKERS FOR DIAGNOSIS, PROGNOSIS, AND THERAPY GUIDANCE

Grand Hyatt, Seattle, Washington, USA
November 21-24, 2015



UW Biostatistics presents the Fifth Seattle Symposium in Biostatistics: Biomarkers for Diagnosis, Prognosis, and Therapy Guidance. Short Courses will precede the Symposium on Saturday and Sunday, November 21-22.

SHORT COURSES: November 21-22 (*Fees: \$675 Full Day; \$350 Half Day; \$975 for Two Full Days*)

- Saturday:** *High-Dimensional Statistical Learning*
Instructors: Ali Shojaie and Daniela Witten
- Sunday Track 1:** **Basic Statistics of Biomarkers and Clinical Trials**
Morning: *Statistical Evaluation of Biomarkers*
Instructor: Patrick Heagerty
Afternoon: *Addressing the Role of Biomarkers in Clinical Trials Design*
Instructors: Thomas Fleming, David DeMets, Lisa McShane
- Sunday Track 2:** **Technology of Omics Data**
Morning: *Overview of Omics Data*
Instructor: Bruce Weir
Afternoon: *Nuts and Bolts of Omics Data, and Reproducible Research*
Instructor: Raphael Gottardo

SYMPOSIUM: November 23-24

(*Fees: On or before 10/01/2015, \$325 Attendee, \$90 Student; After 10/01/2015, \$375 Attendee, \$105 Student*)

Monday, November 23, Morning: Development/Discovery of Candidate Biomarkers

Charles Perou (keynote): *Development and Validation of Genomic Biomarkers for the Clinic*

John Quackenbush: *Can We Use Inferred Networks to Discover Biomarkers?*

Rob Tibshirani: *Assessment of Internally Derived Predictors Using Selective Inference*

Holly Janes: *Methods for Evaluating Biomarkers for Guiding Therapy*

Rafael Irizarry: *Overcoming Bias, Systematic Error and Unwanted Variability in High Throughput Measurement*

Invited Panel: *"What Makes a Discovery Study Compelling?"*

Panelists: Steve Friend, Frank Harrell, Dan Hayes, and Bruce Weir

Monday, November 23, Afternoon: Clinical Trials for Diagnosis, Prognosis, and Intervention

David Parkinson (keynote): *Challenges and Opportunities*

Rich Simon: *Genomics Driven Clinical Trials*

Dan Hayes: *Clinical Trials for Biomarkers in Breast Cancer*

Qi Xia: *A Retrospective Look at Development of MetMAB with Companion Diagnostic*

Tuesday, November 23, Morning: Related Issues: Regulatory Considerations, Responsible Parties, and Ethics

Lisa McShane (keynote): *Best Practices to Promote Reproducibility and Ensure Integrity of Omics Research*

Gail Geller: *Trust, Integrity and Ethics in Omics*

Thomas Fleming: *Insights from IOM Omics and the Duke Experience*

Michael Pacanowski: *Regulatory Considerations for Targeted Drug Development*

Elizabeth Daley: *Public Perception and Use of Genomic Tests*

Invited Panel: *"Responsible Parties."*

Panelists: Gil Omenn, Hank Greely, Wylie Burke, Jane Fridlyand, and Michael Pacanowski

More Symposium and Short Course information available online at: symposium.biostat.washington.edu



JSM 2015 Career Service Employers

Join us for the 2015 JSM Career Service, located in Hall 4A of the convention center. Access is for registered applicants and employers only. To register, go to the main JSM Registration Desk and add the Career Service to your registration.

- AbbVie*
- Amgen*
- Axio Research
- Bank of America*
- Bank of the West
- Boehringer Ingelheim Pharmaceuticals
- Bucknell University
- California State University Fullerton
- Capital One*
- FDA, Center for Biologics Evaluation and Research*
- FDA, Center for Drug Evaluation and Research*
- CluePoints
- CNA
- Eli Lilly and Company*
- Exponent
- Fred Hutch
- IBM T. J. Watson Research Center
- KPMG*
- Lawrence Livermore National Laboratory
- Novartis Oncology*
- Pacific Northwest National Laboratory*
- Precima
- Sandia National Laboratories
- SAS Institute*
- StataCorp*
- The EMMES Corporation*
- The Hartford Insurance Group
- The Walt Disney Company
- Travelers
- University of Florida, Center for Health Equity and Quality Research
- University of Massachusetts, Lowell
- University of Mississippi Medical Center, Center for Biostatistics & Bioinformatics
- University of South Florida, Health Informatics Institute
- W.L. Gore & Associates*
- Westat*

* denotes an Executive Suite

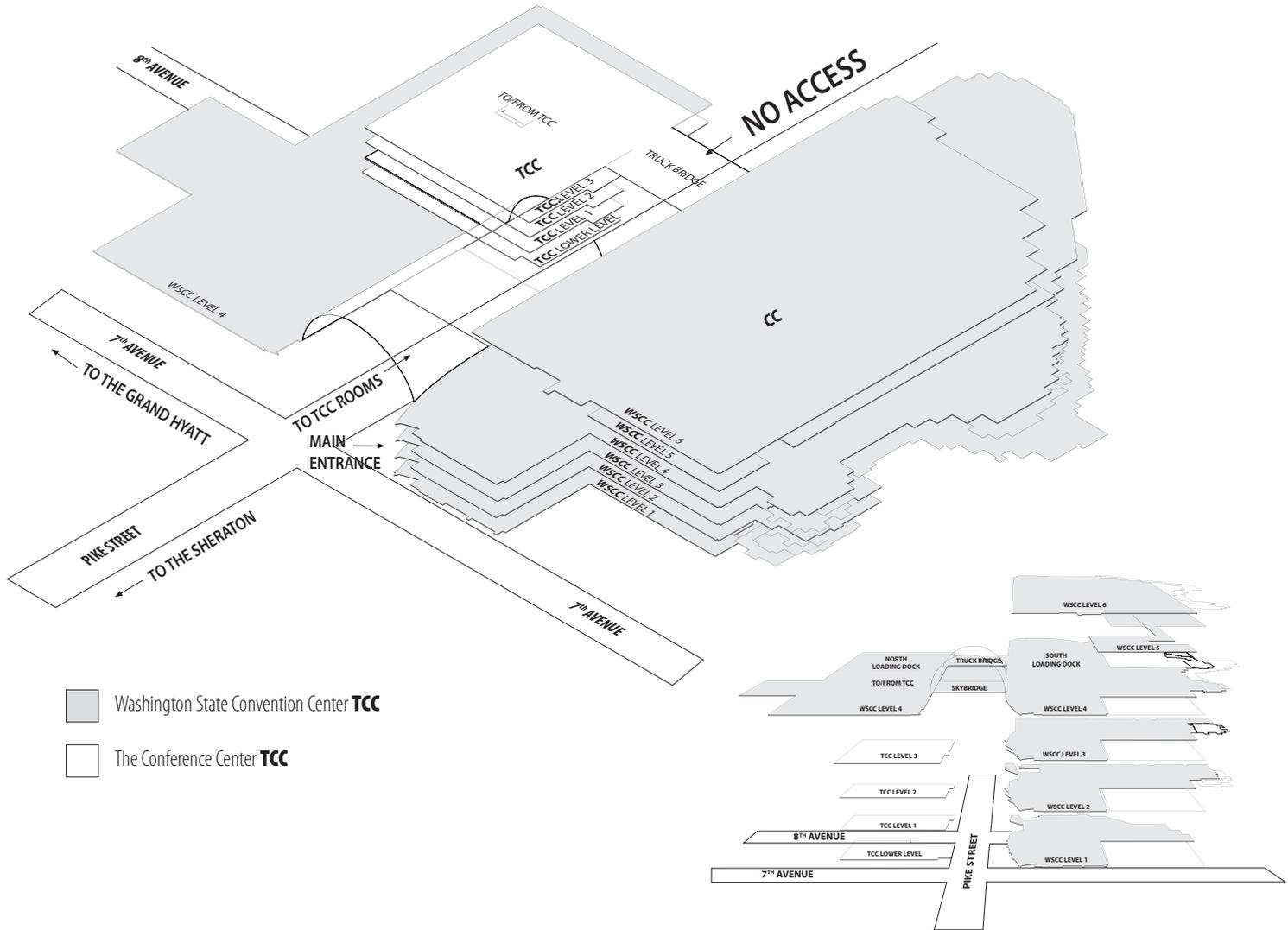


FLOOR PLANS

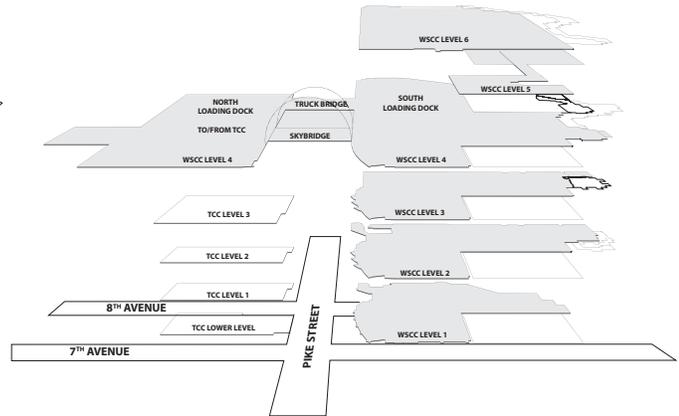
Overview

(The Conference Center **TCC** and Convention Center **CC**)

LOST?
TCC ROOMS ARE ACROSS THE STREET FROM THE MAIN CC BUILDING.



-  Washington State Convention Center **TCC**
-  The Conference Center **TCC**



RESTROOMS



AED DEVICE



SEATTLE VISITORS CENTER



FOOD/BEVERAGE



FIRST AID



CONVENTION CENTER



ACCESSIBLE ENTRANCE/ELEVATOR



FE FIRE ESCAPE



THE CONFERENCE CENTER

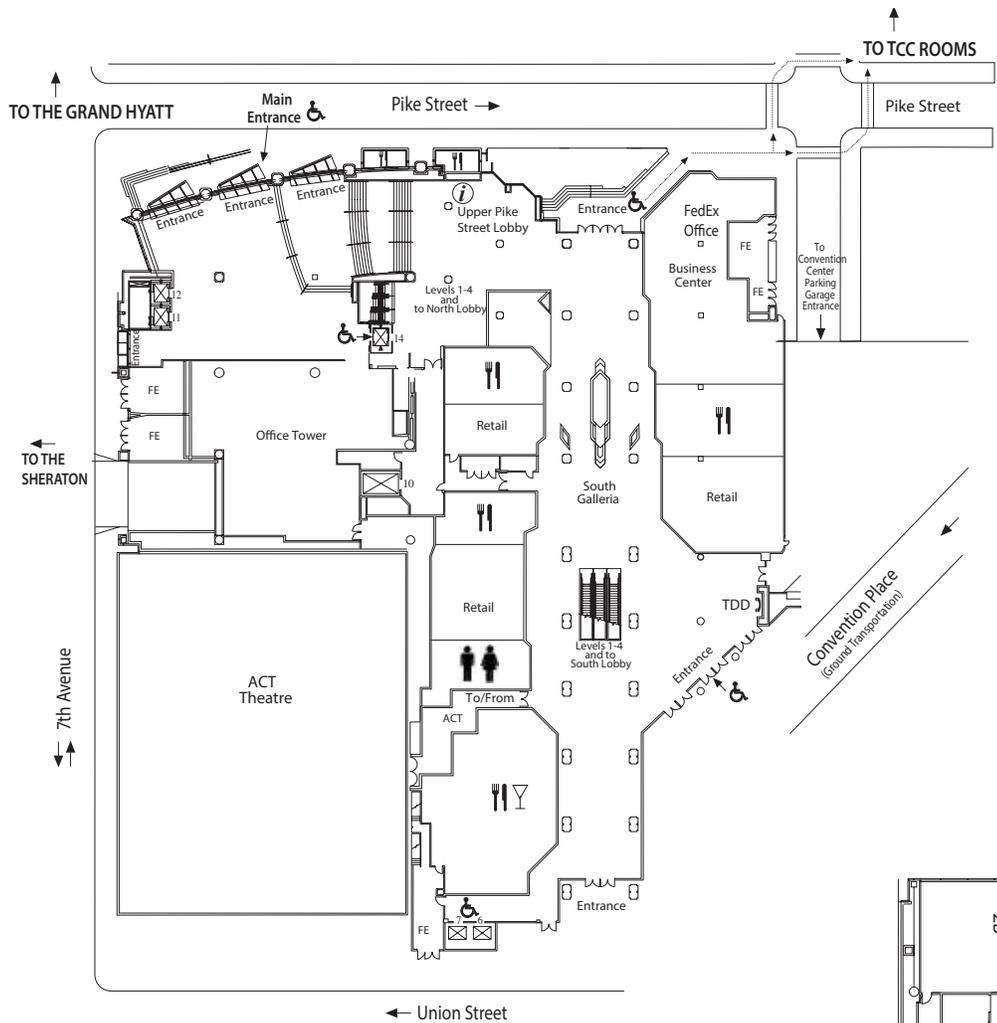


ELEVATORS

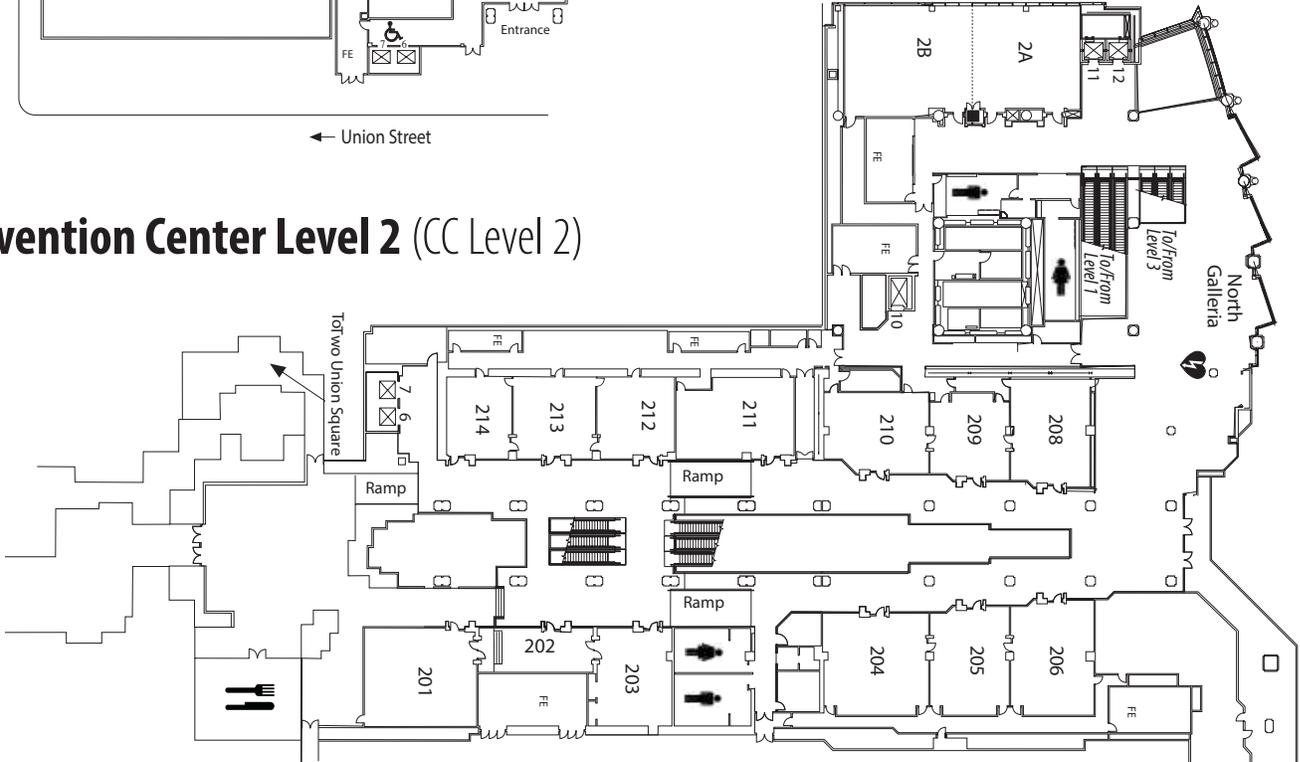
FLOOR PLANS



Convention Center Level 1 (CC Level 1)



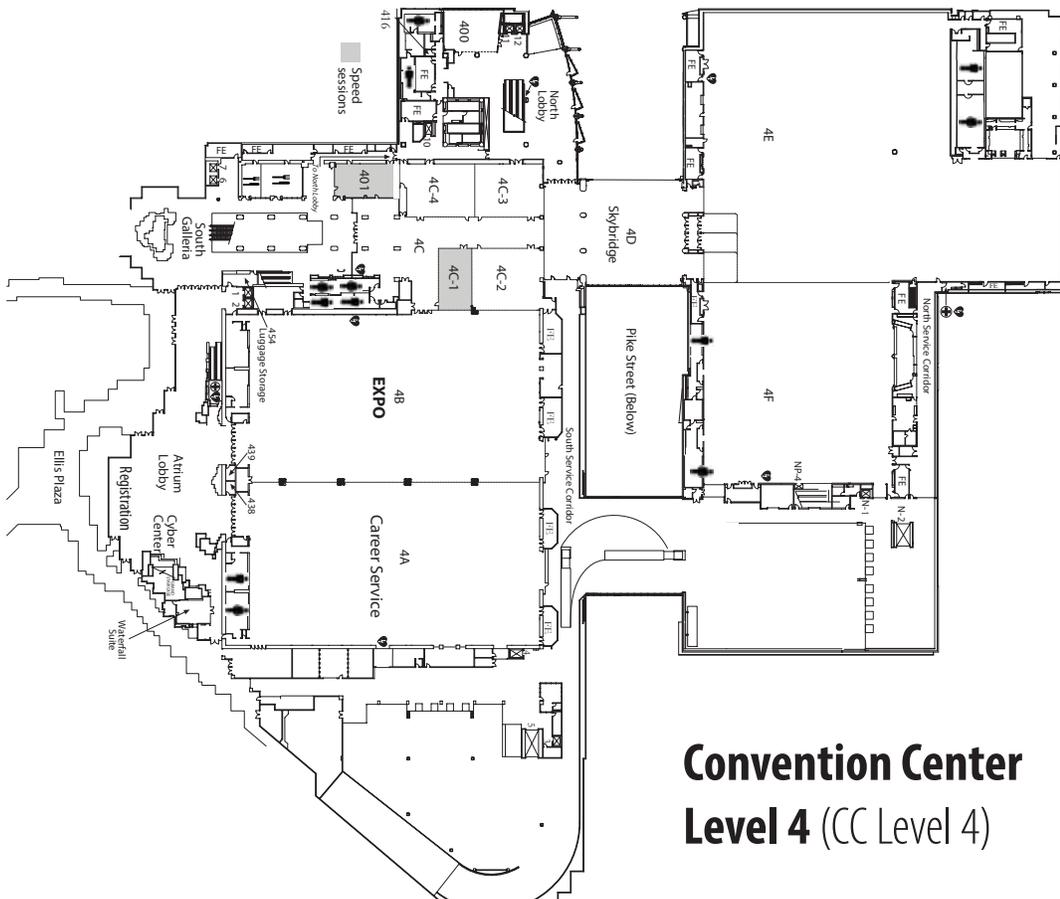
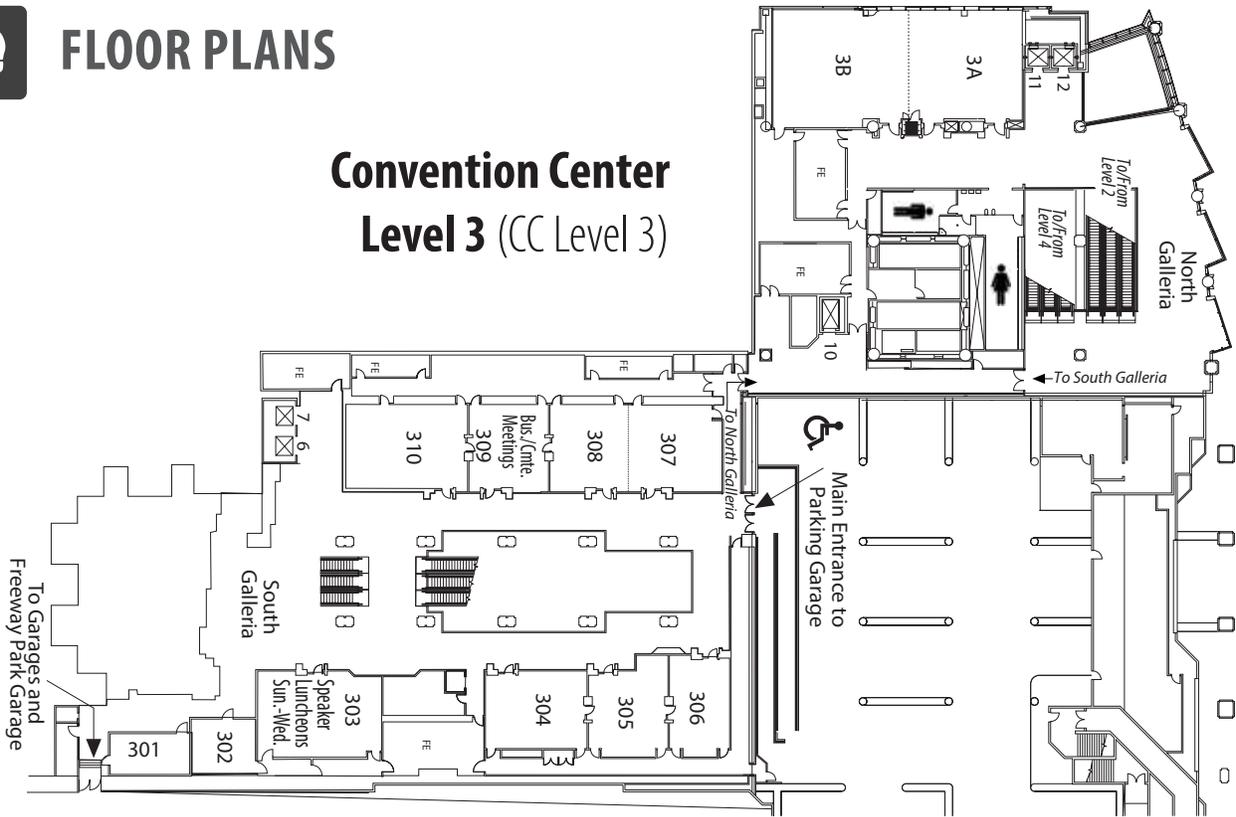
Convention Center Level 2 (CC Level 2)





FLOOR PLANS

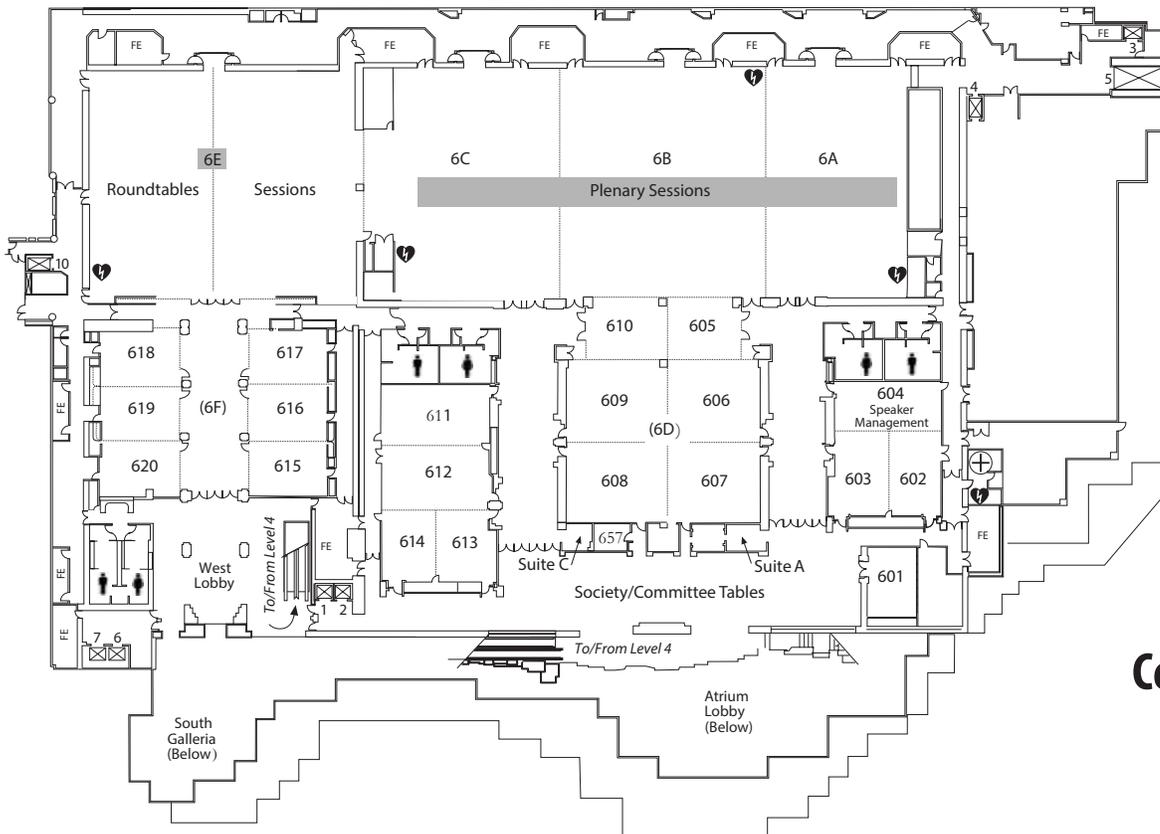
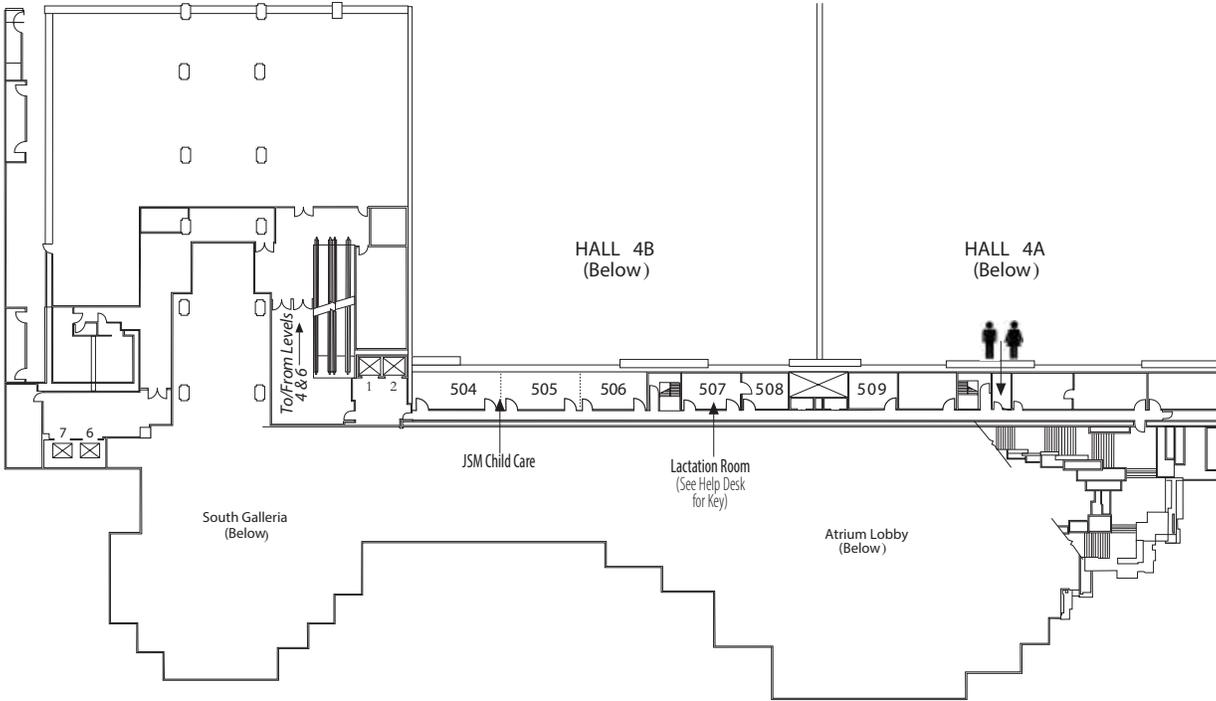
Convention Center Level 3 (CC Level 3)



Convention Center Level 4 (CC Level 4)

Convention Center Level 5 (CC Level 5)

FLOOR PLANS



Convention Center Level 6 (CC Level 6)



ANNUAL REVIEWS

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statistics.annualreviews.org • Volume 2 • April 2015

Editor: **Stephen E. Fienberg**, *Carnegie Mellon University*

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The *Annual Review of Statistics and Its Application*, in publication since 2014, informs statisticians, quantitative methodologists, and users of statistics about major methodological advances and the computational tools that allow for their implementation. It includes developments in the field of statistics, including theoretical statistical underpinnings of new methodology, as well as developments in specific application domains such as biostatistics and bioinformatics, economics, machine learning, psychology, sociology, and aspects of the physical sciences.

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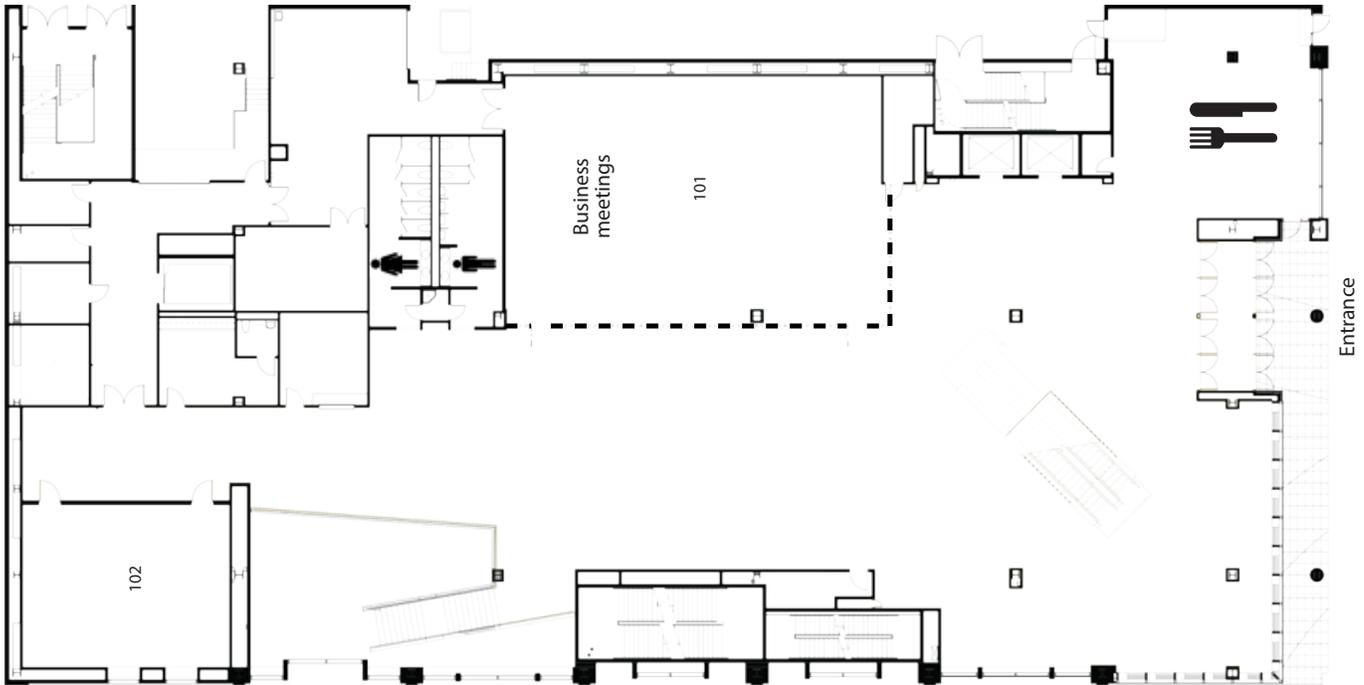


LOST? TCC ROOMS ARE ACROSS THE STREET FROM THE MAIN CC BUILDING.

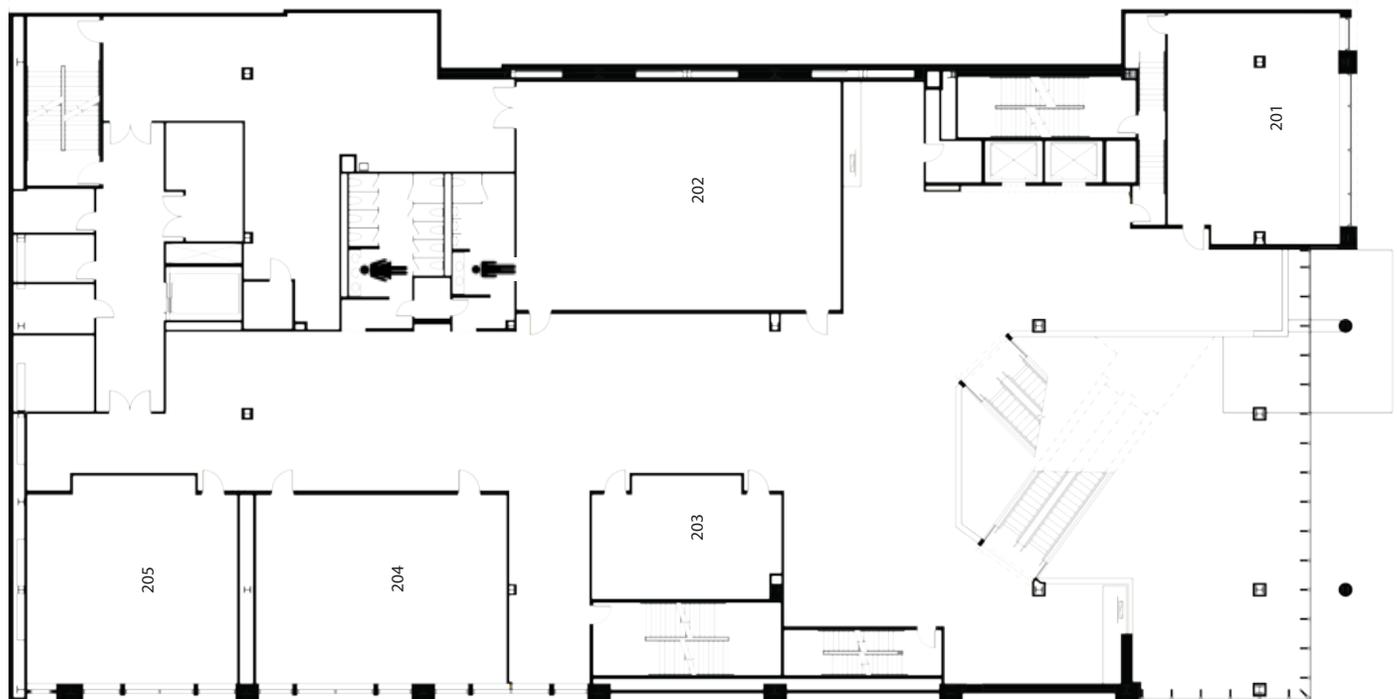
FLOOR PLANS



The Conference Center Level 1 (TCC Level 1)



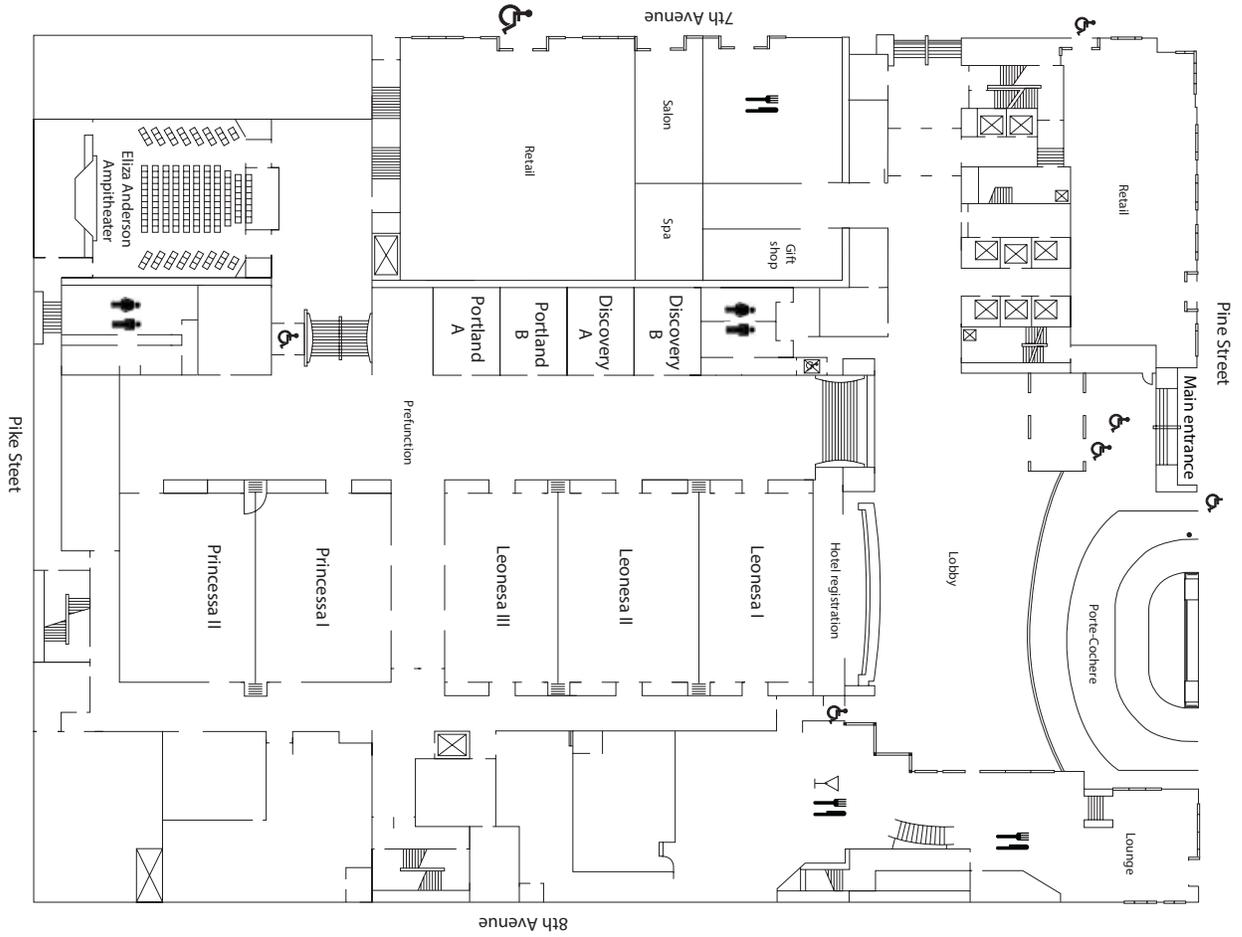
The Conference Center Level 2 (TCC Level 2)



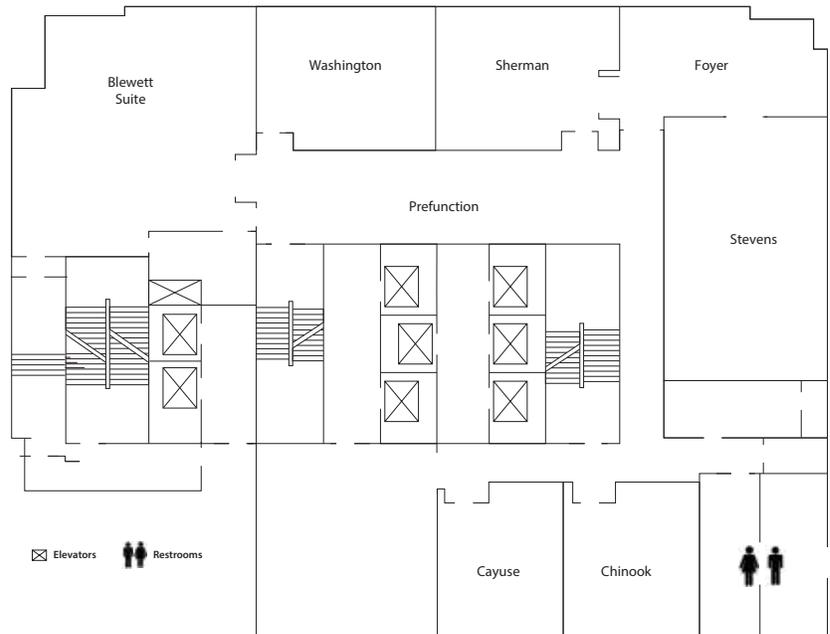


FLOOR PLANS

Grand Hyatt First Floor (GH)

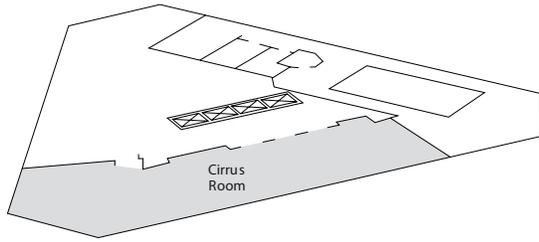


Grand Hyatt Seventh Floor (GH)

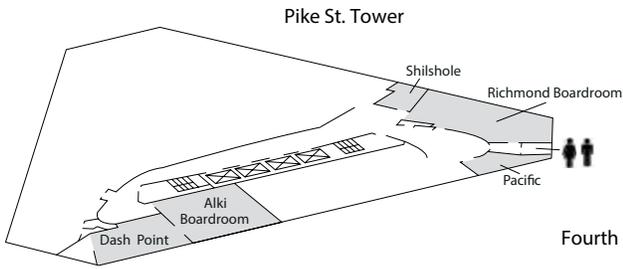


Sheraton Hotel (Headquarters Hotel)

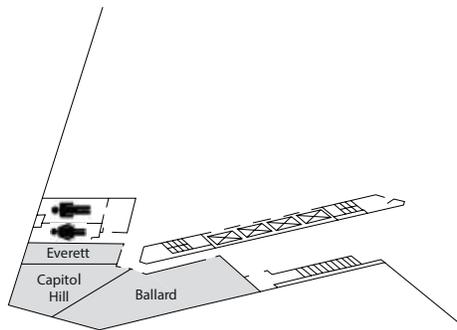
FLOOR PLANS



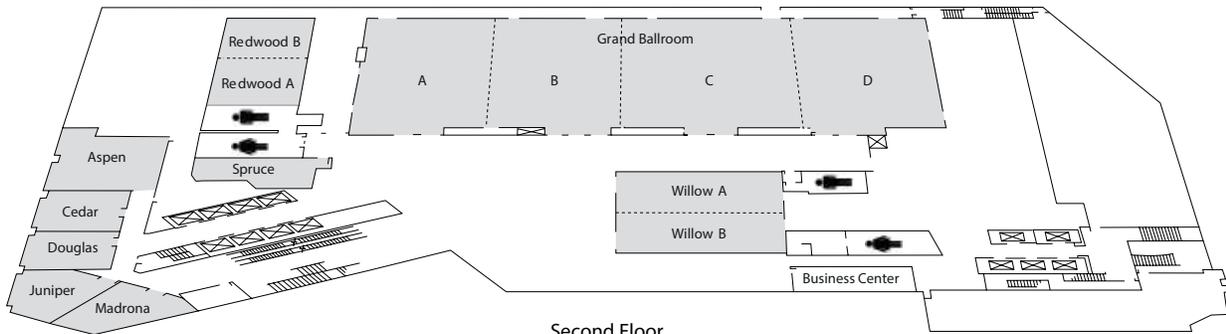
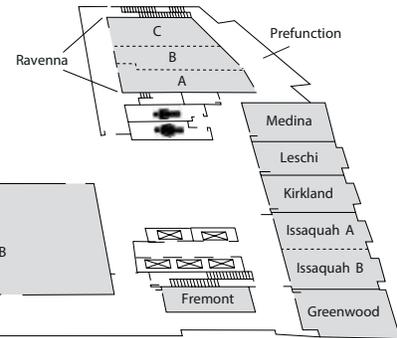
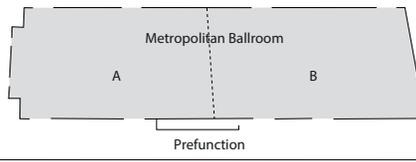
35th Floor



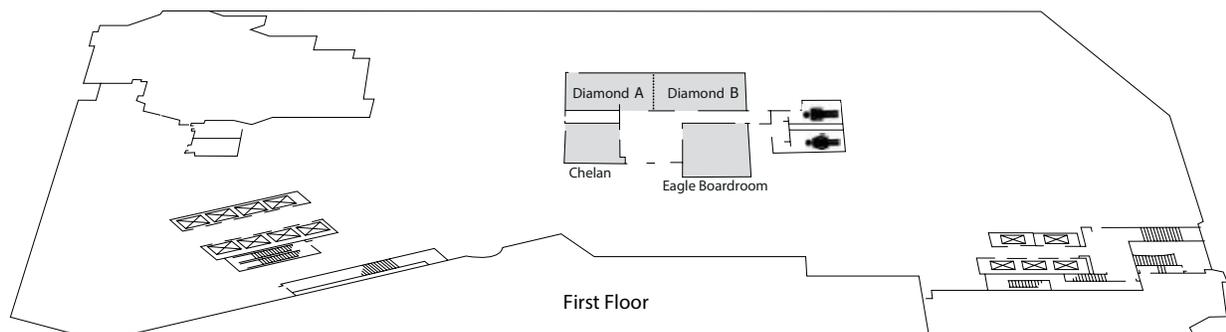
Fourth Floor



Third Floor



Second Floor

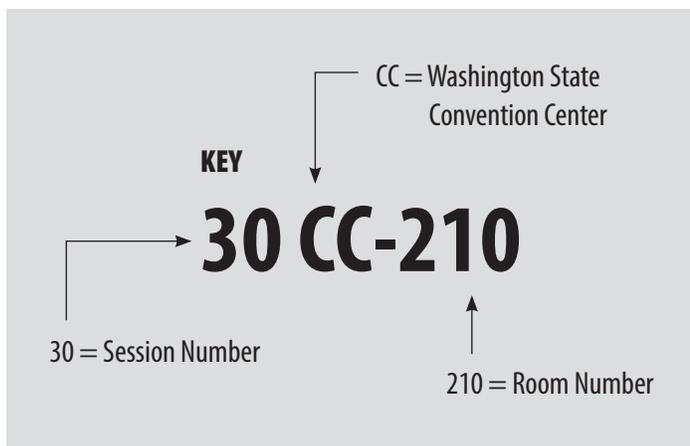


First Floor



TECHNICAL SESSIONS AT A GLANCE SUNDAY

Sponsor	2:00 p.m.	4:00 p.m.	8:30 p.m.	9:30 p.m.
B&E	23 CC-2B	49 CC-2B / 70 CC-205		
BIOM	3 CC-617 / 25 CC-616 / 36 CC-615 / 37 CC-614 / 38 CC-613	61 CC-609 / 64 CC-606 / 80 CC-618 / 81 CC-617 / 82 CC-616		
BIOP	15 CC-612 / 16 CC-611 / 42 CC-620 / 44 CC-619 / 45 CC-618	60 CC-4C4 / 62 CC-612 / 88 CC-619 / 85 CC-611 / 86 CC-620		
CAUWOM	14 CC-3B			
CHANCE		56 CC-214		
COC	11 CC-4C3			
Computing	39 CC-213	84 CC-605		
EDUC	12 CC-607 / 40 CC-603	65 CC-610		
ENAR	5 CC-608	51 CC-608		
ENVR	24 CC-304 / 32 CC-306	48 CC-3B	91 CC-4B	
EPI	7 CC-606 / 33 CC-605	67 CC-615 / 75 CC-614 / 76 CC-613		
GOVT	30 CC-210	57 CC-206		
HPSS	10 CC-610	59 CC-213 / 73 CC-212		
ICSA	18 TCC-202			
IMS	2 CC-4C2 / 8 CC-4C1 / 28 CC-307	47 CC-310 / 52 CC-3A / 71 CC-308		
ISBA	4 CC-401 / 19 CC-3A			
ISI		55 CC-210		
KISS			89 CC-4B	
MEM		58 TCC-202		
NPAR	20 CC-308 / 31 CC-310	66 CC-401 / 74 CC-4C1	90 CC-4B	92 CC-4B
SBS	4 CC-401 / 19 CC-3A / 29 CC-214	54 CC-4C3 / 69 CC-304 / 72 CC-307		
SDM	17 CC-212 / 41 CC-201 / 43 CC-211	50 CC-607 / 87 CC-603		
SIS	22 TCC-101			
SMDD	13 CC-609			
SOC	27 CC-203	79 CC-203		
SPES	6 TCC-204	83 TCC-204		
SRMS	21 CC-206 / 34 CC-2A / 35 CC-204	63 CC-211 / 68 CC-2A / 77 CC-201 / 78 CC-204		
SSC		53 TCC-101		
StatImage	26 CC-205			
WNAR	9 CC-4C4			



LOST?

TCC ROOMS ARE ACROSS THE STREET FROM THE MAIN CC BUILDING. SEE THE MAP ON **PAGE 20**.

TECHNICAL SESSIONS AT A GLANCE MONDAY



Sponsor	8:30 a.m.	10:30 a.m.	2:00 p.m.	4:00 p.m.	8:00 p.m.
ASA	102 CC- Ballroom 6E	147 CC- Ballroom 6E		272 CC-Ballroom 6ABC	
B&E	113 CC-4C4	169 CC-610 / 176 CC-611	242 CC-214		
BIOM	107 CC-619 / 117 CC-618 / 125 CC-615 / 139 CC-614	162 CC-204 / 168 CC-304 / 175 CC-4C1 / 187 CC-306 / 193 CC-4B	254 CC-616 / 253 CC-615 / 219 CC-4C2 / 271 CC-4B**		
BIOP	118 CC-608 / 144 CC-610 / 145 CC-617	160 CC-3B / 164 CC-3A / 191 CC-310 / 192 CC-308	260 CC-614 / 259 CC-613 / 232 CC-609 / 231 CC-607		
CESR	108 CC-4C3				
CNSL		171 TCC-202	225 CC-617		
Computing	142 CC-205	189 CC-605 / 166 CC-606	229 TCC-101		
DEF	146 CC-203				
EDUC	128 CC-401 / 143 CC-306	202 CC-4B	256 CC-605 / 240 CC-606		
ENAR	102 CC- Ballroom 6E / 103 CC-4C2	147 CC- Ballroom 6E / 170 CC-205 / 177 CC-210 / 194 CC-4B	222 CC-4C3	272 CC-Ballroom 6ABC	
ENVR	116 CC-213 / 128 CC-401 / 129 CC-4C1	150 CC-2A / 182 CC-206 / 202 CC-4B / 203 CC-4B / 203 CC-4B*	247 CC-306 / 271 CC-4B**		
EPI	106 CC-616 / 129 CC-4C1 / 136 CC-620 /	174 CC-401 / 183 CC-620 / 203 CC-4B*	234 CC-620 / 248 CC-619 / 270 CC-4B		
GOVT	112 CC-308 / 134 CC-310	163 CC-613	245 CC-210 / 241 CC-206		
GRPH		158 CC-608	257 TCC-204		
HPSS	122 CC-304		246 CC-611 / 227 CC-608		
ICSA	102 CC- Ballroom 6E / 131 CC-2B	147 CC- Ballroom 6E	233 CC-201	272 CC-Ballroom 6ABC	
IISA	102 CC- Ballroom 6E	147 CC- Ballroom 6E	226 CC-2B	272 CC-Ballroom 6ABC	
IMS	102 CC- Ballroom 6E / 105 CC-607 / 109 CC-611 / 111 CC-603 / 130 CC-605	147 CC- Ballroom 6E / 148 CC-4C3 / 155 CC-4C4 / 161 CC-201 / 178 CC-203	218 CC-310 / 216 CC- Ballroom 6E	272 CC-Ballroom 6ABC	273 CC- Ballroom 6E
ISBA	102 CC- Ballroom 6E	147 CC- Ballroom 6E	235 CC-3A	272 CC-Ballroom 6ABC	
ISI	102 CC- Ballroom 6E	147 CC- Ballroom 6E			
JASA		159 CC-4C2			
KISS	102 CC- Ballroom 6E / 132 CC-210	147 CC- Ballroom 6E / 156 CC-618		272 CC-Ballroom 6ABC	
MEM			221 CC-618		
MHR		152 CC-615	243 CC-610		
MKTG	129 CC-4C1	203 CC-4B*	228 CC-203		
NPAR	119 CC-211 / 135 CC-212	180 CC-211 / 181 CC-212	220 CC-3B		
PRIV	115 CC-206				
PUB			238 CC-4C1		
Q&P	140 TCC-204		217 CC-4C4		
RISK	141 TCC-202	173 CC-4B			
RSS	102 CC- Ballroom 6E	147 CC- Ballroom 6E		272 CC-Ballroom 6ABC	
SBS	123 CC-201 / 133 CC-214	149 CC-213 / 179 CC-214	244 CC-308 / 230 CC-307		
SDM	126 CC-204	157 CC-607 / 190 CC-603	258 TCC-202		
SGG	124 CC-609				
SJS		184 TCC-101	224 CC-603		
SMDD	121 CC-612	188 CC-307			
SOC		151 CC-609	252 CC-212 / 237 CC-211		
SPES	104 TCC-101	165 TCC-204	255 CC-401		
SRMS	114 CC-3B / 120 CC-307 / 129 CC-4C1 / 137 CC-3A	167 CC-612, 203 CC-4B*	251 CC-2A / 250 CC-204 / 239 CC-205		
SSC	102 CC- Ballroom 6E	147 CC- Ballroom 6E / 154 CC-619 / 199 CC-4B	236 CC-304	272 CC-Ballroom 6ABC	
SSPA	128 CC-401	202 CC-4B			
Stat Bord		200 CC-4B			
Stat Bus		186 CC-617			
StatImage	110 CC-2A		249 CC-213		
TSHS	127 CC-606	185 CC-616	223 CC-612		
TSIG		172 CC-614			
WNAR	102 CC- Ballroom 6E / 138 CC-613	147 CC- Ballroom 6E / 153 CC-2B		272 CC-Ballroom 6ABC	

* 11:35 start time

** 3:05 start time



TECHNICAL SESSIONS AT A GLANCE TUESDAY

Sponsor	8:30 a.m.	10:30 a.m.	2:00 p.m.	4:00 p.m.	8:00 p.m.
ASA				451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC
B&E	310 TCC-202	334TCC-101 /373 CC-4B	414 CC-4C1 / 419 CC-308		
BIOM	319 CC-614 / 320 CC-615	327 CC-611 / 353 CC-4C1 / 363 CC-617 / 367 CC-618	407 CC-620 / 417 CC-606 / 428 CC-619 / 429 CC-618 / 431 CC-616 / 449 CC-4B		
BIOP	290 CC-4C4 / 300 CC-612 / 324 CC-611 / 325 CC-613	345 CC-619 / 353 CC-4C1 / 368 CC-616 / 371 CC-615 / 372 CC-4B	412 CC-610 / 416 CC-612 / 435 CC-613 / 437 CC-614 / 449 CC-4B		
CNSL	323 CC-616	352 CC-206	405 TCC-204 / 442 CC-4B		
COC		340 TCC-204			
Computing	289 CC-2B / 322 CC-307	365 CC-613	410 CC-211		
DEF	304 CC-3A	370 CC-603	397 CC-214		
DEM				451 CC-Ballroom 6ABC	
EDUC	294 CC-609	366 CC-310	408 CC-205 / 443 CC-4B		
ENAR	285 CC-4C3	346 CC-612	420 CC-611 / 399 CC-608	451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC
ENVR	302 CC-214 / 314 CC-213	332 CC-2B / 354 CC-401	424 CC-210 / 450 CC-4B**		
EPI	301 CC-610 / 315 CC-605	359 CC-614	425 CC-617 / 401 CC-609		
ETHICS	295 CC-3B				
GM			400 CC-4C3		
GOVT		351 CC-3B	411 CC-307 / 422 CC-306 / 423 CC-304 / 444 CC-4B		
GRPH	306 CC-308		432 CC-212		
HPSS	307 CC-606 / 308 CC-4C1	358 CC-304 / 377 CC-4B	398 CC-2B		
ICSA	291 CC-4C2	350 CC-610	446 CC-4B	451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC
IISA	292 CC-310			451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC
IMS	283 CC-603 / 284 CC-201 / 286 CC-607 / 311 CC-203	328 CC-607 / 336 CC- Ballroom 6E / 355 CC-203	393 CC- Ballroom 6E / 392 CC-615	452 CC- Ballroom 6E / 451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC
ISBA	305 CC-212	339 CC-2A		451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC
JABES			396 CC-4C2		
KISS		344 CC-201		451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC
MHR	308 CC-4C1 / 296 CC-617	354 CC-401 / 356 CC-306 / 377 CC-4B	402 CC-2A / 450 CC-4B**		
MKTG			436 TCC-101/438 CC-4B		
NPAR	318 CC-205 / 287 CC-206	347 CC-204	427 CC-603		
PUB			418 CC-4B		
Q&P		342 CC-214	430 TCC-202		
RISK	293 CC-608	364 CC-212			
RSS				451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC
SBS	305 CC-212 / 313 CC-210	349 CC-210 / 354 CC-401 / 357 CC-205	421 CC-605 / 395 CC-204 / 450 CC-4B**		
SDM	297 CC-2A / 309 CC-401 / 326 CC-211	331 CC-606 / 369 CC-605 / 378 CC-4B *	434 CC-213 / 433 CC-203		
SGG		343 CC-609 / 353 CC-4C1	449 CC-4B		
SIS	316 CC-204		439 CC-4B		
SMDD		333 CC-4C3	406 CC-607		
SOC		362 CC-308	413 CC-4C4 / 441 CC-4B		
SPES	298 CC-620 / 321 CC-619	335 CC-213			
SRMS	299 TCC-204	338 CC-4C2 / 361 CC-3A	409 CC-310 / 426 CC-401 / 445 CC-4B		
SSC	317 CC-306	330 CC-211	447 CC-4B	451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC
SSPA	309 CC-401 / 312 CC-304	378 CC-4B *	394 CC-201 / 448 CC-4B		
StatImage	288 TCC-101	360 CC-307 / 375 CC-4B	415 CC-3A		
TECH		329 CC-608			
TSHS	303 CC-618		404 CC-206 / 440 CC-4B		
TSIG		376 CC-4B			
WJYA		341 TCC-202			
WNAR		337 CC-4C4 / 348 CC-620 / 353 CC-4C1	449 CC-4B	451 CC-Ballroom 6ABC	453 CC-Ballroom 6ABC

* 11:35 start time

** 3:05 start time

TECHNICAL SESSIONS AT A GLANCE WEDNESDAY



Sponsor	8:30:00 AM	10:30:00 AM	2:00:00 PM	4:00:00 PM
ASA	461 CC-4C2 / 462 CC- Ballroom 6E			618 CC-Ballroom 6ABC
B&E	486 CC-206 / 489 CC-210	525 TCC-202 / 532 TCC-204	576 TCC-202 / 599 CC-203	
BIOM	483 CC-615 / 499 CC-616 / 503 CC-617	506 CC-608 / 543 CC-613 / 544 CC-614	588 CC-620 / 594 CC-619 / 608 CC-618 / 609 CC-617 / 610 CC-616	
BIOP	505 CC-205 / 479 CC-3A / 474 CC-3B	526 CC-615 / 546 CC-616 / 549 CC-617 / 550 CC-618	592 CC-615 / 595 CC-614 / 615 CC-611 / 616 CC-605 / 617 CC-603	
CARCH	482 TCC-202			
CCD			585 CC-3B	
CNSL		517 CC-4C4	598 CC-204	
COPSS				618 CC-Ballroom 6ABC
Computing	480 CC-204 / 502 CC-203	511 CC-2A	613 CC-308	
EDUC	487 CC-401	529 CC-204 / 545 CC-211 / 560 CC-4B / 562 CC-4B	575 CC-4C4	
ENAR	462 CC- Ballroom 6E / 461 CC-4C2 / 464 CC-608 / 475 CC-613	507 CC-609	577 CC-609	618 CC-Ballroom 6ABC
ENVR	471 CC-213	521 CC-310 / 538 CC-308	591 CC-213 / 602 CC-214	
EPI	477 CC-614	539 CC-619 / 540 CC-620 / 554 CC-4B	574 CC-608 / 603 CC-613	
GM		514 CC-2B		
GOVT	484 CC-304 / 488 CC-4C1	516 CC-4C2 / 536 CC-611 / 563 CC-4B *	593 CC-4C3	
GRPH	472 CC-2B	551 CC-4B		
HCPS		557 CC-4B		
HPSS	493 CC-306	531 CC-606	579 CC-4C1	
ICSA	461 CC-4C2 / 462 CC- Ballroom 6E / 476 TCC-204	533 CC-603 / 558 CC-4B	581 CC-4C2	618 CC-Ballroom 6ABC
IISA	461 CC-4C2 / 462 CC- Ballroom 6E / 491 CC-212	528 CC-304		618 CC-Ballroom 6ABC
IMS	462 CC- Ballroom 6E / 490 CC-618 / 461 CC-4C2 / 467 CC-611 / 465 CC-610	508 CC- Ballroom 6E / 509 CC-205 / 524 CC-210	573 CC- Ballroom 6E / 578 CC-310 / 600 CC-304	618 CC-Ballroom 6ABC
ISBA	461 CC-4C2 / 462 CC- Ballroom 6E / 463 CC-607		589 CC-211	618 CC-Ballroom 6ABC
ISI	461 CC-4C2 / 462 CC- Ballroom 6E			
JASAAPP			583 CC-2B	
JNS		518 CC-203		
KISS	461 CC-4C2 / 462 CC- Ballroom 6E	559 CC-4B		618 CC-Ballroom 6ABC
MEM			584 CC-606	
MHR		523 CC-201		
MKTG		537 CC-306	582 TCC-101	
NOETHER		519 CC-3B		
NPAR	470 CC-612 / 497 CC-619 / 498 CC-620	527 CC-212	607 CC-210	
PUB		510 CC-4C3		
Q&P			612 TCC-204	
RISK		520 CC-307		
RSS	461 CC-4C2 / 462 CC- Ballroom 6E / 466 CC-4C3			618 CC-Ballroom 6ABC
SA		515 CC-3A		
SBS	492 CC-605	534 CC-213 / 535 CC-214	601 CC-212	
SDM	468 CC-4C4 / 504 CC-211	547 CC-401 / 548 CC-4C1 / 552 CC-4B	587 CC-201 / 614 CC-205	
SGG		555 CC-4B		
SIS	487 CC-401	513 TCC-101 / 562 CC-4B		
SMDD	500 CC-2A		596 CC-610 / 611 CC-612	
SOC	469 CC-307	542 CC-605	597 CC-607	
SPES	485 CC-606 / 501 CC-603			
SRMS	478 CC-308 / 494 CC-310	522 CC-612 / 541 CC-610	580 CC-307 / 605 CC-2A / 606 CC-3A	
SSC	461 CC-4C2 / 462 CC- Ballroom 6E / 495 CC-214	556 CC-4B		618 CC-Ballroom 6ABC
SSPA			590 CC-401	
Stat Bord			586 CC-206	
StatImage	481 CC-201	512 CC-607	604 CC-306	
TSHS		530 CC-206		
TSIG	496 TCC-101			
WNAR	461 CC-4C2 / 462 CC- Ballroom 6E / 473 CC-609 / 561 CC-4B			618 CC-Ballroom 6ABC

* 11:35 start time

** 3:05 start time



TECHNICAL SESSIONS AT A GLANCE THURSDAY

Sponsor	8:30:00 AM	10:30:00 AM
B&E	640 CC-204 / 643 CC-211	683 CC-211
BIOM	637 CC-609 / 651 CC-616 / 652 CC-617 / 653 CC-618	661 CC-609 / 678 CC-610 / 695 CC-613 / 697 CC-614 / 702 CC-620 /
BIOP	659 CC-613 / 658 CC-605 / 657 CC-603 / 639 CC-611 / 636 CC-607 / 635 CC-606	664 CC-608 / 680 CC-611 / 699 CC-617 / 700 CC-619 / 701 CC-618
Computing	638 CC-205 / 660 CC-210	662 CC-4C3 / 696 CC-401
EDUC	654 CC-401	
ENAR	620 CC-608 / 641 CC-615	672 CC-603
ENVR	646 CC-213	675 CC-615 / 687 CC-616
EPI	631 CC-612 / 647 CC-610 / 648 CC-614	671 CC-606 / 688 CC-605
ETHICS		665 TCC-202
GOVT	645 CC-212	682 CC-206
GRPH	623 CC-206	
HPSS	628 CC-619 / 632 CC-620	
ICSA	625 TCC-202	
IMS	619 CC-4C4 / 622 CC-310	663 CC-4C2 / 668 CC-310 / 684 CC-304
ISBA	633 CC-307	
MEM		669 TCC-101
NPAR	650 CC-308	670 CC-201 / 674 CC-213 / 692 CC-212 /
SAMSI	626 TCC-101	
SBS	629 CC-4C3 / 633 CC-307 / 644 CC-304	677 CC-4C1 / 685 CC-307 / 686 CC-308
SDM	656 CC-3A / 655 CC-2A / 627 CC-2B	673 CC-3A / 698 CC-4C4
SMDD		693 CC-612
SOC	642 CC-3B	667 CC-204 / 679 CC-205 / 691 CC-203
SPES		694 TCC-204
SRMS	624 CC-4C1 / 634 CC-203 / 649 CC-201	676 CC-2B / 689 CC-2A / 690 CC-210
SSPA		681 CC-3B

DOWNLOAD THE ALL-NEW **JSM APP!**

The official JSM 2015 app provides everything you need to stay up to date while in Seattle.

- Get last-minute updates
- Create your own schedule
- Play the JSM Challenge for prizes
- And more!

Available on Google Play and the App Store; free.



Session Tag Descriptions

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

● THEME

JSM theme sessions are directly relevant to the JSM 2015 theme, "Statistics: Making Better Decisions." 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.

FRIDAY AUGUST 7

JSM Hours

7:00 a.m.—6:00 p.m. Room TKTKTKTKTKTKTKT
Speaker Management

Committee/Business Meetings & Other Activities

7:00 a.m.—3:00 p.m. S-Redwood
Friday Board Meeting
Chair(s): Pam Craven, ASA; Pam Craven, ASA

7:00 a.m.—5:30 p.m. S-Juniper
Friday Board Meeting Break-Out Room 1
Chair(s): Pam Craven, ASA

7:30 a.m.—5:30 p.m. S-Madrona
Friday Board Meeting Break-Out Room 2
Chair(s): Pam Craven, ASA

SATURDAY AUGUST 8

Fri-Sun

JSM Hours

7:30 a.m.—6:00 p.m. CC-Atrium Lobby
ASA Membership/Help Desk/Press Desk

7:30 a.m.—6:00 p.m. CC-Atrium Lobby
JSM Main Registration

7:30 a.m.—6:00 p.m. CC-Atrium Lobby
Cyber Center—Other

7:30 a.m.—6:00 p.m. S-Spruce
JSM Satellite Registration

8:00 a.m.—5:00 p.m. CC-4B
Exhibitor Move-In and Lounge

9:00 a.m.—5:00 p.m. CC-4A
JSM Career Service (Job Posting and Resume Submission Only)

Committee/Business Meetings & Other Activities

7:00 a.m.—3:00 p.m. S-Redwood
Saturday Board Meeting
Chair(s): Pam Craven, ASA; Pam Craven, ASA

7:30 a.m.—6:00 p.m. S-Ravenna
ACTStat Annual Meeting—Other
Organizer(s): Matthew Mayo, ACTStat

7:30 a.m.—5:30 p.m. S-Juniper
Saturday Board Meeting Break-Out 1
Chair(s): Pam Craven, ASA

7:30 a.m.—5:30 p.m. S-Madrona
Saturday Board Meeting Break-Out 2
Chair(s): Pam Craven, ASA

7:30 a.m.—6:00 p.m. S-Ravenna
ACTStat Annual Meeting
Organizer(s): Matthew Mayo, ACTStat

4:00 p.m.—5:30 p.m. S-Diamond
Working Group on Statistical Ambassadors Roundtable (Closed)
Chair(s): Wendy Lou, University of Toronto

SUNDAY AUGUST 9

JSM Hours

7:30 a.m.—10:30 p.m. Cyber Center	CC-Atrium Lobby
7:30 a.m.—8:30 p.m. JSM Main Registration	CC-Atrium Lobby
7:30 a.m.—8:30 p.m. ASA Membership/Help Desk/Press Desk	CC-Atrium Lobby
7:30 a.m.—1:30 p.m. JSM Satellite Registration	S-Spruce
8:00 a.m.—11:00 a.m. Exhibitor Move In	CC-4B
9:00 a.m.—5:00 p.m. Seattle Restaurant and Tourism Information Center	CC-Upper Pike Street Lobby
9:00 a.m.—7:00 p.m. Speaker Management Room	CC-604

1:00 p.m.—6:00 p.m. CC-4B
EXPO 2015

1:00 p.m.—6:00 p.m. CC-4B
American Statistical Association Booth #504

1:00 p.m.—6:00 p.m. CC-4B
ASA Store

1:00 p.m.—6:00 p.m. CC-4A
JSM Career Service
(Full Placement Service Open)

Committee/Business Meetings & Other Activities

7:30 a.m.—10:00 a.m. S-Issaquah
Joint COP-Editors Meeting
Chair(s): David Banks, Duke University;
Hal Stern, University of California

7:30 a.m.—3:30 p.m. S-Ravenna
ACTStat Annual Meeting
Organizer(s): Matthew Mayo, ACTStat

8:00 a.m.—9:30 a.m. CC-303
Statistics Initiative for the Math Alliance
Organizer(s): Leslie Ain McClure, The University of Alabama
at Birmingham

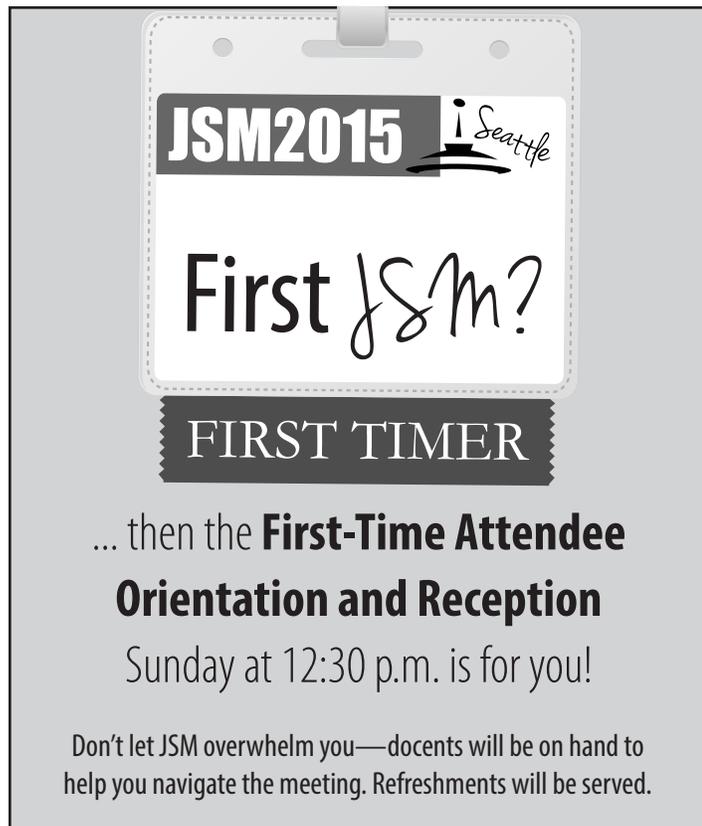
8:00 a.m.—12:00 p.m. S-Ballard
Council of Sections Governing Board Opening Business
Meeting (Closed)
Chair(s): Stephen Gulyas, Optum Inc.

8:30 a.m.—1:30 p.m. S-Diamond
Caucus of Academic Representatives Officers Meeting
Chair(s): David R. Hunter, Penn State

9:00 a.m.—10:30 a.m. CC-309
Caucus for Women in Statistics Governing Council Meeting
(Closed)
Organizer(s): Paula Roberson, University of Arkansas for Medical
Sciences

9:00 a.m.—5:00 p.m. TCC-102
NISS/ASA/IMS Writing Workshop (Closed)
Chair(s): Keith Crank, Retired

10:30 a.m.—12:30 p.m. CC-4C2
JSM Presentation Skills Workshop (Open to JSM Speakers)



JSM2015 *Seattle*

First JSM?

FIRST TIMER

... then the **First-Time Attendee Orientation and Reception**
Sunday at 12:30 p.m. is for you!

Don't let JSM overwhelm you—docents will be on hand to help you navigate the meeting. Refreshments will be served.

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

11:00 a.m.—12:30 p.m.	S-Boren	4:30 p.m.—8:00 p.m.	S-Boren
Accreditation Committee Meeting (Closed)		ENAR Executive Committee Meeting (By Invitation Only)	
Chair(s): Theresa Utlaut, Intel Corporation		Organizer(s): Jianwen Cai, ENAR; Jose' Pinheiro, ENAR	
12:30 p.m.—2:00 p.m.	CC-Ballroom 6ABC	5:30 p.m.—7:00 p.m.	S-Ravenna A
First-Time Attendee Orientation and Reception		KISS Annual Board Meeting (Closed)	
		Organizer(s): Dongseok Choi, Oregon Health & Science University	
12:30 p.m.—2:00 p.m.	S-Kirkland	5:30 p.m.—8:30 p.m.	CC-303
Leadership Support Council Meeting (Closed)		NISS/SAMSI Affiliates Meeting (Closed)	
Chair(s): Jessica Utts, UC Irvine		Organizer(s): Nell Sedransk, NISS	
1:00 p.m.	CC-4B, Spotlight Seattle	6:00 p.m.—7:00 p.m.	S-Ravenna B
Spotlight Seattle Kick-off		ASA Caucus of Academic Representatives Business and Executive Committee Meeting	
1:00 p.m.—2:00 p.m.	S-Medina	Chair(s): Paul J. Rathouz, University of Wisconsin - Madison	
GAISE Committee Meeting		6:00 p.m.—7:00 p.m.	S-Ravenna C
Chair(s): Nicholas Horton, Amherst College		Section on Medical Devices and Diagnostics Officers Meeting (Closed)	
1:00 p.m.—5:00 p.m.	S-Issaquah	Chair(s): Peter Lam, Boston Scientific	
Council of Sections Opening Business Meeting (Closed)		6:00 p.m.—7:30 p.m.	S-Ballard
Chair(s): Stephen Gulyas, Optum Inc.		University of Minnesota Alumni and Friends Reception	
1:30 p.m.—5:00 p.m.	S-Aspen	Organizer(s): Sally Olander, University of Minnesota, Twin Cities	
IMS Executive Committee Meeting		6:00 p.m.—8:00 p.m.	S-Redwood
Organizer(s): Elyse Gustafson, IMS; Elyse Gustafson, IMS		RTI International Reception	
2:30 p.m.—4:00 p.m.	S-Ballard	Organizer(s): Margo Jordan, RTI International	
Professional Issues and Visibility Council Meeting (Closed)		6:00 p.m.—8:00 p.m.	S-Greenwood
Chair(s): Rob Santos, The Urban Institute		Section on Quality and Productivity Executive Committee Meeting	
3:30 p.m.	CC-4B, Spotlight Seattle	Chair(s): David Edwards, Virginia Commonwealth University	
Spotlight Seattle: Taste of the Market		6:00 p.m.—9:00 p.m.	CC-309
3:30 p.m.—5:00 p.m.	S-Diamond	Section on Physical and Engineering Sciences Executive Committee Meeting (Closed)	
Section for Statistical Programmers and Analysts Executive Committee Meeting (Closed)		Chair(s): Stephanie DeHart, DuPont	
Chair(s): Nancy Petersen,		6:00 p.m.—9:00 p.m.	S-Diamond
4:00 p.m.—5:00 p.m.	S-Ravenna B	ICSA Board Meeting (Closed)	
Education Council Meeting (Closed)		Organizer(s): Zhezhen Jin, Columbia University	
Chair(s): Jeri Metzger Mulrow, National Science Foundation		6:30 p.m.—8:00 p.m.	S-Grand Ballroom A
4:00 p.m.—5:00 p.m.	S-Ravenna C	Google Faculty Reception	
Membership Council Meeting (Closed)		Organizer(s): Tim Hesterberg, Google	
Chair(s): James L. Rosenberger, Penn State		6:30 p.m.—8:00 p.m.	S-Medina
4:00 p.m.—5:30 p.m.	S-Leschi	CHANCE Editor Meeting	
Awards Council Meeting (Closed)		Chair(s): Scott R. Evans, Harvard University	
Chair(s): Nathaniel Schenker, ASA		6:30 p.m.—8:30 p.m.	S-Grand Ballroom B
4:00 p.m.—5:30 p.m.	S-Kirkland	JMP Reception for Friends and Users	
KISS Career Development and Mentoring		Organizer(s): Robin Moran, JMP (A Division of SAS, Inc.)	
Organizer(s): Dongseok Choi, Oregon Health & Science University			

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

6:30 p.m.—8:30 p.m. S-Willow A
Purdue Alumni Reception
 Organizer(s): Aaron Kosdrosky, Purdue University

6:30 p.m.—9:30 p.m. Off Site
Biometrics Executive Committee Meeting
 Chair(s): Diana Miglioretti, UC Davis

7:00 p.m.—8:30 p.m. S-Willow B
Reception for Members of the Royal Statistical Society
 Organizer(s): Nicola Emmerson, Royal Statistical Society

7:00 p.m.—8:30 p.m. S-Issaquah
ISOSTATS Business Meeting
 Chair(s): K.B. Boomer, Bucknell University

8:30 p.m.—10:30 p.m. CC-4B
JSM Opening Mixer, sponsored by Westat and Fred Hutch

11:30 p.m.—1:00 p.m. CC-309
Journal of Statistics Education Editorial Board Meeting
 Chair(s): Michelle Everson, The Ohio State University

Speaker with Lunch 12:30 p.m.—1:50 p.m.

1 CC-303
SPAIG Committee Speaker with Lunch (Added fee \$\$\$)—Speaker with Lunch SPAIG Committee
 Organizer(s): Kelly H. Zou, Pfizer Inc.

SL01 **Challenges in Risk Analysis of Complex Systems: From Space Shuttle Challenger and Dirty Bombs to Medical Drugs and Chemicals—◆Siddhartha Dalal, AIG**

Invited Sessions 2:00 p.m.—3:50 p.m.

2 CC-4C2
Medallion Lecture I: Computational Tradeoffs in Statistical Estimation—Invited
 IMS, International Chinese Statistical Association, International Indian Statistical Association
 Organizer(s): Igor Pruenster, University of Torino
 Chair(s): Mathias Drton, University of Washington

2:05 p.m. Computational Tradeoffs in Statistical Estimation—
 ◆John Lafferty, The University of Chicago

3:35 p.m. Floor Discussion

3 CC-617
◆● Making Better Decisions: Recent Statistical Advances and Challenges in Aging and Dementia Research—Invited
 Biometrics Section, ENAR, Mental Health Statistics Section, International Indian Statistical Association, Statistics Without Borders

Organizer(s): Dandan Liu, Vanderbilt University; Chengjie Xiong, Washington University in St. Louis

Chair(s): Dandan Liu, Vanderbilt University

2:05 p.m. Selection and Evaluation of Weighted Composite Outcome Measures for Clinical Trials in Alzheimer's Disease—◆M. Colin Ard, UC San Diego; Steven D. Edland, UC San Diego

2:30 p.m. Alzheimer's Disease Neuroimaging Initiative: Statistical Challenges and Solutions—◆Sharon X. Xie, University of Pennsylvania; Matthew Thomas White, Boston Children's Hospital; Jarcy Zee, Arbor Research Collaborative for Health

2:55 p.m. Semi-Markov Models for Interval-Censored Transient Cognitive States with Backward Transition and Unknown Initial Time—◆Shaoceng Wei, University of Kentucky; Richard J. Kryscio, University of Kentucky

3:20 p.m. Disc: Chengjie Xiong, Washington University in St. Louis

3:45 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

4 CC-401

Highlights from Bayesian Analysis—Invited

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

Organizer(s): Marina Vannucci, Rice University
Chair(s): Marina Vannucci, Rice University

- 2:05 p.m. A Tractable State-Space Model for Symmetric Positive-Definite Matrices—◆Jesse Windle, Duke University; Carlos M. Carvalho, The University of Texas at Austin
- 2:30 p.m. Inference in Two-Piece Location-Scale Models with Jeffreys Priors—◆Mark Steel, University of Warwick; Francisco Javier Rubio, University of Warwick
- 2:55 p.m. Bayesian Structure Learning in Sparse Graphical Models—◆Abdolreza Mohammadi, University of Groningen; Ernst C. Wit, University of Groningen
- 3:20 p.m. Fixed-Form Variational Posterior Approximation Through Stochastic Linear Regression—◆David A. Knowles, Stanford University; Tim Salimans, Algoritmica
- 3:45 p.m. Floor Discussion

5 CC-608

Emerging Statistical Challenges in Revealing Hidden Heritability—Invited

ENAR, Biometrics Section, International Indian Association

Organizer(s): Jung-Ying Tzeng, North Carolina State University
Chair(s): Yun Li, The University of North Carolina at Chapel Hill

- 2:05 p.m. Integrative Genomic Analysis via Sparse Simultaneous Signal Detection—◆Hongzhe Li, University of Pennsylvania
- 2:30 p.m. Uncovering Genetic Architecture for Complex Diseases from Integrated Functional Genomics Analysis—◆Hongyu Zhao, Yale School of Public Health; Dongjun Chung, Medical University of South Carolina; Can Yang, Hong Kong Baptist University; Cong Li, Yale University; Qian Wang, Yale University; Joel Gelernter, Yale School of Medicine
- 2:55 p.m. A Method to Exploit the Structure of Genetic Ancestry Space to Enhance Case-Control Studies—◆Kathryn Roeder, ASA, IMS; Corneliu Bodea, ASA, IMS
- 3:20 p.m. Set-Based Inference for Gene-Environment Interaction in Longitudinal Studies—Seungeun Lee, University of Michigan; Zihuai He, University of Michigan; Min Zhang, University of Michigan; ◆Bhramar Mukherjee, University of Michigan
- 3:45 p.m. Floor Discussion

6 TCC-204

Scaling Up Response Surface Models for Big Geostatistical and Computer Simulation Data—Invited

Section on Physical and Engineering Sciences, Quality and Productivity Section, Section on Statistics and the Environment, Conference on Statistical Practice Steering Committee

Organizer(s): Robert B. Gramacy, The University of Chicago
Chair(s): Robert B. Gramacy, The University of Chicago

- 2:05 p.m. Parallelizing Gaussian Process Calculations in R—◆Christopher J. Paciorek, UC Berkeley; Benjamin Lipshitz, UC Berkeley; Wei Zhu, IBM; Mr. Prabhat, Lawrence Berkeley National Laboratory; Cari Kaufman, UC Berkeley; Rollin Thomas, Lawrence Berkeley National Laboratory
- 2:30 p.m. Multi-Resolution Spatial Methods for Large Data Sets—◆Doug Nychka, National Center for Atmospheric Research; Dorit Hammerling, National Center for Atmospheric Research; Zachary Thomas, The Ohio State University; William Kleiber, University of Colorado
- 2:55 p.m. Nearest-Neighbor Gaussian Process Models for Bayesian Inference on Large Spatio-Temporal Data—◆Sudipto Banerjee, UCLA; Abhirup Datta, University of Minnesota; Andrew O. Finley, Michigan State University
- 3:20 p.m. Fast Methods for Creating Accurate Emulators via Sparse Grid Designs—◆Matthew Plumlee, Georgia Institute of Technology
- 3:45 p.m. Floor Discussion

7 CC-606

Recent Developments in Regression Analysis with Predictors Subject to Censoring—Invited

Section on Statistics in Epidemiology, Biometrics Section, Section on Statistical Consulting

Organizer(s): Jing Qian, University of Massachusetts Amherst
Chair(s): Josephine Asafu-Adjei, The University of North Carolina at Chapel Hill

- 2:05 p.m. Biomarker Discovery with Highly Left-Censored Multiplex Immunoassay Data—◆Elizabeth Hill, Medical University of South Carolina; Elizabeth Slate, Florida State University
- 2:30 p.m. Thresholding Regression with Covariate Subject to Random Censoring—◆Jing Qian, University of Massachusetts Amherst; Folefac Atem, Harvard University; Rebecca Betensky, Harvard University
- 2:55 p.m. On Regression Models When the Predictor Is Subject to Censoring—◆David Oakes, University of Rochester

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

3:20 p.m. Semiparametric Approach for Regression with Covariate Subject to Limit of Detection—◆Bin Nan, University of Michigan; Shengchun Kong, Purdue University

3:45 p.m. Floor Discussion

8 CC-4C1 Bayesian Computation I—Invited

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

Organizer(s): Christian P. Robert, Université Paris-Dauphine

Chair(s): Mark Girolami, University of Warwick

2:05 p.m. Rapid Mixing of Parallel MCMC—◆Douglas VanDerwerken, Duke University; Scott Schmidler, Duke University

2:30 p.m. Accelerating MCMC Schemes—◆Christian P. Robert, Université Paris-Dauphine; Marco Banterle, Université Paris-Dauphine; Clara Grazian, Université Paris-Dauphine; Randal Douc, Telecom SudParis

2:55 p.m. Firefly Monte Carlo: Exact MCMC with Subsets of Data—◆Ryan P. Adams, Harvard University; Dougal Maclaurin, Harvard University

3:20 p.m. Scalable Bayesian Inference with Hamiltonian Monte Carlo—◆Michael Betancourt, University of Warwick

3:45 p.m. Floor Discussion

9 CC-4C4 ■ ● Computational/Statistical Methods for Integrative -Omics—Invited

WNAR, Biometrics Section

Organizer(s): Xianlong Sean Wang, Fred Hutchinson Cancer Research Center

Chair(s): Pei Wang, The Mount Sinai Hospital

2:05 p.m. Tandem Mass Spectrum Identification via Cascaded Search—◆William Stafford Noble, University of Washington; Attila Kertesz-Farkas, University of Washington; Uri Keich, University of Sydney

2:35 p.m. Reconstructing Integrative Molecular Bayesian Networks from Diverse Omics—◆Jun Zhu, Icahn School of Medicine at Mount Sinai; Seungyeul Yoo, Icahn School of Medicine at Mount Sinai; Luan Lin, Icahn School of Medicine at Mount Sinai

3:05 p.m. A Big Data Approach for Integrative Analysis of Two Different High-Throughput Genomic Data Types—◆Hongkai Ji, Johns Hopkins Bloomberg School of Public Health; Weiqiang Zhou, Johns Hopkins Bloomberg School of Public Health; Bing He, Johns Hopkins Bloomberg School of Public Health

3:35 p.m. Floor Discussion

10 CC-610 Causal Estimates in Survival Analysis Using Instrumental Variables—Invited

Health Policy Statistics Section, Biometrics Section

Organizer(s): Todd MacKenzie, Dartmouth College

Chair(s): Christine Mauro, Columbia University

2:05 p.m. Simple Instrumental Variable Regression for Censored Data with Exposure-Dependent Censoring—◆Kwun Chuen Gary Chan, University of Washington; Dylan Small, University of Pennsylvania; Yijian Huang, Emory University

2:25 p.m. A Unifying Framework for Assessing Bias in Two-Stage Instrumental Variable Models—◆Nandita Mitra, University of Pennsylvania; Fei Wan, University of Pennsylvania; Dylan Small, University of Pennsylvania

2:45 p.m. Using Instrumental Variables to Estimate a Cox's Proportional Hazards Regression Subject to Additive Confounding—◆Todd MacKenzie, Dartmouth College

3:05 p.m. Instrumental Variable Additive Hazard Models—◆Jason Fine, The University of North Carolina

3:25 p.m. Disc: Eric Tchetgen, Harvard University

3:45 p.m. Floor Discussion

11 CC-4C3 ■ ● Big Data in Seattle—Invited

Council of Chapters, International Indian Statistical Association, Conference on Statistical Practice Steering Committee, Section on Statistical Consulting, Committee on Applied Statisticians

Organizer(s): Steven Millard, Probability, Statistics, & Information
Chair(s): Steven Millard, Probability, Statistics, & Information

2:05 p.m. Trends in Computational Television Advertising—◆Brendan Kitts, Adap.tv

2:35 p.m. Building a Big Data Visual Analytics System for Everyone—◆Leland Wilkinson, Tableau Software

3:05 p.m. The Truth Is Out There, but How Do We Dig It Out?—◆Mikhail Traskin, Amazon

3:35 p.m. Floor Discussion

12 CC-607

Undergraduate Curriculum: The Pathway to Sustainable Growth in Our Discipline—Invited Section on Statistical Education, Section on Teaching of Statistics in the Health Sciences, Scientific and Public Affairs Advisory Committee

Organizer(s): Christopher J. Malone, Winona State University
Chair(s): Nicholas Horton, Amherst College

- 2:05 p.m. The Undergraduate Curriculum of the Future—
◆ Johanna Hardin, Pomona College
- 2:25 p.m. Using the Guidelines to Develop a New Undergraduate Program—◆ Stacey Hancock, UC Irvine
- 2:45 p.m. Impact of the New ASA Undergraduate Curriculum Guidelines on the Hiring of Future Undergraduates—
◆ Robert Alan Vierkant, Mayo Clinic
- 3:05 p.m. Common Themes in the Recently Adopted Undergraduate and Master's Curriculum Recommendations—◆ John Bailer, Miami University
- 3:25 p.m. Disc: Xiao-Li Meng, Harvard University
- 3:45 p.m. Floor Discussion

13 CC-609

Recent Developments in Bayesian Medical Device and Drug Trials—Invited

Section on Medical Devices and Diagnostics, Section on Bayesian Statistical Science, Biometrics Section, International Society for Bayesian Analysis (ISBA)

Organizer(s): Laura Thompson, FDA
Chair(s): Gene Anthony Pennello, FDA

- 2:05 p.m. Detecting and Accounting for Violations of the Constancy Assumption in Noninferiority Clinical Trials—◆ Joe Koopmeiners, University of Minnesota; Brian Hobbs, MD Anderson Cancer Center
- 2:35 p.m. Bayesian Nonparametric Models for Comparative Effectiveness—◆ Gary L. Rosner, Johns Hopkins Medical Institution; Chenguang Wang, Johns Hopkins Medical Institution
- 3:05 p.m. Bayesian Analysis of Heterogeneous Treatment Effect in Patient-Centered Outcomes Research—
◆ Ravi Varadhan, The Johns Hopkins University; Thomas A. Louis, Johns Hopkins Bloomberg School of Public Health/U.S. Census Bureau; Chenguang Wang, Johns Hopkins Medical Institution
- 3:05 p.m. Disc: David Draper, UC Santa Cruz/eBay Research Labs
- 3:35 p.m. Floor Discussion

Invited Panels 2:00 p.m.—3:50 p.m.

14 CC-3B

Implicit Bias: What Statisticians Need to Know and Do—Invited

Caucus for Women in Statistics, Joint Committee on Women in the Mathematical Sciences, International Chinese Statistical Association, International Indian Statistical Association, Statistics Without Borders, Section on Statistical Consulting, Scientific and Public Affairs Advisory Committee

Organizer(s): Amanda Golbeck, University of Montana; Yulia R. Gel, The University of Texas at Dallas

Chair(s): Amanda Golbeck, University of Montana

- Panelists:
- ◆ Nicholas P. Jewell, UC Berkeley
 - ◆ Judith Singer, Harvard University
 - ◆ Arlene Ash, University of Massachusetts
 - ◆ Jon Kettenring, Drew University
 - ◆ Marcia Gumpertz, North Carolina State University
 - ◆ Mary W. Gray, American University

3:45 p.m. Floor Discussion

**Topic-Contributed Sessions
2:00 p.m.—3:50 p.m.**

15 CC-612

Novel Computational Approaches in Drug Safety Surveillance—Topic-Contributed Biopharmaceutical Section, Biometrics Section

Organizer(s): Susan Gruber, Reagan-Udall Foundation for the FDA
Chair(s): Susan Gruber, Reagan-Udall Foundation for the FDA

- 2:05 p.m. Exploratory Data Analysis in Observational Data Utilizing Machine Learning-Based Approaches—
◆ Andrew Bate, Pfizer Inc.
- 2:25 p.m. Which Needles Are Not in the Haystack? Linking Evidence to Support the Establishment of a Reference Standard of Negative Controls for Pharmacovigilance—◆ Richard D. Boyce, University of Pittsburgh; Erica Voss, Janssen R&D; Christian Reich, AstraZeneca; Nicholas Tatonetti, Columbia University; Patrick Ryan, Observational Health Data Sciences and Informatics
- 2:45 p.m. Bayesian Assessment of Safety Profiles in Clinical Trial Studies—◆ Judy Li, FDA; Wei-Chen Chen, FDA; Paul Mintz, FDA

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 3:05 p.m. Use of Design-Driven Automated Drug Safety Monitoring Systems to Obtain Causal, Multidatabase Estimates of Safety Risks—◆Jeremy Rassen, Aetion, Inc.
- 3:25 p.m. Monstrous MCMC: Fully Bayesian Inference in Cyclops for Massive Observational Data Sets—◆Trevor Shaddox, UCLA; Marc A. Suchard, UCLA
- 3:45 a.m. Floor Discussion

16 CC-611

■ ● Exploring Bayesian Approaches in Drug Clinical Trials—Topic-Contributed

Biopharmaceutical Section, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), International Chinese Statistical Association, Biometrics Section

Organizer(s): Freda Cooner, FDA/CDER

Chair(s): Kathleen Fritsch, FDA

- 2:05 p.m. Bayesian Adaptive Commensurate Prior Methods for Rare Disease and Pediatric Clinical Trials—◆Bradley P. Carlin, University of Minnesota; Cynthia Basu, University of Minnesota; Brian Hobbs, MD Anderson Cancer Center
- 2:25 p.m. The Role of Simulation in Designing Rare Disease Trials—◆Jason Connor, Berry Consultants
- 2:45 p.m. Bayesian Approaches for Benefit-Risk Assessment—◆Ram Tiwari, FDA/CDER/OT/OB
- 3:05 p.m. Bayesian Opportunities in Clinical Trials from an Industry Perspective—◆Fanni Natanegara, Eli Lilly and Company; Karen Price, Eli Lilly and Company
- 3:25 p.m. Disc: Freda Cooner, FDA/CDER
- 3:45 p.m. Floor Discussion

17 CC-212

■ ● Theory and Methods for Massive Spatial Data—Topic-Contributed

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

Organizer(s): Soutir Bandyopadhyay, Lehigh University

Chair(s): Steve Sain, National Center for Atmospheric Research

- 2:05 p.m. Spatial Modeling of the American Community Survey—◆Soutir Bandyopadhyay, Lehigh University; Tucker Sprague McElroy, U.S. Census Bureau; Doug Nychka, National Center for Atmospheric Research
- 2:25 p.m. Likelihood Approximation and Model Quality Assessment for Large Environmental Data Sets—◆Ying Sun, King Abdullah University of Science and Technology; Michael L. Stein, The University of Chicago
- 2:45 p.m. Local Asymptotics for Kriging—◆William Kleiber, University of Colorado; Doug Nychka, National Center for Atmospheric Research
- 3:05 p.m. Estimating a Low-Rank Covariance Matrix for Spatial Data—◆Tapabrata Maiti, Michigan State University; Siddhartha Nandy, Michigan State University; Chae Young Lim, Michigan State University
- 3:25 p.m. Computing Exact Gaussian Likelihoods for Markov Random Field Models—◆Joseph Guinness, North Carolina State University; Ilse C.F. Ipsen, North Carolina State University
- 3:45 p.m. Floor Discussion

18 TCC-202

■ ● Non- and Semiparametric Methods for Complex Medical Data—Topic-Contributed

International Chinese Statistical Association, Biometrics Section

Organizer(s): Yuan Jiang, Oregon State University

Chair(s): Yuan Jiang, Oregon State University

- 2:05 p.m. Accounting for Time Series Errors in Partially Linear Model with Single- or Multiple-Run—◆Chunming Zhang, University of Wisconsin - Madison; Yu Han, University of Wisconsin - Madison; Shengji Jia, University of Wisconsin - Madison
- 2:25 p.m. Support Vector Classification with Missing Covariates—◆Michael C. Wu, Fred Hutchinson Cancer Research Center; Thomas G. Stewart, The University of North Carolina at Chapel Hill; Donglin Zeng, The University of North Carolina
- 2:45 p.m. Covariate-Adjusted Genetic Association Testing for Binary Traits in the Presence of Population Structure—◆Duo Jiang, Oregon State University;

- Sheng Zhong, The University of Chicago; Mary Sara McPeck, The University of Chicago
- 3:05 p.m. Density Estimation in the Two-Sample Problem with Likelihood Ratio Ordering—◆Tao Yu, National University of Singapore; Pengfei Li, University of Waterloo; Jing Qin, National Institute of Allergy and Infectious Diseases
- 3:25 p.m. Partially Time-Varying Coefficient Proportional Hazards Models with Time-Dependent Covariates Measured with Error—◆Xiao Song, University of Georgia; Lily Wang, Iowa State University
- 3:45 p.m. Floor Discussion

19 CC-3A

■ ● Bayesian Methods for Complex and High-Dimensional Data with Application to Analysis of RNA-Seq Data—Topic-Contributed Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), Biometrics Section

Organizer(s): Kin Fai Au, The University of Iowa

Chair(s): Kin Fai Au, The University of Iowa

- 2:05 p.m. Bayesian Nonparametric Tests via Sliced Inverse Modeling—◆Jun S. Liu, Harvard University; Bo Jiang, Two-Sigma Investments Inc.; Chao Ye, Tsinghua University
- 2:25 p.m. Bayesian Variable Selection for Binary Outcomes in High-Dimensional Settings—◆Wenyi Wang, MD Anderson Cancer Center; Amir Nikooienejad, Texas A&M University; Valen E. Johnson, Texas A&M University
- 2:45 p.m. Statistical Inference Problems Arising from the Availability of Multiple RNA-Seq Data Sets—◆Jingyi (Jessica) Li, UCLA
- 3:05 p.m. Statistical Modeling of Splice Junction Expression in RNA-Seq—◆Julia Salzman, Stanford University; Linda Szabo, Stanford University
- 3:25 p.m. Identifying Genetic Variants That Regulate Gene Expression: How to Ensure Reproducibility—◆Chiara Sabatti, Stanford University
- 3:45 p.m. Floor Discussion

20 CC-308

● Modern Advancements in Modeling and Inference of Correlated Functional Data—Topic-Contributed

Section on Nonparametric Statistics, Biometrics Section

Organizer(s): Ana-Maria Staicu, North Carolina State University

Chair(s): Arnab Maity, North Carolina State University

- 2:05 p.m. Generalized Multilevel Function-on-Scalar Regression and Principal Component Analysis—◆Jeff Goldsmith, Columbia University; Vadim Zipunnikov, Johns Hopkins Bloomberg School of Public Health; Jennifer Schrack, Johns Hopkins Bloomberg School of Public Health
- 2:25 p.m. Simple Fixed-Effects Inference for Complex Functional Models—◆So Young Park, North Carolina State University; Ana-Maria Staicu, North Carolina State University; Luo Xiao, The Johns Hopkins University; Ciprian Crainiceanu, The Johns Hopkins University
- 2:45 p.m. Principal-Component-Based Functional Linear Mixed Models—◆Sonja Greven, LMU; Jona Cederbaum, Ludwig Maximilians University Munich; Haochang Shou, University of Pennsylvania
- 3:05 p.m. Semiparametric Functional Mixed Models for Longitudinal Functional Data, with Application to Glaucoma Data—◆Wonyul Lee; Jeffrey Morris, MD Anderson Cancer Center; Veera Baladandayuthapani, MD Anderson Cancer Center
- 3:25 p.m. Bayesian Nonparametric Functional Models for High-Dimensional Genomics Data—◆Veera Baladandayuthapani, MD Anderson Cancer Center; Jeffrey Morris, MD Anderson Cancer Center; Lin Zhang, MD Anderson Cancer Center; Keith Baggerly, MD Anderson Cancer Center; Hongxiao Zhu, Virginia Tech
- 3:45 p.m. Floor Discussion

21 CC-206

Methodological Challenges in Consumer Payment Surveys—Topic-Contributed Survey Research Methods Section, SSC, Business and Economic Statistics Section

Organizer(s): Kyle Vincent, Bank of Canada

Chair(s): Kyle Vincent, Bank of Canada

- 2:05 p.m. Variance Estimation for Survey-Weighted Data Using Bootstrap Resampling Methods: 2013 Methods-of-Payment Survey Questionnaire—◆Heng Chen; Rallye Shen, Bank of Canada
- 2:25 p.m. Estimation and Calibration from Multiple Data Sources: Linking Payment Volumes and User Type Allocations from Different Survey Vantage Points—◆Geoffrey Gerdes, Federal Reserve Board
- 2:45 p.m. Assimilating Dual-Panel Surveys to Generate Population Estimates—◆Marcin Hitezenko,
- 3:05 p.m. Validating Survey Data Using Benford's Law—◆Kevin Foster, Federal Reserve Bank of Boston

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

3:25 p.m. In Love with the Debit Card, but Still Married to Cash—◆Carin Van Der Cruijssen; Nicole Jonker, De Nederlandsche Bank; Lola Hernandez, De Nederlandsche Bank

3:45 p.m. Floor Discussion

22 TCC-101

■ ● Statistical Analysis of Women's Sports—Topic-Contributed

Section on Statistics in Sports

Organizer(s): Michael Schuckers, St. Lawrence University

Chair(s): Ben Baumer, Smith College

2:05 p.m. Senior Swim Competition Times—◆David Doane, Oakland University; Kevin Murphy, Oakland University

2:25 p.m. Are Women Professional Tennis Players Really Less Consistent Than Male Players?—◆Stephanie Kovalchik, RAND Corporation

2:45 p.m. A Comparison of Probabilistic Rating Systems for Women's Beach Volleyball—◆Mark Glickman, Boston University; Jonathan Hennessy, The Houston Rockets

3:05 p.m. Floor Discussion

23 CC-2B

■ ● The Fed's Forecasts—Topic-Contributed Business and Economic Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Neil R. Ericsson, Federal Reserve Board

Chair(s): Carol Corrado, The Conference Board

2:05 p.m. Forecast Error Monetary Policy Shocks—◆Tara Sinclair, The George Washington University; Pao-Lin Tien, Wesleyan University; Edward N. Gamber, Congressional Budget Office

2:25 p.m. The Distribution of Inflation Forecast Errors—◆Julie K. Smith, Lafayette College; Edward N. Gamber, Lafayette College; Jeffrey Liebner, Lafayette College

2:45 p.m. Evaluating the Efficiency of the FOMC's New Economic Projections—◆Natsuki Arai, National Chengchi University

3:05 p.m. Greenbook Forecasts and the Business Cycle—◆Frederick Joutz; Neil R. Ericsson, Federal Reserve Board; Tara Sinclair, The George Washington University

3:25 p.m. Detecting and Estimating Time-Varying Bias in the Fed's International Greenbook Forecasts—◆Neil R. Ericsson, Federal Reserve Board; Emilio J. Fiallos, Rutgers University; J. E. Seymour, Federal Reserve Board

3:45 p.m. Floor Discussion

24 CC-304

■ ● Statistical Methods for Remote Sensing of the Environment II: The Carbon Cycle—Topic-Contributed

Section on Statistics and the Environment

Organizer(s): Amy Braverman, Jet Propulsion Laboratory

Chair(s): Amy Braverman, Jet Propulsion Laboratory

2:05 p.m. Uncertainty Quantification for the Orbiting Carbon Observatory-2 Remote Sensing Retrieval—◆Jonathan Hobbs, California Institute of Technology; Amy Braverman, Jet Propulsion Laboratory; Noel Cressie, University of Wollongong; Robert Granat, Jet Propulsion Laboratory, California Institute of Technology; Michael Gunson, Jet Propulsion Laboratory, California Institute of Technology

2:25 p.m. Bayesian Approach to CO₂ Retrievals for the OCO-2 Instrument Using a Surrogate Forward-Model—◆Jenny Brynjarsdottir, Case Western Reserve University; Amy Braverman, Jet Propulsion Laboratory; Jonathan Hobbs, California Institute of Technology

2:45 p.m. Spatio-Temporal Data Fusion for Massive Multivariate Remote Sensing Data—◆Hai Nguyen, Jet Propulsion Laboratory; Matthias Katzfuss, Texas A&M University; Noel Cressie, University of Wollongong; Amy Braverman, Jet Propulsion Laboratory

3:05 p.m. Sources and Sinks of Carbon Dioxide from Remote Sensing: A Spatial Analysis—◆Sandy Burden, University of Wollongong; Noel Cressie, University of Wollongong

3:25 p.m. Disc: Snigdhanu Chatterjee, University of Minnesota

3:45 p.m. Floor Discussion

25 CC-616

Recent Development in Personalized Medicine—Topic-Contributed

Biometrics Section, ENAR, International Indian Statistical Association

Organizer(s): Rui Song, North Carolina State University

Chair(s): J. McLean Sloughter, Seattle University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Sunday

2:05 p.m. On Estimation of Optimal Treatment Regimes for Maximizing T-Year Survival Probability—◆Rui Song, North Carolina State University; Runchao Jiang, North Carolina State University; Wenbin Lu, North Carolina State University; Marie Davidian, North Carolina State University

2:25 p.m. Regression Analysis for Cumulative Incidence Function Under Two-Stage Randomization—◆Yu Cheng, University of Pittsburgh; Idil Yavuz, Dokuz Eylul University

2:45 p.m. Estimating the Optimal Treatment Sequence for Graft-Versus-Host Disease Following Stem Cell Transplantation—◆Erica Moodie, McGill University; David Stephens, McGill University; Elizabeth Krakow, McGill University

3:05 p.m. Q-Learning Residual Analysis—◆Bibhas Chakraborty, Duke University; Ashkan Ertefaie, University of Pennsylvania; Susan Shortreed, Group Health Research Institute

3:25 p.m. Building Treatment Policies with Incomplete Data from SMART Studies—◆Min Qian, Columbia University; Eric Laber, North Carolina State University

3:45 p.m. Floor Discussion

26 **CC-205**

Recent Advances in Neuroimaging Data Analysis—Topic-Contributed

Section on Statistics in Imaging, Biometrics Section

Organizer(s): Jian Kang, Emory University

Chair(s): Jian Kang, Emory University

2:05 p.m. Improved Activation Detection in fMRI—◆Ranjan Maitra, Iowa State University; Alejandro Murua, University of Montreal

2:25 p.m. Bayesian Hierarchical Variable Selection for Genome-Wide Association Studies—◆Yize Zhao, SAMSI; Hongtu Zhu, The University of North Carolina at Chapel Hill; Zhaohua Lu, Penn State; Rebecca C. Knickmeyer, The University of North Carolina; Fei Zou, The University of North Carolina

2:45 p.m. Incorporating Spatial Dependence into Bayesian Multiple Testing of Statistical Parametric Maps in Functional Neuroimaging—◆Andrew Brown, Clemson University; Nicole A. Lazar, University of Georgia; Gauri S. Datta, University of Georgia/U.S. Census Bureau; Woncheol Jang, Seoul National University; Jennifer E. McDowell, University of Georgia

3:05 p.m. Semiparametric Bayes Graphical Models Incorporating Covariates with Applications to Imaging Genetics—◆Suprateek Kundu, Emory University; Jian Kang, Emory University

3:25 p.m. A Parsimonious Differential Brain Connectivity Network Detection Method—◆Shuo Chen, University of Maryland

3:45 p.m. Floor Discussion

27 **CC-203**

CANCELLED: Health Insurance and Medicare—Topic-Contributed

Social Statistics Section, Health Policy Statistics Section, Biometrics Section

Organizer(s): James Noon, U.S. Census Bureau

3:25 p.m. Floor Discussion

Contributed Sessions 2:00 p.m.—3:50 p.m.

28 **CC-307**

Semiparametric Inference—Contributed

IMS

Chair(s): Jacob Konikoff, UCLA

2:05 p.m. Survival Time Estimates Deduced from Integral Equations—◆Gerhard Dikta, Fachhochschule Aachen

2:20 p.m. Empirical Likelihood Ratio for Differentiable Statistical Functional in Terms of Cumulative Hazard—◆Zhiyuan Shen, University of Kentucky; Mai Zhou, University of Kentucky

2:35 p.m. Weighted Bootstrap and Kernel Density Estimation—◆Bo Liu; Majid Mojirsheibani, California State University at Northridge

2:50 p.m. Kernel Regression Estimation for Incomplete Data—◆Timothy Reese; Majid Mojirsheibani, California State University at Northridge

3:05 p.m. Symmetric Log-Concave Density Estimation and Mixture Modeling—◆Charles Doss, University of Minnesota; Fadoua Balabdaoui, Ceremade, Universite Paris Dauphine

3:20 p.m. Nonparametric Identifiability of Finite Mixture Models with Covariates—◆Zheyu Wang, The Johns Hopkins University; Xiao-Hua Zhou, University of Washington

3:35 p.m. Efficient Estimation in a Heteroskedastic Single-Index Model—◆Junli Lin, Penn State

29 CC-214 Bayesian Theory and Foundations— Contributed

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

Chair(s): Natesh Pillai, Harvard University

- 2:05 p.m.** An Efficient Method for Model Selection—◆**Arnab Maity**, Northern Illinois University; **Sanjib Basu**, Northern Illinois University
- 2:20 p.m.** Risk Factors Assessment and Bayesian Model Averaging with Hyperprior Structures in Matched Case-Control Studies—◆**Yi Mu**, CDC
- 2:35 p.m.** On the Use of Grouped Covariate Regression in Oversaturated Models—◆**Stephen Loftus**, Virginia Tech; **Leanna House**, Virginia Tech; **Lisa Belden**, Virginia Tech; **Jeni Walke**, Virginia Tech; **Matt Becker**, Virginia Tech
- 2:50 p.m.** Bayesian Variable Selection in Quantile Regression Using the Savage-Dickey Density Ratio—**Man-Suk Oh**, Ewha Womans University; ◆**Jungsoon Choi**, Hanyang University
- 3:05 p.m.** Standard Errors and Selection of Tuning Parameters for Bayesian Lassos Using Geometrically Ergodic Gibbs Samplers—◆**Sounak Chakraborty**, University of Missouri - Columbia
- 3:20 p.m.** Methods for Comparing and Improving Low-Dimensional Embeddings—◆**Chris DuBois**, Dato
- 3:35 p.m.** On the Null Distribution of Bayes Factors for Bayesian Linear Regression—◆**QUAN Zhou**, Baylor College of Medicine; **Yongtao Guan**, Baylor College of Medicine

30 CC-210 Statistical Inference—Contributed

Government Statistics Section

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

- 2:05 p.m.** Comparison of Frequentist and Bayesian Methods for Testing Measurement Invariance Between Groups—◆**Dmitriy Poznyak**, Mathematica Policy Research
- 2:20 p.m.** Tolerance Limits Under Normal Mixtures: Application to the Evaluation of Nuclear Power Plant Safety and to the Assessment of Circular Error Probable—◆**Zachary Zimmer**; **Thomas Mathew**, University of Maryland, Baltimore County; **DoHwan Park**, University of Maryland, Baltimore County
- 2:35 p.m.** Comparing Aberration Detection Algorithms for Robust Weekly Monitoring of Notifiable Diseases—◆**Hong Zhou**, CDC; **Howard Burkom**, The Johns Hopkins University; **Susan Katz**, CDC;

Ruth Jajosky, CDC; **Willie Anderson**, CDC; **Dey Achintya**, CDC; **Umed Ajani**, CDC

- 2:50 p.m.** Parametric Tests of Equality of Several Univariate and/or Multivariate Frequency Distributions and Several Transition Frequency Matrices and Several Contingency Tables—◆**Mian Adnan**, Ball State University
- 3:05 p.m.** Sieve Maximum Likelihood Estimation Using B-Spline Smoothing in the Generalized Linear Models with an Unknown Link Function—◆**Mengdie Yuan**, FDA
- 3:20 p.m.** Statistical Analysis of Sparse Bioequivalence Study with Pharmacokinetics Endpoints—◆**Guoying Sun**, FDA; **Huaixiang Li**, FDA; **Fairouz Makhoulouf**, FDA; **Donald Schuirmann**, FDA
- 3:35 p.m.** Multidimensional Classification with Semiparametric Mixture Model—◆**Ao Yuan**, NIH; **Chunxiao Zhou**, NIH

31 CC-310 Special Session: Student Paper Award—Contributed

Section on Nonparametric Statistics, International Indian Statistical Association

Chair(s): Ursula U. Müller, Texas A&M University

- 2:05 p.m.** A Subsampled Double Bootstrap for Massive Data—◆**Srijan Sengupta**, University of Illinois at Urbana-Champaign; **Stanislav Volgushev**, Ruhr University Bochum; **Xiaofeng Shao**, University of Illinois at Urbana-Champaign
- 2:20 p.m.** Post-Regularization Confidence Bands for High-Dimensional Nonparametric Models with Local Sparsity—◆**Junwei Lu**, Princeton University; **Mladen Kolar**, The University of Chicago; **Han Liu**, Princeton University
- 2:35 p.m.** Variable Selection in Function-on-Scalar Regression—◆**Yakuan Chen**, Columbia University; **Jeff Goldsmith**, Columbia University; **Todd Ogden**, Columbia University
- 2:50 p.m.** Efficient and Adaptive Linear Regression in Semi-Supervised Settings—◆**Abhishek Chakraborty**, Harvard University; **Tianxi Cai**, Harvard University
- 3:05 p.m.** Two-Way Hazards Model for Call Center Waiting Times—◆**Gen Li**, The University of North Carolina at Chapel Hill; **Jianhua Huang**, Texas A&M University; **Haipeng Shen**, The University of North Carolina at Chapel Hill
- 3:20 p.m.** Fused Lasso Additive Model—◆**Ashley Petersen**, University of Washington; **Daniela Witten**, University of Washington; **Noah Simon**, University of Washington
- 3:35 p.m.** A New Notion of Depth and Central Regions for Functional Data—◆**Naveen Narisetty**, University of Michigan; **Vijay Nair**, University of Michigan

32 **CC-306**
Analysis of Extreme Values—Contributed Section on Statistics and the Environment

Chair(s): Edward Boone, Virginia Commonwealth University

- 2:05 p.m. Downscaling Extremes for Fire Risk Assessment—
◆ Benjamin Shaby, Penn State
- 2:20 p.m. Assessing Regional Climate Models' Ability to Produce Extreme Precipitation—Dan Cooley, Colorado State University; Grant Weller, Savvysherpa, Inc.
- 2:35 p.m. Quantifying Distributional Changes Daily Surface Temperature Observations—◆ Martin Tingley,
- 2:50 p.m. Bayesian Hierarchical Modeling of Extreme Low Temperatures in Northern Finland—◆ Emeric Thibaud, Colorado State University; Anthony C. Davison, Ecole Polytechnique Fédérale de Lausanne
- 3:05 p.m. Probabilistic Modeling and Inference for Extreme Rainfall Episodes in Central America—◆ Luis Cid-Serrano, Universidad del Bio Bio
- 3:20 p.m. Changes in Extreme Temperatures Under Increased CO2 in Millennial-Scale Climate Simulations—
◆ Whitney Huang, Purdue University; Michael L. Stein, The University of Chicago; Elisabeth Moyer, The University of Chicago; Shanshan Sun, The University of Chicago; David McInerney, University of Adelaide
- 3:35 p.m. **Floor Discussion**

33 **CC-605**
● SIE C1: Causal Inference—Contributed Section on Statistics in Epidemiology, Biometrics Section

Chair(s): Nicole Carnegie, University of Wisconsin - Milwaukee

- 2:05 p.m. Nonparametric Methods for Doubly Robust Estimation of Continuous Treatment Effects—
◆ Edward Kennedy, University of Pennsylvania Perelman School of Medicine; Zongming Ma, The Wharton School; Matthew McHugh, University of Pennsylvania; Dylan Small, University of Pennsylvania
- 2:20 p.m. Robust Confidence Intervals with Invalid Instruments—◆ Hyunseung Kang, The Wharton School; Tony Cai, University of Pennsylvania; Dylan Small, University of Pennsylvania
- 2:35 p.m. Extending Heckman's Treatment Model to Nonadditive Treatment Effects—◆ Andrew Justin Spieker, University of Washington; Joseph Chris Delaney, University of Washington; Robyn McClelland, University of Washington
- 2:50 p.m. Doubly Robust Standardization in Cohort Studies with a Binary Exposure and Censored Events—

◆ Tomohiro Shinozaki, The University of Tokyo; Yutaka Matsuyama, The University of Tokyo

- 3:05 p.m. Doubly Robust Estimation of Causal Effects Using Primal-Dual Optimization—◆ Qingyuan Zhao, Stanford University; Daniel Percival, Google
- 3:20 p.m. Exact Confidence Intervals in the Presence of Interference—◆ Joseph Rigdon, Stanford University; Michael Hudgens, The University of North Carolina at Chapel Hill
- 3:35 p.m. **Floor Discussion**

34 **CC-2A**
Mode Effects—Contributed Survey Research Methods Section, Committee on Applied Statisticians

Chair(s): Frank Potter, Mathematica Policy Research

- 2:05 p.m. Mode Effects in American Trends Panel: A Closer Look at the Person-Level and Item-Level Characteristics—◆ Stanislav Kolenikov, Abt SRBI; Kyle McGeeney, Pew Research Center; Scott Keeter, Pew Research Center; Courtney Kennedy, Abt SRBI
- 2:20 p.m. A Close Look at the Interview Length for Cell and Landline Telephone Surveys: The Case of the California Health Interview Survey—◆ Jennifer Kali, Westat; Ismael Flores-Cervantes, Westat
- 2:35 p.m. Analyzing Mode Effects by Using R-Indicators of Propensity Models—◆ Ying Li, NORC at the University of Chicago; Michael Stern, NORC at the University of Chicago; Fang Wang, NORC at the University of Chicago; Ipek Bilgen, NORC at the University of Chicago
- 2:50 p.m. Comparison of Landline and Cell Phone Response Patterns from a Call-Back Telephone Survey: Behavioral Risk Factor Surveillance System (BRFSS) and Asthma Call-Back Survey (ACBS)—◆ Xiaoting Qin, CDC
- 3:05 p.m. Does the Timing of the Mode Switch Matter in a Mixed-Mode Survey? Results from an Experiment—
◆ James Wagner, University of Michigan; Heather M. Schroeder, Institute for Social Research; Andrew Piskorowski, University of Michigan
- 3:20 p.m. Survey Treatments and Response Modes: Bayesian Survival Analysis with Competing Risks—◆ Hiroaki Minato, U.S. Energy Information Administration
- 3:35 p.m. Effect of Data-Collection Mode on Response Rates and Data Quality in Voting Survey of Active Duty Military—◆ David McGrath, DOD/DMDC; Tim Markham, Research, Surveys, and Statistics Center; Eric Falk, Research, Surveys, and Statistics Center; Kim Hylton, Research, Surveys, and Statistics Center; Fawzi Al Nassir, Research, Surveys, and Statistics Center

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

35 CC-204 Frame and Coverage Issues—Contributed

Survey Research Methods Section, Government Statistics Section,
Statistics Without Borders, Committee on Applied Statisticians

Chair(s): Kenneth Pick, U.S. Census Bureau

- 2:05 p.m.** How Can We Produce Estimates When We Can't Call You? Revisiting Methods to Adjust for the Phoneless Population—◆Meena Khare, National Center for Health Statistics; Nadarajasundaram Ganesh, NORC at the University of Chicago; Kennon Copeland, NORC at the University of Chicago; Wei Zeng, NORC at the University of Chicago; Xian Tao, NORC at the University of Chicago; James A. Singleton, NCIRD/CDC
- 2:20 p.m.** Got a Phone Number? Examining the Reliability and Accuracy of Phone Number Append Propensity Models for ABS Samples—◆Trent Buskirk, Marketing Systems Group; Kristen Olson, University of Nebraska - Lincoln
- 2:35 p.m.** ABS Coverage Evaluation: Recommendations for Evaluating the Household Coverage of Address-Based Sampling (ABS) Frames—◆Joseph McMichael, RTI International
- 2:50 p.m.** Assessing the Impact of Using a Single-Frame Cell Phone Sample Design for the National Immunization Survey—◆Wei Zeng, NORC at the University of Chicago; Kirk Wolter, NORC at the University of Chicago; Xian Tao, NORC at the University of Chicago; Elizabeth Ormson, NORC at the University of Chicago; Nadarajasundaram Ganesh, NORC at the University of Chicago; Zhen Zhao, CDC; Meena Khare, National Center for Health Statistics; Laurie Elam-Evans, CDC; David Yankey, CDC; Jenny Jeyarajah, CDC; Holly A. Hill, CDC
- 3:05 p.m.** Can We Hit the Mark? Using Commercial and Publicly Available Data to Target Specific Populations—◆Ned English, NORC at the University of Chicago; Alicia Frasier, NORC at the University of Chicago; Trent Buskirk, Marketing Systems Group; Davod Malarek, MSG
- 3:20 p.m.** An Evaluation of Ported Telephone Numbers in the 2013 California Health Interview Survey—◆Greg Norman, Westat; Ismael Flores Cervantes, Westat
- 3:35 p.m.** 2016 Sample Redesign of the National Health Interview Survey—◆Chris Moriarity, National Center for Health Statistics; Van Parsons, National Center for Health Statistics

36 CC-615 ■ Advances in Survival Analysis with Health Applications—Contributed

Biometrics Section, International Indian Statistical Association

Chair(s): Andy (A) Ni, The University of North Carolina at Chapel Hill

- 2:05 p.m.** An Examination of Spatial Scan Statistics Based on Time-to-Event Data—◆Iram Usman, University of Alberta; Rhonda Jean Rosychuk, University of Alberta
- 2:20 p.m.** Methods for Time-to-Event Analysis with Change-point—◆Sayan Dasgupta; Ying Qing Chen, Fred Hutchinson Cancer Research Center
- 2:35 p.m.** A Predictive Biomarker Model for Subgroup Selection—◆Yu-Chuan Chen, FDA/NCTR; James J. Chen, FDA/NCTR
- 2:50 p.m.** Efficient Likelihood-Based Estimation Approach for an Accelerated Failure Time Model with Case-Cohort and Nested Case-Control Sampling—◆Suhyun Kang, North Carolina State University; Wenbin Lu, North Carolina State University
- 3:05 p.m.** On Matching Strategies and Absolute Risk Estimation for Nested Case Control Studies in Survival Analysis—◆Hongying Li, UC San Diego; Ruth Patterson, UC San Diego Moores Cancer Center; Loki Natarajan, UC San Diego Moores Cancer Center
- 3:20 p.m.** Bayesian Dynamic Survival Model with Covariate-Varying Coefficients and Its Applications to Epidemiologic Research—◆Jianghua He, University of Kansas Medical Center
- 3:35 p.m.** An Improved Two-Stage Procedure to Compare Two or More Hazard Curves—◆Zhongxue Chen, Indiana University - Bloomington; Hanwen Huang, University of Georgia; Peihua Qiu, University of Florida

37 CC-614 Modern Approaches to Analysis of Correlated Data—Contributed

Biometrics Section, International Indian Statistical Association

Chair(s): Yue Zhang, University of Utah

- 2:05 p.m.** Misspecification in Generalized Linear Mixed Models with Correlated Random Effects Based on Randomization—◆Mohammad Zakir Hossain, University of London; Heiko Grossmann, University of London; Steven G. Gilmour, University of Southampton
- 2:20 p.m.** A PRESS Statistic for Working Correlation Structure Selection in Generalized Estimating Equations—A.H.M. Mahbub Latif, University of Dhaka; ◆John Preisser, The University of North Carolina
- 2:35 p.m.** Analysis of Intraclass Correlation Coefficients for Correlated Binomial Data from Several Treatment Groups—◆Krishna Saha, Central Connecticut State University; Debaraj Sen, Concordia University
- 2:50 p.m.** Model Selection for Longitudinal Data with Time-Dependent Covariates Using Generalized Method

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

of Moments—◆Maryann Shane, University of Northern Colorado

3:05 p.m. Modeling the Change in the Multivariate Relationship Between a Binary and a Continuous Response Over Time—◆Scott Kreider,

3:20 p.m. Modeling Clustered Bivariate Binary Outcome: Application to the Joint Modeling of HCV and HIV Co-Infection—◆Edmund Essah Ameyaw, Howard University; Paul Bezandry, Howard University; Victor Apprey, Howard University; John Kwagyan, Howard University

3:35 p.m. Identifying the Mean-Variance Relationship in Logistic Regression Models—◆Katherine Cai, Arizona State University

38 CC-613

■ Applications in Biological and Health Data—Contributed

Biometrics Section, Section on Statistics and the Environment, Statistics Without Borders

Chair(s): Kenneth Wilkins, NIH

2:05 p.m. Nonlinear Time Series Analysis of Aphid Dynamics—Bahman Shafii, University of Idaho; ◆John Merickel, University of Idaho

2:20 p.m. A Discriminant Function for Renal Inflammatory Activity Associated with Lupus Nephritis—◆Alice Hinton, The Ohio State University; H.N. Nagaraja, The Ohio State University; Brad Rovin, The Ohio State University Medical Center

2:35 p.m. Regional Analysis of the Cancer Mortality Rates in the United States—◆Doo Young Kim, University of South Florida; Chris P. Tsokos, University of South Florida

2:50 p.m. Evaluation of the Evolution of Survival for Two Groups of Breast Cancer Patients—◆Sandra Ramirez, Pontificia Universidad Javeriana Seccional Cali; Luis Cid-Serrano, Universidad del Bio Bio; Marcela Valdes Guerra, Universidad del Bio Bio; Jose Steinberg, Hospital Las Higueras

3:05 p.m. 50-Year Trends and State Variation in Socioeconomic and Racial/Ethnic Inequalities in U.S. Infant Death Rates, 1960 to 2010—◆Yuen Yi Lee, University of Technology, Sydney; Jarvis Chen, Harvard University; Brent Coull, Harvard University; Linda Valeri, Harvard University; Nakul Singh, Harvard University; Sofia Gruskin, Harvard University; Jason Beckfield, Harvard University; Nancy Krieger, Harvard University

3:20 p.m. Universal and Individual Characteristics of Postural Sway During Quiet Stance in Healthy Young Adults—◆Charles Smith, North Carolina State University; Tomohisa Yamamoto, Osaka University; Taishin Nomura, Osaka University

3:35 p.m. Effects of Beta Blockers on Hospital Admission Rates and Cost—◆Naihui Zhou, Columbia University; Ronald Low, MetroPlus; Shunsuke Ito, New York City Health and Hospitals Corporation; Van Dunn, MetroPlus

39 CC-213

Computing with Graph, Process, and Other Nonstandard Data—Contributed

Section on Statistical Computing, Section on Statistics in Defense and National Security

Chair(s): Xiaoqiang Xue, Quintiles

2:05 p.m. Spatiotemporal Detection of Unusual Human Population Behavior Using Mobile Phone Data—◆Adrian Dobra, University of Washington

2:20 p.m. Guidelines for Generating Right-Censored Outcomes from a Cox Model Extended to Accommodate Time-Varying Covariates—◆Maria Montez-Rath, Stanford University School of Medicine; Kristopher Kapphahn, Stanford University; Maya Mathur, Stanford University School of Medicine; Aya Mitani, Boston University; David Hendry, Aarhus Universitet Institut for Statskundskab; Manisha Desai, Stanford University

2:35 p.m. Spatial Distribution of Line Faults and Its Applications—◆Toshinari Kamakura, Chuo University

2:50 p.m. Mixture Link Models for Binomial Data with Overdispersion—◆Andrew M. Raim, U.S. Census Bureau; Nagaraj K. Neerchal, University of Maryland, Baltimore County; Jorge G. Morel, University of Maryland, Baltimore County

3:05 p.m. A Normal-Mixture Model with Random Effects for Analyzing Heart Rate Variability—◆Jessica Ketchum, Georgia Regents University; Alvin Best, Virginia Commonwealth University; Viswanathan Ramakrishnan, Medical University of South Carolina

3:20 p.m. A Comparison of Methods for Correlating Two Variables in the Presence of Nondetects—◆Stephen Looney, Georgia Regents University; Courtney E. McCracken, Emory University

3:35 p.m. A User Study Evaluating Recommender Systems in a Digital Library for Older Adults—◆Amy K. Atwood, University of Wisconsin - Madison; Adam Maus, University of Wisconsin - Madison

40 CC-603

Student/GTA Attitudes and Performance: Research Findings—Contributed

Section on Statistical Education

Chair(s): Aimee Schwab, Xavier University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 2:05 p.m. Statistics Graduate Teaching Assistants: What Research Suggests About Their Training and Development as Teachers—◆Nicola Justice, University of Minnesota
- 2:20 p.m. Comparing Student Performance in Blended and Traditional Courses: Does Prior Academic Achievement Matter?—◆James R. Schmidt, University of Nebraska - Lincoln; Carlos J. Asarta, University of Delaware
- 2:35 p.m. Active Learning Techniques with Applications to a Statistics Classroom—◆Ashlyn Munson; John Hutchinson, Rice University; Carrie Obenland Owens, Rice University; Lesa Tran, Rice University; Kristi Kincaid, Rice University
- 2:50 p.m. Using the SATS (Survey of Attitudes Toward Statistics) to Predict Student Grades—◆Anne Michele Millar, Mount Saint Vincent University; Marjorie E. Bond, Monmouth College
- 3:05 p.m. Looking Deeper into Student's Engagement, Learning Style, and Attitudes—◆Chand Chauhan, Indiana University Purdue University Fort Wayne; Yvonne Zubovic, Indiana University Purdue University Fort Wayne
- 3:20 p.m. Students' Perception on Challenge-Based Instruction—◆Fernando Flor; Xiaohui Wang, The University of Texas Pan American
- 3:35 p.m. **Floor Discussion**

41 CC-201 High-Dimensional Applications—Contributed Section on Statistical Learning and Data Mining, Section on Statistics in Defense and National Security

Chair(s): Hsin-Cheng Huang, Institute of Statistical Science

- 2:05 p.m. Mapping Epistasis and Plasticity for Quantitative Genetic Shape Variation Using Tree-Structured Models—◆Xiaotian Dai; Guifang Fu, Utah State University
- 2:20 p.m. An Actor-Critic Contextual Bandit Algorithm for Personalized Interventions Using Mobile Devices—◆Huitian Lei, University of Michigan; Ambuj Tewari, University of Michigan; Susan A. Murphy, University of Michigan
- 2:35 p.m. Getting Your Photo 'Explored' on Flickr: A Predictive Model Using Photo Metadata—◆Enayetur Raheem, University of Northern Colorado; Niloofar Ramezani, University of Northern Colorado
- 2:50 p.m. Comparison of R and Vowpal Wabbit for Click Prediction in Display Advertising—◆Jaimyoung Kwon, AOL Advertising; Bin Ren, AOL Platforms; Rajasekhar Cherukuri, AOL Platforms; Marius Holtan, AOL Platforms

- 3:05 p.m. Judgement Post-Stratification to Improve Inference of Link-Tracing Samples with Applications to Network Data—◆Ran Wei, The Ohio State University; Elizabeth Stasny, The Ohio State University; David Sivakoff, The Ohio State University
- 3:20 p.m. Album Recommendation System Based on Random Forest Method and Mixed Effect Model—◆Taikgun Song; Sanghoon Cho, Iowa State University; Hyeongseon Jeon, Iowa State University
- 3:35 p.m. Bayesian Estimation of Sufficient Dimension-Reduction Space—◆Moumita Karmakar, University of Maryland, Baltimore County; Kofi Placid Adragani, University of Maryland, Baltimore County

42 CC-620 Adaptive Design 1—Contributed Biopharmaceutical Section, Biometrics Section

Chair(s): Grace West, Amgen

- 2:05 p.m. Estimation of Treatment Effect in a Sub-Population: An Empirical Bayes Approach—◆Changyu Shen, Indiana University; Xiaochun Li, Indiana University School of Medicine; Jaesik Jeong, Chonnam National University
- 2:20 p.m. An Innovative Solution to Address Missing Data Problem to Estimate the Immune Response in Vaccine Trials—◆Manoj Thakur, Sanofi Pasteur; John Jezorwski, Sanofi Pasteur; Robert D. Small, Sanofi Pasteur
- 2:35 p.m. Evaluation of Stability in Thresholds Based on ROC Analysis—◆Jingjing Gao, AbbVie; Narinder Nangia, AbbVie
- 2:50 p.m. Two-Stage Phase IIa to Phase IIb Seamless Transition Design—◆Haolun Shi, The University of Hong Kong; Guosheng Yin, The University of Hong Kong
- 3:05 p.m. General Semiparametric AUC Regression Model with Discrete Covariates—◆Yan Zhao, The University of Oklahoma Health Sciences Center; Som Bohora, The University of Oklahoma Health Sciences Center; Taniana Balachova, The University of Oklahoma Health Sciences Center
- 3:20 p.m. Testing Hypotheses of Continuous-Covariate-Adaptive Randomized Clinical Trials—◆Xiaoming Li, University of Virginia; Jianhui Zhou, University of Virginia; Feifang Hu, The George Washington University
- 3:35 p.m. Power and Sample Size Calculation for the Additive Hazard Model—◆Pei-Fang Su,

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

43 CC-211

Topics in Dimension Reduction—Contributed Section on Statistical Learning and Data Mining, Section on Statistics and the Environment

Chair(s): Adele Cutler, Utah State University

- 2:05 p.m.** The Estimation of the Noise Variance in High-Dimensional PPCA Model and Its Applications—◆Zhaoyuan Li, The University of Hong Kong; Jianfeng Yao, The University of Hong Kong; Damien Passemier, The Hong Kong University of Science and Technology
- 2:20 p.m.** BRIC and MINT: Statistical Learning of Expert Opinion on Emerging Markets—◆Eftychia Solea; Bing Li, Penn State; Aleksandra B. Slavkovic, Penn State
- 2:35 p.m.** A New Estimator for Efficient Dimension Reduction in Regression—◆Wei Luo, Baruch College; Xizhen Cai, Carnegie Mellon University
- 2:50 p.m.** Online PCA in High Dimension: A Comparative Study—◆David Degras, DePaul University; Hervé Cardot, Université de Bourgogne
- 3:05 p.m.** Inference and Analysis of Climate Sensitivity via Data-Reduction Techniques: A Detailed Approach—Gabriel Huerta, University of New Mexico; ◆Mohammad Hattab, University of New Mexico; Charles Jackson, The University of Texas at Austin
- 3:20 p.m.** Pseudo-Sufficient Dimension Reduction and Sufficient Variable Selection—◆Wenbo Wu,
- 3:35 p.m.** On the Penalty Functions for Two-Way Regularized Matrix Decomposition—◆Senmao Liu, Texas A&M University

44 CC-619

● Statistical Issues Specific to Therapeutic Areas I—Contributed

Biopharmaceutical Section, Section for Statistical Programmers and Analysts, Biometrics Section

Chair(s): Kuolong Hu, Amgen

- 2:05 p.m.** Ruling Out a Safety Margin—◆Kunthel By; Thomas Ly, FDA; John Yap, FDA; Jessica Kim, FDA
- 2:20 p.m.** Practical Considerations for Consistency Assessment in Multiregional Clinical Trials with Oncology Examples—◆Jianchang Lin, Takeda Pharmaceutical International Co.; Zhaoyang Teng, Takeda Pharmaceutical International Co.; Guohui Liu, Takeda Pharmaceutical International Co.; Xuedong Chi, Takeda Pharmaceuticals; Mingxiu Hu, Takeda Pharmaceuticals
- 2:35 p.m.** One Sample Group Sequential Trial Design for Correlated Binary Data—◆Ming Zhou; Yang Zhao, University of Tennessee Health Science Center;

Larry Shen, Pharmapace, Inc.

- 2:50 p.m.** Optimality Considerations in an Adaptive Phase II Trial for a Novel Therapeutic Indication—◆Yuping Li, Theravance Biopharma US, Inc.; Alex Dmitrienko, Quintiles; Whedy Wang, Theravance Biopharma US, Inc.
- 3:05 p.m.** Continual Reassessment Method Under Model Uncertainty—◆Tobias Mielke, ICON PLC
- 3:20 p.m.** Testing Multiple Endpoints in Multiple Prespecified Subgroups Using Group Sequential Procedures—◆Christine Gause, Merck; Keaven Anderson, Merck
- 3:35 p.m.** Stopping for Futility on Progression-Free Survival in Oncology Clinical Trials—◆Qiming Liao, GlaxoSmithKline

45 CC-618

Topics in Clinical Trials 1—Contributed Biopharmaceutical Section, Biometrics Section

Chair(s): Lisa Chen, Amgen

- 2:05 p.m.** Missing Data Analysis in Crossover Studies with Baseline Measurements and Small Sample Sizes—◆Zifang Guo, Merck; Yue Liu, Merck; Devan Mehrotra, Merck
- 2:20 p.m.** Bayesian Adaptive Designs in the Presence of Multiple Factors: Hyperbaric Oxygen Brain Injury Treatment (HOBIT) Phase II Trial—◆Byron J. Gajewski, University of Kansas Medical Center; Scott M. Berry, Berry Consultants; Gaylan L. Rockswold, Hennepin County Medical Center
- 2:35 p.m.** A Bayesian Adaptive Design for Phase IIb Dose-Finding Using a Composite Endpoint—◆Norman Bohidar; Kyle Wathen, Johnson & Johnson
- 2:50 p.m.** Dose-Finding Methods Based on Cure Model Approach in Phase I Cancer Clinical Trials—◆Menghui Chen, Merck; Yong Lin, Rutgers University; Weichung Joe Shih, Rutgers University
- 3:05 p.m.** Challenges on Pediatrics Clinical Trials—◆Annpey Pong
- 3:20 p.m.** Improve the Prediction of Landmark Event Time by Incorporating Actual Enrollment Data—◆Yong Zhang, Novartis Pharmaceuticals; Zhichao Sun, University of Michigan; Kalyanee Appanna, Novartis Pharmaceuticals; Cheng Zheng, Novartis Pharmaceuticals; Kaushal Mishra, Novartis Pharmaceuticals; Feng Tai, Novartis Pharmaceuticals; Can Cai, Novartis Oncology
- 3:35 p.m.** Missing Data Issue for Sedative Products in Human Abuse Potential Studies—◆Ling Chen, FDA

Special Presentation 4:00 p.m.—5:50 p.m.**46 CC-4C2**
Introductory Overview Lecture: Personalized Medicine—Invited

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

Organizer(s): Michael Kosorok, The University of North Carolina at Chapel Hill

Chair(s): TBD

- 4:05 p.m.** Individualized Treatment Rules: An Introduction to the Principles of Treatment Tailoring—◆Erica Moodie, McGill University
- 4:35 p.m.** Estimating Dynamic Treatment Regimens Using SMARTs and Reinforcement Learning—◆Michael Kosorok, The University of North Carolina at Chapel Hill
- 5:05 p.m.** Estimation of Optimal Treatment Regimens with Competing Outcomes—◆Eric Laber, North Carolina State University
- 5:35 p.m.** Floor Discussion

Invited Sessions 4:00 p.m.—5:50 p.m.**47 CC-310**
● Recent Developments in Machine Learning and Data Mining—Invited

IMS, International Indian Statistical Association, Conference on Statistical Practice Steering Committee

Organizer(s): Xiaotong Shen, University of Minnesota

Chair(s): Annie Qu, University of Illinois at Urbana-Champaign

- 4:05 p.m.** Adaptive Estimation of the Copula Correlation Matrix for Semiparametric Elliptical Copulas—Marten Wegkamp, Cornell University; ◆Yue Zhao, Cornell University
- 4:30 p.m.** Local Identifiability of L_1 -Minimization Dictionary Learning: A Sufficient and Almost Necessary Condition—◆Siqi Wu, UC Berkeley; Bin Yu, UC Berkeley
- 4:55 p.m.** Classification with Unstructured Predictors with an Application to Sentiment Analysis—◆Annie Qu, University of Illinois at Urbana-Champaign; Xiaotong Shen, University of Minnesota; Junhui

Wang, University of Illinois at Chicago; Yiwen Sun, University of Minnesota

- 5:20 p.m.** Maximum Likelihood Inference for a Large Precision Matrix—◆Yunzhang Zhu, The Ohio State University; Xiaotong Shen, University of Minnesota
- 5:45 p.m.** Floor Discussion

48 CC-3B
■ ● Novel Spatial and Spatio-Temporal Approaches for Health Applications—Invited

Section on Statistics and the Environment, Korean International Statistical Society, Health Policy Statistics Section, Government Statistics Section, SSC, Biometrics Section

Organizer(s): Mikyoung Jun, Texas A&M University

Chair(s): Mikyoung Jun, Texas A&M University

- 4:05 p.m.** A New Estimation Approach for Combining Epidemiological Data from Multiple Sources—◆Yongtao Guan, University of Miami; Hui Huang, Peking University; Xiaomei Ma, Yale University; Rasmus Waagepetersen, Aalborg University; Theodore Holford, Yale University; Rong Wang, Yale University; Harvey Risch, Yale University; Lloyd Mueller, Connecticut Department of Public Health
- 4:30 p.m.** Latent Cluster Modeling of Spatio-Temporal Variation in Small-Area Health Data—◆Andrew B. Lawson, Medical University of South Carolina; Duncan Lee, University of Glasgow
- 4:55 p.m.** Joint Modeling of Spatial Outcomes: Benefits to Understanding the Underlying Process and Power Gains—◆Charmaine Dean, University of Western Ontario; Cindy Feng, University of Saskatchewan; Alisha Albert-Green, University of Western Ontario
- 5:20 p.m.** The Modeling of Incomplete Disease Counts in Time and Space—◆Jon Wakefield, University of Washington; Laina Mercer, University of Washington
- 5:45 p.m.** Floor Discussion

49 CC-2B
■ ● Volatility and Dependence: Recent Results and Outlook—Invited

Business and Economic Statistics Section

Organizer(s): Jan Beran, University of Konstanz

Chair(s): Jan Beran, University of Konstanz

- 4:05 p.m.** Tail Risk, Volatility, and Return Predictability—◆Viktor Todorov, Northwestern University
- 4:30 p.m.** Dependence and Nonstationarity in Time Series—◆Peter Robinson, LSE

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

4:55 p.m. Testing Mean Stability of Heteroscedastic Time Series—◆Liudas Giraitis, University of London

5:20 p.m. Estimation of the Continuous and Discontinuous Leverage Effect—◆Christina Dan Wang, Princeton University

5:45 p.m. Floor Discussion

50 CC-607 Statistical Learning Using Convex Optimization—Invited

Section on Statistical Learning and Data Mining

Organizer(s): Jacob Bien, Cornell University

Chair(s): Maxwell Grazier G'Sell, Carnegie Mellon University

4:05 p.m. Iteratively Reweighted Least Squares: New Insights from an Old Paradigm—◆Ryan Joseph Tibshirani, Carnegie Mellon University; Piotr Fryzlewicz, London School of Economics; Yining Wang, Carnegie Mellon University

4:25 p.m. Individualized Rank Aggregation Using Nuclear Norm Regularization—◆Sahand N. Negahban, Yale University

4:45 p.m. Two Novel Applications of Selective Inference—Sam Gross, Stanford University; Stephen Reid, Stanford University; ◆Rob Tibshirani, Stanford University

5:05 p.m. Generalized Convex Banding for Covariance Estimation—◆Jacob Bien, Cornell University

5:25 p.m. Fused Lasso Additive Model—Ashley Petersen, University of Washington; ◆Daniela Witten, University of Washington; Noah Simon, University of Washington

5:45 p.m. Floor Discussion

51 CC-608 Cancer Genomics and Translational Research—Invited

ENAR, Biometrics Section, Section on Medical Devices and Diagnostics

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

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

4:05 p.m. Applications of Genomic Data in Novartis Clinical Development—◆Douglas Michael Robinson, Novartis Pharmaceuticals

4:30 p.m. Some Experience with Biomarker-Driven Cancer Clinical Trials—◆Michael LeBlanc, Fred Hutchinson Cancer Research Center

4:55 p.m. Bayesian Models for Heterogeneity in Human Cancers—◆Yuan Ji, The University of Chicago

3:20 p.m. Disc: Rajeshwari Sridhara, FDA

3:40 p.m. Floor Discussion

52 CC-3A Bayesian Computation II—Invited

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

Organizer(s): Omiros Papaspiliopoulos, ICREA-UPF

Chair(s): Omiros Papaspiliopoulos, ICREA-UPF

4:05 p.m. Estimation of the Score Vector and Observed Information Matrix in Intractable Models—◆Pierre Etienne Jacob, University of Oxford; Arnaud Doucet, University of Oxford; Sylvain Rubenthaler, Université Nice Sophia Antipolis

4:30 p.m. Travel Time Reliability Prediction for Mapping Services—◆Dawn Woodard, Cornell University

4:55 p.m. Stratification of Markov Processes for Rare Event Simulation—◆Jonathan Weare, The University of Chicago

5:20 p.m. Quantifying Epistemic Uncertainty in ODE and PDE Numerical Solutions via Gaussian Measures and Feynman-Kac Identities—◆Mark Girolami, University of Warwick

5:45 p.m. Floor Discussion

53 TCC-101 Better Statistical Learning for Complex Data—Invited

SSC, Government Statistics Section

Organizer(s): Chong Zhang, University of Waterloo; Xingye Qiao, Binghamton University

Chair(s): Chong Zhang, University of Waterloo

4:05 p.m. Linear and Quadratic Discriminant Analyses for High-Dimensional Data—◆Yingli Qin, University of Waterloo; Yilei Wu, University of Waterloo; Mu Zhu, University of Waterloo

4:30 p.m. Angle Breakdown Point for Classification—◆Yufeng Liu, The University of North Carolina

4:55 p.m. Link Prediction for Partially Observed Networks—Yunpeng Zhao, George Mason University; Yun-Jhong Wu, University of Michigan; Elizaveta Levina, University of Michigan; ◆Ji Zhu, University of Michigan

5:20 p.m. A New Approach to Variable Selection via Algorithmic Regularization Paths—Yue Hu, Rice University; ◆Genevera I. Allen, Rice University/Baylor College of Medicine

5:45 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

54 CC-4C3

■ ● Mixed Membership Models and Their Applications: Past, Present, and Future—Invited

Section on Bayesian Statistical Science, Section on Statistical Learning and Data Mining, International Society for Bayesian Analysis (ISBA), Committee on Applied Statisticians

Organizer(s): Edo Airoldi, Harvard University; Elena Erosheva, University of Washington

Chair(s): Edo Airoldi, Harvard University

- 4:05 p.m.** Mixed Membership Modeling: De Finetti and Nonparametrics—◆Michael Jordan, UC Berkeley; Tamara Broderick, UC Berkeley; Ashia Wilson, UC Berkeley
- 4:30 p.m.** An Overview of Mixed Membership Models: Some History and a General Formulation—◆Elena Erosheva, University of Washington; Steven Fienberg, Carnegie Mellon University
- 4:55 p.m.** Interpretability and A Priori Constraints in Mixed Membership Models—◆Burton Singer, University of Florida; Marcia Castro, Harvard University
- 5:20 p.m.** Disc: David Blei, Columbia University
- 5:45 p.m.** Floor Discussion

55 CC-210

■ ● Recent Development in Gene Mapping for Complex Trait Association Studies—Invited

International Statistical Institute, Biometrics Section

Organizer(s): Yun Li, The University of North Carolina at Chapel Hill

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

- 4:05 p.m.** Empirical Bayes Scan Statistics for Detecting Clusters of Disease Risk Variants in Genetic Studies—◆Iuliana Ionita-Laza, Columbia University
- 4:30 p.m.** Robust Partial Likelihood for Detecting Imprinting and Maternal Effects Using Case-Control Families—◆Shili Lin, The Ohio State University
- 4:55 p.m.** Genetic Association Mapping of Binary Traits in Samples with Related Individuals—◆Mary Sara McPeck, The University of Chicago; Sheng Zhong, The University of Chicago; Duo Jiang, Oregon State University
- 5:20 p.m.** Detecting and Exploiting Relatedness in Large-Scale Genotype Data—◆Brian Browning, University of Washington; Sharon Browning, University of Washington
- 5:45 p.m.** Floor Discussion

56 CC-214

■ Superbugs: Fighting Nightmare Bacteria with Statistics—Invited

CHANCE, Biometrics Section, Statistics Without Borders, Conference on Statistical Practice Steering Committee, Committee on Applied Statisticians

Organizer(s): Scott R. Evans, Harvard University

Chair(s): Scott R. Evans, Harvard University

- 4:05 p.m.** Meeting the Challenges to Address Superbugs—◆Thomas Fleming, University of Washington
- 4:25 p.m.** Changing the TB Drug Development Paradigm: Contributions of Statistical Science—◆Lori Dodd, NIAID/NIH
- 4:45 p.m.** Discordant MIC Analysis: A New Path to Licensure of Anti-Infective Drugs—◆Dean Follmann, National Institute of Allergy and Infectious Diseases ; Erica Brittain, National Institute of Allergy and Infectious Diseases
- 5:05 p.m.** Statistical Considerations for Antibacterial Drugs Targeting Unmet Medical Needs—◆Daniel Rubin, FDA
- 5:25 p.m.** Superbugs: Fighting Nightmare Bacteria with Statistics—◆John Powers, NIH
- 5:45 p.m.** Floor Discussion

57 CC-206

■ ● Poverty, Government Program Receipt, and Measurement Using Administrative and Survey Data—Invited

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

Organizer(s): Bruce Meyer, Harris School

Chair(s): Marie Kraska, Auburn University

- 4:05 p.m.** How Do Safety Net Participation Rates from Administrative Data and Survey Data Respond to Policy Variation and the Business Cycle? Evidence from the CPS ASEC—◆Marianne Bitler, UC Irvine; Hilary Hoynes, UC Berkeley
- 4:25 p.m.** Using Linked Survey and Administrative Data to Better Measure Income: Implications for Poverty, Program Effectiveness, and Holes in the Safety Net—◆Bruce Meyer, Harris School; Nikolas Mittag, CERGE-EI/Charles University
- 4:45 p.m.** Bias from Unit Nonresponse in the Measurement of Household Income in CPS and SIPP—Bruce Meyer, Harris School; Adam Bee, U.S. Census Bureau; ◆Graton M.R. Gathright, U.S. Census Bureau
- 5:05 p.m.** Supplemental Poverty Measure Thresholds: Imputing Noncash Benefits to the Consumer Expenditure

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Survey—Kathleen S. Short, U.S. Census Bureau;
◆Thesia Garner, Bureau of Labor Statistics;
Marisa Gudrais, Bureau of Labor Statistics

5:25 p.m. Disc: David Johnson, Bureau of Economic Analysis

5:45 p.m. Floor Discussion

58 **TCC-202**
■ ● Memorial Session for Dennis Lindley—Invited

Memorial, International Society for Bayesian Analysis (ISBA),
Section on Bayesian Statistical Science, IMS, Committee on
Applied Statisticians

Organizer(s): David Draper, UC Santa Cruz/eBay Research Labs
Chair(s): Vadim von Brzeski, UC Santa Cruz/eBay Research Labs

4:05 p.m. Dennis Lindley: The Man and the Magic—◆Philip Dawid, University of Cambridge

4:35 p.m. Keeping It Simple—◆Anthony O’Hagan, University of Sheffield

5:05 p.m. The Influence of Dennis Lindley’s Work on Applied Statistical Practice—◆David Draper, UC Santa Cruz/eBay Research Labs

5:35 p.m. Floor Discussion

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

59 **CC-213**
■ ● Multivariate Meta-Analysis: Approaches, Applications, Assessments—Topic-Contributed Health Policy Statistics Section

Organizer(s): Simina M. Boca, Georgetown University Medical Center
Chair(s): Christopher Schmid, Brown University

4:05 p.m. Sensitivity to Excluding Treatments in Network Meta-Analysis—Lifeng Lin, University of Minnesota; ◆Haitao Chu, University of Minnesota, Twin Cities; James Hodges, University of Minnesota

4:25 p.m. A Bayesian Nonparametric Meta-Analysis Model—◆George Karabatsos, University of Illinois at Chicago

4:45 p.m. Testing for Publication Bias in Multivariate Random-Effects Meta-Analysis—◆Yong Chen, The University of Texas School of Public Health; Chuan Hong, The University of Texas School of Public Health; Haitao Chu, University of Minnesota, Twin Cities

5:05 p.m. An Empirical Comparison of Univariate and Multivariate Meta-Analyses for Categorical Outcomes—◆Thomas Trikalinos, Brown University; Christopher Schmid, Brown University; David Hoaglin, Consulting Statistician

5:25 p.m. Multivariate Meta-Analysis with an Increasing Number of Parameters—Simina M. Boca, Georgetown University Medical Center; Ruth Pfeiffer, National Cancer Institute; ◆Joshua Sampson, National Cancer Institute

5:45 p.m. Floor Discussion

60 **CC-4C4**
■ ● Advanced Multiple Testing Methodologies for Confirmatory Trials—Topic-Contributed Biopharmaceutical Section, ENAR

Organizer(s): Freda Cooner, FDA/CDER
Chair(s): Freda Cooner, FDA/CDER

4:05 p.m. Power and Sample Size Calculation Using Graphical Approaches—◆Dong Xi, Novartis; Willi Maurer, Novartis; Ekkehard Glimm, Novartis; Frank Bretz, Novartis

4:25 p.m. Global-Test-Based Closed Testing Procedures for Multiple Comparisons—◆Xuan Liu, AbbVie; Qi Jiang, AbbVie; Jane Qian, AbbVie

4:45 p.m. Flexible Alpha Spending Functions for Type I Error Control in Clinical Trials with Interim Analysis and Multiple Endpoints—Abdul Sankoh, Synageva BioPharma; ◆Xueying Chen, Novartis Pharmaceuticals

5:05 p.m. Confidence Regions Corresponding to Multiple Comparisons Procedures—◆Brian Wiens, Portola Pharmaceuticals

5:25 p.m. Disc: Walt Offen, AbbVie

5:45 p.m. Floor Discussion

61 **CC-609**
■ ● Classifier Development for Biomarker Discovery from Complex Feature Spaces—Topic-Contributed Biometrics Section, International Indian Statistical Association

Organizer(s): Bobbie-Jo Webb-Robertson, Pacific Northwest National Laboratory

Chair(s): Bobbie-Jo Webb-Robertson, Pacific Northwest National Laboratory

4:05 p.m. Mediation Analysis for Survival Data Using Semiparametric Probit Models—◆Yen-Tsung Huang, Brown University; Tianxi Cai, Harvard University

Sunday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 4:25 p.m. Classification of Protein-Binding Ligands Using Their Structural Information—◆Galkande Arachige Iresha Chamanthi Premarathna, Texas Tech University; Leif Ellingson, Texas Tech University
- 4:45 p.m. Integrative Clustering of High-Dimensional Data Using Non-Negative Matrix Factorization—◆Prabhakar Chalise, University of Kansas Medical Center ; Brooke Fridley, University of Kansas Medical Center
- 5:05 p.m. Analysis of FTICR-MS Features from a Reciprocal Soil Transplant Experiment—◆Alejandro Heredia-Langner, PNNL; Nancy J. Hess, PNNL; Kristin H. Jarman, PNNL; Lee Ann McCue, PNNL; Malak Tfaily, PNNL; Vanessa L. Bailey, PNNL
- 5:25 p.m. A Meta-Analysis Approach to Exploratory Data Analysis and Feature Exploration for Complex Omics Data Through Computational Statistics—◆Lisa Bramer, Pacific Northwest National Laboratory; Bobbie-Jo Webb-Robertson, Pacific Northwest National Laboratory; Jon Jacobs, Pacific Northwest National Laboratory; Eric Orwoll, Oregon Health & Science University; Jodi Lapidus, Oregon Health & Science University
- 5:45 a.m. Floor Discussion

62 CC-612

■ ● Challenges and Opportunities for Enrichment Design of Clinical Trials—Topic-Contributed

Biopharmaceutical Section, Biometrics Section

Organizer(s): Lanju Zhang, AbbVie; Xiaolong Luo, Celgene

Chair(s): Lanju Zhang, AbbVie

- 4:05 p.m. Informational Design for Biomarker Population Selection and Alpha Allocation—◆Xiaoyun Li, Merck; Cong Chen, Merck Research Laboratories
- 4:25 p.m. A Bootstrap Test Procedure for Treatment-Biomarker Interaction in Phase III Clinical Trials—◆Bingshu Chen, Queens University; Wenyu Jiang, Queen's University
- 4:45 p.m. Enrichment Design for Targeted Therapy—◆Bo Yang, AbbVie Pharmaceutical Research & Development; Yijie Zhou, AbbVie; Lanju Zhang, AbbVie; Lu Cui, AbbVie
- 5:05 p.m. Regulatory Challenges in Reviewing Targeted Therapy Trial—◆Kun He, DBV/OB/CDER/FDA; Rajeshwari Sridhara, FDA
- 5:25 p.m. Disc: Xiaolong Luo, Celgene
- 5:45 p.m. Floor Discussion

63 CC-211

■ ● Advancing Research in Total Survey Error: Establishing New Links Between Multiple Sources of Survey Error—Topic-Contributed

Survey Research Methods Section, Government Statistics Section, Statistics Without Borders, Section on Statistical Consulting

Organizer(s): Brady T. West, University of Michigan Institute for Social Research

Chair(s): Brady T. West, University of Michigan Institute for Social Research

- 4:05 p.m. Do Interviewers with High Cooperation Rates Behave Differently? Interviewer Cooperation Rates and Interview Behaviors—◆Kristen Olson, University of Nebraska - Lincoln; Jolene D. Smyth, University of Nebraska - Lincoln; Antje D. Kirchner, University of Nebraska - Lincoln
- 4:25 p.m. Decomposing Mobile Versus PC Web Mode Effects in a Probability Web Panel—◆Christopher Antoun,
- 4:45 p.m. The Effects of Nonresponse Error and Measurement Error on Estimates of Regression Coefficients—◆Antje Kirchner; Barbara Felderer, University of Mannheim
- 5:05 p.m. To Allow or Disallow Smartphone Participation in Web Surveys: Choosing Between the Potential for Coverage and Measurement Error—◆Gregg Peterson, Institute for Social Research; Jamie Griffin, Institute for Social Research; John LaFrance, Market Strategies International; JiaoJiao Li, Market Strategies International
- 5:25 p.m. Disc: Jill Dever, RTI International
- 5:45 p.m. Floor Discussion

64 CC-606

■ ● Four Approaches to Treatment Effect Heterogeneity—Topic-Contributed

Biometrics Section

Organizer(s): Luke W. Miratrix, Harvard University

Chair(s): Luke W. Miratrix, Harvard University

- 4:05 p.m. Identification in Regression Discontinuity Designs with Multiple Cutoffs—◆Luke Keele, Penn State
- 4:25 p.m. Weighting Methods for Assessing Mediation Effect Variation in Multi-Site Trials with an Application to the National Job Corps Study—◆Xu Qin, The University of Chicago; Guanglei Hong, The University of Chicago
- 4:45 p.m. Efficient Augmentation and Relaxation Learning for Treatment Regimes Using Observational Data—◆Yingqi Zhao, University of Wisconsin - Madison; Eric Laber, North Carolina State University; Sumona Saha, University of Wisconsin - Madison

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

5:05 p.m. Estimating Heterogeneous Treatment Effects by Combining Experimental with Observational Data—
◆Jasjeet Sekhon, UC Berkeley

5:25 p.m. Floor Discussion

65 CC-610

■ Statistics with Computing in the Evolving Undergraduate Curriculum—Topic-Contributed Section on Statistical Education, Section on Teaching of Statistics in the Health Sciences

Organizer(s): John D. Emerson, Middlebury College

Chair(s): Bill Peterson, Middlebury College

4:05 p.m. Learning Statistics with R, from the Ground Up—
◆Xiaofei Wang

4:25 p.m. Statistical Computation Using Student Collaborative Work—◆John D. Emerson, Middlebury College

4:45 p.m. Preparing Our Students for the Future of Statistics—
◆John W. Emerson, Yale University

5:05 p.m. Intro Stats in the 21st Century—◆Richard De Veaux, Williams College

5:25 p.m. Introducing Probability and Statistics to Students Who Have Had Calculus: A Bayesian Approach with Computing—◆Joseph Chang, Yale University

5:45 p.m. Floor Discussion

66 CC-401

● New Developments in Nonparametric Analysis of Multivariate and Functional Data: Data Depth and Beyond—Topic-Contributed Section on Nonparametric Statistics, Section on Statistics and the Environment

Organizer(s): Regina Y. Liu, Rutgers University

Chair(s): Aurore Delaigle, The University of Melbourne

4:05 p.m. Detecting Trends in Functional Time Series Data: Antarctic Climate Study—◆Pamela Llop, IMAL(UNL-CONICET)/FIQ (UNL); Ricardo Fraiman, Universidad de la República; Ana Justel, Universidad Autónoma de Madrid; Regina Y. Liu, Rutgers University

4:25 p.m. Antipodal Reflection Depth (ARD) and Its Application to Nonparametric Outlier Detection in Multivariate and Functional Data—◆Yi Fan, Rutgers University; Regina Y. Liu, Rutgers University

4:45 p.m. Extremal Notion of Depth for Functional Data with Applications to Simultaneous Inference—◆Naveen Narisetty, University of Michigan; Vijay Nair, University of Michigan

5:05 p.m. The Properties of Functional Depth—◆Alicia Nieto-Reyes, Universidad de Cantabria; Heather Battey, Princeton University

5:25 p.m. Depth-Based Statistical Methods for Random Graphs—◆Ricardo Fraiman, Universidad de la República

5:45 p.m. Floor Discussion

67 CC-615

Fresh Perspectives in Causal Inference, III—Topic-Contributed

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

Organizer(s): Jessica Young, Harvard School of Public Health; Susan Gruber, Reagan-Udall Foundation for the FDA

Chair(s): Lan Liu, Harvard University

4:05 p.m. Bias-Reduced (BR) Doubly Robust (DR) Estimation—◆Karel Vermeulen, Ghent University; Stijn Vansteelandt, Ghent University

4:25 p.m. Statistics in the Twilight Zone: Component-Specific Inference in Finite Mixture Models—◆Avi Feller, Harvard University; Luke W. Miratrix, Harvard University; Natesh Pillai, Harvard University; Evan Greif, Harvard University

4:45 p.m. Causal Inference in Environmental Science and Agriculture: Opportunities and Challenges—◆Molly Davies,

5:05 p.m. Non-Collapsibility and Selection Bias of Hazard Ratio—◆Menglan Pang; Michal Abrahamowicz, McGill University; Robert Platt, McGill University

5:25 p.m. Comparison of a Targeted Maximum Likelihood Estimator to Other Estimation Techniques for the One-Year Risk of Recurrent MI Among New Users of High vs. Low Potency Statins—◆Jonathan Todd, The University of North Carolina Gillings School of Global Public Health; Michele Jonsson Funk, The University of North Carolina Gillings School of Global Public Health; Alan Brookhart, The University of North Carolina at Chapel Hill

5:45 p.m. Floor Discussion

68 CC-2A

■ Survey Nonresponse: Investigation and Practice—Topic-Contributed

Survey Research Methods Section, Government Statistics Section, Statistics Without Borders

Organizer(s): Daniel Yang, Bureau of Labor Statistics

Chair(s): William Cecere, Westat

4:05 p.m. Effective Strategies for Collecting Interviewer Observations to Be Used for Nonresponse

Sunday

Adjustment—◆Dan Li, The Search Agency; Brady T. West, University of Michigan Institute for Social Research

4:25 p.m. Imputation of Missing Data in the State Inpatient Databases—◆Yan Ma, The George Washington University; Wei Zhang, The George Washington University; Stephen Lyman, Hospital for Special Surgery; Andrew Gelman, Columbia University

4:45 p.m. Optimal Sample Allocation to Maximize Number of Publishable Cells in the Survey of Occupational Injuries and Illnesses—◆Diem-Tran Kratzke, Bureau of Labor Statistics; Daniell Toth, Bureau of Labor Statistics

5:05 p.m. Investigating the Effect of Mode Assignment on the Response Rate in the Current Population Survey—◆Polly Phipps, Bureau of Labor Statistics; Daniel Yang, Bureau of Labor Statistics; Brian Meekins, Bureau of Labor Statistics; Daniell Toth, Bureau of Labor Statistics

5:25 p.m. Exploring Regional Effects on Establishment Nonresponse Using Hierarchical Linear Modeling—◆Morgan Earp, Bureau of Labor Statistics; Polly Phipps, Bureau of Labor Statistics; Daniell Toth, Bureau of Labor Statistics; Charlotte Oslund, Bureau of Labor Statistics

5:45 p.m. Floor Discussion

69 **CC-304**

■ Emulating Complex Computer Models—Topic-Contributed

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

Organizer(s): Jarrett Barber, Arizona State University

Chair(s): Mark C. Greenwood, Montana State University

4:05 p.m. Optimization Under Constraints by Applying an Asymmetric Entropy Measure—◆Herbert Lee, UC Santa Cruz; David Lindberg, Norwegian University of Science and Technology

4:25 p.m. Multivariate Stochastic Process Models for Joint Regression and Classification—◆Tony Pourmohamad, UC Santa Cruz; Herbert Lee, UC Santa Cruz

4:45 p.m. Calibration of Computer Models with Informative Failures—◆Peter Marcy, Los Alamos National Laboratory; Curtis Storlie, Los Alamos National Laboratory

5:05 p.m. Speeding Up Neighborhood Searches in Local Gaussian Process Fitting of Large-Scale Computer Experiments—◆Ben Haaland, Georgia Tech, ISyE; Chih-Li Sung, Georgia Tech, ISyE

5:25 p.m. An Emulator for an Individual-Based Model of Tree Growth—◆Jarrett Barber, Arizona State

University; Kiona Ogle, Arizona State University; Michael Fell, Arizona State University

5:45 p.m. Floor Discussion

Contributed Sessions 4:00 p.m.—5:50 p.m.

70 **CC-205**
Panel Data, Linear Models, and Testing—Contributed

Business and Economic Statistics Section, International Indian Statistical Association

Chair(s): Juana Sanchez, UCLA

4:05 p.m. Minimum Wages and Employment: A Factor Model Approach—◆Evan Totty, Purdue University

4:20 p.m. Estimation and Inference in Interactive Effects Panel Data Models with a Constrained Factor Structure—◆Mohitosh Kejriwal, Purdue University; Evan Totty, Purdue University

4:35 p.m. On Identifying and Estimating a Nonseparable Structural Function for Panel Data—◆C.Y. (Chor-Yiu) Sin, National Tsing Hua University; Ji-Liang Shiu, Renmin University of China

4:50 p.m. Generalized Method of Moments Optimal Instrument Theory Applied to Generalized Linear Mixed Models Under Informative Sampling—◆Mariana Saenz, Georgia Southern University

5:05 p.m. Testing the Number of Components in Normal Mixture Regression Models—◆Katsumi Shimotsu, The University of Tokyo

5:20 p.m. Bahadur Intercept with Applications to One-Sided Testing—◆Zeng-Hua Lu, University of South Australia

5:35 p.m. Floor Discussion

71 **CC-308**
Robust Methods for Estimation, Inference, and Computation—Contributed

IMS, International Indian Statistical Association

Chair(s): David Gerard, University of Washington

4:05 p.m. Bayesian Analysis for Nonparametric Regime Shift Models—◆Yingxing Li, Xiamen University

4:20 p.m. Divergence-Constrained Distributionally Robust Optimization: Data-Driven Strategy—◆Anand Vidyashankar, George Mason University; Jie Xu, George Mason University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 4:35 p.m. Symmetric Gini Covariance and Correlation—
◆Yongli Sang
- 4:50 p.m. Robust Estimation of Principal Components from
Depth-Based Multivariate Rank Covariance Matrix—
◆Subhabrata Majumdar, University of Minnesota,
Twin Cities; Snigdhasu Chatterjee, University of
Minnesota
- 5:05 p.m. M-Estimation Under Dependence—◆Pramita Bagchi
- 5:20 p.m. Nonstandard M-Estimation Under Partially Identified
Models—◆Han Jiang; Stephen Man Sing Lee, The
University of Hong Kong
- 5:35 p.m. Nonparametric Two-Sample Testing in High
Dimensions: Free Lunches and Computation Statistics
Tradeoffs—◆Aaditya Ramdas, Carnegie Mellon
University; Sashank Reddi, Carnegie Mellon
University; Larry Wasserman, Carnegie Mellon
University; Aarti Singh, Carnegie Mellon University;
Barnabas Poczos, Carnegie Mellon University

72 CC-307

■ Bayesian Methods in Genetics and Genomics—Contributed

Section on Bayesian Statistical Science, International Society
for Bayesian Analysis (ISBA), Biometrics Section, International
Indian Statistical Association

Chair(s): Tanzy Love, University of Rochester

- 4:05 p.m. Characterizing Cellular Phenotypes via Bayesian
Regression in the Gene Ontology—◆Paula J.
Griffin, Boston University School of Public Health;
Tatsunori Hashimoto, MIT; Edo Airoldi, Harvard
University
- 4:20 p.m. A New Method for Fast Approximate Bayesian
Computation in Population Genetic Models—
◆Erkan Buzbas, University of Idaho; Noah
Rosenberg, Stanford University
- 4:35 p.m. A Bayesian Predictive Model for Imaging Genetics
with Application to Schizophrenia—◆Thierry
Chekouo, MD Anderson Cancer Center; Francesco
Stingo, MD Anderson Cancer Center; Michele
Guindani, MD Anderson Cancer Center; Kim-Anh
Do, MD Anderson Cancer Center
- 4:50 p.m. Model-Based Clustering with Flipping to Detect and
Correct Switched Gene Expression Measurements—
◆William Young; Adrian Raftery, University
of Washington; Ka Yee Yeung, University of
Washington
- 5:05 p.m. Shrinkage Priors for Bayesian Learning from High-
Dimensional Genetics Data—◆Anjishnu Banerjee,
Medical College of Wisconsin
- 5:20 p.m. Structured Bayesian Group Factor Analysis—
◆Shiwen Zhao; Chuan Gao, Duke University;
Sayan Mukherjee, Duke University; Barbara
Engelhardt, Princeton University

- 5:35 p.m. GLAD: A Mixed-Membership Model for
Heterogeneous Tumor Subtype Classification—
◆Patrick Flaherty, University of Massachusetts
Amherst; Hachem Saddiki, Worcester Polytechnic
Institute; Jon McAuliffe, UC Berkeley

73 CC-212

Model Diagnostics, Model Selection, and Their Applications to Advanced Data Analysis— Contributed

Health Policy Statistics Section

Chair(s): Ying Liu, Columbia University

- 4:05 p.m. Data Envelopment Analysis of a Nurse-Led Group
Clinic Program: Identifying Patient-Specific Factors
to Reduce Rehospitalization—◆Patrick Edmonds,
University of Kansas Medical Center; Jo Wick,
University of Kansas Medical Center; Ubolrat
Piamjariyakul, University of Kansas Medical Center;
Carol Smith, University of Kansas Medical Center
- 4:20 p.m. Diagnostics for the Complementary Log-Log
Regression Model—◆Stephen Quinn, Flinders
University; Leigh Blizzard, Menzies Institute of
Medical Research; Jana Canary, Menzies Institute
of Medical Research; David W. Hosmer, University
of Massachusetts
- 4:35 p.m. Birth(Death)/Birth-Death Processes and Their
Computable Transition Probabilities with Statistical
Application—◆Lam Ho, UCLA; Marc A. Suchard,
UCLA
- 4:50 p.m. Chance for Recovery Increase vs. Risk Reduction—
◆Lev Sverdlov,
- 5:05 p.m. Selecting Spatial Scale of Covariates in Regression
Models of Environmental Exposures—◆Lauren P.
Grant, Virginia Commonwealth University; Chris
Gennings, Icahn School of Medicine at Mount Sinai;
David Wheeler, Virginia Commonwealth University
- 5:20 p.m. Limit Theorems for Random Vectors and Stationary
Sequences—◆Armine Bagyan, Penn State; Arkady
Tempelman, Penn State; Bing Li, Penn State
- 5:35 p.m. Floor Discussion

74 CC-4C1

Advances in Nonparametric Modeling: Part 1—Contributed

Section on Nonparametric Statistics

Chair(s): Sonja Greven, LMU

- 4:05 p.m. An Alternative Local Polynomial Estimator for the
Errors-in-Variables Problem—◆Xianzheng Huang,
University of South Carolina; Haiming Zhou,
University of South Carolina

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 4:20 p.m. A Smooth Simultaneous Confidence Band for Conditional Variance Function—◆Li Cai, Soochow University; Lijian Yang, Soochow University
- 4:35 p.m. Nonparametric Modal Regression—◆Yen-Chi Chen, Carnegie Mellon University; Christopher R. Genovese, Carnegie Mellon University; Ryan Joseph Tibshirani, Carnegie Mellon University; Larry Wasserman, Carnegie Mellon University
- 4:50 p.m. Nonparametric Hazard Rate Estimation of Left-Truncated and Right-Censored Data with Application to Breast Cancer Data—◆Jufen Chu, The University of Texas at Dallas; Sam Efromovich, The University of Texas at Dallas
- 5:05 p.m. Nonparametric Estimation of a Change Point of a Regression Function—◆Xiyue Liao; Mary Catherine Meyer, Colorado State University
- 5:20 p.m. A Fast Algorithm for Log-Concave Density Estimation—◆Yu Liu; Yong Wang, The University of Auckland
- 5:35 p.m. Estimating the Number of Clusters Using Cross Validation—◆Wei Fu; Patrick Perry, New York University

75 CC-614

● SIE CP4: Disease Prediction—Contributed Section on Statistics in Epidemiology, Biometrics Section, Section on Statistics and the Environment, Statistics Without Borders

Chair(s): Mark Stephen Litaker, The University of Alabama at Birmingham

- 4:05 p.m. A Spatial Epidemic Model for Disease Spread Over a Heterogeneous Spatial Support—◆Aaron Porter; Jacob Oleson, The University of Iowa
- 4:20 p.m. Absolute Risk Modeling Under an Extreme Case-Control Design—◆Jennifer Sinnott, Harvard University
- 4:35 p.m. Model Selection for Parsimonious Models via Conceptual Predictive Statistic—◆Zugui Zhang, Christiana Care Health System
- 4:50 p.m. Analysis of Bivariate Longitudinal Discrete Data: A Joint Continuous-Time Markov Chains Approach—◆Chih-Hsien Wu,
- 5:05 p.m. Quantifying Spatio-Temporal Variation of Invasion Spread—◆Joshua Goldstein; Murali Haran, Penn State; Ottar Bjornstad, Penn State; Andrew Liebhold, USDA Forest Service
- 5:20 p.m. Competing Risks in Survey Design Data: A Case Study of the Effect of Obesity on Mortality—Long Ngo, Beth Israel Deaconess Medical Center; ◆Sarah Chiodi, Beth Israel Deaconess Medical Center; Christina Wee, Beth Israel Deaconess Medical Center

- 5:35 p.m. Identifying Boundaries in Spatial Modeling for Disease Mapping—◆Nema Dean, University of Glasgow; Craig Anderson, University of Technology, Sydney; Duncan Lee, University of Glasgow

76

CC-613

■ Methods in Epidemiology Research— Contributed

Section on Statistics in Epidemiology, Biometrics Section

Chair(s): Shanshan Ding, University of Delaware

- 4:05 p.m. Multivariate Modeling of Biomarkers for Cross-Sectional HIV Incidence Estimation—◆Jacob Konikoff, UCLA; Ron Brookmeyer, UCLA
- 4:20 p.m. Analysis Readmission Rate of Diabetes Patients—◆Jiangtao Luo, University of Nebraska Medical Center
- 4:35 p.m. Statistical Models to Study Variation in the Associations Between Food Store Availability and Body Mass Index Around Participant's Residential Locations in the MESA—◆Jonggyu Baek, University of Michigan; Brisa Ney Sanchez, University of Michigan; Loni Philip Tabb, Drexel University School of Public Health; Tonatiuh Barrientos-Gutierrez, National Institute of Public Health; Kari A. Moore, Drexel University School of Public Health; Jana A. Hirsch, The University of North Carolina/Carolina Population Center; Ana V. Diez-Roux, Drexel University School of Public Health
- 4:50 p.m. Trajectory of Handgrip Strength Is Predictive of Worsening Physical Function: Application of Joint Functional Principal Components and Survival Analysis to Sparse Longitudinal Data—◆Qian-Li Xue, The Johns Hopkins University; Tong Tong Wu, Rochester University; Paulo Chaves, Florida International University
- 5:05 p.m. Population Data to Measure Mortality Reductions Produced by Organized Cancer Screening: Analyze with Care—◆James A. Hanley, McGill University; Harald Weedon-Fekjaer, University of Oslo; Ailish Hannigan, University of Limerick; Olli Saarela, University of Toronto
- 5:20 p.m. Assessing Global Differences in Endorsement of Current Procedural Terminology Codes—◆Xu Shi, University of Washington; Hristina Pashova, Axio Research; Patrick Heagerty, University of Washington
- 5:35 p.m. The Optimal Hormonal Replacement Selection for Brain Dead Organ Donors Based on Graft Survival in Recipients—◆Zhibao Mi, VA CSPCC Perry Point; Dimitri Novitzky, Haley VA Medical Center; Joseph Collins, VA CSPCC; David Cooper, University of Pittsburgh Thomas E. Starzl Transplantation Institute

77 **CC-201**
Using Multiple Sources of Data—Contributed
 Survey Research Methods Section, Government Statistics Section, Committee on Applied Statisticians

Chair(s): Jennifer Childs, U.S. Census Bureau

- 4:05 p.m.** Are Proxy Responses Better Than Administrative Records?—◆Mary Mulry; Andrew Keller, U.S. Census Bureau; Tyler W. Fox, U.S. Census Bureau
- 4:20 p.m.** An Association Study on Health Status and Air Qualities Using Linked NHIS and EPA Modeled Data—◆Rong Wei, CDC/NCHS/ORM; Van Parsons, National Center for Health Statistics; Jennifer D. Parker, National Center for Health Statistics
- 4:35 p.m.** Applying Pattern-Mixture Models for Estimation from Multiple Data Sources—◆Jeffrey Gonzalez, Bureau of Labor Statistics; John L. Eltinge, Bureau of Labor Statistics
- 4:50 p.m.** Re-Contact Within the Justice System: Integrating Multiple Data Sources Through Record Linkage—◆Alexander Reicker, Statistics Canada
- 5:05 p.m.** Changes in Labor Market Behavior Due to Panel Conditioning in a German Panel Study—◆Ruben Bach, Institute for Employment Research; Stephanie Eckman, Institute for Employment Research
- 5:20 p.m.** Treatment of Missing Data in the FBI's National Incident Based Reporting System: A Case Study in the Bakken Region—◆Dan Liao, RTI International; Marcus Berzofsky, RTI International; David Heller, RTI International; Kelle Barrick, RTI International; Matthew DeMichele, RTI International
- 5:35 p.m.** Alternative Methods for Sampling and Estimation in the National Immunization Survey (NIS): Utilizing Immunization Information Systems (IIS) Data—◆Elizabeth Ormson, NORC at the University of Chicago; Xian Tao, NORC at the University of Chicago; Nadarajasundaram Ganesh, NORC at the University of Chicago; Vicki Pineau, NORC at the University of Chicago; Kirk Wolter, NORC at the University of Chicago; James A. Singleton, NCIRD/CDC; Stacie Greby, CDC; Laura Pabst, CDC; LaTrece Harris, CDC; Sarah Reagan-Steiner, CDC; Holly A. Hill, CDC

78 **CC-204**
Small-Area Estimation—Contributed
 Survey Research Methods Section, Government Statistics Section, Section on Statistics and the Environment

Chair(s): Yajuan Si, University of Wisconsin - Madison

- 4:05 p.m.** Small-Area Estimates of Crime Rates for States and Large Counties Based on the NCVS—◆Bob Fay, Westat; Mamadou S. Diallo, Westat
- 4:20 p.m.** Estimation of the Difference of Small-Area Parameters from Different Time Periods—◆Ryan Janicki, U.S. Census Bureau
- 4:35 p.m.** An Evaluation of Different Small-Area Estimators and Benchmarking for the Annual Survey of Public Employment and Payroll—◆Bac Tran, U.S. Census Bureau
- 4:50 p.m.** Analysis of Basic Area-Level Models: The Extensions of the Fay-Herriot Model—◆Abhishek Nandy, University of Minnesota; Snigdhanu Chatterjee, University of Minnesota
- 5:05 p.m.** Evaluation of Small-Area Estimation Method Used in AskCHIS Neighborhood Edition—Yueyan Wang, UCLA; ◆Pan Wang, UCLA; Jean D. Opsomer, Colorado State University; Ninez A. Ponce, UCLA; Hongjian Yu, UCLA
- 5:20 p.m.** Combining Time Series and Cross-Sectional Data for the Current Employment Statistics Estimates—◆Julie Gershunskaya, Bureau of Labor Statistics
- 5:35 p.m.** Spatial Bayesian Hierarchical Model for Small-Area Estimation of Categorical Data—◆Xin Wang, Iowa State University; Emily Berg, Iowa State University; Zhengyuan Zhu, Iowa State University; Dongchu Sun, University of Missouri - Columbia; Gabriel Demuth, Iowa State University

79 **CC-203**
Survey Design—Contributed

Social Statistics Section, Government Statistics Section, Survey Research Methods Section, Committee on Applied Statisticians
 Chair(s): Jingchen Hu, Duke University

- 4:05 p.m.** Sequential Design for Computerized Adaptive Testing That Allows for Response Revision—◆Shiyu Wang, University of Illinois at Urbana-Champaign; Georgios Fellouris, University of Illinois at Urbana-Champaign; Hua-Hua Chang, University of Illinois
- 4:20 p.m.** Data-Collection Strategies for the Application of Conditional Dynamic Network Models—◆Zack Almquist, University of Minnesota; Yang Yang, University of Minnesota
- 4:35 p.m.** Constructing Cross-Sectional Weights for the German Panel of Household Finances—◆Panagiota Tzamourani, Deutsche Bundesbank
- 4:50 p.m.** Estimating Taxes for the Redesigned CPS ASEC Sample—◆Bruce Webster, U.S. Census Bureau
- 5:05 p.m.** Optimal Adaptive Sequential Design with Application to Crowdsourcing—◆Xiaou Li, Columbia University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

5:20 p.m. Text Analysis: Further Work on Computer-Assisted Techniques—◆Bernard Dugoni, NORC at the University of Chicago

5:35 p.m. Old SSS Proceedings Papers Online!—◆Michael Yang, NORC at the University of Chicago; Fritz Scheuren, NORC at the University of Chicago

80 CC-618 Methods for Current-Status and Interval-Censored Data—Contributed

Biometrics Section

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

4:05 p.m. Probability-Scale Residuals for Continuous, Discrete, and Censored Data—◆Bryan Shepherd, Vanderbilt University; Chun Li, Case Western Reserve University; Qi Liu, Vanderbilt University

4:20 p.m. Generalized Odds-Rate Hazards Models for Current Status Data Using EM Algorithm—◆Bin Yao, University of South Carolina; Lianming Wang, University of South Carolina

4:35 p.m. An Exploration into Grouped Current Status Data—◆Lucia Petito, UC Berkeley; Nicholas P. Jewell, UC Berkeley

4:50 p.m. A Unified Approach to Model Simultaneously Interval-Censored and Right-Truncated Time-to-Event Data with Clustering and Overdispersion—◆Sammy Chebon; Christel Faes, Hasselt University; Helena Geys, Janssen Pharmaceutica NV

5:05 p.m. Parameter Estimation in Modeling Arbitrarily Interval-Censored Survival Data with External Time-Dependent Covariates—◆Wei Fang,

5:20 p.m. Interval Censoring in Multi-State Survival Data—◆Philip Hougaard, H. Lundbeck A/S

5:35 p.m. Frailty Model Approach for the Clustered Interval-Censored Data with Informative Censoring—◆Jinheum Kim, University of Suwon

81 CC-617

Analysis of Ordinal Data—Contributed

Biometrics Section, International Indian Statistical Association

Chair(s): Charles Smith, North Carolina State University

4:05 p.m. Cost-Sensitive Performance Metric for Ordinal Classification—◆Nysia George, FDA/NCTR; Ching-Wei Chang, National Center for Toxicological Research; Tzu-Pin Lu, National Taiwan University

4:20 p.m. Nonparametric Estimation of Agreement Measure Between Ordinal and Censored Continuous Outcomes—◆Tian Dai; Ying Guo, Emory University; Limin Peng, Emory University; Amita K. Manatunga, Emory University

4:35 p.m. Nonparametric Regression Models for Ordinal Predictors—◆Bradley Turnbull, North Carolina State University; Sujit Ghosh, SAMSI/North Carolina State University

4:50 p.m. Cluster Analysis for Ordered Categorical Data—◆Ivy Liu, Victoria University of Wellington

5:05 p.m. A Bayesian Approach to Estimate Clusters in Repeated Ordinal Data—◆Roy Costilla, Victoria University of Wellington; Ivy Liu, Victoria University of Wellington; Richard Arnold, Victoria University of Wellington

5:20 p.m. Continuous Medians for Numerical Rating Scales—◆Julia Crook, Mayo Clinic

5:35 p.m. Floor Discussion

82 CC-616

Methods for Longitudinal Data with Nonstandard Distributions—Contributed

Biometrics Section, Government Statistics Section, International Indian Statistical Association

Chair(s): Jeffrey Dawson, The University of Iowa

4:05 p.m. Fast Estimation of Regression Parameters in a Broken Stick Model for Longitudinal Data—◆Ritabrata Das, University of Michigan; Moulinath Banerjee, University of Michigan; Bin Nan, University of Michigan

4:20 p.m. Analysis of Paired Data in Randomized Clinical Trials: An Application of Quantile Regression—◆Alok Dwivedi, Texas Tech University Health Sciences Center; Indika Mallawaarachchi, Texas Tech University Health Sciences Center; Michael Privitera, University of Cincinnati; Sheryl Haut, Montefiore Medical Center; Sada Nand Dwivedi, All India Institute of Medical Sciences; Rakesh Shukla, University of Cincinnati; Patrick Tarwater, Texas Tech University Health Sciences Center

*ASA
Awards Celebration*

Honor your colleagues!
Come to the ASA Awards
& Editor Appreciation Ceremony
Sunday at 7:30.

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 4:35 p.m.** Modeling Longitudinal Counts with Excess Zeros: A Hurdle GMM Approach—◆Trent L. Lalonde, University of Northern Colorado
- 4:50 p.m.** Maximum Pseudo-Likelihood and GEE-Type Inference for Clustered Count Data Based on Zero-Inflated Conway-Maxwell Poisson Distribution with Application to the Iowa Fluoride Study—◆Hyoyoung Choo-Wosoba; Somnath Datta, University of Louisville
- 5:05 p.m.** Two New Bivariate Zero-Inflated Generalized Poisson Distributions with a Flexible Correlation Structure—◆Chi Zhang
- 5:20 p.m.** Neural Spike Trains as Realizations of Skellam Process with Resetting—◆Reza Ramezan, California State University at Fullerton; Paul Marriott, University of Waterloo; Chenouri Shojaeddin, University of Waterloo
- 5:35 p.m.** Analysis of Tree-Valued Data Using Branch Order Regression—◆Kingshuk Roy Choudhury, Duke University; Sean Skwerer, Yale School of Public Health

83 **TCC-204**
Physical Sciences—Contributed
Section on Physical and Engineering Sciences, Quality and Productivity Section

Chair(s): David Jones, Harvard University

- 4:05 p.m.** A Low-End Quantile Estimator from a Right-Skewed Distribution—◆Paul Horn, Cincinnati Children's Hospital Medical Center; Hongjun Wang, University of Cincinnati
- 4:20 p.m.** Robust and Automated Spatial Interpolation with Applications to Atmospheric Science Data—◆Joon Jin Song, Baylor University; Soohyun Kwon, Kyungpook National University; GyuWon Lee, Kyungpook National University
- 4:35 p.m.** A Common Factor Approach for Multivariate Data Cleaning with an Application to Mars Phoenix Mission Data—◆Dongping Fang, Zurich; Wei Ding, University of Massachusetts; Elizabeth Oberlin, Tufts University; Samuel P. Kounaves, Tufts University
- 4:50 p.m.** Error Structure Arising from the Synchronization of Hybrid Chaotic Systems with Mixed Time Delays—◆Morris Morgan, Hampton University; Carolyn Bradshaw Morgan, Hampton University; Kristin Denise Morgan, University of Kentucky
- 5:05 p.m.** Complex-Valued Time Series for Physical Applications—◆Adam Sykulski, NorthWest Research Associates; Sofia Olhede, University College London; Jonathan Lilly, NorthWest Research Associates; Jeffrey Early, NorthWest Research Associates

- 5:20 p.m.** An Application with the Sample Size Having a Generalized Log-Series Distribution—◆Ram Tripathi, The University of Texas at San Antonio; Ramesh Gupta, University of Maine
- 5:35 p.m.** Understanding Uncertainty in Ductile Damage Studies—◆Joanne Wendelberger, Los Alamos National Laboratory

84 **CC-605**
Advances in R Software—Contributed
Section on Statistical Computing, Government Statistics Section, International Indian Statistical Association

Chair(s): Yu Jiang, Yale University/VA CSPCC Connecticut Health Care

- 4:05 p.m.** The Network Structure of R Packages—◆Joseph Rickert
- 4:20 p.m.** An R Package That Collects and Archives Files and Other Details to Support Reproducible Computing—◆Stan Pounds, St. Jude Children's Research Hospital; Zhifa Liu, St. Jude Children's Research Hospital
- 4:35 p.m.** Multinomial Regression for Correlated Data Using the Bootstrap in R—◆Jennifer Thompson, Vanderbilt University; Timothy Girard, Vanderbilt University Medical Center; Pratik Pandharipande, Vanderbilt University Medical Center; E. Wesley Ely, Vanderbilt University Medical Center; Rameela Chandrasekhar, Vanderbilt University
- 4:50 p.m.** The Arborist: An Accelerated Random Forest Implementation—◆Mark Seligman, Suiji
- 5:05 p.m.** Applying the R Language in Streaming and Business Intelligence Applications—◆Louis Bajuk, TIBCO Software Inc.
- 5:20 p.m.** Mining an R Bug Database with R—◆Stephen Kaluzny, TIBCO Software Inc.
- 5:35 p.m.** Enhancing Reproducibility and Collaboration via Management of R Package Cohorts—◆Gabriel Becker, Genentech Research; Cory Barr, Anticlockwork Arts; Robert Gentleman, Genentech Research; Michael Lawrence, Genentech Research

85 **CC-611**
Biomarkers and Endpoint Validation 1—Contributed
Biopharmaceutical Section, Biometrics Section

Chair(s): Samir Lababidi

- 4:05 p.m.** Sequential Monitoring of Clinical Trials with a Stepped Wedge Design—◆Siobhan Brown, University of Washington; Abigail Shoben, The Ohio State University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 4:20 p.m. Sample Size Re-Estimation (SSR) at Interim Analysis in Therapeutic Cancer Vaccine Trials with Compensation for Delayed Treatment Effect—◆ Yi Zhang, Sunovion Pharmaceuticals
- 4:35 p.m. Statistics to Aid Decision-Making for Early-Phase Cancer Trials with Survival Endpoint—◆ Shaoyi Li, Celgene
- 4:50 p.m. Comparison of Predictive Modeling Methods in Phase I Oncology Trials Using Biomarkers—◆ Shuai Yuan, Merck
- 5:05 p.m. Using Correlation Patterns of Study Findings to Assess Data Quality in Clinical Trials—◆ Richard Zink, SAS Institute
- 5:20 p.m. MOST: Multi-Stage Optimal Sequential Trial Design for Phase II Clinical Trials with Biomarker Subgroups—◆ Yong Zang, Florida Atlantic University
- 5:35 p.m. Model-Based Meta-Analysis of Clinical Dose Response for Biological Products—◆ Joseph Wu, Pfizer Inc.; Anindita Banerjee, Pfizer Inc.; Bo Jin, Pfizer Inc.; Sandeep Menon, Pfizer Inc.; Steven Martin, Pfizer Inc.

86 CC-620

■ ● Clinical Trial Design 1—Contributed Biopharmaceutical Section, Biometrics Section

Chair(s): Junshan Qiu

- 4:05 p.m. Inference on Subgroups and All-Comers Cognizant of Logical Relationships Among Efficacy Parameters—◆ Szu-Yu Tang, Ventana Medical Systems, Inc.; Jason Hsu, The Ohio State University
- 4:20 p.m. A Simultaneous Testing Strategy for Meta-Analysis of a Dichotomous Endpoint—◆ Radha Raikar, Merck; Devan Mehrotra, Merck
- 4:35 p.m. Accelerated Failure Time Model for Recurrent Events with Errors in Covariates—◆ Ming Zhu, AbbVie; Yijian Huang, Emory University
- 4:50 p.m. Gene-Network-Based Predictive Modeling for High-Dimensional Genomic Data—◆ Rui Zhong, AbbVie; Xin Huang, AbbVie; Viswanath Devanarayan, AbbVie
- 5:05 p.m. Bayesian Hierarchical Modeling of Dose, Exposure, and Response for Dose Justification in Phase I/II Combination Trials—◆ Siyan Xu, Novartis Oncology; Yu-Yun Ho, Novartis Oncology; Jinnie Ko, Novartis Oncology; Astrid Jullion, Novartis Pharma AG/Novartis Oncology
- 5:20 p.m. Sample Size Calculation for Comparability Studies Under Nested Mixed Models—◆ Qianqiu Li, Johnson & Johnson; Bill Pikounis, Janssen R&D; Todd Yeager, Janssen R&D
- 5:35 p.m. Drexplorer: A Tool to Assess Dose-Response Relationship for Anti-Cancer Drug-Screening Data and Evaluate Drug-Drug Interactions—◆ Pan

Tong, MD Anderson Cancer Center; Kevin R. Coombes, The Ohio State University; Faye M. Johnson, MD Anderson Cancer Center; Lauren A. Byers, MD Anderson Cancer Center; Lixia Diao, MD Anderson Cancer Center; Diane D. Liu, MD Anderson Cancer Center; J. Jack Lee, MD Anderson Cancer Center; John N. Weinstein, MD Anderson Cancer Center; John V. Heymach, MD Anderson Cancer Center; Jing Wang, MD Anderson Cancer Center

87 CC-603

High-Dimensional Variable Selection—Contributed Section on Statistical Learning and Data Mining, SSC

Chair(s): Cheryl Flynn, AT&T Labs

- 4:05 p.m. Variable Selection in Semiparametric Models for the Strong Hierarchical Data—◆ Yang Li; Xianbin Zeng, Renmin University of China; Yichen Qin, University of Cincinnati Lindner College of Business; Shuangge Ma, Yale University
- 4:20 p.m. Penalized Beta Regression and Adaptive Random Lasso—◆ Youran Fan, Cleveland Clinic; Xiao-Feng Wang, Cleveland Clinic
- 4:35 p.m. The Benefit of Group Sparsity in Group Inference with Debiased Scaled Group Lasso—◆ Ritwik Mitra, Rutgers University; Cun-Hui Zhang, Rutgers University
- 4:50 p.m. Investigating the Variability of Sparse Canonical Correlation Analysis: Simulations and Insight for Inferential Measures—◆ Ashley Bonner, McMaster University; Joseph Beyene, McMaster University
- 5:05 p.m. Variable Selection and Shrinkage Estimation in Linear Models Under Quadratic Risk—◆ Mohamed Amezziane, Central Michigan University; S. Ejaz Ahmed, Brock University
- 5:20 p.m. Sparse Random Graphs: Regularization and Concentration of the Laplacian—◆ Can Le, University of Michigan; Elizaveta Levina, University of Michigan; Roman Vershynin, University of Michigan
- 5:35 p.m. A Unified Tightening After Contraction Framework for Sparse Learning Problems: An Algorithmic Approach—◆ Qiang Sun, Princeton University; Jianqing Fan, Princeton University; Han Liu, Princeton University; Tong Zhang, Rutgers University

88 CC-619

Topics in Clinical Trials 2—Contributed Biopharmaceutical Section, Biometrics Section

Chair(s): Helen Wei,

- 4:05 p.m. The Application of Integrated Analysis to Assess Treatment Effect—◆ Hui Quan, Sanofi; Bingzhi Zhang, Sanofi

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 4:20 p.m. Analysis of Response Profiles in Clinical Trials—
◆Kao-Tai Tsai
- 4:35 p.m. Position-Specific Artifact Removal for Targeted Next-
Generation Sequencing–Based Somatic Mutation
Detection—◆John Kang,
- 4:50 p.m. Analyzing Ordinal, Discrete Variables in Equivalence
and Noninferiority Studies—◆Elena Rantou, FDA/
CDER
- 5:05 p.m. A Modified Simon’s Two-Stage Design for Phase
II Clinical Trials—◆Jongphil Kim, H. Lee Moffitt
Cancer Center & Research Institute; Michael J.
Schell, H. Lee Moffitt Cancer Center & Research
Institute
- 5:20 p.m. The Slope-Up Pattern Mixture Model with Multiple
Imputation—◆Kenneth Liu, Merck Research
Laboratories; Gregory Golm, Merck; James
Mancuso, Pfizer Inc.
- 5:35 p.m. Floor Discussion

Invited Poster Presentations

8:30 p.m.—9:15 p.m.

89 CC-4B
**Computational Methods for Big Data and
Visualization Problems—Invited**

Korean International Statistical Society, Section on Statistics
and the Environment

Chair(s): Lan Xue, Oregon State University

Korean International Statistical Society

- 1 Exploratory Data Analysis and High-Performance
Computing—◆Doug Nychka, National Center for
Atmospheric Research
- 2 Multilevel Boundary Conditioning for Large Spatial Data
Sets—◆Zhen Zhang, The University of Chicago; Michael
L. Stein, The University of Chicago; Mihai Anitescu,
Argonne National Laboratory
- 3 A Multiresolution Approximation for Big Spatial Data—
◆Matthias Katzfuss, Texas A&M University
- 4 Geometry on Demand: An Efficient Sampling Algorithm
for High-Dimensional Problems—◆Shiwei Lan,
University of Warwick; Babak Shahbaba, UC Irvine
- 5 Point Process on a Global Scale and Its Application to
Lightning Occurrence—◆Mikyong Jun, Texas A&M
University
- 6 Modeling Dynamics of Large-Scale Effective Connectivity
in fMRI Data—◆Hernando Ombao, UC Irvine; Chee-
Ming Ting, Universiti Teknologi Malaysia; Sh-Hussain
Salleh, Universiti Teknologi Malaysia
- 7 A Conditional Simulation Approach to Future

- Precipitation Scenario Generation—◆Won Chang, The
University of Chicago; Michael L. Stein, The University
of Chicago; Elisabeth Moyer, The University of Chicago;
Jiali Wang, Argonne National Laboratory; Rao
Kotamarthi, Argonne National Laboratory
- 8 Large-Scale Multimodal Brain Network Construction and
Its Application to Maltreated Children—◆Moo Chung,
University of Wisconsin - Madison
- 9 Accelerating Statistical Analysis Through Parallel
Computations—◆Dorit Hammerling, National Center
for Atmospheric Research; Doug Nychka, National Center
for Atmospheric Research; Benjamin Jamroz, National
Center for Atmospheric Research
- 10 Estimating Mediation Effects Under Correlated Errors
in Big fMRI Data—◆Yi Zhao, Brown University; Xi Luo,
Brown University
- 11 A Bayesian Spatio-Temporal Model for fMRI—◆Wesley
Thompson, UC San Diego
- 12 Quantifying the Uncertainty of Contour Maps—◆David
Bolin, Chalmers University of Technology/University of
Gothenburg
- 13 Spatio-Temporal Smoothing for Very Large Data Sets:
Satellite-Based Vegetation Measurements—◆Johan
Lindström, Lund University
- 14 A New Method for Estimating Spectral Clustering
Change-Points for fMRI Data—◆Ivor Cribben, University
of Alberta; Yi Yu, University of Cambridge
- 15 Smoothed Full-Scale Covariance Approximation for
Large Spatial Data Sets—◆Huiyan Sang, Texas A&M
University

90 CC-4B
**Nonparametric/Functional Data Analysis 1
—Invited**

Section on Nonparametric Statistics, Survey Research Methods
Section

Chair(s): Lan Xue, Oregon State University

Section on Nonparametric Statistics

- 16 Information Criterion for Nonparametric Model-Assisted
Survey Estimators—◆Addison Dolin James, Oregon State
University; Lan Xue, Oregon State University; Virginia
Lesser, Oregon State University
- 17 Variable Screening in Multicategory Classification—◆Yue
Zeng, The University of Arizona; Hao Helen Zhang,
The University of Arizona; Ning Hao, The University of
Arizona
- 18 New Feature Screening Method for Time-Varying
Coefficient Model with Ultrahigh-Dimensional
Longitudinal Data—◆Wanghuan Chu, Penn State; Runze
Li, Penn State; Matthew Reimherr, Penn State
- 19 Simultaneous Inference for the Mean of Functional Time
Series—◆Ming Chen, The University of Texas at Dallas;
Qiongxia Song, The University of Texas at Dallas

Sunday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 20 Convergence Analysis of Kernel Canonical Correlation Analysis—◆Krishnakumar Balasubramanian, University of Wisconsin - Madison; Ming Yuan, University of Wisconsin - Madison

91 CC-4B ‘STATMOS’ Statistics in the Atmospheric Sciences—Invited

Section on Statistics and the Environment, Korean International Statistical Society

Chair(s): Lan Xue, Oregon State University

Section on Statistics and the Environment

- 1 Comparison of Ensemble Filters for Data Assimilation—◆Barbara Ann Bailey, San Diego State University; Colette Smirniotis, San Diego State University
- 2 Spatial Seasonal Forecasting of Tropical Cyclone Occurrences Using Sea Surface Temperature and Latent Heat Flux—◆Marcela Alfaro-Córdoba, North Carolina State University; Montserrat Fuentes, North Carolina State University; Joseph Guinness, North Carolina State University; Lian Xie, North Carolina State University
- 3 A Multi-Scale Reconstruction of Bivariate Paleoclimate from Tree Rings Using a Mechanistic Growth Model—◆John Tipton, Colorado State University; Mevin Hooten, Colorado State University
- 4 Observation-Based Simulations of Future Temperatures with Changes in Variability Predicted by a Climate Model—◆Andrew Poppick, The University of Chicago; Michael L. Stein, The University of Chicago; Elisabeth Moyer, The University of Chicago
- 5 Expanded Multivariate Adaptive Regression Splines for Emulating Computational Models—◆Naveen Narisetty, University of Michigan; Vijay Nair, University of Michigan; Ji Zhu, University of Michigan; Zach Zhang, University of Michigan
- 6 Cross-Covariance Functions for Space-Time Processes on a Sphere—◆Jaehong Jeong, Texas A&M University; Mikyoung Jun, Texas A&M University
- 7 Spatial Quantile Evaluation of Air Quality Models Using In Situ Observations—◆Elizabeth Mannshardt, North Carolina State University; Montserrat Fuentes, North Carolina State University; Soumendra Lahiri, North Carolina State University; Kristen Foley, EPA
- 8 A Partial Warp Parameterization for the Spatial Deformation Model for Nonstationary Covariance—◆Paul D. Sampson, University of Washington
- 9 Computationally Efficient Bayesian Inference for Spatial Generalized Linear Mixed Models—◆Saksham Chandra, Penn State; Murali Haran, Penn State
- 10 Predicting Traffic-Related Air Pollutants in Near-Road Urban Environments—◆Owais Gilani, University of Michigan School of Public Health; Veronica J. Berrocal, University of Michigan; Stuart Batterman, University of Michigan School of Public Health
- 11 A Study of Models for High-Dimensional Spatial Binary

Data—◆Yawen Guan, Penn State; Murali Haran, Penn State

- 12 A Gauss-Pareto Process Model for Spatial Prediction of Extreme Precipitation—◆Robert Alohimakalani Yuen, University of Michigan; Peter Guttorp, University of Washington
- 13 A Comparison of Precipitation Extremes Under RCP8.5 and RCP4.5 via Pattern Scaling—◆Miranda Fix, Colorado State University; Dan Cooley, Colorado State University; Steve Sain, National Center for Atmospheric Research; Claudia Tebaldi, National Center for Atmospheric Research
- 14 A Bayesian, Multivariate, Functional Linear Model with Spatially Varying Coefficients—◆Christopher Krut, North Carolina State University; Montserrat Fuentes, North Carolina State University; Brian J. Reich, North Carolina State University
- 15 Local Likelihood Estimation for Covariance Functions with Spatially Varying Parameters—◆Mark Risser, The Ohio State University; Catherine Calder, The Ohio State University
- 16 Quantifying Numerical Uncertainty in Dynamical Climate Models—◆Oksana Chkrebti, The Ohio State University; David A. Campbell, Simon Fraser University; Mark Girolami, University of Warwick; Ben Calderhead, Imperial College London
- 17 A Dynamic Spatial Factor Model for Speciated Pollutants and Adverse Birth Outcomes—◆Maria A. Terres, North Carolina State University; Montserrat Fuentes, North Carolina State University

92 CC-4B Nonparametric/Functional Data Analysis 2—Invited

Section on Nonparametric Statistics

Chair(s): Lan Xue, Oregon State University

Section on Nonparametric Statistics

- 18 Generalized Partially Linear Geo-Spatial Models—Lily Wang, Iowa State University; ◆Guannan Wang, University of Georgia
- 19 Simultaneous Confidence Bands for the Distribution Function of a Finite Population—◆Jiangyan Wang, Soochow University; Suojin Wang, Texas A&M University; Lijian Yang, Soochow University
- 20 A Simultaneous Confidence Corridor for Varying Coefficient Regression with Sparse Functional Data—◆Lijie Gu, Soochow University; Lily Wang, Iowa State University; Wolfgang Karl Härdle, Humboldt University; Lijian Yang, Soochow University
- 21 Constrained Polynomial Spline Estimation of Monotone Additive Models—◆Lu Wang, Oregon State University; Lan Xue, Oregon State University

MONDAY AUGUST 10

Session Tag Descriptions

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

● THEME

JSM theme sessions are directly relevant to the JSM 2015 theme, "Statistics: Making Better Decisions." 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.

Monday

JSM Hours

7:00 a.m.—6:00 p.m. Speaker Management Room	CC-604
7:30 a.m.—10:00 p.m. Cyber Center	CC-4A
7:30 a.m.—6:00 p.m. ASA Membership/Help Desk/Press Desk	CC-Atrium Lobby
7:30 a.m.—6:00 p.m. JSM Main Registration	CC-Atrium Lobby
8:00 a.m.—5:30 p.m. JSM Career Service	CC-4A
8:00 a.m.—6:00 p.m. Exhibitor Lounge	CC-4B
9:00 a.m.—6:00 p.m. Seattle Restaurant and Tourism Information Center	CC-Upper Pike Street Lobby
9:00 a.m.—5:30 p.m. American Statistical Association Booth #504	CC-4B
9:00 a.m.—5:30 p.m. EXPO 2015	CC-4B
9:00 a.m.—5:30 p.m. ASA Marketplace	CC-4B

Committee/Business Meetings & Other Activities

7:00 a.m.—8:00 a.m. Section on Teaching of Statistics in the Health Sciences Executive Committee Meeting (Closed) Chair(s): Heather Bush, University of Kentucky	S-Leschi
7:00 a.m.—8:30 a.m. Committee on Membership Retention and Recruitment Business Meeting Chair(s): Jennifer Gauvin, Novartis	S-Ravenna B
7:00 a.m.—8:30 a.m. ASA Development Committee Chair(s): Jim Landwehr, Avaya Labs (retired)	S-Issaquah B
7:00 a.m.—8:30 a.m. Council of Chapters International Science and Engineering Fair Meeting Breakfast (Closed) Chair(s): Linda J. Young, USDA/NASS	S-Columbia
7:00 a.m.—8:30 a.m. Statistics in Defense and National Security Section Executive Committee Meeting Chair(s): Edward Melnick, New York University Stern School of Business	Off Site
7:00 a.m.—8:30 a.m. Section on Statistical Graphics Executive Committee Meeting Chair(s): Naomi B. Robbins, NBR	S-Aspen

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

7:00 a.m.—8:30 a.m. S-Issaquah A
Technometrics Management Committee Meeting
 Chair(s): David Steinberg, Tel Aviv University

7:00 a.m.—8:30 a.m. S-Ravenna C
ASA Advisory Committee on Climate Change Policy Business Meeting
 Chair(s): Bruno Sanso, UC Santa Cruz; Dave Higdon, Virginia Tech; Karen Kafadar, University of Virginia

7:00 a.m.—8:30 a.m. S-Ravenna A
SPAIG Committee Business Meeting (Closed)
 Chair(s): Barry D. Nussbaum, EPA

7:00 a.m.—8:30 a.m. S-Kirkland
Committee on International Relations in Statistics (Closed)
 Chair(s): Geert Molenberghs, Universiteit Hasselt/Katholieke Universiteit Leuven

7:00 a.m.—8:30 a.m. S-Seneca
HPSS Executive Committee Meeting (Closed)
 Chair(s): Joseph Cappelleri, Pfizer Inc.

7:00 a.m.—8:30 a.m. S-Greenwood
Section on Statistical Education Officers Meeting (Closed)
 Chair(s): William Notz, The Ohio State University

7:00 a.m.—8:30 a.m. S-Virginia
Committee on Privacy and Confidentiality Business Meeting (Closed)
 Chair(s): Jacob Bournazian, Energy Information Administration

7:00 a.m.—9:00 a.m. S-University
Committee on ASA Archives and Historical Materials Business Meeting
 Chair(s): John McKenzie, Babson College

7:30 a.m.—9:00 a.m. S-Redwood
Carnegie Mellon Alumni and Faculty Breakfast
 Organizer(s): Margaret Smykla, Carnegie Mellon University

7:30 a.m.—12:00 p.m. S-Metropolitan A
Biopharmaceutical Section Executive Committee Meeting (Closed)
 Chair(s): Dionne Price, FDA/CDER

Calling all students!!

Don't miss the popular **Student Mixer** Monday night at 6:00.



Drinks!



Prizes!



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● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

8:00 a.m.—9:00 a.m. S-Jefferson A
Committee on Scientific Freedom and Human Rights Meeting
 Chair(s): Joseph B. Kadane, Carnegie Mellon University

8:00 a.m.—9:30 a.m. S-Jefferson B
Communications in Statistics Editorial Board Meeting (Closed)
 Organizer(s): Narayanaswamy Balakrishnan, McMaster University

8:00 a.m.—5:00 p.m. S-Medina
ASA DataFest Steering Committee (Closed)
 Chair(s): Donna LaLonde, ASA

8:30 a.m.—10:30 a.m. S-Ballard
Diversity in Statistics Mentoring Program (Closed)
 Chair(s): Sydeaka Watson, The University of Chicago

8:30 a.m.—10:30 a.m. S-Cirrus Room
Advisory Committee on Continuing Education Business Meeting
 Chair(s): Steven McKay, ASA

9:00 a.m.— CC-4B, Spotlight Seattle
Spotlight Seattle: Seattle Insider Tips

10:00 a.m.— CC-4B, Spotlight Seattle
JSM Coffee House, Sponsored by Sanofi

10:30 a.m.—12:00 p.m. S-Columbia
Council of Chapters Governing Board Executive Meeting
 Chair(s): Linda J. Young, USDA/NASS

10:30 a.m.—12:00 p.m. S-Boren
Council of Chapters Governing Board Chapter Status Committee Meeting (Closed)
 Chair(s): Linda J. Young, USDA/NASS

11:00 a.m.—3:00 p.m. CC-4B, Spotlight Seattle
Spotlight Seattle: JSM Photo Booth

12:00 p.m.—5:00 p.m. S-Boren
Council of Chapters Governing Board Meeting
 Chair(s): Linda J. Young, USDA/NASS

12:30 p.m.—1:30 p.m. S-Aspen
Informational Meeting on ASA Accreditation
 Chair(s): Theresa Utlaut, Intel Corporation; Ronald Wasserstein, ASA

12:30 p.m.—2:00 p.m. S-Virginia
JBES AE Luncheon
 Chair(s): Jamie Hutchens, ASA

12:30 p.m.—2:00 p.m. S-Issaquah B
Committee on Funded Research Business Meeting (Closed)
 Chair(s): Bruno Sanso, UC Santa Cruz; Dave Higdon, Virginia Tech; Karen Kafadar, University of Virginia

12:30 p.m.—2:00 p.m. S-Ravenna A
Statistics and Public Policy Editors Meeting
 Chair(s): David Banks, Duke University; Hal Stern, University of California

12:30 p.m.—2:00 p.m. S-Kirkland
Section on Statistical Computing Executive Committee Meeting
 Chair(s): David A. van Dyk, Imperial College London

12:30 p.m.—2:00 p.m. S-Issaquah A
Committee on Women in Statistics Business Meeting
 Chair(s): Dalene Stangl, Duke University

12:30 p.m.—2:00 p.m. TCC-102
2016 JSM Program Committee Meeting (Closed)
 Chair(s): Jeffrey Morris, MD Anderson Cancer Center

12:30 p.m.—2:00 p.m. S-Ballard
Statistics in Medicine Editorial Board Meeting Luncheon (Closed)
 Organizer(s): Ralph D'Agostino Sr., Boston University; Leilanie D'Agostino, Boston University

12:30 p.m.—2:00 p.m. S-University
Annals of Applied Statistics Editor's Luncheon
 Organizer(s): Elyse Gustafson, IMS; Elyse Gustafson, IMS

12:30 p.m.—2:00 p.m. S-Jefferson A
Biostatistics Journal Editorial Board Meeting
 Organizer(s): Anastasios Tsiatis, North Carolina State University

12:30 p.m.—2:00 p.m. S-Cirrus Room
IMS Editors Luncheon
 Organizer(s): Elyse Gustafson, IMS; Elyse Gustafson, IMS

12:30 p.m.—2:30 p.m. S-Greenwood
JCGS Editor's Lunch
 Chair(s): Thomas Lee, UC Davis

1:30 p.m.— CC-4B, Spotlight Seattle
Popcorn Break, Sponsored by XLSTAT

3:00 p.m.—4:30 p.m. S-Seneca
Committee on Gay and Lesbian Concerns in Statistics Business Meeting
 Chair(s): Diane Herz, Mathematica Policy Research

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

3:30 p.m.— CC-4B, Spotlight Seattle
Spotlight Seattle: Northwest Microbrew Tasting Bar

4:00 p.m.—5:00 p.m. TCC-102
Statistics in Business School Interest Group Business Meeting
Chair(s): Billie Anderson, Ferris State University

4:00 p.m.—5:30 p.m. GH-Menzies Suite
ASA Section on Statistics in Imaging Business Meeting
Chair(s): Ciprian Crainiceanu, The Johns Hopkins University

4:00 p.m.—6:00 p.m. S-Cirrus Room
CAUSE Business Meeting
Organizer(s): Dennis Pearl, Penn State/CAUSE

4:30 p.m.—5:30 p.m. GH-Blewett Suite
Teaching Statistics to Nonstatisticians: The Perfect Solution
Organizer(s): Jean Paul Maalouf, Addinsoft XLSTAT

4:30 p.m.—5:30 p.m. S-Ballard
JQT Business Meeting
Organizer(s): Fugee Tsung, The Hong Kong University of Science and Technology

5:00 p.m.—6:30 p.m. S-Greenwood
Section on Quality and Productivity Strategic Planning Meeting
Chair(s): David Edwards, Virginia Commonwealth University

5:00 p.m.—6:30 p.m. GH- Leonesa Ballroom I
Section for Statistical Programmers and Analysts Business Meeting and Mixer
Chair(s): Nancy Petersen,

5:00 p.m.—7:00 p.m. CC-303
UCLA Departments of Statistics and Biostatistics Reception (Closed)
Organizer(s): Rick Schoenberg, UCLA

5:00 p.m.—7:00 p.m. GH- Leonesa Ballroom III
University of Washington Department of Biostatistics Alumni Reception
Organizer(s): Andrea Hitlin, University of Washington

5:00 p.m.—7:00 p.m.
NISS/SAMSI Reception
Organizer(s): Nell Sedransk, NISS

5:30 p.m.—7:00 p.m. GH- Leonesa Ballroom II
Departments of Biostatistics and Statistics and Operations Research
Organizer(s): Michael Kosorok, The University of North Carolina

5:30 p.m.—7:00 p.m. S-Columbia
SHS Section Business Meeting and Mixer - Other Cmte/ Business
Chair(s): Heather Bush, University of Kentucky

5:30 p.m.—7:00 p.m. CC-309
Biometrics Section Mixer and Business Meeting
Chair(s): Diana Miglioretti, UC Davis

5:30 p.m.—7:30 p.m. S-Leschi
Yale Biostatistics Alumni Reception
Organizer(s): Haiqun Lin, Yale School of Public Health; Elizabeth Eocaci-Tucker, Yale University

5:30 p.m.—7:30 p.m. S-Virginia
Penn State University Alumni Reception
Organizer(s): Barbara Collins, Penn State

6:00 p.m.—7:00 p.m. TCC-204
IISA Business Meeting
Organizer(s): Soumendra Lahiri, North Carolina State University

6:00 p.m.—7:00 p.m. CC- Ballroom 6E
President's Invited Speaker Reception (By Invitation Only)
Chair(s): Pam Craven, ASA



Christine H. Fox of the
Johns Hopkins University Applied Physics
Laboratory will deliver the
ASA President's Invited Address at 4:00 p.m.
Don't miss her talk, "The Role of Analysis in
Supporting Strategic Decisions."
CC-Ballroom 6ABC

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

6:00 p.m.—7:00 p.m. TCC-102
Section on Medical Devices and Diagnostics Business Meeting
 Chair(s): Peter Lam, Boston Scientific

6:00 p.m.—7:00 p.m. S-Kirkland
Business and Economic Statistics Section Executive Committee Meeting
 Chair(s): Bruce Meyer, Harris School

6:00 p.m.—7:30 p.m. S-Metropolitan A
JSM Student Mixer, sponsored by Monsanto

6:00 p.m.—7:30 p.m. S-Issaquah
University of Michigan JSM Joint Alumni Reception
 Organizer(s): Fatma Nedjari, University of Michigan

6:00 p.m.—7:30 p.m. TCC-202
KISS Annual Meeting
 Organizer(s): Dongseok Choi, Oregon Health & Science University

6:00 p.m.—7:30 p.m. S-Redwood
Christian Statisticians Informal Discussion Group
 Organizer(s): Jason Wilson, Biola University

6:00 p.m.—8:00 p.m. S-University
Annals of Statistics Editorial Meeting
 Organizer(s): Elyse Gustafson, IMS; Elyse Gustafson, IMS

6:00 p.m.—8:00 p.m. S-Grand Ballroom B
AbbVie Reception (By Invitation Only)

6:00 p.m.—8:00 p.m. S-Ravenna
Sections on Statistical Computing and Graphics Business Meeting
 Chair(s): David A. van Dyk, Imperial College London

6:30 p.m.—7:30 p.m. S-Willow B
Statistics Instructors in Cyberspace Business Meeting
 Organizer(s): Michelle Everson, The Ohio State University

6:30 p.m.—7:30 p.m. S-Metropolitan B
ASA Longtime Member Reception (By Invitation Only), Sponsored by RTI International & Westat

6:30 p.m.—8:30 p.m. S-Willow A
Harvard Statistics and Biostatistics Alumni and Friends Reception
 Organizer(s): Madeleine Straubel, Harvard University

6:30 p.m.—9:00 p.m. S-Seneca
Southern Methodist University Alumni Social
 Organizer(s): Wayne Woodward, Southern Methodist University

6:30 p.m.—9:30 p.m. S-Grand Ballroom A
Department of Statistics, Aggie Reunion
 Organizer(s): Valen Johnson, Texas A&M University

7:00 p.m.—8:30 p.m. S-Ballard
Survey Research Methods Section Executive Committee Meeting (Closed)
 Chair(s): Michael Elliott, University of Michigan

8:00 p.m.—9:30 p.m. CC- Ballroom 6E
IMS Reception
 Organizer(s): Elyse Gustafson, IMS; Elyse Gustafson, IMS

11:30 a.m.—1:00 p.m. S-Leschi
Ad Hoc Statistical Leadership Training Committee Meeting
 Chair(s): James Hess

Roundtables with Coffee

7:00 a.m.—8:15 a.m.

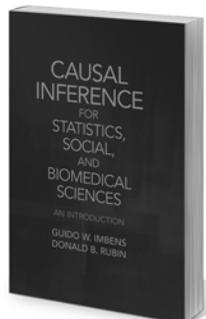
93 CC- Ballroom 6E
Government Statistics Section A.M. Roundtable Discussion (Added fee \$\$\$)
 Government Statistics Section
 Organizer(s): Morgan Earp, Bureau of Labor Statistics
ML01 Issues in Implementing Adaptive Survey Design—
 ◆ Peter Miller,

94 CC- Ballroom 6E
Health Policy Statistics Section A.M. Roundtable Discussion (Added fee \$\$\$)
 Health Policy Statistics Section
 Organizer(s): Frank Yoon, Mathematica Policy Research
ML02 Design and Analysis Considerations for Integrating Mobile Health (MHealth) Technology into Health Care and Clinical Research—◆ Rickey Carter, Mayo Clinic

95 CC- Ballroom 6E
Section on Statistical Education A.M. Roundtable Discussion (Added fee \$\$\$)
 Section on Statistical Education
 Organizer(s): Patricia Humphrey, Georgia Southern University
ML03 Writing in the Statistics Classroom—◆ Kim Love-Myers, University of Georgia

Monday

Cambridge University Press at the Joint Statistical Meeting 2015



'This book will be the 'Bible' for anyone interested in the statistical approach to causal inference' **Thomas D. Cook, Joan and Sarepta Harrison Chair of Ethics and Justice, Northwestern University**

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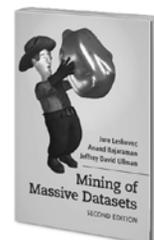


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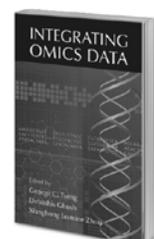
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Integrating Omics Data

George C. Tseng, Debashis Ghosh, Xianghong Jasmine Zhou

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96 **CC- Ballroom 6E**

Section on Statistical Education A.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Education

Organizer(s): Patricia Humphrey, Georgia Southern University
ML04 **ENgaging and Adaptive Blended LEarning (ENABLE): A Hybrid-Flexible (HyFlex) Model for Teaching and Learning in Large Classes—◆ Jackie Miller, University of Michigan**

97 **CC- Ballroom 6E**

Section on Statistical Consulting A.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Consulting

Organizer(s): Isabella R. Ghement, Ghement Statistical Consulting Company Ltd.
ML05 **Teaching and Consulting: A One-to-One Mapping—◆ Jonathan Berkowitz, University of British Columbia**

98 **CC- Ballroom 6E**

Section on Statistical Learning and Data Mining A.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Learning and Data Mining

Organizer(s): Howard Bondell, North Carolina State University
ML06 **Practical Optimization for Real-World Statistical Problems—◆ Glen Colopy, University of Oxford**

99 **CC- Ballroom 6E**

Section on Statistics in Epidemiology A.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistics in Epidemiology

Organizer(s): Daniel Gillen, UC Irvine
ML07 **Statistical Issues in the Analysis of Electronic Health Record Data—◆ Sebastien Haneuse, Harvard School of Public Health**

100 **CC- Ballroom 6E**

Survey Research Methods Section A.M. Roundtable Discussion (Added fee \$\$\$)

Survey Research Methods Section

Organizer(s): Yan Li, University of Maryland
ML08 **Bayesian Small-Area Unit-Level Modeling: A Discussion of Viable Approaches—◆ Donald Malec, National Center for Health Statistics**

101 **CC- Ballroom 6E**

Section on Statistics and the Environment A.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistics and the Environment

Organizer(s): Brian J. Reich, North Carolina State University
ML09 **Dependence in Spatial and Multivariate Extremes—◆ Dan Cooley, Colorado State University**

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

102 **CC- Ballroom 6E**

Introductory Overview Lecture: New Perspectives in Spatial and Spatio-Temporal Data Analysis—Invited

ASA, ENAR, WNAR, IMS, SSC, International Indian Statistical Association, International Chinese Statistical Association, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA), Royal Statistical Society, International Statistical Institute, International Society for Bayesian Analysis (ISBA), Section on Statistics and the Environment, Conference on Statistical Practice Steering Committee

Organizer(s): Debashis Mondal, Oregon State University

8:35 a.m. Model-Based Geostatistics for Prevalence Mapping in Low-Resource Settings—◆ Peter J. Diggle, Lancaster University; Emanuele Giorgi, Lancaster University

9:05 a.m. Determinantal Point Processes on the Sphere—◆ Jesper Moller, Aalborg University

9:35 a.m. Space-Time Modeling of Infectious Disease Data—◆ Jon Wakefield, University of Washington

10:05 a.m. Floor Discussion

Invited Sessions 8:30 a.m.—10:20 a.m.

103 **CC-4C2**

Bayesian Methodology in Clinical Development—Invited

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

Organizer(s): Stacy Rachele Lindborg, Biogen Idec

Chair(s): Kim Crimin, Biogen Idec

8:35 a.m. MS Disease Progression: A Multiple Imputation Approach for Handling Missing Data—◆ Katherine

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Riester, Biogen Idec; Lei Xu, Biogen Idec; Jacob Elkins, Biogen Idec; Ilya Lipkovich, Quintiles; Stacy Rachele Lindborg, Biogen Idec

- 9:00 a.m. New Perspectives on Randomization Tests for Co-Primary and Secondary Endpoints—◆Arman Sabbaghi, Purdue University; Nathan Stein, University of Pennsylvania; Joseph Lee, Harvard University; Stacy Rachele Lindborg, Biogen Idec; Ying Zhu, Biogen Idec
- 9:25 a.m. A Principal Stratification Approach to Receipt of Rescue Medication in Early Escape Designs—◆David Watson, Carleton College
- 9:50 a.m. Disc: Donald B. Rubin, Harvard University
- 10:10 a.m. Floor Discussion

104 **TCC-101**
■ Design and Analysis of Mixture Experiments: New Methods with Applications—Invited
 Section on Physical and Engineering Sciences, Quality and Productivity Section, Conference on Statistical Practice Steering Committee, Section on Statistical Consulting, Committee on Applied Statisticians

Organizer(s): Greg F. Piepel, Pacific Northwest National Laboratory
 Chair(s): Scott K. Cooley, Pacific Northwest National Laboratory

- 8:35 a.m. Using Multiple Objectives to Select an Optimal Split-Plot Design for a Mixture-Process Experiment—◆Christine Anderson-Cook, Los Alamos National Laboratory; Lu Lu, University of South Florida; Timothy Robinson, University of Wyoming
- 9:05 a.m. Mixture Experiment Design Varying One, Two, and Three Components at a Time—◆Greg F. Piepel, Pacific Northwest National Laboratory; Scott K. Cooley, Pacific Northwest National Laboratory; John D. Vienna, Pacific Northwest National Laboratory; Jarrod V. Crum, Pacific Northwest National Laboratory
- 9:35 a.m. Ordinal Responses in Mixture Experiments—◆Michelle Mancenido, Arizona State University; Douglas C. Montgomery, Arizona State University; Connie Borrer, Arizona State University; Rong Pan, Arizona State University
- 10:05 a.m. Floor Discussion

LOST?

TCC ROOMS ARE ACROSS THE STREET FROM THE MAIN CC BUILDING. SEE THE MAP ON **PAGE 20**.

105 **CC-607**
■ ● Statistical Methods for Big Genomic Data Analysis—Invited

IMS, Biometrics Section

Organizer(s): Haiyan Huang, UC Berkeley
 Chair(s): Peter Mueller, The University of Texas at Austin

- 8:35 a.m. A Latent Mixture Model for Gene Set Analysis—◆Zhijin Wu, Brown University
- 9:00 a.m. Integrative Models of GWAS SNPs, Genomic, and Epigenomic Data—◆Sunduz Keles, University of Wisconsin; Sunyoung Shin, University of Wisconsin; Chandler Zuo, University of Wisconsin
- 9:25 a.m. Gene Coexpression Measures in Large Heterogeneous Samples Using Count Statistics—Y.X. Rachel Wang, UC Berkeley; Michael Waterman, University of Southern California; ◆Haiyan Huang, UC Berkeley
- 9:50 a.m. Disc: Terry Speed, Walter & Eliza Hall Institute of Medical Research in Melbourne/UC Berkeley
- 10:10 a.m. Floor Discussion

106 **CC-616**
■ ● Recent Developments in Statistical Genetics and Genomics—Invited

Section on Statistics in Epidemiology, Biometrics Section

Organizer(s): Jinbo Chen, University of Pennsylvania Perelman School of Medicine
 Chair(s): Jinbo Chen, University of Pennsylvania Perelman School of Medicine

- 8:35 a.m. ContamDE: Differential Expression Analysis of RNA-Seq Data for Contaminated Tumor Samples—◆Hong Zhang, Fudan University
- 9:00 a.m. Genetic Association Testing with Human Brain Functional Networks as Phenotypes—◆Wei Pan, University of Minnesota
- 9:25 a.m. Statistical Models for Analyzing X-Chromosome Data—◆Sanjay Shete, MD Anderson Cancer Center
- 9:50 a.m. Quantification of Multiple Tumor Clones Using Gene Array Data—◆Charles Kooperberg, Fred Hutchinson Cancer Research Center; Yichen Cheng, Fred Hutchinson Cancer Research Center; James Y. Dai, Fred Hutchinson Cancer Research Center
- 10:15 a.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

107 **CC-619**
Statistical Advances for the Detection of Gene-Environment Interactions—Invited

Biometrics Section, Section on Statistics and the Environment

Organizer(s): Yuehua Cui, Michigan State University
 Chair(s): Ping-Shou Zhong, Michigan State University

- 8:35 a.m. Integrative Analysis of Gene-Environment Interactions—◆Yuehua Cui, Michigan State University
- 9:00 a.m. The Logistic Regression Model for Gene-Environment Interactions Using Both Case-Parent Trios and Unrelated Case-Controls—◆Yi-Hau Chen, Academia Sinica
- 9:25 a.m. Using Imputed Genotype Data in Joint Score Tests for Genetic Association and Gene-Environment Interactions in Case-Control Studies—Nilanjan Chatterjee, National Cancer Institute; ◆Minsun Song, National Cancer Institute
- 9:50 a.m. Disc: Bhramar Mukherjee, University of Michigan
- 10:15 a.m. Floor Discussion

108 **CC-4C3**
Statistics and the Media—Invited

Committee on Excellence in Statistical Reporting, International Chinese Statistical Association, Section on Statistical Consulting, Scientific and Public Affairs Advisory Committee

Organizer(s): Morteza Marzjarani,
 Chair(s): Morteza Marzjarani,

- 8:35 a.m. Exploiting the Media's Obsession with Controversy to Promote Good Science—◆Donald Berry, MD Anderson Cancer Center
- 9:00 a.m. Maintaining the Credibility of Official Statistics—◆Michael D. Levi, Bureau of Labor Statistics
- 9:25 a.m. Science Journalism Meets Statistics: How Jellybeans Explain Your Sex Life—◆Regina Nuzzo, Freelance Journalist/Gallaudet University
- 9:50 a.m. The Creative Tension Between the Data Creators and the Storytellers—◆Lucas Hitt, Bureau of Economic Analysis
- 10:15 a.m. Floor Discussion

109 **CC-611**
Causal Modeling—Invited

IMS
 Organizer(s): Thomas S. Richardson, University of Washington
 Chair(s): Andrea Rotnitzky, Universidad Di Tella/Harvard School of Public Health

- 8:35 a.m. Extending Effects on the Untreated and Mediated Effects from Point Treatment to Longitudinal Settings—◆Ilya Shpitser, University of Southampton
- 9:00 a.m. A Generalized Backdoor Criterion—◆Marloes H. Maathuis, ETH Zurich; Diego Colombo, ETH Zurich
- 9:25 a.m. Recent Developments for Mediation Analysis: Can We Do Better?—◆Eric Tchetgen Tchetgen, Harvard University
- 9:50 a.m. Disc: Peter M. Aronow, Yale University
- 10:10 a.m. Floor Discussion

110 **CC-2A**
Statistics in Imaging: Open Problems—Invited

Section on Statistics in Imaging, Mental Health Statistics Section, Biometrics Section
 Organizer(s): Hernando Ombao, UC Irvine
 Chair(s): Hernando Ombao, UC Irvine

- 8:35 a.m. Change-point Estimation in Shape or Other Markers for Alzheimer's Disease—◆Laurent Younes, The Johns Hopkins University
- 9:00 a.m. Brain Connectivity Analysis: A Critical Review and Some Progress—◆Victor Solo, University of New South Wales
- 9:25 a.m. Open Problems and New Directions in Functional Magnetic Resonance Imaging (fMRI)—◆Martin A. Lindquist, The Johns Hopkins University
- 9:50 a.m. Combining State-Space Modeling, Biophysics, and Compressive Sensing to Solve Ill-Posed Inverse Problems for EEG and MEG Recordings—◆Patrick L. Purdon, Massachusetts General Hospital; Emery N. Brown, Massachusetts General Hospital/MIT
- 10:15 a.m. Floor Discussion

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

111 CC-603 High-Dimensional Statistics and Computational Methods—Invited

IMS

Organizer(s): Sahand N. Negahban, Yale University

Chair(s): Sahand N. Negahban, Yale University

- 8:35 a.m.** Multiple Testing of Subnetworks with Application to Identification of Pathway Crosstalk—◆Yin Xia, The University of North Carolina at Chapel Hill; Tony Cai, University of Pennsylvania; Tianxi Cai, Harvard University
- 9:00 a.m.** Efficient Tensor Completion with Provable Guarantees—◆Sewoong Oh, University of Illinois at Urbana-Champaign
- 9:25 a.m.** Taming the Monster: A Fast and Simple Algorithm for Contextual Bandits—◆Alekh Agarwal, Microsoft Research
- 9:50 a.m.** High-Dimensional Sparse Additive Functional Data Models—◆Garvesh Raskutti, University of Wisconsin; Ming Yuan, University of Wisconsin - Madison
- 10:15 a.m.** Floor Discussion

112 CC-308 Bayesian Approaches to Record Linkage—Invited

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

Organizer(s): Mauricio Sadinle, Carnegie Mellon University

Chair(s): Steven Fienberg, Carnegie Mellon University

- 8:35 a.m.** Methods for Quantifying Conflict Casualties in Syria—◆Rebecca Steorts, Duke University; Samuel Ventura, Carnegie Mellon University; Mauricio Sadinle, Carnegie Mellon University; Steven Fienberg, Carnegie Mellon University
- 8:55 a.m.** Adjusting for Errors in Blocking Variables in Record Linkage—◆Nicole Dalzell, Duke University; Jerry Reiter, Duke University
- 9:15 a.m.** Joint Modeling for Record Linkage and Statistical Analysis—◆Michael Larsen, The George Washington University
- 9:35 a.m.** Simultaneously Propagating Uncertainty and Providing Inference on Linked Data via Bayesian Graphical Record Linkage—◆Andrea Tancredi, Sapienza University of Rome; Rebecca Steorts, Duke University; Brunero Liseo, Sapienza University of Rome
- 9:55 a.m.** Disc: William E. Winkler, U.S. Census Bureau
- 10:15 a.m.** Floor Discussion

113 CC-4C4 Smarter Analytics: Making Better Decisions in Modern Service Systems—Invited Business and Economic Statistics Section, Government Statistics Section

Organizer(s): Haipeng Shen, The University of North Carolina at Chapel Hill; Dawn Woodard, Cornell University

Chair(s): Dawn Woodard, Cornell University

- 8:35 a.m.** Algorithms and Applications for Interpretable Machine Learning—◆Cynthia Rudin, MIT
- 8:55 a.m.** Choosing Arrival Process Models for Service Systems: Tests of a Nonhomogeneous Poisson Process—◆Song-Hee Hailey Kim, Yale School of Management; Ward Whitt, Columbia University
- 9:15 a.m.** Quantifying Disparities in Accessibility and Availability of Pediatric Primary Care with Implications for Policy Making—Monica Gentili, Georgia Institute of Technology; ◆Nicoleta Serban, Georgia Institute of Technology; Julie Swann, Georgia Institute of Technology
- 9:35 a.m.** Telephone Call Centers: Asymptotic Optimality of Myopic Forecasting-Scheduling Scheme—◆Han Ye, University of Illinois at Urbana-Champaign
- 9:55 a.m.** Disc: Haipeng Shen, The University of North Carolina at Chapel Hill
- 10:15 a.m.** Floor Discussion

114 CC-3B Recent Advances in Statistical Methodology for Small-Area Estimation and Federal Surveys—Invited

Survey Research Methods Section, Government Statistics Section, Section on Statistics and the Environment

Organizer(s): Scott H. Holan, University of Missouri

Chair(s): Darcy Miller, NASS

- 8:35 a.m.** Inference About Small-Area Distributions Using Area-Level Tabulations—◆Raymond Chambers, University of Wollongong
- 9:00 a.m.** Small-Area Estimation for High-Dimensional Multivariate Spatio-Temporal Count Data—◆Jonathan R. Bradley, University of Missouri; Scott H. Holan, University of Missouri; Christopher K. Wikle, University of Missouri
- 9:25 a.m.** On Borrowing Information Over Time in Small-Area Estimation—◆William R. Bell, U.S. Census Bureau; Carolina Franco, U.S. Census Bureau
- 9:50 a.m.** Disc: John L. Eltinge, Bureau of Labor Statistics
- 10:15 a.m.** Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Invited Panels 8:30 a.m.—10:20 a.m.

115 CC-206

■ ● Has Informed Consent Outrun Its Usefulness?—Invited

Committee on Privacy and Confidentiality, Section on Statistical Consulting, Scientific and Public Affairs Advisory Committee

Organizer(s): Alan F. Karr, RTI International

Chair(s): Alan F. Karr, RTI International

Panelists: ◆ Marjory Blumenthal, Office of Science and Technology Policy

◆ Frauke Kreuter, Joint Program in Survey Methodology

◆ Julia Lane, American Institutes for Research

◆ Helen Nissenbaum, New York University

10:15 a.m. Floor Discussion

Topic-Contributed Sessions

8:30 a.m.—10:20 a.m.

116 CC-213

■ ● Spatial Statistics Applied to Environmental Health Problems—Topic-Contributed

Section on Statistics and the Environment, International Society for Bayesian Analysis (ISBA), Section on Bayesian Statistical Science, Government Statistics Section, Biometrics Section, International Indian Statistical Association, Committee on Applied Statisticians

Organizer(s): Veronica J. Berrocal, University of Michigan

Chair(s): Veronica J. Berrocal, University of Michigan

8:35 a.m. Bayesian Multiscale Modeling for Aggregated Disease Mapping Data—◆ Mehreteab Aregay, Medical University of South Carolina; Andrew B. Lawson, Medical University of South Carolina; Christel Faes, Hasselt University; Russel S. Kirby, University of South Florida

8:55 a.m. Socio-Spatial Epidemiology: Statistical Methods for Ecological Networks—◆ Catherine Calder, The Ohio State University; Christopher Browning, The Ohio State University; Yanan Jia, The Ohio State University

9:15 a.m. Spatial Statistics Applied to Environmental Health Problems—◆ Annibale Biggeri, Michela Baccini, Computer Science and Applications; Dolores Catelan; Corrado Lagazio, University of Genoa

9:35 a.m. Quantifying Future Ozone-Related Mortality Under Climate Change and Methods to Incorporate Uncertainty in Future Ozone Exposures—◆ Stacey Alexeeff, National Center for Atmospheric Research; Doug Nychka, National Center for Atmospheric Research; Gabriele Pfister, National Center for Atmospheric Research

9:55 a.m. The Effects of Exposure Misspecification in Spatio-Temporal Epidemiological Studies—◆ Gavin Shaddick, University of Bath; James Zidek, The University of British Columbia; Yi Liu, University of Bath

10:15 a.m. Floor Discussion

117 CC-618
■ ● Lifetime Data Analysis for Medical Decision-Making—Topic-Contributed
 Biometrics Section, Health Policy Statistics Section

Organizer(s): Mei-Ling Ting Lee, University of Maryland

Chair(s): Mei-Ling Ting Lee, University of Maryland

8:35 a.m. Instrumental Variable Additive Hazards Models—◆ Jialiang Li, Duke University/NUS/SERI; Jason Fine, The University of North Carolina; Alan Brookhart, The University of North Carolina at Chapel Hill

8:55 a.m. Recent Advances in Formulating and Evaluating of Models of Absolute Risk—◆ Mitchell Gail, National Cancer Institute

9:15 a.m. Recurrent Event Data Analysis with Intermittently Observed Time-Varying Covariates—◆ Shanshan Li, Indiana University; Chiung-Yu Huang, The Johns Hopkins University; Dean Follmann, National Institute of Allergy and Infectious Diseases; Richard Krause, NIAID/NIH

9:35 a.m. On Measuring Functional Attribution—◆ Ying Qing Chen, Fred Hutchinson Cancer Research Center

9:55 a.m. Explained Variation in Correlated Survival Data—◆ Ronghui Xu, UC San Diego; Gordon Honerkamp-Smith, UC San Diego

10:15 a.m. Floor Discussion

118 CC-608
■ Statistical Challenges in Clinical Trials of Novel Vaccines—Topic-Contributed
 Biopharmaceutical Section, Biometrics Section

Organizer(s): Ghideon Solomon, FDA/CBER

Chair(s): Desale Habtzghi, The University of Akron

8:35 a.m. Statistical Challenges for Evaluating Malaria Vaccine Efficacy—◆ Ghideon Solomon, FDA/CBER

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 8:55 a.m. Methods for Increasing Power in Vaccine Efficacy Trials—◆David Benkeser; Peter B. Gilbert, Fred Hutchinson Cancer Research Center; Marco Carone, University of Washington
- 9:15 a.m. Immune Correlates of Protection: Recent Developments and Future Challenges—◆Andrew Dunning, Sanofi Pasteur
- 9:35 a.m. Novel Vaccine Designs—◆Michael Proschan, NIH/NIAID
- 9:55 a.m. Disc: Amelia Dale Horne, CBER/FDA
- 10:15 a.m. Floor Discussion

119 CC-211

■ ● Empirical Bayes Methods for Modern Data Analysis: Theoretical, Computational, and Practical Aspects—Topic-Contributed Section on Nonparametric Statistics, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), International Indian Statistical Association

Organizer(s): Lee H. Dicker, Rutgers University

Chair(s): Sihai Zhao, University of Illinois at Urbana-Champaign

- 8:35 a.m. Nonparametric Empirical Bayes Estimation for Sparse, Heteroskedastic Normal Means—◆Linda Zhao, University of Pennsylvania
- 8:55 a.m. Generalized Likelihood Ratio Test for Detecting Nonzero Normal Means—◆Wenhua Jiang, Soochow University; Cun-Hui Zhang, Rutgers University
- 9:15 a.m. Maximum Likelihood for Nonparametric Empirical Bayes: New Methods and Applications—◆Lee H. Dicker, Rutgers University
- 9:35 a.m. Second-Order Calibration: A Cheap Way to Get Approximate Posteriors—◆Omkar Muralidharan, Google
- 9:55 a.m. Sophisticated vs. Naive Bayes: Is It Worth the Effort?—◆Ivan Mizera, University of Alberta
- 10:15 a.m. Floor Discussion

120 CC-307

■ ● Bayesian Modeling of Complex Survey Data Using Stan—Topic-Contributed Survey Research Methods Section, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)

Organizer(s): Qixuan Chen, Columbia University

Chair(s): Shira Mitchell, Columbia University

- 8:35 a.m. Estimating the Prevalence of Psychiatric Disorders Among National Guard Service Members Using a Bayesian Post-Stratification Model—◆Sharifa

Barracks; Qixuan Chen, Columbia University; Sandro Galea, Columbia University Mailman School of Public Health

- 8:55 a.m. Multilevel Regression and Post-Stratification for Survey Weighting—◆Yajuan Si, University of Wisconsin - Madison; Andrew Gelman, Columbia University
- 9:15 a.m. Multilevel Regression and Post-Stratification Using Stan—◆Robert Trangucci, Columbia University
- 9:35 a.m. Bayesian Predictive Inference for Skewed Survey Data in Unequal Probability Sampling—◆Qixuan Chen, Columbia University
- 9:55 a.m. Disc: Joseph Sedransk, University of Maryland
- 10:15 a.m. Floor Discussion

121 CC-612

■ ● Minimizing Bias in Medical Device Trials Through Study Design and Data Analysis—Topic-Contributed

Section on Medical Devices and Diagnostics, Government Statistics Section, Biometrics Section

Organizer(s): Laura Lu, FDA/CDRH; Jack Zhou, FDA/CDRH

Chair(s): Laura Lu, FDA/CDRH

- 8:35 a.m. Study Design Using Bayesian Conditional Borrowing of the Prior with Multiple Cutoffs—◆Peter Lam, Boston Scientific; Songtao Jiang, Boston Scientific; Ming-Hui Chen, University of Connecticut
- 8:55 a.m. Sensitivity Analysis for Clinical Trials with Missing Outcome Data Using Repeated Measures: A Simulation Study Design—◆Terry Liao, Boston Scientific; Ying Yang, FDA
- 9:15 a.m. Minimizing Bias in Observational Comparative Clinical Studies—◆Lilly Yue, FDA/CDRH
- 9:35 a.m. Practical Considerations for Establishing Monitoring Committees in Device Trials for Ensuring Trial Validity—◆Rajesh Nair, CDRH/FDA
- 9:55 a.m. Disc: Greg Campbell, FDA/CDRH
- 10:15 a.m. Floor Discussion

122 CC-304

■ ● Student Paper Awards—Topic-Contributed Health Policy Statistics Section

Organizer(s): Frank Yoon, Mathematica Policy Research

Chair(s): Frank Yoon, Mathematica Policy Research

- 8:35 a.m. Health Care Policy Evaluation Using Propensity Score Matching: A Study of Care Consistent with a Patient-Centered Medical Home Using a Large Population

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Survey—◆Robert Ashmead, U.S. Census Bureau/
Center for Statistical Research & Methodology;
Bo Lu, The Ohio State University College of Public
Health

8:55 a.m. Lung Transplant Allocation Strategies—◆Jingjing
Zou, Columbia University; David Lederer,
Columbia University; Daniel Rabinowitz, Columbia
University

9:15 a.m. Quantifying an Adherence Path-Specific Effect
of Antiretroviral Therapy in the Nigeria PEPFAR
Program—◆Caleb Miles; Ilya Shpitser, University
of Southampton; Phyllis Kanki, Harvard School of
Public Health; Seema Meloni, Harvard School of
Public Health; Eric Tchetgen Tchetgen, Harvard
University

9:35 a.m. Flexible Models for Estimating Optimal Treatment
Initiation Time for Survival Endpoints: Application
to Timing of CART Initiation in HIV/TB Co-
Infection—◆Liangyuan Hu, Brown University ;
Joseph Hogan, Brown University

9:55 a.m. Hierarchical Bayesian Approaches for Detecting
Inconsistency in Network Meta-Analysis—◆Hong
Zhao; James Hodges, University of Minnesota;
Haijun Ma, Amgen; Qi Jiang, Amgen; Bradley P.
Carlin, University of Minnesota

10:15 a.m. Floor Discussion

123 **CC-201**
**■ ● Advances in Bayesian Model Selection—
 Topic-Contributed**

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

Organizer(s): Yingbo Li, Clemson University

Chair(s): Andrew Brown, Clemson University

8:35 a.m. Default Variable Selection Using Shrinkage Priors—
◆DebdEEP Pati, Florida State University

8:55 a.m. Achieving Extra Parsimony and BMA Shrinkage via
Non-Local Priors—◆David Rossell, University
of Warwick; Donatello Telesca, UCLA; Jairo
Fuquene, University of Warwick; Mark Steel,
University of Warwick

9:15 a.m. Fast Computation for Bayesian Variable Selection—
◆Jin Wang, University of Illinois at Urbana-
Champaign; Feng Liang, University of Illinois at
Urbana-Champaign; Yuan Ji, The University of
Chicago

9:35 a.m. Mixtures of G-Priors in Generalized Linear
Models—◆Yingbo Li, Clemson University; Merlise
Clyde, Duke University

9:55 a.m. Bayesian Inference for High-Dimensional Dynamic
Systems Modeled by Ordinary Differential Equations
with Applications to Brain Networks—◆Tingting

Zhang, University of Virginia; Brian Caffo, The
Johns Hopkins University; Dana Boatman,
The Johns Hopkins University; Qiannan Yin,
University of Virginia

10:15 a.m. Floor Discussion

124 **CC-609**
**■ Statistical Advance in Integrative Analysis of
 Genomics Data—Topic-Contributed**

Section on Statistics in Genomics and Genetics, Biometrics Section

Organizer(s): Qunhua Li, Penn State

Chair(s): Qunhua Li, Penn State

8:35 a.m. Differential Methylation Analysis in Bisulfite
Sequencing Studies with Related Individuals—
◆Xiang Zhou, University of Michigan

8:55 a.m. Exploiting Structure to Reduce and Integrate High-
Dimensional, Under-Sampled Genomics Data—
◆Yang Liu, Penn State; Francesca Chiaromonte,
Penn State; Bing Li, Penn State

9:15 a.m. Identification of Stably Expressed Genes from
Arabidopsis RNA-Seq Data—◆Yanming Di,
Oregon State University; Bin Zhuo,

9:35 a.m. A Machine Learning Approach for Predicting
Transcription Factor Binding—◆Steve Qin, Emory
University

9:55 a.m. Statistical Analyses of Genetic Epistasis Among
Cancer Genes—◆Audrey Fu; Xiaoyue Wang,
Peking Union Medical College; Megan E.
McNerney, The University of Chicago; Kevin P.
White, The University of Chicago

10:15 a.m. Floor Discussion

125 **CC-615**
**■ Privacy-Preserving Data Analysis in
 Distributed Data Setting: What Can We Learn
 from Other Disciplines?—Topic-Contributed**

Biometrics Section, International Indian Statistical Association

Organizer(s): Paramita Saha-Chaudhuri, McGill University

Chair(s): Jared S. Murray, Carnegie Mellon University

8:35 a.m. Privacy-Protecting Analytic and Data-Sharing
Methods for Large Electronic Health Data
Networks—◆Darren Toh, Harvard Medical
School/Harvard Pilgrim Health Care Institute

8:55 a.m. Patient Privacy, Big Data, and PoLoR: Using an
Old Tool for New Challenges—◆Paramita Saha
Chaudhuri, McGill University

9:15 a.m. Data Privacy in Biomedical Research and Practice in
the Era of Big Data—◆Aleksandra B. Slavkovic,
Penn State

Monday

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9:35 a.m. Practical Methods for Privacy-Preserving Genome-Wide Association Study Data Sharing—◆ Fei Yu, Carnegie Mellon University; Zhanglong Ji, UC San Diego

9:55 a.m. Practical Applications of Secure Multi-Party Computation for Public Health and Post-Marketing Drug Surveillance—◆ Khaled El Emam,

10:15 a.m. Floor Discussion

126 CC-204 Student Paper Awards—Topic-Contributed Section on Statistical Learning and Data Mining

Organizer(s): Hernando Ombao, UC Irvine

Chair(s): Matt Taddy, The University of Chicago

8:35 a.m. Multi-Task Learning for the Diagnosis of Alzheimer's Disease—◆ Guan Yu, The University of North Carolina at Chapel Hill; Yufeng Liu, The University of North Carolina; Dinggang Shen, The University of North Carolina at Chapel Hill

8:55 a.m. Dantzig-Type Penalization for Multiple Quantile Regression with High-Dimensional Covariates—◆ Seyoung Park, University of Michigan; Xuming He, University of Michigan; Shuheng Zhou, University of Michigan

9:15 a.m. Weak Signal's Identification and Inference in Penalized Model Selection—◆ Peibei Shi, University of Illinois at Urbana-Champaign; Annie Qu, University of Illinois at Urbana-Champaign

9:35 a.m. Falling Rule Lists—◆ Fulton Wang; Cynthia Rudin, MIT

9:55 a.m. Community Detection in Multi-Relational Data Through Multi-Layer Stochastic Blockmodel—◆ Subhadeep Paul, University of Illinois at Urbana-Champaign; Yuguo Chen, University of Illinois at Urbana-Champaign

10:15 a.m. Floor Discussion

Topic-Contributed Panels

8:30 a.m.—10:20 a.m.

127

CC-606

■ Using 'Real Data' for Teaching in the Health Sciences: Benefits, Challenges, and Opportunities—Topic-Contributed
Section on Teaching of Statistics in the Health Sciences, Section on Statistical Education, International Indian Statistical Association

Organizer(s): Ann Brearley, University of Minnesota

Chair(s): Carol Bigelow, University of Massachusetts Amherst

Panelists: ◆ Ronald Gangnon, University of Wisconsin

◆ Amy Nowacki, Cleveland Clinic

◆ Steven Grambow, Duke University

◆ Laila Poisson, Henry Ford Health System

◆ Jacqueline Milton, Boston University School of Public Health

10:15 a.m. Floor Discussion

Contributed Sessions

8:30 a.m.—10:20 a.m.

128

CC-401

SPEED: Topics in Imaging Biostatistics, Computing, and Modeling—Contributed
Section for Statistical Programmers and Analysts, Section on Statistical Education, Section on Statistics and the Environment, International Indian Statistical Association

Chair(s): Susan Halabi, Duke University

8:35 a.m. Sensitivity of Multiply Imputed Results to Quantity and Differential of Missingness—◆ Chad Evans, University of Pennsylvania

8:40 a.m. Tolerance Bands for Functional Data—◆ Lasitha Rathnayake; Pankaj Choudhary, The University of Texas at Dallas

8:45 a.m. Comparing Ricean and Gaussian Modeling in Magnitude fMRI Analysis Using Random Field Theory—◆ Zabedah Saad, University of Northern Colorado; Khalil Shafie, University of Northern Colorado

8:50 a.m. Matrix Factorization Algorithms for the Identification of Resting-State Networks Using Functional Magnetic Resonance Imaging—◆ Karthik Devarajan, Fox Chase Cancer Center; Harvey Hensley, Fox Chase Cancer Center

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 8:55 a.m. Using Code-Based Statistical Software in an Introductory Statistics Course—◆Kirsten Doehler, Elon University
- 9:00 a.m. An Open Source R Shiny Web Application to Estimate Power for a Logistic Regression Interaction Term in the 2 X 2 X 2 Case—◆D. Keith Williams, University of Arkansas for Medical Sciences; C. Heath Gauss, University of Arkansas for Medical Sciences; Zoran Bursac, University of Tennessee Health Science Center
- 9:05 a.m. Classification of Greek Wines According to Geographic Region—◆Carlos Natividad-Licon, The University of Texas at San Antonio; Jonathan Morales, The University of Texas at San Antonio
- 9:10 a.m. Imputation of Missing Data for CDC-Funded HIV Testing Program Data: Methods and Modeling—◆Guoshen Wang, CDC; Yi Pan, CDC; Ruiguang Song, CDC; Pujia Seth, CDC; Lisa Belcher, CDC
- 9:15 a.m. GMM Versus GQL Logistic Regression Models for Multi-Level Correlated Data—◆Bei Wang, Arizona State University; Jeffrey Wilson, W. P. Carey School of Business/Arizona State University
- 9:20 a.m. For Unequal Samples of Skewed Data, Which T-Test: Equal or Unequal Variances?—◆Avraham Wein, Yeshiva College; James Schmeidler, Icahn School of Medicine at Mount Sinai
- 9:25 a.m. Response Rate Improvements Through Operational Efficiency—◆Christopher Bieganski, Nielsen; Ryan Baer, Nielsen; Megan Sever, Nielsen; Mengying Fu, Nielsen
- 9:30 a.m. Predicting Risk of End-Stage Kidney Disease Using Criteria to Guide Disease Management—◆Yuxiang Xie, University of Washington; Marlena Maziarz, University of Washington; Yoshio Hall, University of Washington
- 9:35 a.m. Estimating an Unobserved State Variable Using Marked Point Process Filters—◆Xinyi Deng, Boston University; Daniel F. Liu, UC San Francisco; Kenneth Kay, UC San Francisco; Loren M. Frank, UC San Francisco; Uri Eden, Boston University
- 9:40 a.m. Testing Linear Hypothesis of High-Dimensional Multi-Sample Mean Vectors—◆Bu Zhou, National University of Singapore; Jin-Ting Zhang, National University of Singapore
- 9:45 a.m. Classification on Children's Notion of Sources of Science Knowledge—◆Guoguo Zheng, University of Georgia; April Galyardt, The University of Georgia; Maggie Renken, Georgia State University; Ilya Goldin, Pearson
- 9:50 a.m. Making Classifier Performance Comparisons for Three-Class ROC Surfaces—◆Yingjie Hu, New York University
- 9:55 a.m. Quantitative Lung Image Analysis Using a Spatial Point Process Framework—◆Brian Vestal,

- University of Colorado Denver; Nichole Carlson, University of Colorado Anschutz Medical Campus
- 10:00 a.m. Automated Intracerebral Hemorrhage Segmentation of CT Scans—◆John Muschelli, The Johns Hopkins University; Elizabeth Sweeney, The Johns Hopkins University; Natalie L. Ullman, Johns Hopkins Medical Institution; Daniel F. Hanley, Johns Hopkins Medical Institution; Ciprian Crainiceanu, The Johns Hopkins University
- 10:05 a.m. Prospective Power Estimation for Peak Inference for fMRI with the Toolbox Neuropower—◆Joke Durnez, Ghent University; Gregory Burgess, Washington University School of Medicine; Jasper Degryse, Ghent University; Deanna Barch, Washington University School of Medicine; Beatrijs Moerkerke, Ghent University; Tom E. Nichols, University of Warwick
- 10:10 a.m. Hierarchical Modeling of Reported Economic Activity of Faculty at the University of Georgia—◆Kristen Elizabeth Roland, The University of Georgia; Yawei Shen; Jiajun Xu, The University of Georgia; Yanyan Tan, The University of Georgia; April Galyardt, The University of Georgia
- 10:15 a.m. **Floor Discussion**

129 CC-4C1 SPEED: Topics in Statistical Methods and Applications—Contributed

Survey Research Methods Section, Section on Statistics in Marketing, Section on Statistics and the Environment, Section on Statistics in Epidemiology, International Indian Statistical Association

Chair(s): Lynn Waterhouse,

- 8:35 a.m. Novel Application of Statistical Tools for Big Data Analyses of Solar Physics—Siavoush Mohammadi, Infotrek; ◆Lars K.S. Daldorff, University of Michigan/NASA GSFC
- 8:40 a.m. Uplift Model vs. Propensity Model—◆Zhen Zhang, C Spire ; Lei Zhang, Mississippi State Department of Health; Kendall Churchwell, C Spire; Jim Veillette, C Spire
- 8:45 a.m. The Torgegram for Fluvial Variography: Characterizing Spatial Dependence on Stream Networks—◆Dale Zimmerman, The University of Iowa; Jay Ver Hoef, NOAA National Marine Mammal Lab
- 8:50 a.m. Bias Correction for CSP: Better Border Biosecurity Estimates—◆Andrew Robinson, The University of Melbourne; Geoffrey Decrouez,
- 8:55 a.m. Providing Weight to Unit-Weighting: Generalizability of Unit-Weighted Factor Scores—◆Rafael Garcia, The University of Arizona
- 9:00 a.m. Partially Missing at Random and Ignorable Inferences

for Parameter Subsets with Missing Data—◆Sahar Zangeneh, Fred Hutchinson Cancer Research Center; Roderick Little, University of Michigan

- 9:05 a.m. Predicted Heart Age Among U.S. Adults, BRFSS 2011—◆Yuna Zhong, CDC/IHRC; Cathleen Gillespie, CDC; Mark Cobain, Habit Partners Community Interest Company; Quanhe Yang, CDC
- 9:10 a.m. Differences in Student Debt Among Demographic Groups in Those Recently Graduating with a Bachelors Degree 2011–2012—◆Bailey C. Ingraham Lopresto, Christiana Care-Value Institute
- 9:15 a.m. Generalization of Conditional Logit Choice Model Using Gaussian Copula—◆Arjun Poddar, Old Dominion University; N. Rao Chaganty, Old Dominion University
- 9:20 a.m. Detecting Fraud in a Survey Sample Recruited Online—◆Derick Brown, RTI International; Jill Dever, RTI International; Linda Squiers, RTI International; Erik Augustson, National Cancer Institute
- 9:25 a.m. Bivariate Spatial Analysis of Temperature and Precipitation from General Circulation Models and Observations—◆Robert Philbin; Mikyoung Jun, Texas A&M University
- 9:30 a.m. Evaluating the Practice of Assuming Parallelism in Relative Potency Determination with Four-Parameter Logistic Regression—◆Liping Song, Merck; Robert Capen, Merck Research Laboratories
- 9:35 a.m. Graphical Ruggedness Testing Using an Unreplicated 3-Cubed Factorial Experiment—◆John McCool, Penn State Great Valley
- 9:40 a.m. An Alternative Modified Hypergeometric Distribution Probability Model Useful in Industrial Quality Control—◆Sudip Roy; Ram Tripathi, The University of Texas at San Antonio
- 9:45 a.m. Using IRT Models to Estimate and Visualize Spatial Clusters—◆Andre Cancado, University of Brasilia; Antonio Eduardo Gomes, University of Brasilia; Cibele Queiroz da Silva, University of Brasilia; Fernando Luiz Pereira Oliveira, Federal University of Ouro Preto; Luiz Duczmal, Universidade Federal de Minas Gerais
- 9:50 a.m. Identification and Inference for Time-Varying Instrumental Variables—◆Matthew Blackwell, Harvard University
- 9:55 a.m. Current Methods of Weight Trimming in Sample Surveys—◆Frank Potter, Mathematica Policy Research
- 10:00 a.m. Evaluation of Model Fit Indices and Structural Coefficient Bias with Bifactor Model Misspecification—◆Yan Wang, University of South Florida; Eun Sook Kim,
- 10:05 a.m. **Floor Discussion**

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

130 CC-605 Advances in Statistical Genomics and Genetics—Contributed

IMS, Biometrics Section

Chair(s): Jingyi (Jessica) Li, UCLA

- 8:35 a.m. Optimal Multiple Testing with Prior Information—◆Edgar Dobriban, Stanford University; Art Owen, Stanford University; Stuart Kim, Stanford University; Kristen Fortney, Stanford University
- 8:50 a.m. Comparison of Partially Ranked Lists with Application to RNA-Seq Differential Expression Methods—◆Dean Palejev, Bulgarian Academy of Sciences; Eugenia Stoimenova, Bulgarian Academy of Sciences
- 9:05 a.m. Intrinsic Noise in Nonlinear Gene Regulation Inference—◆Chao Du, University of Virginia; Wing Hung Wong, Stanford University
- 9:20 a.m. A Semiparametric Bayesian Approach for Differential Expression Analysis of RNA-Seq Data—Fangfang Liu, Iowa State University; Chong Wang, Iowa State University; ◆Peng Liu, Iowa State University
- 9:35 a.m. Thresholding Tests for Signal Detection on High-Dimensional Count Distributions—◆Yumou Qiu, University of Nebraska - Lincoln; Song Xi Chen, Peking University/Iowa State University; Dan Nettleton, Iowa State University
- 9:50 a.m. A Phylogenetic Method for Quantitative Trait Mapping with Complex Data Sets—◆Katherine Thompson, University of Kentucky; Laura Kubatko, The Ohio State University
- 10:05 a.m. Optimal Sparse Signal Recovery Under Dependence—◆Jun Li, Kent State University; Ping-Shou Zhong, Michigan State University

131 CC-2B Statistical Modeling for Complex Structures—Contributed

International Chinese Statistical Association, International Indian Statistical Association

Chair(s): Faming Liang, University of Florida

- 8:35 a.m. Generalized Concept of Relative Risk and Wider Applications of the Proportional Hazards Model and the Kaplan-Meier Estimator—◆Bojuan Zhao, Tianjin University of Finance and Economics
- 8:50 a.m. Semiparametric Regression Analysis of Survival Data with Dependent Interval Censoring—◆Chyong-Mei Chen, Providence University

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9:05 a.m. Semiparametric Analysis of Complementary Log-Log Survival Model with Time-Varying Covariates—
◆Wenyng Zheng, University of Washington; Ying Qing Chen, Fred Hutchinson Cancer Research Center

9:20 a.m. Tensor Approximation in Functional Linear Quantile Regression—◆Linglong Kong, University of Alberta; Dengdeng Yu, University of Alberta; Ivan Mizera, University of Alberta

9:35 a.m. Model Identifiability for MCCFA Model and Its Applications to Differential Item Functioning Detection—◆Yu-Wei Chang, University of Illinois at Urbana-Champaign; Rung-Ching Tsai, National Taiwan Normal University; Nan-Jung Hsu, National Tsing Hua University

9:50 a.m. High-Frequency Financial Statistics with Parallel R and Intel Xeon Phi Coprocessor—◆Jian Zou, Worcester Polytechnic Institute

10:05 a.m. Bridging Density Functional Theory and Big Data Analytics with Applications—◆Henry Lu, National Chiao Tung University; Chien-Chang Chen, NCTU; Hung-Hui Juan, NCTU; Meng-Yuan Tsai, NCTU

132 CC-210 Recent Advances in Theory and Methods for Hypothesis Test, Sampling, and Dimension Reduction—Contributed

Korean International Statistical Society, International Indian Statistical Association, Section on Statistical Consulting

Chair(s): Chul H. Ahn, FDA

8:35 a.m. Tests for Volatility Shifts in GARCH Against Long-Range Dependence—◆Tae Wook Lee, Hankuk University of Foreign Studies; Moosup Kim, Seoul National University; Changryong Baek, Sungkyunkwan University

8:50 a.m. Repeated Measures: How Many Time Points to Power?—◆Brigid Wilson,

9:05 a.m. A Transformation-Based Approach to Sample Size Calculation for Logistic Regression—◆Seongho Kim, Wayne State University/Karmanos Cancer Institute; Elisabeth Heath, Wayne State University/Karmanos Cancer Institute; Lance Heilbrun, Wayne State University/Karmanos Cancer Institute

9:20 a.m. Fitting Logistic Regression Model Under Informative Sampling—◆MoonJung Cho, Bureau of Labor Statistics; Michael Sverchkov, Bureau of Labor Statistics

9:35 a.m. Sample Size and Power Estimates for Cluster-Randomized Trials That Use a Stepped Wedge Design—◆David Thompson,

9:50 a.m. Proper Assessment Measures for Hypothesis Tests—
◆Michael Marion, Bloomsburg University

10:05 a.m. A Theoretical Note on Optimal Sufficient Dimension Reduction with Singularity—◆Jae Keun Yoo, Ewha Womans University

133 CC-214 Advances in Bayesian Computation—Contributed

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

Chair(s): Chris Hans, The Ohio State University

8:35 a.m. Improving the INLA Approach for Approximate Bayesian Inference for Latent Gaussian Models—
◆Egil Ferkingstad, Norwegian University of Science and Technology/University of Iceland; HÅvard Rue, Norwegian University of Science and Technology

8:50 a.m. Automated Parameter Blocking for Efficient Markov Chain Monte Carlo Sampling—◆Daniel Turek, UC Berkeley

9:05 a.m. Variational Message Passing for Semiparametric Regression with Classical and Berkson Errors—
◆Sang Il Kim, University of Technology, Sydney

9:20 a.m. Bayesian Analysis of Matrix-Langevin on the Stiefel Manifold—◆Subhajit Sengupta, Northshore University HealthSystem; Subhadip Pal, University of Florida; Arunava Banerjee, University of Florida; Yuan Ji, The University of Chicago

9:35 a.m. Post-Processing of MCMC Output in Bayesian Multidimensional Scaling—◆Kensuke Okada, Senshu University; Shin-ichi Mayekawa, Tokyo Institute of Technology

9:50 a.m. Convergence Analysis of Block Gibbs Samplers for Bayesian Linear Mixed Models with $P > N$ —◆Tavis Abrahamsen, University of Florida; James P. Hobert, University of Florida

10:05 a.m. Particle-Iterated Smoothing—◆Dao Nguyen,

134 CC-310 Innovative Approaches to Administrative Records—Contributed

Government Statistics Section, Committee on Applied Statisticians

Chair(s): Feng Guo, Virginia Tech

8:35 a.m. Innovative Ways the IRS Is Using Administrative Records—◆Tamara Rib, IRS; Barry Johnson, IRS

8:50 a.m. Exploring Mobility with Survey and Tax Data—
◆Amy O'Hara, U.S. Census Bureau; Alison Fields, U.S. Census Bureau

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 9:05 a.m. Selecting the SOI Individual Tax Return Sample—
◆ Tracy Haines, IRS; Valerie Testa, IRS
- 9:20 a.m. Lining Up: Survey and Administrative Data Estimates of Wealth Concentration—◆ Arthur Kennickell, Federal Reserve Board
- 9:35 a.m. Model-Based Estimation for Tax Sampling Applications—◆ Zhenyu Liu, Ernst & Young
- 9:50 a.m. Standardizing Time in Payroll Data Using Splines—
◆ Jack Lothian, Statistics New Zealand
- 10:05 a.m. Assessing Uncertainty When Combining Administrative Data to Estimate Population Counts—◆ Dilek Yildiz; Peter Smith, University of Southampton

135 **CC-212**

Advances in Nonparametric Modeling: Part 2—Contributed

Section on Nonparametric Statistics, Section on Statistics and the Environment

Chair(s): Jeff Goldsmith, Columbia University

- 8:35 a.m. Bayesian Nonparametric Multivariate Ordinal Regression—◆ Junshu Bao, University of South Carolina; Timothy Hanson, University of South Carolina
- 8:50 a.m. Improved Density Estimators for Contaminated Data—◆ Ursula U. M. Iler, Texas A&M University
- 9:05 a.m. Semiparametric Estimation for Measurement Error Models with Validation Data—◆ Yuhang Xu; Yehua Li, Iowa State University; Jae-kwang Kim, Iowa State University
- 9:20 a.m. Performance of Estimates for Mixtures of Time-Varying Effects Models—◆ John Dziak, Penn State; Runze Li, Penn State; Xianming Tan, McGill University; Saul Shiffman, University of Pittsburgh
- 9:35 a.m. Semiparametric Single-Index Modeling for Spatio-Temporal Data—◆ Hamdy Mahmoud, Virginia Tech; Inyoung Kim, Virginia Tech
- 9:50 a.m. Variable Selection for Additive Model via Cumulative Ratios of Empirical Strengths Total—◆ Miao Yang; Lan Xue, Oregon State University; Lijian Yang, Soochow University
- 10:05 a.m. Dynamic Functional Regression with Application to the Cross-Section of Returns—◆ Bahaeddine Taoufik, Penn State; Piotr Kokoszka, Colorado State University; Hong Miao, Colorado State University; Matthew Reimherr, Penn State

136 **CC-620**

■ SIE CP13: Model Comparison—Contributed Section on Statistics in Epidemiology, Section on Statistics and the Environment, Biometrics Section

Chair(s): Sandrah P. Eckel, University of Southern California

- 8:35 a.m. Standardization of Rates Using Logistic Versus Hierarchical Modeling—◆ Jun Zhang, CDC; Patricia Dietz, CDC; Michelle Van Handel, CDC; Samah Hayek, CDC
- 8:50 a.m. Comparison of Robustness to Model Misspecification Between Log-Binomial Models and the Robust Poisson Models When Estimating Relative Risks for Common Binary Outcomes—◆ Wansu Chen, Kaiser Permanente Southern California; Ji Xiaoxiao Shi, Kaiser Permanente Southern California; Lei Qian, Kaiser Permanente Southern California; Stan P. Azen, University of Southern California Keck School of Medicine
- 9:05 a.m. Comparison of Bayesian Regression Methods for Sparse Epidemiologic Data Analysis—◆ Rika Tajima, The University of Tokyo; Yasuo Ohashi, Chuo University; Hirotsugu Ueshima, Shiga University of Medical Science; Yutaka Matsuyama, The University of Tokyo
- 9:20 a.m. How the Choice of Time Scale Can Impact Latent Class Trajectory Analysis—◆ Annie Green Howard, The University of North Carolina at Chapel Hill; Amy Herring, The University of North Carolina at Chapel Hill; Penny Gordon-Larsen, The University of North Carolina at Chapel Hill
- 9:35 a.m. A Zero-Inflated Poisson Mixed Latent Model for Multivariate Zero-Inflated Count Data—◆ Resmi Gupta, Cincinnati Children's Hospital Medical Center; Yue Zhang, University of Cincinnati; Maurizio Macaluso, Cincinnati Children's Hospital Medical Center; Nanhua Zhang, Cincinnati Children's Hospital Medical Center
- 9:50 a.m. Bayesian Age-Period-Cohort Model of Lung Cancer Mortality—◆ Bhikhari P. Tharu, University of South Florida; Ram C. Kafle, Sam Houston State University; Chris P. Tsokos, University of South Florida
- 10:05 a.m. Simultaneous Confidence Intervals for Proportion Difference from Correlated Bilateral Data in Ophthalmologic Studies—◆ Zhengyu Yang, SUNY Buffalo; Xiaobin Liu, SUNY Buffalo; Song Liu, Roswell Park Cancer Institute; Changxing Ma, SUNY Buffalo

Monday

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137 CC-3A Calibration—Contributed

Survey Research Methods Section, Committee on Applied Statisticians

Chair(s): Stephen Cohen, NORC at the University of Chicago

- 8:35 a.m.** Latent Variable Models for Nonresponse Adjustment and Calibration—◆ Brian Meekins, Bureau of Labor Statistics
- 8:50 a.m.** Results of Calibration Research for the 2015 American Housing Survey—◆ Brian Shaffer; Stephen Ash, U.S. Census Bureau; Ernest Lawley, U.S. Census Bureau
- 9:05 a.m.** Improving Precision by Calculating Estimates During the Calibration Process—◆ Marcus Berzofsky, RTI International; Bonnie Shook-Sa, RTI International; George Couzens, RTI International; Phil Kott, RTI International
- 9:20 a.m.** Calibration for the Census of Agriculture—◆ Andrea C. Lamas, USDA/NASS; Kelly Toppin, USDA/NASS; Matthew Williams, Department of Health and Human Services; Linda J. Young, USDA/NASS; Clifford Spiegelman, Texas A&M University
- 9:35 a.m.** Combining Nonresponse and Calibration Adjustments in Weighting—◆ Stephen Ash, U.S. Census Bureau
- 9:50 a.m.** Estimation of Finite Population Mean and Total Using Conditional Inclusion Probabilities Given the Population Ranks—◆ Omer Ozturk, The Ohio State University
- 10:05 a.m.** Floor Discussion

138 CC-613 ■ New Developments in Statistical Genetics and Clinical Trial Methodology—Contributed

WNAR, Biometrics Section

Chair(s): Jason Parcon, PepsiCo

- 8:35 a.m.** Modified F-Test in Microarray Experiments—◆ Gulhan Bourget, California State University at Fullerton
- 8:50 a.m.** Hierarchical Approaches for Integrating Various Types of Genomic Data Sets—◆ Marie Denis, CIRAD; Mahlet Tadesse, Georgetown University
- 9:05 a.m.** Design and Implementation of Group Sequential Trials for Censoring Robust Hazard Ratio Estimators with Nonlinear Information Growth Under Nonproportional Hazards—◆ Jeffrey Lambert, University of Colorado Denver; Adam Boyd, Array Biopharma; John Kittelson, University of Colorado Denver
- 9:20 a.m.** Which Covariates Should Inform Treatment

Decisions? Variable Importance in an Optimal Treatment Context—◆ Jeremy Coyle, UC Berkeley; Alan Hubbard, UC Berkeley; Mitchell J. Cohen, UC San Francisco

- 9:35 a.m.** Optimal Allocation for Comparison of Proportions and Robust Designs in Cluster-Randomized Trials—◆ Sheng Wu, UCLA; Weng Kee Wong, UCLA; Catherine Crespi, UCLA
- 9:50 a.m.** Identifying a Patient Subgroup with Differential Treatment Benefit—◆ David Prince, University of Washington; Susanne May, University of Washington; Scott Emerson, University of Washington; Michael LeBlanc, Fred Hutchinson Cancer Research Center; Erika Thommes, University of Washington
- 10:05 a.m.** Floor Discussion

139 CC-614 New Methods for Studies with Missing Data—Contributed

Biometrics Section, ENAR, Mental Health Statistics Section, Survey Research Methods Section

Chair(s): Diane Richardson, VA Medical Center

- 8:35 a.m.** Approaches for Missing Data in Ordinal Multinomial Models—◆ Niloofar Ramezani, University of Northern Colorado
- 8:50 a.m.** A Different Approach to the Problem of Missing Data—◆ Norman Matloff, UC Davis
- 9:05 a.m.** The Midpoint Mixed Model with a Missingness Mechanism: A Likelihood-Based Framework for Relative Quantification Mass Spectrometry Experiments—◆ Jonathon O'Brien; Bahjat Qaqish, The University of North Carolina at Chapel Hill; Harsha Gunawardena, The University of North Carolina; Joseph Ibrahim, The University of North Carolina at Chapel Hill
- 9:20 a.m.** Estimation in Closed Capture-Recapture Models with Missing Covariate Data—◆ Shen-Ming Lee, Feng Chia University; Wen-Han Hwang, National Chung Hsing University; Jean de Dieu Tapsoba, Fred Hutchinson Cancer Research Center
- 9:35 a.m.** Using the Whole Cohort in the Analysis of Countermatched Samples—◆ Claudia Rivera, The University of Auckland; Thomas Lumley, The University of Auckland
- 9:50 a.m.** Recovering Marginal Treatment Effects from a Transition Model for Longitudinal Data with Drop Out Using Path Analysis—◆ Emin Tahirovic, University of Pennsylvania
- 10:05 a.m.** Effect of Compliance on Analysis of Longitudinal Randomized Clinical Trials—◆ Huaqing Zhao, Temple University; Susan Fisher, Temple University School of Medicine

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140 **TCC-204**

**Modeling, Analysis, and Visualization
Q&P Data—Contributed**

Quality and Productivity Section, Section on Physical and Engineering Sciences, Government Statistics Section, Committee on Applied Statisticians

Chair(s): Abdel-Salam Gomaa, Qatar University

- 8:35 a.m. A Spatial Calibration Model for 2-D Quality Prediction—◆Kaibo Wang, Tsinghua University
- 8:50 a.m. Strictly Positive Estimates of Variance Components for Measurement Systems Analysis Models—◆Laura Lancaster, SAS Institute; Christopher Gotwalt, SAS Institute
- 9:05 a.m. Multivariate Prediction in the Original Units When Using Manly's Exponential Transformation—◆Michael Walker, The University of Alabama; Marcus Perry, The University of Alabama
- 9:20 a.m. An Algorithm for Run Order Optimization in Experimental Designs—◆Jiayu Peng; Dennis Lin, Penn State
- 9:35 a.m. Testing the Adequacy of a Semi-Markov Process—◆Richard Seymour; Christine Schubert Kabban, Air Force Institute of Technology; Gilbert Peterson, Air Force Institute of Technology; Richard Warr, Air Force Institute of Technology
- 9:50 a.m. The Truth About Metagenomics: Quantifying and Counteracting Bias in 16S RRNA Studies—◆David Edwards, Virginia Commonwealth University; Vaginal Microbiome Consortium, Virginia Commonwealth University
- 10:05 a.m. Creating Robust Linear Models Using Generalized Linear Regression (GLR)—◆Scott Wise, JMP (A Division of SAS, Inc.); Brady Brady, JMP (A Division of SAS, Inc.)

141 **TCC-202**

Methods in Financial Risk Assessment—Contributed

Section on Risk Analysis

Chair(s): Leann Long, West Virginia University

- 8:35 a.m. Accounting for Estimation Risk When Pricing Under Adverse Selection—◆Richard Neuberger; Lauren Hannah, Columbia University
- 8:50 a.m. A Bayesian Hierarchical Model for Unsecured Loan Loss Given Default—◆Katarzyna Bijak, University of Southampton
- 9:05 a.m. Mortgage Credit Cycles—◆Douglas McManus, Freddie Mac
- 9:20 a.m. Quadratic Variation Estimation of an Irregularly Observed Semimartingale with Jumps and Noise—

◆Yuta Koike,

- 9:35 a.m. Time-Varying Mixture Models for Financial Risk Management—◆Shuguang Zhang, Florida State University; Xufeng Niu, Florida State University
- 9:50 a.m. Game-Theoretic Decision-Making for Type I and II Errors in Testing Hypotheses—◆Mehmet Sahinoglu, Auburn University; Rasika Kelum Balasurya, Auburn University at Montgomery; David Tyson, Auburn University at Montgomery
- 10:05 a.m. Floor Discussion

142 **CC-205**

Miscellaneous Computational Methods—Contributed

Section on Statistical Computing

Chair(s): Li-An Lin, The University of Texas Health Science Center

- 8:35 a.m. A Generalization to the Family of Discrete Distributions—◆Abdullah Albalawi, Ball State University; Mian Adnan, Ball State University; Tareq F. Khan, Jahangirnagar University
- 8:50 a.m. A Note on Collinearity and Centering in Linear Regression—◆Santiago Velilla, Universidad Carlos III de Madrid
- 9:05 a.m. A Simple and Effective Discretization of a Continuous Random Variable—◆Dawit Zerom, California State University at Fullerton; Zvi Drezner, California State University at Fullerton
- 9:20 a.m. On a Mixture Pareto Distribution—◆Mei Ling Huang, Brock University; Justyne Mottola, Brock University; Percy Brill, University of Windsor
- 9:35 a.m. Feasibility of Reformatting Data for Multiple Imputation of Clustered Data—◆Kristopher Kapphahn, Stanford University; Maya Mathur, Stanford University School of Medicine; Maria Montez-Rath, Stanford University School of Medicine; Manisha Desai, Stanford University
- 9:50 a.m. Finite Sample Properties of A-Optimal Designs for Binary Response Data—◆Srichand Jasti, University of North Texas Health Science Center; Rajesh Nandy, University of North Texas Health Science Center; Karabi Nandy, UCLA
- 10:05 a.m. Copula Density Estimation by Finite Mixture of Parametric Copulas—◆Leming Qu, Boise State University

Monday

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143 New Ideas in Advanced Undergraduate Courses—Contributed

Section on Statistical Education

Chair(s): Elizabeth Claassen, SAS Institute

- 8:35 a.m.** Probability in the Undergraduate Major Curriculum: What Should Students Learn, and When?—
◆ Matthew Carlton, California Polytechnic State University
- 8:50 a.m.** Teaching Study Design Principles vs. Data Analysis—
◆ Tisha Hooks, Winona State University; April Kerby, Winona State University
- 9:05 a.m.** What Would Fisher Do? A Framework for Promoting a Rich Understanding of Generalized and Mixed Model Construction—◆ Julie Couton, University of Nebraska - Lincoln; Walter Stroup, University of Nebraska - Lincoln
- 9:20 a.m.** Including a History of Statistics Course in Your Curriculum—◆ Phyllis Curtiss, Grand Valley State University; Kirk Anderson, Grand Valley State University
- 9:35 a.m.** Making Use of Atypical Regression Models for Theory Building—◆ Ernest Davenport, University of Minnesota College of Education & Human Development; Haijiang Kuang, Pearson; Mark Davison, University of Minnesota College of Education & Human Development; Kyle Nickodem, University of Minnesota College of Education & Human Development; Qinjun Wang, University of Minnesota College of Education & Human Development
- 9:50 a.m.** Using Geometry to Visualize Abstract Aspects of Statistical Formulae Relevant to Correlation and Regression—◆ Kyle Nickodem, University of Minnesota College of Education & Human Development; Qinjun Wang, University of Minnesota College of Education & Human Development; Ernest Davenport, University of Minnesota College of Education & Human Development; Steven A. Culpepper, University of Illinois at Urbana-Champaign
- 10:05 a.m.** Geometric Interpretations of Regression Analysis—
◆ Bilin Zeng, California State University at Bakersfield; Kang Chen, National University of Singapore; Cong Wang, Chinese University of Hong Kong

CC-306

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● Novel Design and Statistical Modeling in Early Development of Oncology Drugs— Contributed

Biopharmaceutical Section, Biometrics Section

Chair(s): Peipei Shi, Eli Lilly and Company

- 8:35 a.m.** Comparisons of Cure Rate Models—Fang Fang, Bayer HealthCare Pharmaceuticals; ◆ Liping Huang, Bayer HealthCare Pharmaceuticals
- 8:50 a.m.** Evaluation of Treatment Efficacy Using a Bayesian Mixture Piecewise Linear Model of Longitudinal Biomarkers—◆ Lili Zhao, University of Michigan; Dai Feng, Merck Research Laboratories; Marc Buyse, Hasselt University; Brian Neelon, University of South Carolina
- 9:05 a.m.** Modeling Framework for Longitudinal Tumor Size in Oncology Clinical Trials—◆ Tianle Hu, Eli Lilly and Company
- 9:20 a.m.** Modeling Tumor Growth in Preclinical Studies—
◆ Yuefeng Lu,
- 9:35 a.m.** Statistical Evaluation of Dose Expansion Cohorts in Phase I Trials—◆ Matthew Schipper,
- 9:50 a.m.** Bayesian Random Forest for Predictive Biomarkers Identification—◆ Wei Zheng, Sanofi; Yuefeng Lu, Sanofi; Yang Zhao, Sanofi
- 10:05 a.m.** Phase I/II Oncology Study Design with Dose Escalation and Concomitant Dose Expansion—
◆ Chaofeng Liu,

CC-610

145 Adaptive Design II—Contributed

Biopharmaceutical Section

Chair(s): Jimmy Hwang,

- 8:35 a.m.** A Practical Approach to Calculating Sample Size Based on Generalized Linear Models for Assessing Differential Expression Analysis in RNA-Seq Data—
◆ Chung-I Li, National Chiayi University
- 8:50 a.m.** Intent-to-Treat Analysis for Longitudinal Studies with Dose Titration Scheme—
◆ Peter Zhang, Otsuka Pharmaceutical Development & Commercialization, Inc.; Ye Yang, Otsuka Pharmaceutical Development & Commercialization, Inc.; Xiaoshu Feng, Otsuka Pharmaceutical Development & Commercialization, Inc.
- 9:05 a.m.** Meta-Analysis of Treatment-Biomarker Interaction in Randomized Clinical Trials—◆ Shi Li,
- 9:20 a.m.** Confidence Interval Estimation for Number of Patient-Years Needed to Treat—◆ Haiyuan Zhu, Actavis; Xiao Wu, Actavis

CC-617

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- 9:35 a.m. Describing Patient-Reported Outcomes from Oncology Trials with Informative Dropouts Due to Adverse Events—◆Chia-Wen Ko, FDA; Paul Kluetz, FDA; Rajeshwari Sridhara, FDA
- 9:50 a.m. Stochastic Dynamics of Reprogramming to Induced Pluripotent Stem Cells—◆Lin Liu, Harvard School of Public Health
- 10:05 a.m. A Constrained Noninferiority Approach for Assessing Clinical Efficacy to Establish Biosimilarity—◆Jason Liao, Novartis Pharmaceuticals

146 **CC-203**
Modeling in Support of Defense and National Security—Contributed

Section on Statistics in Defense and National Security

Chair(s): John Rigsby, Naval Surface Warfare Center

- 8:35 a.m. Latent Variable Models for Aging Effects on Reliability of One-Shot Devices—◆David Collins,
- 8:50 a.m. Petri Net Models of Adversarial Scenarios in Safety and Security—◆Aparna Huzurbazar, Los Alamos National Laboratory; David Collins,
- 9:05 a.m. Enhancing Emergency Response with a Data-Driven Approach to Radiation Visualization Parameter Selection—◆Marylesa Howard, National Security Technologies, LLC; Thomas McCullough, National Security Technologies, LLC; Ashlee Dailey, National Security Technologies, LLC; Johanna Turk, National Security Technologies, LLC; Doug Hague, National Security Technologies, LLC; Michael Mazur, National Security Technologies, LLC; Aaron Luttmann, National Security Technologies, LLC
- 9:20 a.m. Exact Sample Size for Special Nuclear Material Inventory Verification—◆James Wendelberger, Los Alamos National Laboratory
- 9:35 a.m. Estimating Positive Parameters Using Fixed-Accuracy Confidence Interval Methods with Applications in Health and Environment—◆Swarnali Banerjee, Old Dominion University; Nitis Mukhopadhyay, University of Connecticut
- 9:50 a.m. Presenting Complex Statistical Methodologies to Military Leadership: Tricks of the Trade and Lessons Learned—◆Yevgeniya Pinelis, Center for Naval Analyses; Paul Johnson, Marine Corps Operational Test and Evaluation Activity
- 10:05 a.m. Empirical Research on a New Procedure for Identifying Relevant Documents from a Digital Forensics Text String Search—◆Michael Sanchez, The University of Texas at San Antonio; Daijin Ko, The University of Texas at San Antonio

Special Presentation

10:30 a.m.—12:20 p.m.

147 **CC- Ballroom 6E**
Late-Breaking Session I: The VA Secretary Bans a Statistics Book—Invited

ASA, ENAR, IMS, SSC, WNAR, International Chinese Statistical Association, International Indian Statistical Association, International Society for Bayesian Analysis (ISBA), Korean International Statistical Society, Royal Statistical Society, International Statistical Institute, Statistics Without Borders

Organizer(s): Joseph B. Kadane, Carnegie Mellon University
 Chair(s): Dalene Stangl, Duke University

- 10:35 a.m. A history of banning books—◆Kathryn Crane, John F. Kennedy Catholic High School
- 11:00 a.m. A view from a VA statistical trainer—◆William Eisenhauer, Portland State University
- 11:25 a.m. Are the trainers tone deaf?—◆Alicia Carriquiry, Iowa State University
- 11:50 a.m. Disc: Joseph B. Kadane, Carnegie Mellon University
- 12:15 p.m. Floor Discussion

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

148 **CC-4C3**
Le Cam Lecture—Invited

IMS, International Indian Statistical Association, Section on Statistical Consulting

Organizer(s): Antonio Lijoi, University of Pavia
 Chair(s): Aad van der Vaart, Leiden University

- 10:35 a.m. Maximum Likelihood in Modern Times: The Ugly, the Bad, and the Good—◆Jon August Wellner, University of Washington
- 12:05 p.m. Floor Discussion

149 **CC-213**
Bayes and Nonparametric Bayes Methods in Medical Studies—Invited

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

Organizer(s): Peter F. Thall, MD Anderson Cancer Center
 Chair(s): Brian Hobbs, MD Anderson Cancer Center

Monday

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- 10:35 a.m. Predicting Treatment Efficacy via Quantitative MRI: A Bayesian Joint Model—◆ Timothy D. Johnson, University of Michigan; Jincao Wu, FDA
- 11:00 a.m. Causal Inference on Quantiles with Application to Electronic Health Records—Dandan Xu, University of Florida; ◆ Michael J. Daniels, The University of Texas at Austin
- 11:25 a.m. Bayesian Dose-Finding in Two Treatment Cycles Based on the Joint Utility of Efficacy and Toxicity—◆ Juhee Lee, UC Santa Cruz; Peter F. Thall, MD Anderson Cancer Center; Peter Mueller, The University of Texas at Austin; Yuan Ji, NorthShore University Health System
- 11:50 a.m. Subgroup-Based Adaptive (SUBA) Designs for Sequential, Multiple Assignment, Randomized Trials—◆ Yanxun Xu, The University of Texas at Austin; Peter Mueller, The University of Texas at Austin; Peter F. Thall, MD Anderson Cancer Center
- 12:15 p.m. Floor Discussion

150 CC-2A

■ ● Big Data in the Environment—Invited Section on Statistics and the Environment, Korean International Statistical Society, Government Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Edward Boone, Virginia Commonwealth University
Chair(s): Edward Boone, Virginia Commonwealth University

- 10:35 a.m. Computational Challenges with Big Environmental Data—◆ Marc Genton, KAUST
- 11:05 a.m. Circulant Embedding of Approximate Covariances for Inference from Gaussian Data on Large Lattices—◆ Montserrat Fuentes, North Carolina State University; Joseph Guinness, North Carolina State University
- 11:35 a.m. Efficient Parameterizations for Multiscale Multivariate Spatio-Temporal Data—◆ Christopher K. Wikle, University of Missouri; Jonathan R. Bradley, University of Missouri; Scott H. Holan, University of Missouri
- 12:05 p.m. Floor Discussion

151 CC-609

■ ● Better Demographic Forecasts, Better Policy Decisions—Invited

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

Organizer(s): Peter Smith, University of Southampton
Chair(s): Peter Smith, University of Southampton

- 10:35 a.m. Population Projections by the United Nations—◆ John Wilmoth, United Nations
- 11:00 a.m. Probabilistic Population Projections with Migration Uncertainty—◆ Adrian Raftery, University of Washington; Jonathan Azose, University of Washington
- 11:25 a.m. From Bayesian Forecasts to Decisions—◆ Arkadiusz Wisniowski, ESRC Centre for Population Change; Jakub Bijak, ESRC Centre for Population Change; Jonathan J. Forster, ESRC Centre for Population Change
- 11:50 a.m. Disc: Juha Alho, University of Helsinki
- 12:10 p.m. Floor Discussion

152 CC-615

■ ● Recent Advances in Diagnostic Classification Models—Invited

Mental Health Statistics Section, Health Policy Statistics Section, Biometrics Section

Organizer(s): Gongjun Xu, University of Minnesota
Chair(s): Gongjun Xu, University of Minnesota

- 10:35 a.m. A Semiparametric Approach Towards Diagnostic Classification Models—◆ Jingchen Liu, Columbia University
- 11:00 a.m. Detection of Learning in Cognitive Diagnosis—◆ Jeff Douglas, University of Illinois
- 11:25 a.m. A Procedure for Assessing the Completeness of the Q-Matrices of Cognitively Diagnostic Tests—◆ Chia-Yi Chiu, Rutgers University; Hans-Friedrich Koehn, University of Illinois at Urbana-Champaign
- 11:50 a.m. Assessing Item-Level Fit for the DINA Model—◆ Chun Wang, University of Minnesota; Gongjun Xu, University of Minnesota
- 12:15 p.m. Floor Discussion

153 CC-2B

■ ● Risk Prediction and Treatment Selection in Cancer Studies: Statistical Perspectives and Methodological Advances—Invited

WNAR, Biometrics Section

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

- 10:35 a.m. Personalized Evaluation of Biomarker Value in Risk Prediction and Treatment Selection: A Cost-Benefit Perspective—◆ Ying Huang, Fred Hutchinson Cancer Research Center; Eric Laber, North Carolina State University
- 11:00 a.m. Developing Polygenic Risk Prediction Model Based

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on Winner's Curse Correction and Multidimensional Thresholding—◆Jianxin Shi, National Cancer Institute; Nilanjan Chatterjee, National Cancer Institute

- 11:25 a.m. Prognostic and Predictive Values and Statistical Interactions in the Era of Personalized Medicine—◆Jaya M. Satagopan, Memorial Sloan Kettering Cancer Center; Alexia Iasonos, Memorial Sloan Kettering Cancer Center; Qin Zhou, Memorial Sloan Kettering Cancer Center
- 11:50 a.m. Efficient Two-Phase Sampling Designs for Predicting a Binary Outcome Variable—◆Jinbo Chen, University of Pennsylvania Perelman School of Medicine
- 12:15 p.m. Floor Discussion

154 **CC-619**
Recent Advances in Nonparametric and Semiparametric Inference for Random Networks—Invited

SSC
 Organizer(s): Yulia R. Gel, The University of Texas at Dallas
 Chair(s): Vyacheslav Lyubchich, University of Maryland Center for Environmental Science

- 10:35 a.m. Impact of Regularization on Spectral Clustering—Bin Yu, UC Berkeley; ◆Antony Joseph, Walmart Research Lab
- 11:00 a.m. Information Greedy 'Patchwork' Bootstrap on Random Networks—◆Yulia R. Gel, The University of Texas at Dallas; Vyacheslav Lyubchich, University of Maryland Center for Environmental Science; Lilia L. Ramirez Ramirez, Instituto Tecnológico Autónomo de México
- 11:25 a.m. A Continuous-Time Stochastic Block Model for Basketball Networks—◆Lu Xin, University of Waterloo; Hugh Chipman, Acadia University; Mu Zhu, University of Waterloo
- 11:50 a.m. Modeling Dynamics in a Blog Network—◆David Banks, Duke University
- 12:15 p.m. Floor Discussion

155 **CC-4C4**
Advances in Bayesian Modeling—Invited

IMS, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)
 Organizer(s): Edward I. George, The Wharton School
 Chair(s): Edward I. George, The Wharton School

- 10:35 a.m. Bayes in Two Stages: Utility-Based Posterior Summaries—◆Carlos M. Carvalho, The University of Texas at Austin; Paul Richard Hahn, The

University of Chicago; Robert E. McCulloch, The University of Chicago

- 11:00 a.m. Bayesian and Frequentist Multiplicity Control for Exclusive Hypotheses Under Dependence—◆James Berger, Duke University; Shih-Han Chang, Duke University
- 11:25 a.m. A General Approach to Variable Selection Using Bayesian Nonparametric Models—◆Robert E. McCulloch, The University of Chicago
- 11:50 a.m. The Spike-and-Slab LASSO—◆Veronika Rockova, University of Pennsylvania; Edward I. George, The Wharton School
- 12:15 p.m. Floor Discussion

156 **CC-618**
Rediscovering Non- or Semiparametric Approaches to Longitudinal Data Analysis—Invited

Korean International Statistical Society
 Organizer(s): Mi-Ok Kim, Cincinnati Children's Hospital Medical Center
 Chair(s): Hyokyung Hong, Michigan State University

- 10:35 a.m. Unified Inference for Sparse and Dense Longitudinal Models—◆Seonjin Kim, Miami University
- 11:00 a.m. Efficient Estimation for Longitudinal Data by Combining High-Dimensional Moment Conditions—◆Hyunkeun Cho, Western Michigan University; Annie Qu, University of Illinois at Urbana-Champaign
- 11:25 a.m. Estimation of Rank-Tracking Probabilities Using Nonparametric Mixed-Effects Models for Longitudinal Data—◆Colin O. Wu, NIH; Xin Tian, National Heart, Lung, and Blood Institute
- 11:50 a.m. An Extended Hazard Model with Longitudinal Covariates—◆Yu-Ru Su, Fred Hutchinson Cancer Research Center; Yi-Kuan Tseng, National Central University; Jane-Ling Wang, UC Davis
- 12:15 p.m. Floor Discussion

157 **CC-607**
Big Bays: Scalable Algorithms and Architectures—Invited

Section on Statistical Learning and Data Mining, Section on Bayesian Statistical Science, ENAR, International Society for Bayesian Analysis (ISBA), Section on Statistics in Defense and National Security

Organizer(s): Emily Fox, University of Washington
 Chair(s): Nicholas Foti, University of Washington

- 10:35 a.m. Scaling and Generalizing Variational Inference—◆David Blei, Columbia University

Monday

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11:00 a.m. Parallel and Distributed Systems for Large-Scale Machine Learning—◆Carlos Guestrin, University of Washington

11:25 a.m. Covariance Matrices for Mean Field Variational Bayes—◆Tamara Broderick, UC Berkeley; Ryan Giordano, UC Berkeley

11:50 a.m. On Data Parallelism and Model Parallelism for Large-Scale Machine Learning—◆Eric Xing, Carnegie Mellon University

12:15 p.m. Floor Discussion

158 CC-608

■ ● Recent Advances in Interactive Graphics for Data Analysis—Invited Section on Statistical Graphics

Organizer(s): Carson Sievert, Iowa State University

Chair(s): Winston Chang, RStudio

10:35 a.m. Cranvas: Interactive Statistical Graphics in R Based on Qt—◆Xiaoyue Cheng, Iowa State University

10:50 a.m. Interactive Visualization of Trees Using R and D3—◆Kenneth Shirley, AT&T Labs Research

11:05 a.m. Animint: Interactive Web-Based Animations Using Ggplot2's Grammar of Graphics—◆Susan Ruth VanderPlas, Iowa State University; Carson Sievert, Iowa State University; Toby Hocking, McGill University

11:20 a.m. Interactive Graphics for High-Dimensional Genetic Data—◆Karl W. Broman, University of Wisconsin - Madison

11:35 a.m. Interactive Visualizations from R with RCharts and RMaps—◆Ramnath Vaidyanathan, Alteryx, Inc.

11:50 a.m. Ggvis: Moving Toward a Grammar of Interactive Graphics—◆Hadley Wickham, RStudio

12:05 p.m. Floor Discussion

159 CC-4C2

■ JASA (Theory and Methods) Invited Paper and Discussions—Invited

JASA, Theory and Methods, Korean International Statistical Society, International Chinese Statistical Association, International Indian Statistical Association

Organizer(s): Nicholas P. Jewell, UC Berkeley; David Ruppert, Cornell University

Chair(s): Nicholas P. Jewell, UC Berkeley

10:35 a.m. An Adaptive Resampling Test for Detecting the Presence of Significant Predictors—◆Ian McKeague, Columbia University

11:15 a.m. Disc: Lawrence D. Brown, University of Pennsylvania

11:30 a.m. Disc: Eric Laber, North Carolina State University

11:45 a.m. Disc: Richard J. Samworth, University of Cambridge

12:00 p.m. Floor Discussion

160 CC-3B

■ ● Statistical Methods in Drug Safety from Clinical Trial to Post-Market—Invited Biopharmaceutical Section, Government Statistics Section, Biometrics Section

Organizer(s): Shihua Wen, AbbVie

Chair(s): Jingyi Liu, Eli Lilly and Company

10:35 a.m. On Incremental Incidence Rates in Long-Term Cohort Safety Studies—◆Girish Aras, Amgen

10:55 a.m. Application of a Historical Control Database to Characterize Adverse Events in a Vaccine-Eligible Population—◆Prakash Bhuyan, Pfizer Inc.

11:15 a.m. Comparison of Bayesian and Frequentist Meta-Analytical Approaches for Analyzing Time-to-Event Data—◆Brenda Crowe, Eli Lilly and Company

11:35 a.m. Advancing Safety Analyzes in Drug Development: Innovative Statistical Approaches and Real-World Examples—Phase 1 Through Post-Marketing—◆Andrea Best, AbbVie

11:55 a.m. Disc: Aloka Chakravarty, FDA/CDER

12:15 p.m. Floor Discussion

Topic-Contributed Sessions

10:30 a.m.—12:20 p.m.

161 CC-201

■ ● Recent Advances in Change-Point and Feature Detection—Topic-Contributed IMS

Organizer(s): Piotr Fryzlewicz, London School of Economics

Chair(s): Alexander Aue, UC Davis

10:35 a.m. Detecting Multiple Change-Points in Panel Data via Double CUSUM Binary Segmentation—◆Haeran Cho, University of Bristol

10:55 a.m. FDR-Control in Multiscale Change-Point Segmentation—◆Axel Munk, Goettingen University; Housen Li, Max Planck Institute for Biophysical Chemistry; Hannes Sieling, Goettingen University

11:15 a.m. Wild Binary Search: New Paradigm for Interpretable

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Nonparametric Curve Estimation?—◆Piotr Fryzlewicz, London School of Economics

11:35 a.m. Sequential Change-Point Detection for Multivariate Data—◆Hao Chen, UC Davis

11:55 a.m. Multi-Sample Aligned Change-Point Detection Using Penalized Test Statistics—◆Hock Peng Chan, National University of Singapore; Guenther Walther, Stanford University

12:15 p.m. Floor Discussion

162 **CC-204**
■ ● Statisticians and Multiple Sclerosis Research—Topic-Contributed

Biometrics Section, Committee on Applied Statisticians

Organizer(s): Douglas Gunzler, Case Western Reserve University

Chair(s): Douglas Gunzler, Case Western Reserve University

10:35 a.m. A Lag Functional Linear Model for Prediction of Magnetization Transfer Ratio in Multiple Sclerosis Lesions—◆Gina-Maria Pomann, Duke University; Ana-Maria Staicu, North Carolina State University; Elizabeth Sweeney, The Johns Hopkins University; Amanda Mejia, The Johns Hopkins University; Blake Dewey, National Institute of Neurological Disorders and Stroke; Daniel Reich, NIH; Russell Shinohara, University of Pennsylvania

10:55 a.m. Untangling Symptom Overlap in Multiple Sclerosis and Depression: An Adjusted Depression Score for Patient-Centered Care—◆Nathan Morris, Case Western Reserve University

11:15 a.m. Relating Multi-Sequence Time Series Data from MS Lesions on Structural MRI to Clinical Covariates and Outcomes—◆Elizabeth Sweeney, The Johns Hopkins University; Russell Shinohara, University of Pennsylvania; Blake Dewey, National Institute of Neurological Disorders and Stroke; Matthew Schindler, NIH; Kennon Copeland, NORC at the University of Chicago; Daniel Reich, NIH; Ciprian Crainiceanu, The Johns Hopkins University; Ani Eloyan, The Johns Hopkins University

11:35 a.m. Multivariate Pattern Analysis and Confounding in Neuroimaging—◆Kristin Linn, University of Pennsylvania; Bilwaj Gaonkar, University of Pennsylvania; Christos Davatzikos, University of Pennsylvania; Russell Shinohara, University of Pennsylvania; Jimit Doshi, University of Pennsylvania

11:55 a.m. Characterizing Bone Marrow Mesenchymal Stem Cell Molecular Signatures in Multiple Sclerosis Using Consensus Clustering—◆Farren Briggs, Case Western Reserve University; Douglas Gunzler, Case Western Reserve University; Mark Cameron, Case Western Reserve University; Ming Li, Case

Western Reserve University; Sarah Pope Planchon, Cleveland Clinic; Jeffrey Cohen, Cleveland Clinic

12:15 p.m. Floor Discussion

163 **CC-613**
■ ● The Census Bureau's Quest to Make Better Research-Driven Decisions for Economic Surveys—Topic-Contributed

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

Organizer(s): Carma R. Hogue, U.S. Census Bureau

Chair(s): Carma R. Hogue, U.S. Census Bureau

10:35 a.m. Evaluating Estimation Techniques in the Monthly Wholesale Trade Survey—◆Joanna Lineback, U.S. Census Bureau; Martin Klein, U.S. Census Bureau; Joseph L. Schafer, U.S. Census Bureau

10:55 a.m. Testing Contact Strategies to Improve Response in the 2012 Economic Census—◆Erica Marquette, U.S. Census Bureau; Michael Kornbau, U.S. Census Bureau; Junilsa Toribio, U.S. Census Bureau

11:15 a.m. On Recommending a Single Imputation Method for Economic Census Products—◆Katherine Jenny Thompson, U.S. Census Bureau; Xijian Liu, U.S. Census Bureau

11:35 a.m. A Hierarchical Bayesian Approach to Estimation for the Annual Survey of Public Employment and Payroll—◆Brian Dumbacher, U.S. Census Bureau; Michael Larsen, The George Washington University

11:55 a.m. Floor Discussion

164 **CC-3A**
■ ● Subgroup Analyses: How Friendly Are They?—Topic-Contributed

Biopharmaceutical Section, Section for Statistical Programmers and Analysts

Organizer(s): Vipin Arora, Eli Lilly and Company

Chair(s): Stephen Wilson, FDA/CDER/OTS/OB/DBIII

10:35 a.m. Subgroup Analysis: Issues in FDA-Reviewed Clinical Trials—◆Kathleen Fritsch, FDA

10:55 a.m. Visualization Tools for Subgroup Analysis: Are We Using Them to Their Optimal Capacity?—◆Vipin Arora, Eli Lilly and Company

11:15 a.m. Casting the Bones: The Worth and Potential Worthlessness of Subgroup Analyses—◆Kevin Buhr, University of Wisconsin - Madison

11:35 a.m. Subgroup Analysis Findings of Safety with No Statistical Power: What Do These Really Mean?—◆Melvin Munsaka, Takeda Development Center Americas, Inc.

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

11:55 a.m. Disc: Judith Goldberg, New York University School of Medicine

12:15 p.m. Floor Discussion

165 TCC-204

● New Developments and Applications in Design of Experiments—Topic-Contributed Section on Physical and Engineering Sciences, Quality and Productivity Section, Government Statistics Section, SSC

Organizer(s): Julie Zhou, University of Victoria

Chair(s): Julie Zhou, University of Victoria

10:35 a.m. Optimal Designs for Binary Data in the Presence of Factorial Effects and a Covariate—◆John Stufken, Arizona State University; Xijue Tan, University of Georgia

10:55 a.m. Model-Robust Designs for Quantile Regression—◆Douglas Wiens, University of Alberta; Linglong Kong, University of Alberta

11:15 a.m. Approximately Optimal Experimental Designs for Generalized Linear Mixed Models—◆Xiaojuan Xu, Brock University; Sanjoy Sinha, Carleton College

11:35 a.m. D-Optimal Designs Based on the Second-Order Least Squares Estimator—◆Lucy Gao; Julie Zhou, University of Victoria

11:55 a.m. Nature-Inspired Meta-Heuristic Algorithms for Generating Optimal Experimental Designs—◆Weng Kee Wong, UCLA; Guanghao Qi, Fudan University

166 CC-606

■ ● Big Data: Modeling, Tools, Analytics, and Training—Topic-Contributed

Section on Statistical Computing, Section on Statistics in Defense and National Security, International Chinese Statistical Association, Government Statistics Section, Section on Statistical Education, Business and Economic Statistics Section

Organizer(s): Ivo D. Dinov, University of Michigan

Chair(s): Robin Jeffries, California State University at Chico

10:35 a.m. Management, Modeling, and Analytic Challenges of Big Biomedical Data—◆Ivo D. Dinov, University of Michigan

10:55 a.m. Espaliers: A Visualization Method for Big Data—◆Robert Robinson, Institute for Systems Biology; Gustavo Glusman, Institute for Systems Biology; Joseph G. Vockley, Inova Translational Medicine Institute; John E. Niederhuber, Inova Translational Medicine Institute; Greg Eley, Scimentis, LLC

11:15 a.m. The Computational Challenges of Constructing and Visualizing Large-Scale Brain Networks—◆Moo Chung, University of Wisconsin - Madison

11:35 a.m. Big Data Services: Globus Online, Galaxy, GridFTP—◆Ravi Madduri, The University of Chicago

11:55 a.m. Recent Trends in Large-Scale Data-Intensive Systems—◆Barzan Mozafari, University of Michigan

12:15 p.m. Floor Discussion

167 CC-612

Modern Techniques for Handling Missing Data—Topic-Contributed

Survey Research Methods Section, Korean International Statistical Society, Mental Health Statistics Section, Government Statistics Section, International Indian Statistical Association, Section on Statistical Consulting

Organizer(s): Jae-kwang Kim, Iowa State University

Chair(s): Emily Berg, Iowa State University

10:35 a.m. Multiple Imputation Using the Weighted Finite Population Bayesian Bootstrap—◆Michael Elliott, University of Michigan; Hanzhi Zhou, Mathematica Policy Research; Trivellore Raghunathan, University of Michigan

10:55 a.m. Two-Stage Fractional Hot Deck Imputation—◆Wayne Fuller, Iowa State University; Jae-kwang Kim, Iowa State University

11:15 a.m. How Should We Choose Calibration Variables When Adjusting for Nonresponse That Is Not Missing at Random?—◆Phil Kott, RTI International

11:35 a.m. Calibration in Missing Data Analysis—◆Peisong Han, University of Waterloo

11:55 a.m. Calibrated Propensity Score Method for Survey Nonresponse in Cluster Sampling—Myunghae Paik, Seoul National University; Jae-kwang Kim, Iowa State University; ◆Yongchan Kwon, Seoul National University

12:15 p.m. Floor Discussion

168 CC-304

Biometrics Section Student Paper Award Session 1—Topic-Contributed

Biometrics Section

Organizer(s): Rebecca Hubbard, University of Pennsylvania

Chair(s): Diana Miglioretti, UC Davis

10:35 a.m. Integrative Multi-Omics Clustering for Disease Subtype Discovery by Sparse Overlapping Group Lasso and Tight Clustering—◆SungHwan Kim, University of Pittsburgh; Steffi Oesterreich, Magee Womens Research Institute; Yong Seok Park, University of Pittsburgh; George C. Tseng, University of Pittsburgh

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 10:55 a.m. Likelihood-Based Inference for Discretely Observed Birth-Death-Shift Processes, with Applications to Evolution of Mobile Genetic Elements—◆Jason Xu, University of Washington; Vladimir Minin, University of Washington; Peter Guttorp, University of Washington
- 11:15 a.m. Discordant Sibship Design for Detecting Imprinting and Maternal Effects Based on Partial Likelihood—◆Fangyuan Zhang, The Ohio State University; Shili Lin, The Ohio State University
- 11:35 a.m. Analysis of Sequence Data Under Multivariate Trait-Dependent Sampling—◆Ran Tao; Donglin Zeng, The University of North Carolina; Nora Franceschini, The University of North Carolina at Chapel Hill; Kari E. North, The University of North Carolina at Chapel Hill; Eric Boerwinkle, The University of Texas Health Science Center; Danyu Lin, The University of North Carolina
- 11:55 a.m. Floor Discussion

169 **CC-610**

■ ● Time Series: Benchmarking and Reconciliation—Topic-Contributed
Business and Economic Statistics Section

Organizer(s): Tucker Sprague McElroy, U.S. Census Bureau
Chair(s): Peter Zadrozny, Bureau of Labor Statistics

- 10:35 a.m. Simultaneous Reconciliation of Large Disaggregated Time Series of Accounts After a Benchmark Revision with an Application to the U.S. Input-Output Accounts—◆Baoline Chen, Bureau of Economic Analysis; Tommaso Di Fonzo, University of Padova; Thomas Howells, Bureau of Economic Analysis; Marco Marini, IMF
- 10:55 a.m. Regression Performance of Temporally Disaggregate Variables—◆Jens Mehrhoff, Deutsche Bundesbank
- 11:15 a.m. Nowcasting Annual Benchmarks from Quarterly Data: An Assessment of Benchmarking Methods—◆Marco Marini, IMF
- 11:35 a.m. An Empirical Assessment of New and Established Benchmarking Methods in Official Statistics—◆Jennifer Davies, Office for National Statistics; Duncan Elliott, Office for National Statistics; Homesh Sayal, University of Cambridge; John Aston, University of Cambridge
- 11:55 a.m. Variance Estimation by Replication for National CPS Seasonally Adjusted Series—◆Thomas Evans, Bureau of Labor Statistics; Justin J. McIllece, Bureau of Labor Statistics; Stephen M. Miller, Bureau of Labor Statistics
- 12:15 p.m. Floor Discussion

170 **CC-205**

■ ● New Tools for Analysis of Neuroimaging Data—Topic-Contributed

ENAR, Biometrics Section

Organizer(s): Philip Reiss, New York University School of Medicine
Chair(s): Adam Ciarleglio, New York University

- 10:35 a.m. Stroke Localization and Association with Health Outcomes Using Clinical CT Images—◆Ciprian Crainiceanu, The Johns Hopkins University
- 10:55 a.m. Topological Data Analysis for Functional Neuroimaging—◆Nicole A. Lazar, University of Georgia
- 11:15 a.m. Mixture Partial Linear Models for High-Dimensional Responses—◆Kehui Chen, University of Pittsburgh; Kai Hwang, University of Pittsburgh; Michael Hallquist, University of Pittsburgh; Beatriz Luna, University of Pittsburgh
- 11:35 a.m. Multi-Kernel Generalized Additive Models: A Predictive Framework for Multimodal Imaging Data—Wen-Yu Hua, New York University School of Medicine; ◆Philip Reiss, New York University School of Medicine; David Lawrence Miller, University of St. Andrews
- 11:55 a.m. Statistical Methods for Joint Structural-Functional Connectomes—◆Russell Shinohara, University of Pennsylvania
- 12:15 p.m. Floor Discussion

171 **TCC-202**

■ ● Improving Reproducibility of Natural Resource Biometrics—Topic-Contributed
Section on Statistical Consulting, Section on Statistics and the Environment, Committee on Applied Statisticians, Scientific and Public Affairs Advisory Committee

Organizer(s): Joel Howard Reynolds, Western Alaska Landscape Conservation Cooperative

Chair(s): Joel Howard Reynolds, Western Alaska Landscape Conservation Cooperative

- 10:35 a.m. Rapid Dissemination of Regional Cross-Correlation in Waterfowl Counts Across Northeast National Wildlife Refuges—◆Charles Frost, U.S. Fish and Wildlife Service
- 10:55 a.m. A Web Portal to View and Report on Ordinal Vegetation Monitoring Data Across Multiple Protected Areas—◆Thomas Rodhouse, National Park Service
- 11:15 a.m. Tools and Workflows to Affect Efficient Collaboration in Scientific Research—◆Michael Lerch, Montana State University

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 11:35 a.m. Facilitating Reproducible Research with R, Markdown, and Git—◆Karthik Ram, UC Berkeley
- 11:55 a.m. Disc: Emily Silverman, U.S. Fish and Wildlife Service
- 12:15 p.m. Floor Discussion

172 **CC-614**
■ ● Advanced Statistical Models for Driving Risk and Driving Behavior—Topic-Contributed Transportation Statistics Interest Group, Government Statistics Section

Organizer(s): Feng Guo, Virginia Tech

Chair(s): Youjia Fang, Virginia Tech Transportation Institute

- 10:35 a.m. Development of a Real-Time Prediction Model of Driver Behavior at Intersections Using Kinematic Time Series Data—◆Yaoyuan Vincent Tan, University of Michigan; Michael Elliott, University of Michigan; Carol A.C. Flannagan, University of Michigan Transportation Research Institute
- 10:55 a.m. Change-Points Detection in Driving Risk Allowing for Varying Change-Points Among Subjects by Parametric Latent Class Modeling—◆Qing Li, Virginia Tech; Feng Guo, Virginia Tech
- 11:15 a.m. The Effectiveness of Commercial Driver Training: A Times Series Modeling Approach—◆Xingwei Wu, University of Washington; Huizhong Guo, University of Washington; Linda Boyle, University of Washington
- 11:35 a.m. The Application of Artificial Neural Network in Identifying Driver Distraction—◆Shan Bao, University of Michigan Transportation Research Institute; Zizheng Guo, University of Michigan Transportation Research Institute; Jim Sayer, University of Michigan Transportation Research Institute
- 11:55 a.m. Disc: Linda Boyle, University of Washington
- 12:15 p.m. Floor Discussion

Topic-Contributed Poster Presentations
10:30 a.m.—12:20 p.m.

173 **CC-4B**
Section on Risk Analysis Topic-Contributed—Topic-Contributed

Section on Risk Analysis

Chair(s): Matthew Wheeler, NIOSH/CDC

Section on Risk Analysis

- 1 Confidence Intervals for the Difference Between Two

- Median Survival Times for Clustered Survival Data—◆Yu-Mei Chang,
- 2 Asymptotic Properties of the Maximum Likelihood Estimator of the Mixture Autoregressive Model with Applications to Financial Risk—◆Mary Akinyemi, University of Lagos; Georgi N. Boshankov, University of Manchester
- 3 Simpson's Paradox in the Integrated Discrimination Improvement—◆Jonathan Chipman, Vanderbilt University; Danielle Braun, Harvard School of Public Health
- 4 Applying Survival Analyses Techniques to Educational Accountability—◆Ji Zeng, Michigan Department of Education; Joseph A. Martineau, National Center for the Improvement of Educational Assessment, Inc.
- 5 Sequential Surveillance of Structural Breaks in Firms' Credit Rating Migrations—◆Ke Wang, SUNY Stony Brook; Haipeng Xing, SUNY Stony Brook
- 6 The Stress Strength Model for Moran-Downton's Downton's Bivariate Exponential Distribution—◆Yu-Jau Lin, Chung Yuan Christian University; Yuhlong Lio, University of South Dakota; Hon Keung Tony Ng, Southern Methodist University
- 7 Systemic Risk and the Underlying Statistical Assumptions of SRISK—◆Andrew Wilcox, North Carolina State University; Peter Bloomfield, North Carolina State University
- 8 Alternative Modeling Techniques Applied to Insurance Models—Lavinia Museteanu, CSAA; ◆Philip Wong, CSAA
- 9 Prediction for Survival on the 'Titanic'—◆Rohit Maurya, Indian Statistical Institute, Chennai
- 10 When Will Customers Begin to Quit? An Exploration of PRP Strategy in More Complicated Sequential Predictions—◆Mingfei Li, Bentley University
- 11 Personnel Mobility Assessment Using Survival Models for Strategic Workforce Management—◆Xiaomei Qiu, Sandia National Laboratories; Thor Osborn, Sandia National Laboratories
- 12 Modeling Risk of Ship-Whale Collisions—◆Albert Hendrix, QEDA Consulting, LLC; Scott Gende, National Park Service

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

174 **CC-401**
SPEED: Topics on General Methodology in Public Health—Contributed

Section on Statistics in Epidemiology, Biometrics Section

Chair(s): Trent L. Lalonde, University of Northern Colorado

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 10:35 a.m.** Searching for Nonlinearity Using Fractional Polynomials—◆G. Kolm, Christiana Care Health System; Daniel Elliot, Christiana Care Health System; Joanne Brice, Christiana Care Health System
- 10:40 a.m.** Comparison of Three Methods to Estimate the Relationship Between Physical Activity and Health Indicators Among Adults with and Without Disability—◆Qing Zhang, CDC; Courtney-Long Elizabeth A., CDC; Michelle Sloan, CDC; Stevens Alissa, CDC; Dianna D. Carroll, CDC
- 10:45 a.m.** Markov Chains and Continuous Time Multi-State Markov Models Comparisons in Longitudinal Clinical Analysis—◆Lijie Wan, University of Kentucky; Richard J. Kryscio, University of Kentucky
- 10:50 a.m.** Predictive Modeling of Cholera Outbreaks in Different Areas of Bangladesh—◆Amanda Koepke, FHCRC; Ira M. Longini, University of Florida; M. Elizabeth Halloran, ASA; Jon Wakefield, University of Washington; Vladimir Minin, University of Washington
- 10:55 a.m.** A Comparison of Alternative Approaches to Analyzing Subgroup Differences in Survival After AIDS Diagnosis When the Proportional Hazards Assumption Does Not Hold—◆Felicia Hardnett, CDC; Qian An, CDC; Xinjian Zhang, CDC
- 11:00 a.m.** A Bayesian Natural Cubic B Spline Varying Coefficient Method for Nonignorable Dropout—◆Camille Moore, Colorado School of Public Health; Samantha MaWhinney, Colorado School of Public Health; Nichole Carlson, University of Colorado Anschutz Medical Campus; Jeri Forster, Colorado School of Public Health
- 11:05 a.m.** The Marginal Structural Models for Modeling Time-Dependent Exposure in the Analysis of Case-Control Studies—◆Lie Hong Chen, Kaiser Permanente; Anny H. Xiang, Kaiser Permanente
- 11:10 a.m.** Assessing Bias in the Estimation of Causal Hazard Ratio Among Compliers Using Two-Stage Instrumental Variable Approaches—◆Fei Wan, University of Pennsylvania; Dylan Small, University of Pennsylvania; Nandita Mitra, University of Pennsylvania; Justin Bekelman, University of Pennsylvania
- 11:15 a.m.** Assessing Temporal Trends of Central-Line Associated Methicillin-Resistant Staphylococcus Aureus (MRSA) Infections in the U.S. Hospitals—◆Minn Soe,
- 11:20 a.m.** Estimating the Causal Effect of Solid Organ Transplantation Treatment Regimes on Survival—◆Jeffrey Boatman; David Vock, University of Minnesota
- 11:25 a.m.** Modeling Geo-Located Public Health Data Using Spatio-Temporal Log-Gaussian Cox Processes—◆Theresa Smith, Lancaster University; Peter J. Diggle, Lancaster University; Ben Taylor, Lancaster University
- 11:30 a.m.** Regression for Skewed Biomarker Outcomes Subject to Pooling—◆Emily Mitchell, NICHD; Robert H. Lyles, Emory University; Amita K. Manatunga, Emory University; Michelle Danaher, NICHD; Neil J. Perkins, NICHD; Enrique F. Schisterman, NIH
- 11:35 a.m.** Imputing Estrogen Receptor Status in a Population-Based Cancer Registry: A Sensitivity Analysis—◆Rebecca Andridge, The Ohio State University; Anne-Michelle Noone, National Cancer Institute
- 11:40 a.m.** Variable Selection in Additive Hazards Model with Case-Cohort Design—◆Andy (Ai) Ni, The University of North Carolina at Chapel Hill; Jianwen Cai, The University of North Carolina at Chapel Hill
- 11:45 a.m.** Investigating Potential Socioeconomic and Behavioral Factors Influencing Mosquito Net Ownership in Three Countries in Sub-Saharan Africa—◆Benjamin Pope, The University of Arizona; Denise Roe, The University of Arizona; Kacey Ernst, The University of Arizona; Daoqin Tong, The University of Arizona
- 11:50 a.m.** An Improved Version of Activity Intensity and Its Comparison with Activity Count, with the Application to Women Health Initiative—◆Jiawei Bai, The Johns Hopkins University; Chongzhi Di, Fred Hutchinson Cancer Research Center; Ciprian Crainiceanu, The Johns Hopkins University; Luo Xiao, The Johns Hopkins University
- 11:55 a.m.** Modeling the Relationships with Longitudinal Growth Patterns: Comparing Your Options—◆Brianna Heggeseth,
- 12:00 p.m.** A Comparison of Methods for Imputing Missing Longitudinal fMRI Data—◆Maria Josefsson, UmeÅ University; Anders Lundquist, UmeÅ University; Lars Nyberg, UmeÅ University
- 12:05 p.m.** Comparison of Missing Imputation Methods for Combining Multiregional Cohort Studies—◆Ayano Takeuchi, Keio University
- 12:10 p.m.** Challenges in Full Matching in the Presence of Clustering and Sparse Data—◆Matthew Bryan, University of Pennsylvania; Russell Localio, University of Pennsylvania
- 12:15 p.m.** Floor Discussion
- 175** **CC-4C1**
SPEED: Recent Advance of Statistical Methods in Biometrics—Contributed
Biometrics Section, Section on Statistics and the Environment
 Chair(s): Yuan Jiang, Oregon State University
- 10:35 a.m.** A Novel Tail Dependence Measure to Quantify the Reproducibility and Quality of Sequencing Experiments—◆Qunhua Li, Penn State; Tao Yang, Penn State

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 10:40 a.m.** Predicting Binary Outcome Using Multivariate Longitudinal Data: Monitoring Disease Progression in Patients with Newly Diagnosed Primary Open-Angle Glaucoma—◆Feng Gao, Washington University School of Medicine; Philip Miller, Washington University School of Medicine; Chengjie Xiong, Washington University in St. Louis; Julia Beiser, Washington University School of Medicine; Mae Gordon, Washington University School of Medicine
- 10:45 a.m.** Copula Models in the Analysis of Familial Binary Data—◆Yihao Deng, Indiana University Purdue University Fort Wayne
- 10:50 a.m.** The Delta Garden Study: A Quasi-Experimental, Cross-Sectional, Nested, Pair-Matched Design with Zero-Inflated Endpoints—◆Page Moore, University of Arkansas for Medical Sciences; Amy Schrader, University of Arkansas for Medical Sciences; Judith L. Weber, University of Arkansas for Medical Sciences
- 10:55 a.m.** Assessing the Effect of Spaceflight on the Propensity for Astronauts to Develop Disk Herniation—◆Alan Feiveson, NASA Johnson Space Center; Claudia Mendez, MEI Technologies; Jeffrey T. Somers, Wyle Science
- 11:00 a.m.** Evaluations of Transform-Both-Sides Methods for Nonlinear Mixed Effects Models—◆Noa Molshatzki, University of Southern California; Sandra P. Eckel, University of Southern California
- 11:05 a.m.** Two-Sample Location-Scale Testing Using Shift Functions and Semiparametric Random Censorship Models—◆Rianka Bhattacharya, New Jersey Institute of Technology; Sundarraman Subramanian, New Jersey Institute of Technology
- 11:10 a.m.** An Alternative Estimation Method for the Extended Hazards Model—◆Yinding Wang; Jiajia Zhang, University of South Carolina
- 11:15 a.m.** Dunn Index Bootstrap (DIBS): A Procedure to Empirically Select a Cluster Analysis Method That Identifies Biologically and Clinically Relevant Molecular Subgroups—◆Iwona Pawlikowska, St. Jude Children's Research Hospital; Zhifa Liu, St. Jude Children's Research Hospital; Arzu Onar-Thomas, St. Jude Children's Research Hospital; Stan Pounds, St. Jude Children's Research Hospital
- 11:20 a.m.** Joint Modeling of Outcomes from Studies with Clustered Reciprocal Control Designs—◆Michael Pennell, The Ohio State University; Abigail Shoben, The Ohio State University; Electra Paskett, The Ohio State University
- 11:25 a.m.** Three-Level Nested Logistic Regression with Varying Intraclass Correlations—◆Kyle Irimata,
- 11:30 a.m.** A Population-Based Approach to Analyzing Pulses in Time Series of Hormone Data—◆Kenneth Horton,
- 11:35 a.m.** Correlation of Probability-Scale Residuals for General Regression Models—◆Qi Liu, Vanderbilt University; Bryan Shepherd, Vanderbilt University; Chun Li, Case Western Reserve University
- 11:40 a.m.** Estimating Power for Interaction Tests in Logistic Regression: A Case Study of Tobacco Cessation Among Cancer Survivors—◆Zoran Bursac, University of Tennessee Health Science Center; D. Keith Williams, University of Arkansas for Medical Sciences; C. Heath Gauss, University of Arkansas for Medical Sciences; Bob Klesges, University of Tennessee Health Science Center
- 11:45 a.m.** Extending Methods for Clustering Multivariate Continuous and Discrete Longitudinal Data to Accommodate Issues in Developing Prognostic Markers for Kidney Disease—◆Kenneth Wilkins, NIH
- 11:50 a.m.** Statistical Methods for Predicting Dengue Diagnosis Using Clinical and LCMS Data—◆Carolyn Cotterman, UC Berkeley; Lionel Gresh, Sustainable Sciences Institute; Natalia Voge, Colorado State University; Rushika Perera, Colorado State University; Eva Harris, UC Berkeley
- 11:55 a.m.** Reverse-Engineering the KM Curve to Simulate Individual Data—◆Abhijit Dasgupta, ARAASTAT
- 12:00 p.m.** A Simulation Study for Bivariate Wiener Process Models for an Observable Marker and the Latent Health Status—◆Sara Conroy; Michael Pennell, The Ohio State University
- 12:05 p.m.** Semiparametric Mixed Beta Regression with Penalized Splines for Disease Severity—◆Pedro Torres-Saavedra, University of Puerto Rico at Mayaguez; Ra'el E. Macchiavelli, University of Puerto Rico at Mayaguez
- 12:10 p.m.** 2x2 Factorial Design in Randomized Controlled Trials with Binary Outcomes: A Practical Guide on Sample Size Efficiency—◆Shuang Huang, The University of Arizona; Chengcheng Hu, The University of Arizona
- 12:15 p.m.** Floor Discussion
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- Contributed Sessions**
10:30 a.m.—12:20 p.m.
-
- 176** **CC-611**
Business Analytics and Financial Econometrics—Contributed
Business and Economic Statistics Section
 Chair(s): Bruce Meyer, Harris School
- 10:35 a.m.** Identification Strategies for Models of Innovation, R&D, and Productivity—◆Juana Sanchez, UCLA

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 10:50 a.m. Profitability Effects of Large Firm Size (LFM)—
◆Leo Upchurch; Fan Wu, Tuskegee University
- 11:05 a.m. The Pretty Good Analyst—◆Chi Wan, University of Massachusetts Boston
- 11:20 a.m. If Everyone Is an Indexer, Who Sets Prices? Combining Valuation-Driven and Capital-Driven Asset Demand—◆Serge Sverdllov,
- 11:35 a.m. Functional Data Analysis of Interbank Offered Rates—◆Sanhita Sengupta, Indian Statistical Institute
- 11:50 a.m. Estimation of Multi-Granger Network Causal Models—◆Andrey Skripnikov, University of Florida; George Michailidis, University of Florida
- 12:05 p.m. Sharp Bounds on the Value-at-Risk for the Sum of Dependent Losses—◆Robert Alohimakalani Yuen, University of Michigan; Stilian Stoev, University of Michigan; Dan Cooley, Colorado State University

177 **CC-210**
■ Diverse Applications of Statistical Methods—Contributed

ENAR, Biometrics Section

Chair(s): Bryan Stanfill, CSIRO

- 10:35 a.m. Perinatal Antiretroviral Exposure and Prevented Mother-to-Child HIV Infections in the Era of Antiretroviral Prophylaxis in the United States, 1994–2010—◆Craig Borkowf, CDC; Kristen M. Little, CDC; Allan W. Taylor, CDC; Maria C.B. Mendoza, CDC; Margaret A. Lampe, CDC; Paul J. Weidle, CDC; Steven R. Nesheim, CDC
- 10:50 a.m. Nonparametric Comparison of Longitudinal Profiles of Healthy Eating Index Scores—◆Aiyi Liu, NICHD/NIH
- 11:05 a.m. Performing Longitudinal Cost Analyses on Hospital Admissions and Emergency Visits Patients with Prostate Cancer—◆Manasi Sheth-Chandra, Old Dominion University; James Blando, Old Dominion University; MyNgoc Nguyen, ODU Center for Global Health; Muge Akpinar-Elci, Old Dominion University
- 11:20 a.m. Model Assessment and Comparison on Longitudinal Correlated Data Analysis—◆Tan Li, Florida International University; Wensong Wu, Florida International University
- 11:35 a.m. Bayesian Bi-Clustering Approach for the Identification of Pathway-Modulating Genes Using Biomedical Literature Search with Ontology Fingerprint—◆Dongjun Chung, Medical University of South Carolina; Andrew B. Lawson, Medical University of South Carolina
- 11:50 a.m. Semiparametric Random-Effect Models for Panel Count Data with Informative Observation Times—

- ◆Yang Li, The University of North Carolina at Charlotte; Yanqing Sun, The University of North Carolina at Charlotte
- 12:05 p.m. A Semiparametric Approach for Spatial Point Process with Geocoding Error in Case-Control Studies—
◆Kun Xu; Yongtao Guan, University of Miami

178 **CC-203**
Advances in Multivariate Analysis—Contributed
 IMS

Chair(s): Genevera I. Allen, Rice University/Baylor College of Medicine

- 10:35 a.m. Conditional Means of Low-Dimensional Projections from High-Dimensional Data: Explicit Error Bounds—◆Ivana Milovic, University of Vienna; Hannes Leeb, University of Vienna
- 10:50 a.m. The Empirical Beta Copula—◆Hideatsu Tsukahara; Johan Segers, Universit  catholique de Louvain; Masaaki Sibuya, Keio University; Nathan Uyttendaele, Universit  catholique de Louvain
- 11:05 a.m. A Mutual Information-Based Approach to Graphical Model Search in the Presence of Latent Variables—
◆Justin Polchlopek,
- 11:20 a.m. Adaptive Higher-Order Spectral Estimators—
◆David Gerard, University of Washington; Peter Hoff, University of Washington
- 11:35 a.m. Efficient Robbins-Monro Procedure for Multivariate Binary Data—◆Cui Xiong; Jin Xu, East China Normal University
- 11:50 a.m. Noniterative Joint and Individual Variation Explained—◆Qing Feng, The University of North Carolina at Chapel Hill; James Stephen Marron, The University of North Carolina; Jan Hannig, The University of North Carolina at Chapel Hill

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

179 **CC-214**
■ Bayesian Modeling in Physical Sciences and Engineering—Contributed

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

Chair(s): Matthew T. Pratola, The Ohio State University

- 10:35 a.m. Quantile POD for Nondestructive Evaluation with Hit-Miss Data—◆Yew-Meng Koh, Hope College
- 10:50 a.m. Application of Bayesian Missing Data Model to Industrial Problems—◆Julie Novak, IBM Research
- 11:05 a.m. Detecting Change-Points Using a Bayesian Approach in Temperature Trends—◆Andrew Bartlett, Southern Illinois University Edwardsville

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 11:20 a.m. Bayesian and Profile Likelihood Approaches to Time Delay Estimation for Stochastic Time Series of Gravitationally Lensed Quasars—◆Hyungsuk Tak, Harvard University
- 11:35 a.m. Bayesian Treed Calibration—◆Bledar Konomi, University of Cincinnati
- 11:50 a.m. Emulator-Based Bayesian Models for Spatial Inverse Problems—◆Anirban Mondal, Case Western Reserve University
- 12:05 p.m. A Hierarchical Nonparametric Bayesian Model That Integrates Multiple Sources of Lifetime Information to Model Large-Scale System Reliability—◆Richard Warr; Brandon Greenwell, AFIT

180 CC-211 Advances in Nonparametric Modeling: Part 3—Contributed

Section on Nonparametric Statistics

Chair(s): Tao Yu, National University of Singapore

- 10:35 a.m. Nonparametric and Semiparametric Compound Estimation in Multiple Covariates—◆Richard Charnigo, University of Kentucky; Limin Feng, Intel Corporation; Cidambi Srinivasan, University of Kentucky
- 10:50 a.m. Analyzing Mixed Models Using Rank-Based Regression—◆Yusuf Bilgic,
- 11:05 a.m. Some Proposals for Transformation-Based Prediction of Conditional Quantiles When the Outcome Is Bounded—◆Marco Geraci, University of South Carolina; M.C. Jones, The Open University
- 11:20 a.m. Projection Pursuit Regression for Multiple Responses—◆Xin Lu Tan, The Wharton School; Andreas Buja, University of Pennsylvania; Zongming Ma, The Wharton School
- 11:35 a.m. Applications of Log-Linear Analysis and Logistic Regression Analysis: Association of Factors in First Graders' Awareness of Final Consonant Clusters in Monomorphemic Words—◆Seo-Eun Choi; Amy Shollenbarger, Arkansas State University
- 11:50 a.m. Semiparametric Spatio-Temporal Varying Coefficient Model in Matched Case-Crossover Studies—◆Ana Maria Ortega Villa, Virginia Tech; Inyoung Kim, Virginia Tech
- 12:05 p.m. Modeling Multi-Level Power Usage with Latent States and Smooth Functions—◆Camila Pedroso Estevam de Souza, The University of British Columbia; Nancy Heckman, The University of British Columbia

181 CC-212 Advances in Nonparametric Modeling: Part 4—Contributed

Section on Nonparametric Statistics

Chair(s): Dehan Kong, The University of North Carolina at Chapel Hill

- 10:35 a.m. Bernstein Polynomial Model for Grouped Data—◆Zhong Guan, Indiana University South Bend
- 10:50 a.m. Density Forecasting Using a Functional Data Approach—◆Thilaksha Tharanganie, Monash University; Rob J. Hyndman, Monash University
- 11:05 a.m. Inference for Distributional Treatment Effects in Instrumental Variable Models—◆Kwonsang Lee, University of Pennsylvania; Jing Qin, National Institute of Allergy and Infectious Diseases; Dylan Small, University of Pennsylvania
- 11:20 a.m. Quantile Autoregression for Censored Data—◆Seokwoo Choi, Michigan Technological University; Stephen Portnoy, University of Illinois at Urbana-Champaign
- 11:35 a.m. Distance-Based Models for Big Ranking Data—◆Philip L.H. Yu, The University of Hong Kong; Hang Xu, The University of Hong Kong
- 11:50 a.m. Scalable Computation of Multivariate Smoothing Splines via Adaptive Basis Sampling—◆Nan Zhang, Texas A&M University; Ping Ma, University of Georgia; Jianhua Huang, Texas A&M University
- 12:05 p.m. Semiparametric Mixed-Model Analysis for Nonlinear Gene-Environment Interactions in Genome-Wide Association Studies—◆Zijian Huang, UC Riverside; Shujie Ma, UC Riverside

182 CC-206 Advances in Deterministic Models and Emulators—Contributed

Section on Statistics and the Environment, Committee on Applied Statisticians

Chair(s): Mark Otto, Fish and Wildlife Service

- 10:35 a.m. A Spatially Varying Coefficient Model for Climate Emulation—◆Jingyu Bao, The University of Chicago; Michael L. Stein, The University of Chicago
- 10:50 a.m. A Space-Time Emulator for Generating Hydrological Measures for Australian Catchments—◆Daniel Gladish, CSIRO; Petra Kuhnert, CSIRO; Dan Pagendam, CSIRO
- 11:05 a.m. Full-Scale Multi-Output Gaussian Process Emulator with Nonseparable Auto-Covariance Functions—◆Bohai Zhang, Texas A&M University; Bledar Konomi, University of Cincinnati; Huiyan Sang,

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- Texas A&M University; Georgios Karagiannis, Purdue University; Guang Lin, Purdue University
- 11:20 a.m. Spatio-Temporal Calibration and Resolution Refinement of Output from Deterministic Models—◆Owais Gilani, University of Michigan School of Public Health; Lisa McKay, Yale School of Public Health; Timothy Gregoire, Yale School of Forestry and Environmental Studies; Yongtao Guan, University of Miami; Brian Leaderer, Yale School of Public Health; Theodore Holford, Yale University
- 11:35 a.m. Joint Spatio-Temporal Analysis of a Linear and a Directional Variable: Space-Time Modeling of Wave Heights and Wave Directions—◆Fangpo Wang, Adobe Systems, Inc.; Alan Gelfand, Duke University; Giovanna Jona-Lasinio, Sapienza University of Rome
- 11:50 a.m. Graphical Causal Models: The Next Multimodel Inference Regime Change Needed in Ecology?—◆Kathryn Irvine; Alix I. Gitelman, Oregon State University
- 12:05 p.m. Floor Discussion

183 **CC-620**

■ SIE CP14: EPI Methods—Contributed
Section on Statistics in Epidemiology, Biometrics Section, International Indian Statistical Association

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

- 10:35 a.m. Spline-Based Self-Controlled Case Series Method—◆Yonas Ghebremichael Weldeselassie, The Open University; Paddy Farrington, The Open University; Heather J. Whitaker, The Open University
- 10:50 a.m. Statistical Agreement of Patient Self-Report Measure and Device-Monitored Measure for Medication Adherence—◆Jian Zhang, Kaiser Permanente Southern California; Yan Wang, UCLA; Honghu Liu, UCLA
- 11:05 a.m. Time-Varying Coefficient Models for Missing-by-Design Intensive Longitudinal Data—◆Xiaoxue Li; Stewart Anderson, University of Pittsburgh; Abdus Wahed, University of Pittsburgh; Saul Shiffman, University of Pittsburgh
- 11:20 a.m. Flexible Group Sequential Monitoring Methods That Incorporate Covariate Adjustment in Observational Studies—◆Lu Bai, UC Irvine; Daniel Gillen, UC Irvine
- 11:35 a.m. Odds Ratio Estimation in 1:N Incomplete Matched Case-Control Studies—◆Chan Jin, Georgia Regents University; Stephen Looney, Georgia Regents University
- 11:50 a.m. A Comparison of Four Different Techniques for Generating Synthetic Populations—◆Lee

- Richardson, Carnegie Mellon University; Shannon Gallagher, Carnegie Mellon University
- 12:05 p.m. Analysis of Bivariate Count Data That Occur in Health Care Studies—◆N. Rao Chaganty, Old Dominion University; Pooja Sengupta, Old Dominion University

184 **TCC-101**
■ Statistical Applications in Sports—Contributed

Section on Statistics in Sports

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

- 10:35 a.m. Estimating the Effect of Pitch Selection and Plate Discipline Using the G-Computation Algorithm—◆Laura Boehm Vock, St. Olaf College; David Vock, University of Minnesota
- 10:50 a.m. Effects of Base Runners' Stolen Base Attempts on Umpires' Ball/Strike Decisions—◆Aaron Baggett, University of Mary Hardin-Baylor; Grant B. Morgan, Baylor University
- 11:05 a.m. Bayesian Optimal Design of Fixed Knockout Tournament Brackets—◆Jonathan Hennessy, The Houston Rockets; Mark Glickman, Boston University
- 11:20 a.m. Utilizing an ARIMA Model to Assess Gait Stability and Spectral Behavior—◆Kristin Denise Morgan, University of Kentucky; Brian Noehren, University of Kentucky
- 11:35 a.m. A Bayesian Hierarchical Model for Estimating the Cost of Postponing the Cyclocross National Championships—◆James Fry, Virginia Tech; Andrew Hoegh, Virginia Tech; Scotland Leman, Virginia Tech; Matt Montesano,
- 11:50 a.m. Predicting Injury Risk in College Athletes—◆Sameer K. Deshpande, University of Pennsylvania; Nicholas Potter, Duke University; Shane T. Jensen, University of Pennsylvania; Daniel McCarthy, University of Pennsylvania; Katherine Heller, Duke University
- 12:05 p.m. Missing Value Imputation for Physical Activity Data Measured by Accelerometer—◆JungAe Lee, Washington University in St. Louis

185 **CC-616**
Strategies, Issues, and Examples for Teaching Statistics in Health Sciences—Contributed

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

Chair(s): Alok Dwivedi, Texas Tech University Health Sciences Center

- 10:35 a.m. Teaching Meta-Analysis: Concepts, Controversies, and Resources—◆Deborah Dawson, The University of Iowa

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 10:50 a.m. Three Related Paradoxes—◆Harry James Norton, Carolinas Medical Center; George Divine, Henry Ford Hospital
- 11:05 a.m. From Measurement Errors to Normal Distributions: A Brief History and Its Pedagogical Implications—◆Ilhan Izmirlı, George Mason University
- 11:20 a.m. Bayesian Analysis for Assessing Equivalence in Delivery of Graduate Statistics Education Between Synchronous Distance Learning Versus Traditional Face-to-Face Learning Students—◆Milind A. Phadnis, University of Kansas Medical Center; Jo Wick, University of Kansas Medical Center
- 11:35 a.m. Control Charts for Visualizing Quality Registry Data at the Swedish National Diabetes Register: The Level and Efforts Charts—◆Hendry Raharjo, Chalmers University of Technology; Bo Bergman, Chalmers University of Technology
- 11:50 a.m. On the Use of Sampling Weights for Retrospective Chart Reviews—◆Ernest Shen, Kaiser Permanente; Adam Sharp, Kaiser Permanente; Corrine Munoz-Plaza, Kaiser Permanente; Tania Tang, Kaiser Permanente; Erin Hahn, Kaiser Permanente; Michael Gould, Kaiser Permanente
- 12:05 p.m. Statisticians Should Control Randomization Implementation—◆Charles Goldsmith, Simon Fraser University

186 **CC-617**

Topics in Business Statistics—Contributed

Statistics in Business Schools Interest Group, IMS

Chair(s): Inna Perevozskaya, Pfizer Inc.

- 10:35 a.m. Quantile Regression Analysis of the Effect of Production of Natural Rubber by Asian Countries on World Rubber Price—◆Kwadwo Nyantakyi, PGIA - University of Peradeniya
- 10:50 a.m. Planned Sales Call Frequencies Estimation Using the EM Algorithm—◆Lan Nygren, Rider University; Lewis CooperSmith, Rider University
- 11:05 a.m. Visual Analytics and the Introductory Statistics Course: Time for a Paradigm Shift—◆Benjamin Adams, The University of Alabama
- 11:20 a.m. Minimization of a General Quantile Function for Appointment Scheduling—◆Peijun Sang, Simon Fraser University
- 11:35 a.m. Robust Hypothesis Testing via L_q -Likelihood—◆Yichen Qin, University of Cincinnati Lindner College of Business; Carey E. Priebe, The Johns Hopkins University

- 11:50 a.m. Jackknife Empirical Likelihood Interval Estimators for the Gini Index—◆Dongliang Wang, SUNY Upstate Medical University; Yichuan Zhao, Georgia State University

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

187 **CC-306**

Informative Observation and Missingness Mechanisms—Contributed

Biometrics Section, International Chinese Statistical Association, Mental Health Statistics Section, International Indian Statistical Association

Chair(s): Shelley Hurwitz, Brigham and Women's Hospital

- 10:35 a.m. A Mixed-Effects Model for Nonignorable Missing Longitudinal Data—◆Xuan Bi; Annie Qu, University of Illinois at Urbana-Champaign
- 10:50 a.m. Simple and Effective Measures to Quantify Nonignorable Selection Bias—◆Hui Xie; Donald Hedeker, The University of Chicago; Robin Mermelstein, University of Illinois at Chicago
- 11:05 a.m. Analysis of Incomplete Longitudinal Binary Data: A Combined Markov's Transition and Logistic Model for Nonignorable Missingness—◆Francis Erebholo, Howard University; John Kwagyan, Howard University; Victor Apprey, Howard University; Paul Bezandry, Howard University
- 11:20 a.m. Two-Sample Test for Correlated Data Under Missing Not at Random—◆Yi Cai, The University of Texas at Houston; Yong Chen, The University of Texas School of Public Health
- 11:35 a.m. Spatial Skew-Normal/Independent Models for Clustered Periodontal Data with Nonrandom Missingness—◆Dipankar Bandyopadhyay, University of Minnesota; Victor Lachos, University of Campinas; Marcos Prates, Universidade Federal de Minas Gerais; Brian J. Reich, North Carolina State University
- 11:50 a.m. Semiparametric Model for Semicompeting Risks Data with Application to Breast Cancer Study—◆Hong Zhu, The University of Texas Southwestern Medical Center; Renke Zhou, Baylor College of Medicine; Melissa Bondy, Baylor College of Medicine; Jing Ning, MD Anderson Cancer Center
- 12:05 p.m. Regression Modeling of Longitudinal Outcomes with Outcome-Dependent Observation Times and Discontinuous Risk Intervals, with Application to a Malaria Vaccine Study—◆Kay See Tan, Memorial Sloan Kettering Cancer Center; Andrea Troxel, University of Pennsylvania; Benjamin French, University of Pennsylvania

188 CC-307 Design and Analysis of Pivotal Studies for Medical Devices—Contributed

Section on Medical Devices and Diagnostics, Biometrics Section

Chair(s): Mary McGarigle, Thoratec Corporation

- 10:35 a.m.** Considerations in Using Registry Data to Support Pre-Market Applications of Medical Devices—
◆ Nelson Lu, FDA/CDRH; Lilly Yue, FDA/CDRH; Yunling Xu, FDA/CDRH
- 10:50 a.m.** Adaptive Sample Size Re-Estimation with Fisher's Exact Test and a Promising Zone—◆ Tyson Rogers, NAMSA; Scott McKane, Respicardia, Inc.
- 11:05 a.m.** Considerations in Sample Size, Type I Error, and Power for 2-Group Noninferiority Study Using Farrington-Manning Method—◆ Songtao Jiang, Boston Scientific; Edmund McMullen, Boston Scientific; Hong Wang, Boston Scientific; Terry Liao, Boston Scientific
- 11:20 a.m.** Analysis of Composite Endpoint with Missing Data in Components—◆ Ying Yang, FDA; Terry Liao, Boston Scientific; Ying Yan, Helsinn Therapeutics (U.S.), Inc.
- 11:35 a.m.** Coarsened Propensity Scores and Hybrid Estimators for Missing Data and Causal Inference—◆ Jack Zhou, FDA/CDRH; Zhiwei Zhang, FDA/CDRH; Zhaohai Li, The George Washington University; Jun Zhang, Shanghai Jiaotong University School of Medicine
- 11:50 a.m.** Issues with Training, Testing, and Validation Data Sets in the Development of Diagnostics Devices—
◆ R. Lakshmi Vishnuvajjala, FDA
- 12:05 p.m.** Optimizing Accuracy of a Sequence of Tests: How Do We Determine the Order of the Tests?—
◆ Christine Schubert Kabban, Air Force Institute of Technology; Donna K. McClish, Virginia Commonwealth University

189 CC-605 Recent Developments in Multiple Testing— Contributed

Section on Statistical Computing

Chair(s): Gul Inan, University of Minnesota

- 10:35 a.m.** Ultra-Fast Permutation-Based Multiple Comparison Adjustment for Weighted Experiments in SAS—
◆ David Judkins, Abt Associates, Inc.
- 10:50 a.m.** Restricted Scheffe Method Using Minimal Cone Approach for Multiple Comparisons—◆ Yimin Zhang, Villanova University; Melinda H. McCann, Oklahoma State University
- 11:05 a.m.** A Simulation Study for Pairwise Multiple Comparisons with Heteroscedastic Variances—◆ Berna Yazici,

Anadolu University; Evren \div zkip, Ankara Police Collage; Ahmet Sezer, Anadolu University

- 11:20 a.m.** A Framework for Monte Carlo-Based Multiple Testing—◆ Georg Hahn; Axel Gandy, Imperial College London
- 11:35 a.m.** Distribution of Error Rates in Multiple Testing—
◆ Wen Zhong; Donald Martin, North Carolina State University
- 11:50 a.m.** Efficient Formation of Auxiliary Markov Chains Through Determining Rules for Equivalent States—
◆ Donald Martin, North Carolina State University
- 12:05 p.m.** Floor Discussion

190 CC-603 High-Dimensional Clustering—Contributed

Section on Statistical Learning and Data Mining, International Indian Statistical Association

Chair(s): Reza Ramezan, California State University at Fullerton

- 10:35 a.m.** Inference for Hierarchical Clustering of Variables—
◆ Maxwell Grazier G'Sell, Carnegie Mellon University; Rob Tibshirani, Stanford University; Jonathan Taylor, Stanford University
- 10:50 a.m.** Important Features PCA for High-Dimensional Clustering—◆ Wanjie Wang, The Wharton School; Jiashun Jin, Carnegie Mellon University
- 11:05 a.m.** Statistical Properties of Convex Clustering—◆ Kean Ming Tan, University of Washington; Daniela Witten, University of Washington
- 11:20 a.m.** Graphical Models by Using a Joint Regression Quantiles Approach—◆ Hyonho Chun; Myung Hee Lee, Colorado State University; Ji Hwan Oh, Purdue University
- 11:35 a.m.** Bayesian Network Structure Learning: A Three-Stage Approach and Its Application—◆ Kaixian Yu, Florida State University; Jinfeng Zhang, Florida State University
- 11:50 a.m.** A Coefficient of Determination for Topic Models—
◆ Thomas Jones, 3e Services LLC
- 12:05 p.m.** A Semiparametric Method for Clustering Mixed Data—◆ Alexander Foss, SUNY Buffalo; Marianthi Markatou, SUNY Buffalo; Aliza Heching, IBM T.J. Watson Research Center; Bonnie K. Ray, IBM T.J. Watson Research Center

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

191 CC-310 Biomarkers and Endpoint Validation II— Contributed

Biopharmaceutical Section, Biometrics Section

Chair(s): Feng Gao, Takeda Pharmaceuticals

- 10:35 a.m.** A Proposed Study Design for QT Assessment Using Exposure-Response Modeling—◆Fang Liu, Merck; Devan Mehrotra, Merck; Deborah Panebianco, Merck; Kuenhi Tsai, Merck
- 10:50 a.m.** Comparison of Missing Data Imputation Methods and Statistical Analysis Methods by Simulation—◆Wenqing Li; Yun Chon, Amgen; Yi Wang, Amgen
- 11:05 a.m.** Early Stopping for Futility or Efficacy in Group-Sequential Clinical Trials with Multiple Co-Primary Endpoints—◆Koko Asakura, National Cerebral and Cardiovascular Center; Toshimitsu Hamasaki, National Cerebral and Cardiovascular Center; Scott R. Evans, Harvard University
- 11:20 a.m.** Design and Analysis of Clinical Trials with Biologics Using Dose Time Response Models—◆Markus Reiner Lange, Novartis Pharma AG; Heinz Schmidli, Novartis Pharma AG
- 11:35 a.m.** Using Software to Search for Optimal Cross-Over Designs—◆Byron Jones, Novartis Pharma AG
- 11:50 a.m.** The Effect of Measurement Error on Biomarker Adaptive Threshold Design—◆Hong Tian; Kevin Liu, Janssen R&D
- 12:05 p.m.** Estimating Adverse Event Rate Differences Using Data from Blinded Trials—◆A. Lawrence Gould, Merck Research Laboratories; William W.B. Wang, Merck Research Laboratories

192 CC-308 ● Noninferiority Studies—Contributed

Biopharmaceutical Section

Chair(s): Cathy Tuglus, Amgen

- 10:35 a.m.** A Modified EM Algorithm for Regression Analysis of Data with Nonignorable Nonresponse—◆Yang Zhang, Amgen; Gong Tang, University of Pittsburgh
- 10:50 a.m.** Validation of Onyx Response Computational Assessment (ORCA) Against Blinded Independent Review Committee (IRC) for the Determination of Progression in Multiple Myeloma Trials—◆Zhiwu Yan, Onyx Pharmaceuticals; Sunhee Ro, Onyx Pharmaceuticals
- 11:05 a.m.** Optimal Censoring Rules Identifying Latent Hazard Ratios in the Analysis of Progression-Free Survival—◆Suman Redhu, Novartis; Das Purkayastha, Novartis

- 11:20 a.m.** Using Simulation When Only Minimal Information Is Available to Estimate the Design Effect for an Ebola Vaccine Evaluation Study—◆Charles Rose, CDC; Paul Gargiullo, CDC; Benjamin Lopman, CDC; Manoj Gambhir, CDC
- 11:35 a.m.** Resampling Tests in the Presence of Nuisance Parameters—◆Ekkehard Glimm, Novartis
- 11:50 a.m.** Comparison Between Two Controlled Multiple Imputation Methods for Sensitivity Analyses of Time-to-Event Data with Possibly Informative Censoring—◆Kaifeng Lu; Dayong Li, Actavis; Gary Koch, The University of North Carolina at Chapel Hill
- 12:05 p.m.** Evaluating the Relative Efficiency of Various Noninferiority Trial Designs—◆Nicole Rembert; David Redden, The University of Alabama at Birmingham

Contributed Poster Presentations

10:30 a.m.—12:20 p.m.

193 CC-4B

Contributed Oral Poster Presentations: Biometrics Section—Contributed

Biometrics Section

Chair(s): Lan Xue, Oregon State University

Biometrics Section

- 13** Skew T and Semiparametric Empirical Likelihoods Versus Parametric Robust Likelihood—◆Wei-Cheng Hsiao, Institute of Statistical Science, Academia Sinica; Tsung-Shan Tsou, National Central University
- 14** Simulation-Based Hypothesis Testing of High-Dimensional Means Under Covariance Heterogeneity—◆Wen Zhou, Colorado State University; Jinyuan Chang, The University of Melbourne; Wenxin Zhou, The University of Melbourne
- 15** Analysis of Single Particle Diffusion with Transient Binding Using Particle Filtering—◆Jason Bernstein,
- 16** Model Selection of Generalized Estimating Equations with Multiply Imputed Longitudinal Data—◆Chung Wei Shen; Yi-Hau Chen, Academia Sinica
- 17** Sieve Estimation for Partial Linear Models with Applications to Cox-Type Models—◆Jiajun Xu, The University of Hong Kong; Kwok Fai Lam, The University of Hong Kong
- 18** Penalized B-Spline Mixed Effects Model with Random Time-Shift: An Application to Contemporary Cervical Dilation Data—◆Caroline Munindi Mulatya, University of South Carolina; Alexander McLain, University of South Carolina

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 19 Multiple Imputation for Longitudinal Count Data with Dropouts: A Methodological Evaluation—◆Takayuki Abe, Keio University School of Medicine; Kazuhito Shiosakai, Daiichi Sankyo Co., Ltd.; Fumiya Sano, Keio University School of Medicine; Rachel Roberts, Keio University School of Medicine; Yuji Sato, Keio University School of Medicine; Manabu Iwasaki, Seikei University
- 20 Migraine and Possible Etiologic Heterogeneity for Double-Negative Breast Cancer—◆Min Shi, National Institute of Environmental Health Sciences; Clarice R. Weinberg, NIH/NIEHS
- 21 Performance of Tests for a Nested Mixed Model Using Nonstandard Covariance Structures—◆Sandra Larrivee, Pennington Biomedical Research Center; Jeffrey Burton, Pennington Biomedical Research Center; Robbie A. Beyl, Pennington Biomedical Research Center; William Johnson, Pennington Biomedical Research Center
- 22 Detecting Differentially Expressed Genes with RNA-Seq Data Using Backward Selection to Account for the Effects of Relevant Covariates—◆Yet Nguyen, Iowa State University; Dan Nettleton, Iowa State University; Haibo Liu, Iowa State University; Chris Tuggle, Iowa State University
- 23 Tolerance Intervals on Bioassay Test Results to Assess Total Variability in Unbalanced Components of Variance Settings—◆Paul Feder, Battelle
- 24 Case Study on Fitting a Risk Prediction Model for Competing Risks—◆Haley Hedlin, Stanford University; John Robbins, UC Davis
- 25 New Robust Sandwich Estimators for Repeated Measures Data—◆Bruce Schaalje, Brigham Young University; Natalie Blades, Brigham Young University
- 26 A Statistical Pipeline for an Activity-Based Protein Profiling Assay—◆William Forrest, Genentech, Inc.; Johanna Heideker, Genentech, Inc.; Taylor Ma, Genentech, Inc.; Kebin Yu, Genentech, Inc.; Jennie Lill, Genentech, Inc.; Ingrid Wertz, Genentech, Inc.
- 27 A Semiparametric Integrated Model for Identifying miRNA Target Proteins—◆Jiawen Zhu, SUNY Stony Brook; Jie Yang, SUNY Stony Brook; Song Wu, SUNY Stony Brook
- 28 Efficient Study Designs for Developing Genomic Biomarkers and Semiparametric Inference—◆Hisashi Noma, The Institute of Statistical Mathematics
- 29 Quantification of Isoforms and Its Impact on Differential Gene Expression Analysis—◆Munni Begum, Ball State University; Rebecca Doerge, Purdue University
- 30 On the Evaluation of the Most Accurate Pediatric Medulloblastoma Animal Model—◆Behrouz Shamsaei; Cuilan Gao, University of Tennessee Chattanooga
- 31 An Association Study Between the Adult Blood Pressure and the Time to First Cardiovascular Disease Events—◆Yongjia Pu, Virginia Commonwealth University; Le Kang, Virginia Commonwealth University
- 32 Use Hierarchical Models to Handle Missing Data—◆Junshan Qiu, FDA
- 33 Rediscovering Quality Control Methods for Health Care Improvement—◆Michele Shaffer, University of Washington and Seattle Children's Research Institute; Lori Rutman, University of Washington and Seattle Children's Hospital
- 34 A Multivariate Permutation Approach to Joint Analysis of Multiple Omics Studies—◆Kyoungmi Kim, UC Davis; Sandra L. Taylor, UC Davis
- 35 A Novel Approach to Testing for Difference in Agreement Among Multiple Raters Between Two Measurement Techniques—◆Huining Kang, University of New Mexico; Ji-Hyun Lee, University of New Mexico; Yong Lin, University of New Mexico
- 36 An Application of Penalized Regression to Biomarker Selection in a Cohort of Bangladesh Children—◆Miao Lu, University of Virginia; Jianhui Zhou, University of Virginia; Caitlin Naylor, University of Virginia; William A. Petri, University of Virginia; Jennie Z. Ma, University of Virginia
- 37 Generalized Linear Models Based on Heterogeneous Natural Exponential Families—◆Patrick Johnston,
- 38 Simulation of Complex Dosing Regimens with RxODE—◆David A. James, Novartis; Wenping Wang, Novartis; Karen Melissa Hallow, University of Georgia
- 39 Spline Models for Cortisol Circadian Rhythms—◆Jacob Wegelin, Virginia Commonwealth University; Kirk Warren Brown, Virginia Commonwealth University
- 40 Statistical Modeling of Sleep Properties in *Drosophila Melanogaster*—◆Gayla Olbricht, Missouri University of Science and Technology; Courtney Fiebelman, Missouri University of Science and Technology; Shelby McNeil, Missouri University of Science and Technology; Luyang Wang, Missouri University of Science and Technology; Sahitya Injamuri, Missouri University of Science and Technology; V.A. Samaranyake, Missouri University of Science and Technology; Matthew S. Thimman, Missouri University of Science and Technology
- 41 Adjusted Supremum Score-Type Statistics for Evaluating Nonstandard Hypotheses—◆Wei-Wen Hsu, Kansas State University; David Todem, Michigan State University; KyungMann Kim, University of Wisconsin - Madison
- 42 On Predicting U.S. and State-Level Cancer Mortality Counts—◆Huann-Sheng Chen, NIH; Shunpu Zhang, University of Nebraska
- 43 Integrated Analysis of miRNA-mRNA Expression Profiles—◆Dake Yang,
- 44 Hospital Admission Data on Red Blood Cell Disorders and a Short-Term Trend Analysis—◆Qin Wang, University of Cincinnati; Marepalli Rao, University of Cincinnati
- 45 Analysis of Bivariate Survival Data Based on Copulas with LogGEV Marginals—◆Dooti Roy, University of Connecticut; Vivekananda Roy, Iowa State University; Dipak K. Dey, University of Connecticut
- 46 Multiple Inflation Generalized Poisson (MIGP) Model with One-Step SCAD Variable Selection—◆Arvind

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- Tripathi, The University of Alabama at Birmingham; Kui Zhang, The University of Alabama at Birmingham; Xiaogang Su, The University of Texas at El Paso
- 47 In-Season Forecast of Anadromous Fish Return Abundance: Maximum Likelihood vs. Bayesian Estimators—◆Saang Yoon Hyun, Pukyong National University
- 48 A Simple Approach to Sample Size Calculation for Count Data in Matched Cohort Studies—Xuesheng Xu, Kaiser Permanente Colorado; ◆Dexiang Gao, University of Colorado; Gary K. Grunwald, University of Colorado
- 49 Change-Point Detection in Multi-Channel EEG Data—◆Anna Louise Schröder, London School of Economics; Hernando Ombao, UC Irvine
- 50 A Sieve Semiparametric Maximum Likelihood Approach for Regression Analysis of Bivariate Interval-Censored Failure Time Data—◆Qingning Zhou, University of Missouri; Tao Hu, Capital Normal University; Jianguo Sun, University of Missouri
- 51 The Correction of Length-Bias in Gene Set Analysis for DNA Methylation Data—◆Shaoyu Li, The University of North Carolina at Charlotte; Iwona Pawlikowska, St. Jude Children's Research Hospital; Tong Lin, St. Jude Children's Research Hospital
- 52 Identification of Treatment Responders with Multiple Longitudinal Outcomes—◆Yumi Kondo, The University of British Columbia; Yinshan Zhao, The University of British Columbia; John Petkau, The University of British Columbia
- 53 A Joint Model for Longitudinal Responses with Missing Data—◆Brenden Bishop, The Ohio State University
- 54 K-Regression Clustering for Interval-Valued Data—◆Fei Liu, University of Georgia; Lynne Billard, University of Georgia

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CC-4B

Contributed Oral Poster Presentations: ENAR—Contributed

ENAR

Chair(s): Lan Xue, Oregon State University

ENAR

- 55 Temporal Trends in Phthalate Exposures in the U.S. Population: A Quantile Regression Approach—◆Min Chen, ExxonMobil Biomedical Sciences, Inc.; Jennifer Foreman, ExxonMobil Biomedical Sciences, Inc.
- 56 Performance of OLS and HCCM Estimators in Heteroskedastic ANCOVA Models—◆T. Beasley, The University of Alabama at Birmingham
- 57 Model Selection and Model Diagnostics for Ordinal Data from a Bayesian Perspective—◆Fanglong Dong; Byron J. Gajewski, University of Kansas Medical Center
- 58 Hierarchical Modeling and Differential Expression Analysis for RNA-Seq Experiments with Inbred and Hybrid Genotypes—◆Andrew Lithio, Iowa State University; Dan Nettleton, Iowa State University

- 59 Early Loss of Normal Body Weight in Multi-Ethnic and Contemporary U.S. Populations—◆Sujatro Chakladar; Donglin Zeng, The University of North Carolina; Danyu Lin, The University of North Carolina; Christy Avery, The University of North Carolina at Chapel Hill; Katelyn Holliday, The University of North Carolina at Chapel Hill; Joseph Engeda, The University of North Carolina at Chapel Hill; Shakia Hardy, The University of North Carolina at Chapel Hill; Ashley Moncrieft, University of Miami; Robert Ostfeld, Yeshiva University Albert Einstein College of Medicine; Jared Reis, National Heart, Lung, and Blood Institute; Pamela Schreiner, University of Minnesota; Christina Shay, The University of North Carolina at Chapel Hill; Jeremiah Stamler, Northwestern University; Gregory Talavera, San Diego State University; Fawn Yeh, The University of Oklahoma Health Sciences Center; Ying Zhang, The University of Oklahoma Health Sciences Center; Marston Youngblood, The University of North Carolina at Chapel Hill; Martha Daviglus, University of Illinois at Chicago; Gerardo Heiss, The University of North Carolina at Chapel Hill
- 60 Joint Model of Bivariate Survival Times and Longitudinal Data—◆Ke Liu; Ying Zhang, Indiana University
- 61 Multiple Imputation of Missing Covariates for the Cure Model—◆Lauren Beesley, University of Michigan; Jeremy Taylor, University of Michigan
- 62 Risk Factors and Outcomes in a Multiple Tumor Marker Setting: The Issues of Correlated and Missing Tumor Markers—◆Bernard Rosner, Brigham and Women's Hospital; Kathryn Fitzgerald, Harvard School of Public Health

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CC-4B

Contributed Oral Poster Presentations: International Chinese Statistical Association— Contributed

International Chinese Statistical Association

Chair(s): Lan Xue, Oregon State University

Section on Statistics in Defense and National Security

- 63 Qualitative Confidence in Quantitative Analysis: Low, Medium, High?—◆James Gattiker, Los Alamos National Laboratory

WVAR

- 64 Confidence Intervals for a Secondary Parameter in Group Sequential Trials with Unknown Correlation—◆Timothy Skalland,

SSC

- 65 Testing for Cluster-Level Random Effects in Joint Modeling of Survival Time and Marker Responses in Clinical Trials—◆Wenyu Jiang, Queen's University; Xin Yao, Queen's University; Bingshu Chen, Queens University

International Chinese Statistical Association

- 66 Set Valued Dynamic Treatment Regimes—◆Tianshuang Wu, University of Michigan; William Pelham, Florida International University; Susan A. Murphy, University of Michigan

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 67 More Powerful Tests for Sparse High-Dimensional Covariances—◆Lihua Peng, Iowa State University; Song Xi Chen, Peking University/Iowa State University; Wen Zhou, Colorado State University
- 68 Integrative Modeling of Multi-Track Hi-C Data for Genome-Scale Reconstruction of 3D Chromatin Structure—◆Chenchen Zou, The Jackson Laboratory for Genomic Medicine; Yuping Zhang, University of Connecticut; Zhengqing Ouyang, The Jackson Laboratory for Genomic Medicine

196 CC-4B

Contributed Oral Poster Presentations: Korean International Statistical Society—Contributed Korean International Statistical Society

Chair(s): Lan Xue, Oregon State University

International Chinese Statistical Association

- 69 Prediction Interval for Shrinkage Tuning Parameter—◆Wenhao Hu, North Carolina State University

Korean International Statistical Society

- 70 Penalized Regression Spline Based on Total Variation—◆Jae-Hwan Jhong, Department of Statistics, Korea University; Ja-Yong Koo, Department of Statistics, Korea University

197 CC-4B

Contributed Oral Poster Presentations: Section on Statistics in Defense and National Security—Contributed

Section on Statistics in Defense and National Security

Chair(s): Lan Xue, Oregon State University

Korean International Statistical Society

- 71 Application on Truncation Invariant Copulas for Modeling Directional Dependence on Foreign Currency Exchange Data—◆Yoonsung Jung, Prairie View A&M University; Jong-Min Kim, University of Minnesota, Morris; Engin A. Sungur, University of Minnesota, Morris

198 CC-4B

Contributed Oral Poster Presentations: Section on Bayesian Statistical Science—Contributed Section on Bayesian Statistical Science

Chair(s): Lan Xue, Oregon State University

Section on Bayesian Statistical Science

- 72 Joint Clustering on Correlated Variables—◆Hongmei Zhang, University of Memphis; Yubo Zou, BCBS; Wilfried Karmaus, University of Memphis; Graham Roberts, University of Southampton; Hasan Arshad, University of Southampton
- 73 Outlier Detection for a Hierarchical Bayes Model for Patient Preferences Elicited Through Discrete Choice Experiments—◆Anna Liza M. Antonio, UCLA; Catherine

- Crespi, UCLA; Robert E. Weiss, UCLA; Christopher Saigal, UCLA
- 74 Hamiltonian Sequential Monte Carlo—◆Svetoslav Kostov, University of Bristol; Nick Whiteley, University of Bristol
- 75 Decoding the Pixels of the Face Image from the Voxels of fMRI BOLD Activity Patterns—◆Rick Farouni, The Ohio State University

199 CC-4B

Contributed Oral Poster Presentations: SSC—Contributed SSC

Chair(s): Lan Xue, Oregon State University

Statistics Without Borders

- 76 Confidence Bands for the Logistic and Probit Regression Models Over Intervals—◆Lucy Kerns, Youngstown State University

200 CC-4B

Contributed Oral Poster Presentations: Statistics without Borders—Contributed Statistics Without Borders

Chair(s): Lan Xue, Oregon State University

Business and Economic Statistics Section

- 77 Assessing the Uncertainties in Default Prediction—◆Miao Yuan, Virginia Tech; Chengyong Tang, Temple University; Yili Hong, Virginia Tech

International Chinese Statistical Association

- 78 Spatial Scan Statistics Using Quasi-Likelihood Function—◆Tung-Lung Wu, Mississippi State University

201 CC-4B

Contributed Oral Poster Presentations: WNAR—Contributed WNAR

Chair(s): Lan Xue, Oregon State University

International Chinese Statistical Association

- 79 The Role of Dimensional Symmetry on Bimanual Psychomotor Skills Education in Immersive Virtual Environments—◆June Luo

Monday

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CC-4B

SPEED: Topics in Imaging Biostatistics, Computing and Modeling, Part 2—Contributed Section for Statistical Programmers and Analysts, Section on Statistics and the Environment, Section on Statistical Education

Chair(s): Lu Wang, Oregon State University

Section for Statistical Programmers and Analysts

- 1 Sensitivity of Multiply Imputed Results to Quantity and Differential of Missingness—◆Chad Evans, University of Pennsylvania

International Indian Statistical Association

- 2 Tolerance Bands for Functional Data—◆Lasitha Rathnayake; Pankaj Choudhary, The University of Texas at Dallas

Section on Statistics in Imaging

- 3 Comparing Ricean and Gaussian Modeling in Magnitude fMRI Analysis Using Random Field Theory—◆Zabedah Saad, University of Northern Colorado; Khalil Shafie, University of Northern Colorado
- 4 Matrix Factorization Algorithms for the Identification of Resting-State Networks Using Functional Magnetic Resonance Imaging—◆Karthik Devarajan, Fox Chase Cancer Center; Harvey Hensley, Fox Chase Cancer Center

Section on Statistical Education

- 5 Using Code-Based Statistical Software in an Introductory Statistics Course—◆Kirsten Doehler, Elon University

Biometrics Section

- 6 An Open Source R Shiny Web Application to Estimate Power for a Logistic Regression Interaction Term in the 2 X 2 X 2 Case—◆D. Keith Williams, University of Arkansas for Medical Sciences; C. Heath Gauss, University of Arkansas for Medical Sciences; Zoran Bursac, University of Tennessee Health Science Center

Section on Statistics and the Environment

- 7 Classification of Greek Wines According to Geographic Region—◆Carlos Natividad-Licon, The University of Texas at San Antonio; Jonathan Morales, The University of Texas at San Antonio

Section for Statistical Programmers and Analysts

- 8 Imputation of Missing Data for CDC-Funded HIV Testing Program Data: Methods and Modeling—◆Guoshen Wang, CDC; Yi Pan, CDC; Ruiguang Song, CDC; Puja Seth, CDC; Lisa Belcher, CDC

Biometrics Section

- 9 GMM Versus GQL Logistic Regression Models for Multi-Level Correlated Data—◆Bei Wang, Arizona State University; Jeffrey Wilson, W. P. Carey School of Business/Arizona State University

Section on Statistical Education

- 10 For Unequal Samples of Skewed Data, Which T-Test: Equal or Unequal Variances?—◆Avraham Wein, Yeshiva College; James Schmeidler, Icahn School of Medicine at Mount Sinai

Quality and Productivity Section

- 11 Response Rate Improvements Through Operational Efficiency—◆Christopher Bieganski, Nielsen; Ryan Baer, Nielsen; Megan Sever, Nielsen; Mengying Fu, Nielsen

WNAR

- 12 Predicting Risk of End-Stage Kidney Disease Using Criteria to Guide Disease Management—◆Yuxiang Xie, University of Washington; Marlena Maziarz, University of Washington; Yoshio Hall, University of Washington

Section on Statistical Learning and Data Mining

- 13 Estimating an Unobserved State Variable Using Marked Point Process Filters—◆Xinyi Deng, Boston University; Daniel F. Liu, UC San Francisco; Kenneth Kay, UC San Francisco; Loren M. Frank, UC San Francisco; Uri Eden, Boston University

Biometrics Section

- 14 Testing Linear Hypothesis of High-Dimensional Multisample Mean Vectors—◆Bu Zhou, National University of Singapore; Jin-Ting Zhang, National University of Singapore

Section for Statistical Programmers and Analysts

- 15 Classification on Children's Notion of Sources of Science Knowledge—◆Guoguo Zheng, University of Georgia; April Galyardt, The University of Georgia; Maggie Renken, Georgia State University; Ilya Goldin, Pearson

Biopharmaceutical Section

- 16 Making Classifier Performance Comparisons for Three-Class ROC Surfaces—◆Yingjie Hu, New York University

Section on Statistics in Imaging

- 17 Quantitative Lung Image Analysis Using a Spatial Point Process Framework—◆Brian Vestal, University of Colorado Denver; Nichole Carlson, University of Colorado Anschutz Medical Campus
- 18 Automated Intracerebral Hemorrhage Segmentation of CT Scans—◆John Muschelli, The Johns Hopkins University; Elizabeth Sweeney, The Johns Hopkins University; Natalie L. Ullman, Johns Hopkins Medical Institution; Daniel F. Hanley, Johns Hopkins Medical Institution; Ciprian Crainiceanu, The Johns Hopkins University
- 19 Prospective Power Estimation for Peak Inference for fMRI with the Toolbox Neuropower—◆Joke Durnez, Ghent University; Gregory Burgess, Washington University School of Medicine; Jasper Degryse, Ghent University; Deanna Barch, Washington University School of Medicine; Beatrijs Moerkerke, Ghent University; Tom E. Nichols, University of Warwick

Section for Statistical Programmers and Analysts

- 20 Hierarchical Modeling of Reported Economic Activity of Faculty at the University of Georgia—◆Kristen Elizabeth Roland, The University of Georgia; Yawei Shen; Jiajun Xu, The University of Georgia; Yanyan Tan, The University of Georgia; April Galyardt, The University of Georgia

Contributed Poster Presentations**11:35 a.m.—12:20 p.m.****203** **CC-4B****SPEED: Topics in Statistical Methods and Applications, Part 2—Contributed****Section on Statistics and the Environment, Section on Statistics in Epidemiology, Section on Statistics in Marketing, Survey Research Methods Section**

Chair(s): Lynn Waterhouse,

Section on Statistics and the Environment

- 1 Novel Application of Statistical Tools for Big Data Analyses of Solar Physics—Siavoush Mohammadi, Infotrek; ◆Lars K.S. Daldorff, University of Michigan/NASA GSFC

Section on Statistics in Marketing

- 2 Uplift Model vs. Propensity Model—◆Zhen Zhang, C Spire; Lei Zhang, Mississippi State Department of Health; Kendell Churchwell, C Spire; Jim Veillette, C Spire

Section on Statistics and the Environment

- 3 The Torgegram for Fluvial Variography: Characterizing Spatial Dependence on Stream Networks—◆Dale Zimmerman, The University of Iowa; Jay Ver Hoef, NOAA National Marine Mammal Lab

Quality and Productivity Section

- 4 Bias Correction for CSP: Better Border Biosecurity Estimates—◆Andrew Robinson, The University of Melbourne; Geoffrey Decrouez,

Survey Research Methods Section

- 5 Providing Weight to Unit-Weighting: Generalizability of Unit-Weighted Factor Scores—◆Rafael Garcia, The University of Arizona
- 6 Partially Missing at Random and Ignorable Inferences for Parameter Subsets with Missing Data—◆Sahar Zangeneh, Fred Hutchinson Cancer Research Center; Roderick Little, University of Michigan
- 7 Predicted Heart Age Among U.S. Adults, BRFSS 2011—◆Yuna Zhong, CDC/IHRC; Cathleen Gillespie, CDC; Mark Cobain, Habit Partners Community Interest Company; Quanhe Yang, CDC

Social Statistics Section

- 8 Differences in Student Debt Among Demographic Groups in Those Recently Graduating with a Bachelor's Degree 2011–2012—◆Bailey C. Ingraham Lopresto, Christiana Care-Value Institute

Section on Statistics in Marketing

- 9 Generalization of Conditional Logit Choice Model Using Gaussian Copula—◆Arjun Poddar, Old Dominion University; N. Rao Chaganty, Old Dominion University

Survey Research Methods Section

- 10 Detecting Fraud in a Survey Sample Recruited Online—◆Derick Brown, RTI International; Jill Dever, RTI

International; Linda Squiers, RTI International; Erik Augustson, National Cancer Institute

Section on Statistics and the Environment

- 11 Bivariate Spatial Analysis of Temperature and Precipitation from General Circulation Models and Observations—◆Robert Philbin; Mikyoung Jun, Texas A&M University

Quality and Productivity Section

- 12 Evaluating the Practice of Assuming Parallelism in Relative Potency Determination with Four-Parameter Logistic Regression—◆Liping Song, Merck; Robert Capen, Merck Research Laboratories
- 13 Graphical Ruggedness Testing Using an Unreplicated 3-Cubed Factorial Experiment—◆John McCool, Penn State Great Valley
- 14 An Alternative Modified Hypergeometric Distribution Probability Model Useful in Industrial Quality Control—◆Sudip Roy; Ram Tripathi, The University of Texas at San Antonio

Section on Statistics in Epidemiology

- 15 Using IRT Models to Estimate and Visualize Spatial Clusters—◆Andre Cancado, University of Brasilia; Antonio Eduardo Gomes, University of Brasilia; Cibele Queiroz da Silva, University of Brasilia; Fernando Luiz Pereira Oliveira, Federal University of Ouro Preto; Luiz Duczmal, Universidade Federal de Minas Gerais

Social Statistics Section

- 16 Identification and Inference for Time-Varying Instrumental Variables—◆Matthew Blackwell, Harvard University

Survey Research Methods Section

- 17 Current Methods of Weight Trimming in Sample Surveys—◆Frank Potter, Mathematica Policy Research

Social Statistics Section

- 18 Evaluation of Model Fit Indexes and Structural Coefficient Bias with Bifactor Model Misspecification—◆Yan Wang, University of South Florida; Eun Sook Kim,

Speaker with Lunch**12:30 p.m.—1:50 p.m.****204** **CC-303****Section on Statistics in Sports Speaker with Lunch (Added fee \$\$\$)—Speaker with Lunch Section on Statistics in Sports**

Organizer(s): Kendra K. Schmid, University of Nebraska Medical Center

- ML10** Some Recent Work in Twenty20 Cricket—◆Tim Swartz, Simon Fraser University

Roundtables with Lunch

12:30 p.m.—1:50 p.m.

205 **CC- Ballroom 6E**
Section on Physical and Engineering Sciences
P.M. Roundtable Discussion (Added fee \$\$\$)
 Section on Physical and Engineering Sciences

Organizer(s): Ananda Sen, University of Michigan
 ML11 Academia and Industry: Can a Statistician Move Successfully from One to the Other?—◆Sabyasachi Basu, The Boeing Company

206 **CC- Ballroom 6E**
Biopharmaceutical Section P.M. Roundtable
Discussion (Added fee \$\$\$)
 Biopharmaceutical Section

Organizer(s): Olga Marchenko, Quintiles
 ML12 The Influence of Clinically and Statistically Meaningful Differences in Risk Benefit: A Case Study—◆Tammy Massie,
 ML13 Phase III Biosimilars Trials: Topics of Interest—◆Lori Davis, ProNAi Therapeutics

207 **CC- Ballroom 6E**
Government Statistics Section P.M. Roundtable
Discussion (Added fee \$\$\$)
 Government Statistics Section

Organizer(s): Morgan Earp, Bureau of Labor Statistics
 ML14 Applications of Regression Trees in Survey Data Analysis—◆Daniell Toth, Bureau of Labor Statistics

208 **CC- Ballroom 6E**
Health Policy Statistics Section P.M. Roundtable
Discussion (Added fee \$\$\$)
 Health Policy Statistics Section

Organizer(s): Frank Yoon, Mathematica Policy Research
 ML15 Statistical Methods for Benefit-Risk Assessment to Meet Regulatory Agency Requirements—◆T. Ceasay, Merck

209 **CC- Ballroom 6E**
Quality and Productivity Section P.M.
Roundtable Discussion (Added fee \$\$\$)
 Quality and Productivity Section

Organizer(s): John Louis Szarka,
 ML16 Quality Anyone? Statistical Process Control to Make Better Decisions and Get Your Process Under Control—◆Erin Tanenbaum, NORC at the University of Chicago



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210 CC- Ballroom 6E

Section on Bayesian Statistical Science P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Bayesian Statistical Science

Organizer(s): David B. Dahl, Brigham Young University
ML17 Robustness and Bayesian Methods—◆Steven MacEachern, The Ohio State University

211 CC- Ballroom 6E

Section on Statistical Computing P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Computing

Organizer(s): Wendy Martinez, Bureau of Labor Statistics
ML18 Bayesian Computation for High-Dimensional Data Sets—◆Naveen Narisetty, University of Michigan

212 CC- Ballroom 6E

Section on Statistical Consulting P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Consulting

Organizer(s): Isabella R. Ghement, Ghement Statistical Consulting Company Ltd.
ML19 Statistical Consulting: The Personal and the Professional—◆Marlene Egger, University of Utah

213 CC- Ballroom 6E

Section on Statistical Education P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Education

Organizer(s): Patricia Humphrey, Georgia Southern University
ML20 Designing Assessments That Support Teaching *and* Learning in Statistics—◆Rochelle Tractenberg, Georgetown University

214 CC- Ballroom 6E

Section on Statistical Learning and Data Mining P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Learning and Data Mining

Organizer(s): Howard Bondell, North Carolina State University
ML21 Data Science vs. Statistics: What's the Difference?—◆Ronald Fricker, Naval Postgraduate School

215 CC- Ballroom 6E

Survey Research Methods Section P.M. Roundtable Discussion (Added fee \$\$\$)

Survey Research Methods Section

Organizer(s): Yan Li, University of Maryland
ML22 Big Data for the Social Sciences—◆Frauke Kreuter, Joint Program in Survey Methodology

Invited Sessions 2:00 p.m.—3:50 p.m.

216 CC- Ballroom 6E

Medallion Lecture II: Causal Discovery with Confidence Using Invariance Principles—Invited
IMS, Korean International Statistical Society, International Indian Statistical Association

Organizer(s): Igor Pruenster, University of Torino
Chair(s): Peter J. Bickel, UC Berkeley

2:05 p.m. Causal Discovery with Confidence Using Invariance Principles—◆Nicolai Meinshausen, ETH Zurich

3:35 p.m. Floor Discussion

217 CC-4C4

■● Preparing Students to Work in Industry—Invited

Quality and Productivity Section, International Chinese Statistical Association, Section on Physical and Engineering Sciences, Section on Statistical Education, Business and Economic Statistics Section, Conference on Statistical Practice Steering Committee, Section on Statistical Consulting, Committee on Applied Statisticians

Organizer(s): Robert G. Wilkinson, The Lubrizol Corporation
Chair(s): Robert G. Wilkinson, The Lubrizol Corporation

2:05 p.m. Interdisciplinary Education: Ohio State University's New Undergraduate Major in Data Analytics—◆Chris Hans, The Ohio State University

2:25 p.m. On Becoming a Data Scientist: From Novice to Expert—◆Joel B. Greenhouse, Carnegie Mellon University

2:45 p.m. Preparing Students to Become Collaborative Statisticians—◆Eric A. Vance, LISA, Virginia Tech

3:05 p.m. Disc: Duane Steffey, Exponent, Inc.

3:15 p.m. Disc: Phil R. Scinto, The Lubrizol Corporation

3:25 p.m. Disc: William Brenneman, Procter & Gamble Company

3:35 p.m. Floor Discussion

218 CC-310

Inference Under Shape Constraints—Invited
IMS, International Indian Statistical Association

Organizer(s): Ingrid Van Keilegom, UniversitÈ catholique de Louvain
Chair(s): Davy Paindaveine, UniversitÈ libre de Bruxelles

2:05 p.m. Robust Regression Using Unimodal Error Density Estimation—◆Mary Catherine Meyer, Colorado State University

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

2:30 p.m. Shape-Constrained Density Estimation: Past, Present, and Future—◆Richard J. Samworth, University of Cambridge; Arlene Kyoung Hee Kim, University of Cambridge

2:55 p.m. Bi-Log-Concave Distribution and Regression Functions—◆Lutz Duembgen, University of Bern; Ralf Andreas Wilke, Copenhagen Business School; Petro Kolesnyk, University of Bern

3:20 p.m. Adaptation in Shape-Constrained Regression Problems—◆Bodhisattva Sen, Columbia University; Adityanand Guntuboyina, UC Berkeley

3:45 p.m. Floor Discussion

219 CC-4C2

■ ● Challenges in the Identification and Validation of Surrogate Markers—Invited Biometrics Section

Organizer(s): Layla Parast, RAND Corporation

Chair(s): Jessica Minnier, Oregon Health & Science University

2:05 p.m. Relationship of Different Surrogate Evaluation Frameworks to the Definition of a Valid Surrogate/Replacement Endpoint—◆Peter B. Gilbert, Fred Hutchinson Cancer Research Center

2:30 p.m. Robust Estimation of the Proportion of Treatment Effect Explained by Surrogate Marker Information—◆Layla Parast, RAND Corporation; Lu Tian, Stanford University

2:55 p.m. Causal Approaches to Surrogacy—◆Jeremy Taylor, University of Michigan; Anna Conlon, University of Michigan; Michael Elliott, University of Michigan

3:20 p.m. Disc: Ross Prentice, Fred Hutchinson Cancer Research Center

3:40 p.m. Floor Discussion

220 CC-3B

● Accelerating Nonparametric Deconvolution—Invited Section on Nonparametric Statistics

Organizer(s): Aurore Delaigle, The University of Melbourne

Chair(s): Jianqing Fan, Princeton University

2:05 p.m. Sparse Regularization Methods for Nonparametric Function Estimation—◆Leonard Stefanski, North Carolina State University

2:30 p.m. Smooth Backfitting in Additive Inverse Regression—◆Holger Dette, Ruhr University Bochum; Nicolai Bissantz, Ruhr University Bochum; Thimo Hildebrandt, Ruhr University Bochum

2:55 p.m. Semiparametric Estimation of AR-ARCH Models with Measurement Error—◆Liqun Wang, University of Manitoba

3:20 p.m. Floor Discussion

221 CC-618

● Memorial Session for Leo Breiman—Invited Memorial, IMS, International Indian Statistical Association

Organizer(s): Xiaotong Shen, University of Minnesota

Chair(s): Marina Meila, University of Washington

2:05 p.m. Advances in Random Forest—◆Adele Cutler, Utah State University

2:35 p.m. Random Forests Extract Interaction Information from Next-Generation Sequencing Data—◆Bin Yu, UC Berkeley; Sumanta Basu, UC Berkeley/Lawrence Berkeley National Laboratory; Ben Brown, Lawrence Berkeley National Laboratory/UC Berkeley

3:05 p.m. Explaining AdaBoost—◆Robert Schapire, Microsoft Research/Princeton University

3:35 p.m. Floor Discussion

222 CC-4C3

■ ● Novel Approaches to Decision-Making in Complex Systems, with Applications to Spatio-Temporal Data and Networks—Invited

ENAR, Section on Statistics and the Environment, SSC, Biometrics Section

Organizer(s): Natallia V. Katenka, University of Rhode Island; Gavino Puggioni, University of Rhode Island

Chair(s): Gavino Puggioni, University of Rhode Island

2:05 p.m. Preferentially Monitored Air Pollution Fields: The Effect on Estimates of Annual Averages and Relative Health Risks—◆James Zidek, The University of British Columbia; Gavin Shaddick, University of Bath

2:30 p.m. A Generalized Conditionally Autoregressive (CAR) Model—◆Veronica J. Berrocal, University of Michigan

2:55 p.m. Inferring Graphical Models in Heterogeneous Populations—◆Ali Shojaie, University of Washington; Takumi Saegusa, Fred Hutchinson Cancer Research Center

3:20 p.m. Disc: Natallia V. Katenka, University of Rhode Island

3:45 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

223 **CC-612**

● Teaching Statistics for Better Decision-Making in the Health Sciences—Invited

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

Organizer(s): Kendra K. Schmid, University of Nebraska Medical Center

Chair(s): Jennifer L. Green, Montana State University

2:05 p.m. Biostatistics Primer: Online E-Modules for Health Professionals—◆Kendra K. Schmid, University of Nebraska Medical Center

2:30 p.m. Teaching to, and Learning from, the Masses—◆Mine Cetinkaya-Rundel, Duke University

2:55 p.m. The What, How, and Why of Software for Teaching Statistics in the Health Sciences—◆Eileen C. King, Cincinnati Children’s Hospital Medical Center

3:20 p.m. Developing Online Resources to Teach Biostatistics to Working Medical Researchers—◆Brian Healy, Massachusetts General Hospital; Amy Shui, Massachusetts General Hospital; Douglas Hayden, Massachusetts General Hospital

3:45 p.m. Floor Discussion

224 **CC-603**

Sports Data in Statistics Education—Invited

Section on Statistics in Sports, Section on Statistical Education

Organizer(s): Justin B. Post, North Carolina State University

Chair(s): Tracy Morris, University of Central Oklahoma

2:05 p.m. Sports, Forecasting, and Data-First Learning—◆Luke Bornn, Harvard University

2:30 p.m. Ranking Sports Teams: More Than Just a Statistics Project—◆Michael A. Rutter, Penn State Erie, The Behrend College

2:55 p.m. Increasing Undergraduate Student Knowledge and Interest Using a Sports Stats Club—◆Justin B. Post, North Carolina State University

3:20 p.m. Data Wrangling for the Lahman—◆Ben Baumer, Smith College

3:45 p.m. Floor Discussion

225 **CC-617**

■ ● Project Planning and Management for Statistical Consultants: Tools for Success—Invited

Section on Statistical Consulting, Statistics Without Borders, Committee on Applied Statisticians

Organizer(s): MaryJo O. Smith, Ypsilon Associates

Chair(s): MaryJo O. Smith, Ypsilon Associates

2:05 p.m. Project Scoping, Mapping, and Execution—◆Ralph M. Turner, HealthCore

2:30 p.m. Managing Analytics Projects—◆Michael Greene, Deloitte Consulting; David Steier, Deloitte Consulting

2:55 p.m. Managing Communication: An Integral Ingredient for Project Success—◆Isabella R. Ghement, Ghement Statistical Consulting Company Ltd.

3:20 p.m. Disc: David Steier, Deloitte Consulting

3:45 p.m. Floor Discussion

226 **CC-2B**

● Model Selection and Prediction for Complex Data—Invited

International Indian Statistical Association, Government Statistics Section, SSC

Organizer(s): J. Sunil Rao, University of Miami

Chair(s): J. Sunil Rao, University of Miami

2:05 p.m. Spatial Generalized Linear Mixed Models in Small-Area Estimation—◆Mahmoud Torabi, University of Manitoba

2:35 p.m. Classified Mixed Model Prediction—◆Thuan Nguyen, Oregon Health & Science University; Jiming Jiang, UC Davis; J. Sunil Rao, University of Miami

3:05 p.m. Asymptotic Theory for Random Forests—◆Stefan Wager, Stanford University

3:35 p.m. Floor Discussion

227 **CC-608**

■ ● Making Better Treatment Decisions: Improving Causal Inference in Patient-Centered Comparative Effectiveness Research—Invited

Health Policy Statistics Section, Biometrics Section

Organizer(s): Douglas P. Landsittel, University of Pittsburgh

Chair(s): Sally Morton, University of Pittsburgh

2:05 p.m. Methods for Comparative Effectiveness Analyses in a High-Dimensional Covariate Space with Few Events—◆Jessica Myers Franklin, Brigham and Women’s Hospital; Wesley Eddings, Brigham and Women’s Hospital; Peter Austin, Institute for Clinical Evaluative Sciences; Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health ; Robert Glynn, Brigham and Women’s Hospital; Sebastian Schneeweiss, Brigham and Women’s Hospital

2:25 p.m. Collaborative Targeted Maximum Likelihood Estimator (CTMLE) in Observational Studies—◆Mark Johannes van der Laan, UC Berkeley;

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- Sam Lendle, UC Berkeley; Sebastian Schneeweiss, Brigham and Women's Hospital
- 2:45 p.m. Modeling Strategies for Patient-Centered Comparative Effectiveness Research—◆Douglas P. Landsittel, University of Pittsburgh; Sally Morton, University of Pittsburgh; Joyce Chang, University of Pittsburgh; Elan Cohen, University of Pittsburgh; Andrew Topp, University of Pittsburgh
- 3:05 p.m. Using Observational Data for Comparative Effectiveness Research: An Empirical Assessment—◆Issa J. Dahabreh, Brown University
- 3:25 p.m. Disc: Miguel Hernan, Harvard University
- 3:45 p.m. Floor Discussion

228 CC-203

■ ● Big Data of Customer Analytics in the Era of Social Media—Invited

Section on Statistics in Marketing, Statistics in Business Schools Interest Group, Government Statistics Section, Business and Economic Statistics Section

Organizer(s): Vyacheslav Lyubchich, University of Maryland Center for Environmental Science; Yulia R. Gel, The University of Texas at Dallas

Chair(s): Lilia L. Ramirez Ramirez, Instituto Tecnológico Autónomo de México

- 2:05 p.m. Big Data and Customer Analytics in the Era of Social Media—◆David Stodder, TDWI
- 2:30 p.m. Transaction Attributes and Customer Valuation—◆Michael Braun, Southern Methodist University; David Schweidel, Emory University; Eli Stein, Harvard University
- 2:55 p.m. Real-Time Predictive Analytics for Clinical Decision Support—◆Brian Lucena, PCCI
- 3:20 p.m. Customer Intelligence Predictive Models Targeting Customer Attrition in Credit Unions—◆Vyacheslav Lyubchich, University of Maryland Center for Environmental Science; Yulia R. Gel, The University of Texas at Dallas
- 3:45 p.m. Floor Discussion

229 TCC-101

Bayesian Variable Selection for Complex and High-Dimensional Data—Invited

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

Organizer(s): Juhee Lee, UC Santa Cruz

Chair(s): Juhee Lee, UC Santa Cruz

- 2:05 p.m. Accelerating Bayesian Variable Selection and Shrinkage Through Orthogonal Data

- Augmentation—◆Merlise Clyde, Duke University; Michael Lindon, Duke University
- 2:35 p.m. Scalable Bayesian Variable Selection—◆Feng Liang, University of Illinois at Urbana-Champaign; Jin Wang, University of Illinois at Urbana-Champaign; Yuan Ji, The University of Chicago; Yitan Zhu, Northshore University HealthSystem
- 3:05 p.m. Variable Selection for BART: An Application to Gene Regulation—Justin Bleich, University of Pennsylvania; Edward I. George, The Wharton School; ◆Shane T. Jensen, University of Pennsylvania; Adam Kapelner, Queens College
- 3:35 p.m. Floor Discussion

Topic-Contributed Sessions

2:00 p.m.—3:50 p.m.

230 CC-307

■ ● Bayesian Methods in the Cognitive and Behavioral Sciences—Topic-Contributed Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)

Organizer(s): Mario Peruggia, The Ohio State University

Chair(s): Mario Peruggia, The Ohio State University

- 2:05 p.m. Regularized Brain Reading with Shrinkage and Smoothing—◆Leila Wehbe; Aaditya Ramdas, Carnegie Mellon University; Rebecca Steorts, Duke University; Cosma Shalizi, Carnegie Mellon University
- 2:25 p.m. A Bayesian Race Model for Characterizing Recognition Memory Performance—◆Trisha Van Zandt, The Ohio State University; Sungmin Kim, Google; Kevin Potter, The Ohio State University; Peter F. Craigmile, The Ohio State University; Mario Peruggia, The Ohio State University
- 2:45 p.m. The Need for Bayesian Hierarchical Models in Cognition: Assessing Subliminal Priming—◆Jeff Rouder, University of Missouri; Richard Morey, Cardiff University
- 3:05 p.m. A Bayesian Framework for Publication Bias Mitigation Using Behavioral Process Models—◆Joachim Vandekerckhove; Maime Guan, UC Irvine
- 3:25 p.m. Incorporating Covariates into Hierarchical Mixed Membership Stochastic Blockmodels—◆Tracy Sweet,
- 3:45 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

231 CC-607

■ ● Recent Research in Adaptive Randomized Trials to Address Challenges in Regulatory Science—Topic-Contributed

Biopharmaceutical Section, Section on Medical Devices and Diagnostics

Organizer(s): Michael Rosenblum, Johns Hopkins Bloomberg School of Public Health

Chair(s): Michael Rosenblum, Johns Hopkins Bloomberg School of Public Health

- 2:05 p.m.** Selection Bias in Adaptive Enrichment Designs—
◆ Noah Simon, University of Washington
- 2:25 p.m.** A Prospective Bayesian Adaptive Trial with Hierarchical Borrowing from a Prior Single Arm Study—◆ Kristine Broglio, Berry Consultants; Jason Connor, Berry Consultants; Scott M. Berry, Berry Consultants
- 2:45 p.m.** Robust Methods for Improving Power in Adaptive Enrichment Designs by Leveraging Prognostic Baseline Variables and Short-Term Outcomes—
◆ Tianchen Qian,
- 3:05 p.m.** Adaptive Design Practice at CDRH, January 2007–May 2013—◆ Xiting Yang, FDA; Laura Thompson, FDA
- 3:25 p.m.** Disc: Sarah Emerson, Oregon State University
- 3:45 p.m.** Floor Discussion

232 CC-609

■ ● Adaptive Multi-Stage Clinical Trials with Unblinded Sample Size Re-Estimation: Overview, Recent Development in Methods, and Their Implementation—Topic-Contributed

Biopharmaceutical Section, Biometrics Section

Organizer(s): Yili Pritchett, Astellas Pharma Global Development

Chair(s): Yili Pritchett, Astellas Pharma Global Development

- 2:05 p.m.** Unblinded Sample-Size Reassessment in Time-to-Event Clinical Trials—◆ Dominic Magirr,
- 2:25 p.m.** Implementation of Sample Size Re-Estimation Designs in Confirmatory Clinical Trials—◆ Eva Miller, InVentiv Health Clinical
- 2:45 p.m.** ‘Promising Zone’ Design Case Studies—◆ Zoran Antonijevic,
- 3:05 p.m.** Exact Confidence Intervals and Unbiased Point Estimates for Adaptive Multi-Stage Clinical Trials—◆ Cyrus Mehta, Cytel Inc.; Ping Gao, The Medicines Company; Lingyun Liu, Cytel Inc.
- 3:25 p.m.** Floor Discussion

233 CC-201

■ Recent Developments in Analyzing Survival Endpoint Adjusting for Treatment Switching/Alternative Therapy in Late-Phase Oncology Trials—Topic-Contributed

International Chinese Statistical Association, Biometrics Section

Organizer(s): Eileen Liao, Takeda Pharmaceuticals

Chair(s): Huyuan Yang, Takeda Pharmaceuticals

- 2:05 p.m.** MSM Versus IPCW in Survival Analysis for Adjusting Confounding Due to Taking Alternative Therapy in Phase III Oncology Clinical Trials—
◆ Jing Xu, Takeda Pharmaceuticals
- 2:25 p.m.** Comparing Several Recensoring Methods of RPSFT Model for the Analysis of OS Data Adjusted for Treatment Switching in Phase III Clinical Trials—
◆ Jason Yuan, Agios Pharmaceuticals; Connie Lee, Takeda Pharmaceuticals
- 2:45 p.m.** Sensitivity Analyses Adjusting Treatment Crossover for Survival Estimate: A Case Study—Kathy Zhang, Medivation, Inc.; Ying Tian, Biogen; ◆ Alan Rong, Astellas; Hua Yu, Biomarin; Xuesong Guan, Amgen
- 3:05 p.m.** Using Knowledge of the Data Structure in Applications of the Parametric G-Formula—
◆ Jessica Young, Harvard School of Public Health
- 3:25 p.m.** Disc: Guoxing Greg Soon, FDA/CDER/DB
- 3:45 p.m.** Floor Discussion

234 CC-620

■ ● Missing Data and Imputation Techniques: Novel Methods and Applications—Topic-Contributed

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

Organizer(s): Yi Pan, CDC

Chair(s): Timothy A. Green, CDC

- 2:05 p.m.** Comparison of Two Approaches for Imputing a Composite Categorical Variable—◆ Yi Pan, CDC; Ruiguang Song, CDC; Yulei He, CDC; Mi Chen, CDC
- 2:25 p.m.** Generalized Estimating Equations (GEE) for Missing Longitudinal Data with High-Dimensional Covariates—◆ Ming Wang, Penn State
- 2:45 p.m.** Imputation Model Checking Using Propensity Scores—◆ Yulei He, CDC; Guangyu Zhang, CDC; Erin Dienes, CDC/NCHS
- 3:05 p.m.** Identifiability Conditions for Nonignorably Missing Binary Outcome Data—◆ Jiwei Zhao, SUNY Buffalo

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3:25 p.m. Recurrent Events Missing Response: When Can We Ignore It? Hypoglycemic Events Analysis via Recurrent Time-to-Event (HEART) Models—
◆Haoda Fu, Eli Lilly and Company

3:45 p.m. Floor Discussion

235 **CC-3A**
Savage Awards Session—Topic-Contributed
International Society for Bayesian Analysis (ISBA), Section on
Bayesian Statistical Science, International Society for Bayesian
Analysis (ISBA)

Organizer(s): Wesley O. Johnson, UC Irvine

Chair(s): Judith Rousseau, Université Paris-Dauphine/CREST

2:05 p.m. Bayesian Modeling of Interactions in Structured Heterogeneous Data (Toward Applications in Integrative Biology)—◆Masanao Yajima, Fred Hutchinson Cancer Research Center

2:25 p.m. Markov Chain Monte Carlo for Continuous-Time Discrete-State Systems—◆Vinayak Rao, Purdue University; Yee Whye Teh, University of Oxford

2:45 p.m. Fast Bayesian Factor Analysis via Automatic Rotations to Sparsity—◆Veronika Rockova, University of Pennsylvania; Edward I. George, The Wharton School

3:05 p.m. Approaches in Bayesian Graphical Modeling—
◆Christine Peterson,

3:25 p.m. Bayesian Inference for High-Dimensional Models: Convergence Properties and Computational Issues—
◆Sayantan Banerjee, MD Anderson Cancer Center; Subhashis Ghoshal, North Carolina State University

3:45 p.m. Floor Discussion

236 **CC-304**
■ ● Statistics: Real-Life Decisions—Topic-
Contributed
SSC

Organizer(s): Ivor Cribben, University of Alberta

Chair(s): Ivor Cribben, University of Alberta

2:05 p.m. Optimal Allocation of Limited Resources: Adaptive Two-Phase Sampling Designs for Biomarker Studies—◆Michael McIsaac, Queen's University

2:25 p.m. The Statistical Applications of Functional Data Analysis in Physical Activity Studies—◆Tyler Williamson, University of Calgary; Haocheng Li, University of Calgary; John Staudenmayer, University of Massachusetts; Sarah Kozey-Keadle, National Cancer Institute; Raymond Carroll, Texas A&M University

2:45 p.m. Robust Discriminant Analysis Models for Multivariate Non-Normal Repeated Measures Data—◆Tolulope Sajobi, University of Calgary; Lisa Lix, University of Manitoba; Yukun Zhang, University of Calgary

3:05 p.m. Assessing the Impact of Genotype Imputation on Genome-Wide Meta-Analysis—◆Elif Acar, University of Manitoba; Emmanuel Omondi, University of Basel

3:25 p.m. Detecting Sea Water Migration in Fish of the Canadian Arctic—◆Martin Lysy, University of Waterloo

3:45 p.m. Floor Discussion

237 **CC-211**
■ ● Leadership and Women in Statistics—
Topic-Contributed

Social Statistics Section, Government Statistics Section,
International Indian Statistical Association, Joint Committee
on Women in the Mathematical Sciences, Caucus for Women
in Statistics, Statistics Without Borders, Section on Statistical
Consulting, Scientific and Public Affairs Advisory Committee

Organizer(s): Marilyn Seastrom, National Center for Education Statistics

Chair(s): Nancy Flournoy, University of Missouri - Columbia

2:05 p.m. Leadership and Women in Statistics—◆Sowmya R. Rao, University of Massachusetts Medical School

2:25 p.m. Competencies Needed for Statistics Leadership from an International Perspective—◆Motomi Mori, Oregon Health & Science University

2:45 p.m. Women Leaders in Federal Statistics—◆Marilyn Seastrom, National Center for Education Statistics

3:05 p.m. A Case Study of Natural Leadership in Statistics: Elizabeth L. Scott—◆Amanda Golbeck, University of Montana

3:25 p.m. The Rise to Leadership and Professional Organization Membership—◆Lee-Ann Hayek, Smithsonian Institution

3:45 p.m. Floor Discussion

238 **CC-4C1**
■ ● Helping Our Communities Make Better
Decisions Through Community-Based
Learning in the Classroom—Topic-Contributed
Scientific and Public Affairs Advisory Committee, Section on
Statistical Education, Statistics Without Borders

Organizer(s): Kelly S. McConville, Swarthmore College

Chair(s): Kelly S. McConville, Swarthmore College

2:05 p.m. Who Takes CBL Courses in Statistics? Could Selection Bias Be a Good Thing?—◆Lynne Schofield, Swarthmore College

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- 2:25 p.m. Statistical Consulting and Academic Civic Engagement—◆Laura Chihara, Carleton College
- 2:45 p.m. Expanding Undergraduate Research Opportunities Beyond Academia—◆Debra Hydorn, University of Mary Washington
- 3:05 p.m. Every Vote Counts: Student-Conducted Exit Polls—◆Emmanuel Addo, American University
- 3:25 p.m. Research into Increasing Voter Turnout—◆Bivin Sadler, Southern Methodist University; Alan Elliott, Southern Methodist University
- 3:45 p.m. Floor Discussion

239 CC-205 **Massive and Missing Sampling Frames— Topic-Contributed**

Survey Research Methods Section, International Chinese Statistical Association, Government Statistics Section

Organizer(s): Karl Rohe, University of Wisconsin - Madison

Chair(s): Andrew C. Thomas, University of Florida

- 2:05 p.m. Massive and Missing Sampling Frames—◆Daniel Ting, Facebook
- 2:25 p.m. Sketches for Stratified Sampling—◆Jack Gorham, Stanford University
- 2:45 p.m. A Critical Threshold for Design Effects in Respondent-Driven Sampling—◆Karl Rohe, University of Wisconsin - Madison
- 3:05 p.m. Branching Process Tools for Exploring Respondent-Driven Sampling—◆Bret Hanlon, University of Wisconsin; Karl Rohe, University of Wisconsin - Madison
- 3:25 p.m. Generalizing the Network Scale-Up Method: A New Estimator for the Size of Hidden Populations—◆Dennis M. Feehan, Princeton University; Matthew J. Salganik, Princeton University
- 3:45 p.m. Floor Discussion

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

240 CC-606 **GAISE into the Future: Updating a Landmark Report for an Increasingly Data- Centric World—Topic-Contributed**

Section on Statistical Education

Organizer(s): Michelle Everson, The Ohio State University

Chair(s): Michelle Everson, The Ohio State University

- Panelists:
- ◆Rob Carver, Stonehill College
 - ◆John Gabrosek, Grand Valley State University
 - ◆Megan Mocko, University of Florida
 - ◆Paul Velleman, Cornell University
 - ◆Beverly Wood, Indian River State College
- 3:45 p.m. Floor Discussion

241 CC-206 **Crowd-Sourcing Big Data from Smartphone Apps for Transportation Research: Role of Statistics and Challenges—Topic-Contributed**

Government Statistics Section, International Indian Statistical Association, Transportation Statistics Interest Group

Organizer(s): Stacey Bricka, Texas Transportation Institute

Chair(s): Linda Boyle, University of Washington

Panelists:

- ◆Feng Guo, Virginia Tech
- ◆Arash Mirzaei, North Central Texas Council of Governments
- ◆Elaine Murakami, Federal Highway Administration
- ◆Bianica Pires, Virginia Tech
- ◆Tianjia Tang, Federal Highway Administration

- 3:45 p.m. Floor Discussion

Contributed Sessions 2:00 p.m.—3:50 p.m.

242 CC-214 **Time Series: Autoregressive Processes, Seasonality, and Unit Roots—Contributed**

Business and Economic Statistics Section, Government Statistics Section

Chair(s): Zachary H. Seeskin, Northwestern University

- 2:05 p.m. A Moving Window Approach to Model-Based Seasonal Adjustment—◆Brian Monsell, U.S. Census Bureau; David Findley, U.S. Census Bureau; Osbert Pang, U.S. Census Bureau
- 2:20 p.m. Concurrent Seasonal Adjustment of State and Metro Payroll Employment Series—◆Steven Mance, Bureau of Labor Statistics
- 2:35 p.m. To Revise or Not to Revise? Investigating the Behavior of X-13ARIMA-SEATS Seasonal Adjustment Revisions as New Series Values Are Added—◆Nicole Czaplicki, U.S. Census Bureau; Kathleen McDonald-Johnson, U.S. Census Bureau

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- 2:50 p.m. On Seasonality: Comparing X-13ARIMA-SEATS Diagnostics—◆Demetra Lytras, U.S. Census Bureau
- 3:05 p.m. Test Seasonal Unit Root with Seasonal Block Bootstrap—◆Nan Zou, UC San Diego; Dimitris Politis, UC San Diego
- 3:20 p.m. Bootstrap-Assisted Unit Root Testing with Piecewise Locally Stationary Errors—◆Yeonwoo Rho, Michigan Technological University; Xiaofeng Shao, University of Illinois at Urbana-Champaign
- 3:35 p.m. Incentive Compatibility of Possible Sharing Arrangements in ARMA Supply Chains—◆Vladimir Kovtun, Yeshiva University Sy Syms School of Business; Avi Giloni, Sy Syms School of Business; Clifford Hurvich, New York University Stern School of Business

243 **CC-610**
■ Imaging, Clustering, Dimension Reduction, and Latent Variables—Contributed
 Mental Health Statistics Section, International Chinese Statistical Association

Chair(s): Su Chen, University of Memphis

- 2:05 p.m. Modeling Placebo Response Using Multiple Functional Predictors—◆Thaddeus Tarpey, Wright State University; Eva Petkova, New York University School of Medicine; R. Todd Ogden, Columbia University; Adam Ciarleglio, New York University; Bei Jiang, Columbia University/New York University
- 2:20 p.m. Modeling Placebo Response Using EEG Data—◆Bei Jiang, Columbia University/New York University; Eva Petkova, New York University School of Medicine; Thaddeus Tarpey, Wright State University; R. Todd Ogden, Columbia University
- 2:35 p.m. Signal Extraction from an Innovative Noninvasive Muscular Dystrophy Biomarker Using Functional Mixed-Effects Models—◆Kush Kapur, Boston Children's Hospital; Basil Darras, Boston Children's Hospital; Seward Rutkove, Beth Israel Deaconess Medical Center
- 2:50 p.m. A Flexible Approach for Modeling Treatment Response with Images as Modifiers of Treatment Effect: An Application to Data from a Clinical Trial for Treatment of MDD—◆Adam Ciarleglio, New York University; Eva Petkova, New York University School of Medicine; Thaddeus Tarpey, Wright State University; R. Todd Ogden, Columbia University
- 3:05 p.m. Clustering Neurons in a Microcircuit by Firing Patterns—◆Jordan Rodu, Carnegie Mellon University; Dylan Small, University of Pennsylvania; Shane T. Jensen, University of Pennsylvania

- 3:20 p.m. Graph Theoretic Analysis of Structural Connectivity Across the Spectrum of Alzheimer's Disease: The Importance of Graph Creation Methods—◆David Ruth, U.S. Naval Academy; David Phillips, U.S. Naval Academy; Alec McGlaughlin, U.S. Naval Academy; Leah Jager, The Johns Hopkins University; Anja Soldan, The Johns Hopkins University
- 3:35 p.m. Autoregressive Latent Class Models for Longitudinal Count Data—◆Nicholas C. Henderson, University of Wisconsin - Madison; Paul J. Rathouz, University of Wisconsin - Madison

244 **CC-308**
Advances in Bayesian Variable Selection—Contributed

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

Chair(s): Yingbo Li, Clemson University

- 2:05 p.m. On the Sparse Bayesian Learning of Linear Models—◆Chia Chye Yee, University of Michigan; Yves Atchade, University of Michigan
- 2:20 p.m. Variable Selection Through Penalized Credible Regions Based on Optimal Dirichlet-Laplace Shrinkage Priors—◆Yan Zhang, North Carolina State University; Howard Bondell, North Carolina State University
- 2:35 p.m. Bayesian Penalized Regression—◆Ding Xiang, University of Minnesota; Galin Jones, University of Minnesota
- 2:50 p.m. Bayesian Variable Selection with Dependent Priors for Regularization Parameters—◆Changgee Chang, Emory University; Suprateek Kundu, Emory University; Qi Long, Emory University
- 3:05 p.m. The Horseshoe+ Estimator of Ultra-Sparse Signals—◆Jyotishka Datta, Duke University/SAMSI; Anindya Bhadra, Purdue University; Nicholas G. Polson, The University of Chicago; Brandon Willard, The University of Chicago
- 3:20 p.m. Bayesian Variable Selection for Binary Outcomes in High-Dimensional Settings—◆Amir Nikooienejad, Texas A&M University; Wenyi Wang, MD Anderson Cancer Center; Valen E. Johnson, Texas A&M University
- 3:35 p.m. Bayesian Multiplicity Adjustment in Selection and Partitioning Problems—◆Dan Spitzner, University of Virginia

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245 CC-210 Working with Missing Data: Nonresponse, Imputation, and Suppressed Data—Contributed Government Statistics Section

Chair(s): Barbara Robles, Board of Governors of the Federal Reserve System

- 2:05 p.m.** Exploring Patterns of and Predicting Nonresponse in the Occupational Employment Statistics (OES) Survey—◆Tian Luo, Bureau of Labor Statistics; Amar Mann, Bureau of Labor Statistics; Richard J. Holden, Bureau of Labor Statistics
- 2:20 p.m.** Capturing Additional Variability Introduced by Imputation Within the Agricultural Resource Management Survey—◆Darcy Miller, NASS; Andrew Dau, NASS
- 2:35 p.m.** Using Imputation to Combine Samples with Different Survey Instruments—◆Adam Bee, U.S. Census Bureau; Jonathan Rothbaum, U.S. Census Bureau
- 2:50 p.m.** Reducing the Infeasibility and Oversuppression for M-LP Cell Suppression—◆Bei Wang, U.S. Census Bureau
- 3:05 p.m.** Current Employment Statistics by Size Class Using Base-Size Definitions—◆Nicholas Fett, Bureau of Labor Statistics
- 3:20 p.m.** An Iterative Cut-Off Sampling Method Applied to an Annual Oil and Gas Reserves Report—◆Jason Worrall, U.S. Department of Energy; Samson Adeshiyani, Department of Energy
- 3:35 p.m.** Treatment of Missing Prices in Seasonal Products in the NCPI Base October 2013-Sep 2014 = 100—◆Pablo Faifman, INDEC; Sebastian Gonzalez, INDEC; Norberto Itzcovich, INDEC

246 CC-611 Important Issues in Clinical Trials, Meta- Analysis, and Diagnostic Medicine— Contributed

Health Policy Statistics Section, Biometrics Section

Chair(s): A. James O'Malley, Dartmouth College

- 2:05 p.m.** A Look at Multivariate Meta-Analysis—◆Joseph Cappelleri, Pfizer Inc.
- 2:20 p.m.** Implications of Self-Reported Dietary Intake Measured with Error in Longitudinal Lifestyle Intervention Trials—◆Juned Siddique, Northwestern University
- 2:35 p.m.** Randomization Inference and Sensitivity Analysis with Binary Outcomes in Matched Observational Studies Through Integer Programming—◆Colin Fogarty, The Wharton School; Dylan Small, University of Pennsylvania; Mark E. Mikkelsen,

University of Pennsylvania; Pixu Shi, University of Pennsylvania

- 2:50 p.m.** Least Squares ROC Method for Tests with the Absence of the Gold Standard—◆Liansheng Tang, NIH Clinical Center/George Mason University; Minh Huynh, IMPAQ International, LLC; Leighton Chan, NIH Clinical Center; John Collins, NIH Clinical Center; Ao Yuan, NIH; Xuan Che, NIH Clinical Center
- 3:05 p.m.** How to Reliably Quantify the Scientific Soundness of Quality Measures? A Monte Carlo Simulation Attempt—◆Fei Xing, Mathematica Policy Research; Sheng Wang, Mathematica Policy Research
- 3:20 p.m.** Adaptive HIV Classification in Malawi Using Particle Swarm Optimization—◆Sitaram Vangala, UCLA; Chi-hong Tseng, UCLA; Weng Kee Wong, UCLA; Risa Hoffman, UCLA; Alan Schooley, UCLA
- 3:35 p.m.** CORE/NON-CORE Configuration Within BIG-DATA Analytics—◆Turkan Kumbaraci Gardenier, Pro-File Computer Institute; George H. Gardenier, Postdoctoral Fellow; John S. Gardenier, National Center for Health Statistics (Retired)

247 CC-306 Advances in Spatio-Temporal Modeling— Contributed

Section on Statistics and the Environment

Chair(s): Dan Cooley, Colorado State University

- 2:05 p.m.** Spatio-Temporal Models for Animal Social Structure—◆Henry Scharf, Colorado State University; Mevin Hooten, Colorado State University; Devin Johnson, NOAA National Marine Mammal Lab; Josh London, NOAA National Marine Mammal Lab
- 2:20 p.m.** Dynamic Models of Animal Movement with Spatial Point Process Interactions—◆James Russell, Penn State; Ephraim Hanks, Penn State; Murali Haran, Penn State
- 2:35 p.m.** Spatio-Temporal Cyclostationary Models of Solar Irradiance—◆Charlotte Haley, Argonne National Laboratory
- 2:50 p.m.** A Spatio-Temporal Approach to Evolution of Spatial Homogeneity of Monsoon Extremes Over India—◆Subhomoy Ghosh, National Institute of Standards and Technology; Buddhananda Banerjee, Indian Institute of Science Education and Research
- 3:05 p.m.** Spatio-Temporal Modeling of Temperature Fields in the Pacific Northwest—◆Camila Casquilho-Resende; Nhu Le, BC Cancer Agency; James Zidek, The University of British Columbia

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3:20 p.m. Beta-Binomial Kriging: An Alternative Model for Spatial Rates—◆Aimee Schwab, Xavier University; David Marx, University of Nebraska - Lincoln

3:35 p.m. Block Prediction Intervals for Non-Gaussian Random Fields—◆Victor De Oliveira, The University of Texas at San Antonio; Bazoumana Kone, PPD

248 **CC-619**
SIE CP9: Genetic Epidemiology—Contributed
Section on Statistics in Epidemiology, Biometrics Section

Chair(s): Dustin Long, West Virginia University

2:05 p.m. Nonparametric Estimation of Recent Demographic History from Segments of Identity by Descent—◆Sharon Browning, University of Washington; Brian Browning, University of Washington

2:20 p.m. Improving Estimates of Biological Age Using Ensemble-Based Prediction Models in Genomic Data Applications—◆Wendy Shih, UCLA Fielding School of Public Health; Steve Horvath, UCLA

2:35 p.m. Detailed Antigenic Dynamics of Influenza Virus Revealed by Bayesian Phylogenetic Clustering—◆Charles Y.K. Cheung, Fred Hutchinson Cancer

Research Center; Trevor Bedford, Fred Hutchinson Cancer Research Center

2:50 p.m. Identity by Descent Analysis Reveals Fine-Scale Population Structure in Crete—◆Anna Plantinga, University of Washington; Fotis Tsetsos, Democritus University of Thrace; Peristera Paschou, Democritus University of Thrace; Petros Drineas, Rensselaer Polytechnic Institute; Brian Browning, University of Washington; George Stamatoyannopoulos, University of Washington

3:05 p.m. Test for Rare Variant Effects on Secondary Traits in Case-Control Sequencing Studies—◆Godwin Yung, Harvard School of Public Health; Xihong Lin, Harvard School of Public Health; Seunggeun Lee, University of Michigan

3:20 p.m. Function-on-Scalar Regression for Next-Generation Sequencing Studies—◆Olga Vsevolozhskaya; Dmitri Zaykin, National Institute of Environmental Health Sciences; Qing Lu, Michigan State University

3:35 p.m. Prioritizing Hypothesis Tests for High-Throughput Data—◆Paul Schliekelman, University of Georgia; Sangjin Kim, University of Georgia



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● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

249 **CC-213**
■ ● Statistical Methods for Neuroimaging Data Analysis I—Contributed

Section on Statistics in Imaging, Biometrics Section

Chair(s): Daniel Rowe, Marquette University

- 2:05 p.m. Dynamic Network Analysis in Resting-State fMRI for Alzheimer's Disease—◆ Heather Shappell; Yorghos Tripodis, Boston University; Ronald J. Killiany, Boston University; Eric Kolaczyk, Boston University
- 2:20 p.m. A Bayesian Signal-Detection Procedure for Rotation-Space Random Fields—◆ Mozhdeh Forghani, UC Irvine; Khalil Shafie, University of Northern Colorado
- 2:35 p.m. Some Likelihood Ratio Tests for Signal Detection from fMRI Brain Images—◆ Khalil Shafie, University of Northern Colorado
- 2:50 p.m. Two-Stage Dose and Reconstruction Screening Study Design for Use in Human Observer Studies—◆ Rickey Carter, Mayo Clinic; Adam Bartley, Mayo Clinic; Alicia Toledano, Biostatistics Consulting, LLC; Cynthia McCollough, Mayo Clinic; Joel Fletcher, Mayo Clinic
- 3:05 p.m. Nonparametric Variogram Modeling with Hole Effect Structure in Analyzing the Spatial Characteristics of fMRI Data—◆ Jun Ye, The University of Akron; Nicole A. Lazar, University of Georgia; Yehua Li, Iowa State University
- 3:20 p.m. Fast Integrated Genetic Effect Investigation on Imaging Data Using Weighted Score Test via Functional Mixed Effects Model—◆ Ja-An Lin, The University of North Carolina at Chapel Hill; Joseph Ibrahim, The University of North Carolina; Hongtu Zhu, The University of North Carolina at Chapel Hill; Hongtu Zhu, The University of North Carolina at Chapel Hill
- 3:35 p.m. Low-Rank Matrix Regression Models for Large-Scale Imaging Genetic Data—◆ Dehan Kong, The University of North Carolina at Chapel Hill; Baiguo An, The University of North Carolina at Chapel Hill; Hongtu Zhu, The University of North Carolina at Chapel Hill

250 **CC-204**
Nonresponse—Contributed

Survey Research Methods Section, Government Statistics Section, Committee on Applied Statisticians

Chair(s): Andrew White, National Center for Education Statistics

- 2:05 p.m. Nonresponse Analysis for School Surveys—◆ Ronaldo Iachan, ICF International; Maria Profiryakova, ICFI; Kurt Peters, ICFI

- 2:20 p.m. Assessing Nonresponse Bias and the Efficacy of Weighting Class Adjustments in a Survey of Adult Educational Attainment with a Nonresponse Follow-Up Sample—◆ Michael Jackson, American Institutes for Research
- 2:35 p.m. Nonresponse Bias Study Approaches for Equal Opportunity Survey—◆ Eric Falk, Research, Surveys, and Statistics Center; David McGrath, DOD/DMDC
- 2:50 p.m. Longitudinal Patterns of Nonresponse Bias in the Current Population Survey—◆ John Dixon, Bureau of Labor Statistics
- 3:05 p.m. Reducing Unit Nonresponse in Controlled Access Situations: An Experimental Study in South Korea—◆ Sun Woong Kim, Dongguk University; Woo-Hyun Yoo, Dongguk University; Eun-Hee Choi, Dongguk University; Young-Je Woo, Dongguk University; Sun-Young Lee, Dongguk University; Ha-na Lee, Dongguk University
- 3:20 p.m. A Method to Assess Nonresponse Bias During Fieldwork—◆ Peter Smith, University of Southampton; Solange Correa, University of Southampton; Gabriele Durrant, University of Southampton
- 3:35 p.m. Response Rates Using Mass Mailing Tools in the National Children's Study—◆ Erin Tanenbaum, NORC at the University of Chicago; Rachel Carpenter, NORC at the University of Chicago; Lauren Bishop, NORC at the University of Chicago; Angela Klipp, NORC at the University of Chicago

251 **CC-2A**
Area-Based Samples—Contributed
 Survey Research Methods Section, Government Statistics Section

Chair(s): Rachel Harter, RTI International

- 2:05 p.m. Improving Inferences from RDS Data by Incorporating Geo-Reference Information—◆ Breda Munoz, RTI International; Mario Chen, FHI 360; Kate MacQueen, FHI 360
- 2:20 p.m. Spatial-Temporal Multivariate Sampling Design for the June Area Survey—◆ Stephanie Zimmer, RTI International; Zhengyuan Zhu, Iowa State University; Sarah Nusser, Iowa State University; Jonathan Lisic; Hejian Sang, Iowa State University
- 2:35 p.m. Geo-Sampling: Refining the Grid-Based Sampling Method Using Geographic Information Systems Layers and Spatial Data—◆ Safaa Amer, RTI International; ◆ Justine Allpress, RTI International; Mark Bruhn, RTI International; James Cajka, RTI International
- 2:50 p.m. Using Census Public Use Microdata Areas (PUMAs) as Primary Sampling Units in Area Probability

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Household Surveys—Joseph McMichael, RTI International; ◆Patrick Chen, RTI International

3:05 p.m. Enhancing the June Agricultural Survey Pre-Screening Through the Use of County Assessor's Information—◆Denise Abreu, USDA; Matt Deaton, USDA/NASS; Wendy Barboza, USDA/NASS

3:20 p.m. Review of the 2015 Sample Redesign of the Consumer Expenditures Survey—◆Danielle Neiman, U.S. Census Bureau; Susan King, Bureau of Labor Statistics; David Swanson, Bureau of Labor Statistics; Stephen Ash, U.S. Census Bureau; Jacob Enriquez, U.S. Census Bureau; Joshua Rosenbaum, U.S. Census Bureau

3:35 p.m. Floor Discussion

252 CC-212

Methodology: Model Fit—Contributed Social Statistics Section, Government Statistics Section

Chair(s): Graton M.R. Gathright, U.S. Census Bureau

2:05 p.m. The Case for Curves: Why Statisticians Should Be Looking for Nonlinear Effects—◆Jason Osborne, University of Louisville; Holley Pitts, University of Louisville

2:20 p.m. Latent Variable Model Selection for Binary Response Data with Application in Educational and Psychiatric Data—◆Yunxiao Chen, Columbia University

2:35 p.m. Lack-of-Fit Diagnostics Based on Standardized Residuals and Orthogonal Components of Pearson's Chi-Square—◆Maduranga Kasun Dassanayake, Arizona State University; Mark Reiser, Arizona State University

2:50 p.m. Evaluation of Training Programs by Exploiting Secondary Outcomes in Principal Stratification Frameworks: The Case of Luxembourg—◆Michela Bia, Evaluation Unit, LISER (CEPS/Insead); Fan Li, Duke University; Andrea Mercatanti, Bank of Italy

3:05 p.m. Hierarchical Models for Assessing Reliability in Teacher Selection Instruments—◆Patricia Martinkova, Institute of Computer Science AS CR/University of Washington; Dan Goldhaber, University of Washington

3:20 p.m. Approximated Penalized Maximum Likelihood for Exploratory Factor Analysis—◆Fan Wallentin, Uppsala University; Shaobo Jin, Uppsala University; Irini Moustaki, London School of Economics

3:35 p.m. Incorporating Unrealized Capital Gains into Income: Impact and Sensitivity of Different Imputation Methods—◆Jeffrey Thompson, Federal Reserve Board

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Methodological Developments in Meta-Analysis—Contributed

Biometrics Section, Government Statistics Section

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

2:05 p.m. Meta-Analytic Framework for Sparse K-Means to Identify Disease Subtypes in Multiple Transcriptomic Studies—◆Zhiguang Huo, University of Pittsburgh

2:20 p.m. Meta-Analysis of Gene Set Enrichment Studies Utilizing Isoform-Specific Expression—◆Lie (Nathan) Li, Southern Methodist University; Xinlei (Sherry) Wang, Southern Methodist University

2:35 p.m. Estimation of Random Effects in Meta-Analysis of Gene Expression Studies—◆Uma Siangphoe, Virginia Commonwealth University; Kellie J. Archer, Virginia Commonwealth University

2:50 p.m. A New Approach for Detecting Gene-by-Gene Interactions Through Meta-Analyses—◆Yulun Liu, The University of Texas School of Public Health; Yong Chen, The University of Texas School of Public Health; Paul Scheet, MD Anderson Cancer Center

3:05 p.m. Suitable Model for Meta-Analysis of Diagnostic Test—◆Jin-Hua Chen, Taipei Medical University; ShengLi Tzeng, Taipei Medical University; Chun-Shu Chen, National Changhua University of Education

3:20 p.m. A Bayesian Hierarchical Model for Network Meta-Analysis of Diagnostic Tests—◆Xiaoye Ma, University of Minnesota; Haitao Chu, University of Minnesota, Twin Cities; Yong Chen, The University of Texas School of Public Health; Joseph Ibrahim, The University of North Carolina

3:35 p.m. Evaluation of Predictive Capacities of Biomarkers Based on Research Synthesis—◆Satoshi Hattori, Kurume University; Xiao-Hua Zhou, University of Washington

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Methods for Genetics and Genomics Data—Contributed

Biometrics Section

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

2:05 p.m. Testing Repeated Measured Microbiome Data and Phylogenetic Tree—◆Pixu Shi, University of Pennsylvania; Hongzhe Li, University of Pennsylvania

2:20 p.m. Classification of Metagenomic Sequences Using Markov Chain Structure—◆Chen Gao, UC Riverside; Cui Xiping, UC Riverside

CC-615

CC-616

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 2:35 p.m.** A Scalable Integrative Model for Multiple Heterogeneous Genomic Data Types Under Multiple Conditions—◆Yingying Wei, The Chinese University of Hong Kong; Mai Shi, The Chinese University of Hong Kong
- 2:50 p.m.** Biologically Realistic Models of Methylation Dynamics for Accurate Profiling—◆Karlene Meyer, University of South Alabama
- 3:05 p.m.** Rare-Variant Association Analysis Using Kullback-Leibler Distance Methods—◆Asuman Turkmen, The Ohio State University; Zhifei Yan, The Ohio State University; Yue-Qing Hu, Fudan University; Shili Lin, The Ohio State University
- 3:20 p.m.** Identification of Gene-Based Copy Number Variants Using Whole Exome Sequencing of Tumor Samples—◆Lun-Ching Chang, National Cancer Institute; Eric Polley, National Cancer Institute
- 3:35 p.m.** A New Estimating Equation Approach for Secondary Trait Analyses in Genetic Case-Control Studies—◆Xiaoyu Song, Columbia University; Iuliana Ionita-Laza, Columbia University; Ying Wei, Columbia University

255 **CC-401**
Experimental Designs I—Contributed
 Section on Physical and Engineering Sciences, Quality and Productivity Section, International Indian Statistical Association

Chair(s): Stephanie DeHart, DuPont

- 2:05 p.m.** Common Variance Fractional Factorial Designs for Model Comparisons—◆Shrabanti Chowdhury; Subir Ghosh, UC Riverside
- 2:20 p.m.** Experimental Designs Optimally Attuned for Time Trends—◆Camilla Sammut-Powell, University of Manchester; Alexander Donev, University of Manchester
- 2:35 p.m.** Potentially Serious Problems with a Type of Blocked ANOVA Design/Analysis—◆Steve Verrill, USDA Forest Products Laboratory; David Kretschmann, USDA Forest Products Laboratory
- 2:50 p.m.** Carryover Designs Including Washout Periods—◆Jonathan Stallings, North Carolina State University
- 3:05 p.m.** Designing Test Information and Test Information in Design—◆David Jones, Harvard University; Xiao-Li Meng, Harvard University
- 3:20 p.m.** Using a Mixture Design to Quantify User Experience for Partial Web Page Load Performance—◆Sarah Kalicin, Intel Corporation; Yi-Fang Tsai, Intel Corporation; Damon Waring, Intel Corporation
- 3:35 p.m.** Circulant Orthogonal Array: Its Construction and Application to fMRI Experiments—◆Frederick Phoa, Academia Sinica

256 **CC-605**
● Topics in Education Analytics—Contributed
 Section on Statistical Education

Chair(s): Pamela Fellers, Grinnell College

- 2:05 p.m.** Predicting Student Retention in STEM Majors—◆Andrew Sage, Iowa State University; Dan Nettleton, Iowa State University; Cinzia Cervato, Iowa State University; Craig Ogilvie, Iowa State University
- 2:20 p.m.** Modeling Undergraduate Retention to Aid in Making Programming Decisions at Universities—◆Brianna Hitt,
- 2:35 p.m.** Making Better Decisions on Placement in Mathematics Courses—◆W. Stephenson, Iowa State University; Chen Hua, Iowa State University; Elgin Johnston, Iowa State University
- 2:50 p.m.** A Multilevel Matched-Pair Analysis to Determine the Effect of Instruction Modality on Student Success and Course Satisfaction Ratings—◆Lori Thombs, University of Missouri; Kim Siegenthaler, University of Missouri; Paula McFarling, University of Missouri; Nai-En Tang, University of Missouri
- 3:05 p.m.** Assessing Instructional Modalities: Individualized Treatment Effects for Personalized Learning—◆Richard Levine, San Diego State University
- 3:20 p.m.** Apply Resampling to Test for Differences in Educational Outcomes for Paired Cohorts Observed Over Several Years—◆William Goodman, University of Ontario Institute of Technology
- 3:35 p.m.** Educational Leadership: Influences from Diverse Fields and Settings—◆Chandra Aleong, Delaware State University; J. Aleong, University of Vermont

257 **TCC-204**
Advances in Graphical Frameworks and Methods Part 1—Contributed
 Section on Statistical Graphics

Chair(s): Nitzan Mekel-Bobrov, Boston Scientific

- 2:05 p.m.** The Dendextend R Package for Manipulation, Visualization, and Comparison of Dendograms—◆Tal Galili, Tel Aviv University
- 2:20 p.m.** Loon: An Interactive and Extendable Statistical Data Visualization Toolkit—◆Adrian Waddell, University of Waterloo; Wayne Oldford, University of Waterloo
- 2:35 p.m.** A Visualization Tool for Assessing the Number of Components in Finite Mixture Models—◆Derek Young, University of Kentucky

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 2:50 p.m. Investigation into Phase Plots to Be Used as Overall Health Status Indicator—◆Mahbubul Majumder, University of Nebraska - Omaha; John Konvalina, University of Nebraska - Omaha
- 3:05 p.m. Detecting Nonlinearities in Structural Equation Modeling Using Residual Plots—◆Laura Hildreth, Montana State University
- 3:20 p.m. A New Visualization Method for Asymmetric Data—◆Anna Quach; Adele Cutler, Utah State University
- 3:35 p.m. Exploratory Data Analysis of a Large Parallel Corpus: A Case Study on the Open Document System of the UN—Mario Morales, Stanford University/Mount Sinai School of Medicine; ◆Roxana Gib, West University of Timisoara

258 TCC-202 Applications in Big Data—Contributed

Section on Statistical Learning and Data Mining, Section on Statistical Computing, Government Statistics Section, International Indian Statistical Association

Chair(s): Dan Merl, Facebook

- 2:05 p.m. Recent Advances in Statistical Inference on Big Graph Data—◆Li Chen, The Johns Hopkins University; Youngser Park, The Johns Hopkins University; Carey E. Priebe, The Johns Hopkins University
- 2:20 p.m. A One-Shot Approach to Distributed Sparse Regression—◆Jason Lee; Yuekai Sun, Stanford University; Qiang Liu, UC Irvine; Jonathan Taylor, Stanford University
- 2:35 p.m. Estimation of High-Dimensional Mean Regression in Absence of Symmetry and Light-Tail Assumptions—◆Yuyan Wang, Princeton University; Jianqing Fan, Princeton University; Quefeng Li, Princeton University
- 2:50 p.m. Machine Learning for Machine Data—◆Sou-Cheng Choi, NORC at the University of Chicago
- 3:05 p.m. A New Framework for Scalable, Accurate, and Intuitive Data Matching—◆Brian P. Kent, Dato; Robert Voyer, Dato
- 3:20 p.m. Blessing of Massive Scale: Spatial Graphical Model Inference with a Total Cardinality Constraint—◆Ethan X. Fang, Princeton University; Han Liu, Princeton University; Mengdi Wang, Princeton University
- 3:35 p.m. Introduction to Network Modeling—◆Alan Izenman, Temple University

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CC-613

● Clinical Trial Design II—Contributed Biopharmaceutical Section, Biometrics Section

Chair(s): Chia-Wen Ko, FDA

- 2:05 p.m. Doubly Robust Risk Estimation in the Presence of Informative Censoring Incorporating Time-Dependent Covariates—◆Takuya Kawahara, The University of Tokyo; Yutaka Matsuyama, The University of Tokyo
- 2:20 p.m. Ignoring Site-Specific Treatment Effects in Multicenter Clinical Trials Increases False Positive Results—◆Eric Macklin, Massachusetts General Hospital/Harvard University
- 2:35 p.m. Influence of Prior on Bayesian Sample Size Calculation—◆Kevin Hou, Incyte Corporation; Gongfu Zhou, Incyte Corporation; Yufan Zhao, Incyte Corporation
- 2:50 p.m. Some Considerations on Designing a Lot Consistency Study with Control Arm—◆Jin Xu, Merck; G. Frank Liu, Merck
- 3:05 p.m. Multistage Adaptive Biomarker-Directed Targeted Clinical Trial Design—◆Zhong Gao, OBE/CBER/FDA; Ming Tan, Georgetown University; Anindya Roy, University of Maryland, Baltimore County
- 3:20 p.m. Assessing the Current and Potential Use of Adaptive Study Designs in Emergency Medicine Clinical Trials—◆Laura Flight, University of Sheffield; Steven A. Julious, University of Sheffield; Steve Goodacre, University of Sheffield
- 3:35 p.m. Identify Sources of Placebo Response Early to Improve the Probability of Success in Late-Stage Program—◆Weining Robieson, AbbVie; Jun Zhao, AbbVie; Deli Wang, AbbVie

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CC-614

Missing Data II—Contributed

Biopharmaceutical Section, Government Statistics Section

Chair(s): Rajesh Nair, FDA

- 2:05 p.m. A Two-Stage, Phase II Clinical Trial Design with Nested Criteria for Early Stopping and Efficacy—◆Daniel Zelterman, Yale University; Michael Kane, Yale University; Michelle DeVeaux, Yale University
- 2:20 p.m. Similarity Assessment of Chromatographic Fingerprint of Botanical Products—◆Xiaoyu Dong, FDA; Yi Tsong, FDA; Zhuang Miao, FDA; Jinhui Dou, FDA
- 2:35 p.m. Improving Power for Biomarker Detection with Joint Modeling of Multiple Endpoints in Early-Phase Clinical Trials—◆Qianying Liu, Sanofi; Glen Laird, Sanofi; Wei Zheng, Sanofi

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 2:50 p.m.** An Empirical Bayesian Approach to Bioequivalence Studies—◆Li He, Merck Research Laboratories; Robert Capen, Merck Research Laboratories
- 3:05 p.m.** Automated High-Dimensional Cytometry Analysis to Elucidate Phenotypic and Functional Modulation in Immune Cellular Subpopulations—◆Shubing Wang, Merck; An Chi, Merck; Yujie Qu, Merck
- 3:20 p.m.** Sample Size Calculation in Clinical Trials with Mixed Binary and Continuous Co-Primary Endpoints Modeled by Gaussian Copulas—◆Beilei Wu, PAREXEL International; Alexander de Leon, University of Calgary; Daniel Bonzo, PAREXEL International
- 3:35 p.m.** Bayesian Prediction Model of Event Times in Randomized Clinical Trial—◆Jiang Li, Novartis; Wentao Feng, Novartis; Satrajit Roychoudhury, Novartis Pharmaceuticals

Contributed Poster Presentations

2:00 p.m.—3:50 p.m.

261 CC-4B

Contributed Oral Poster Presentations: IMS—Contributed

IMS

Chair(s): Lan Xue, Oregon State University

IMS

- 1 Multi-Dimensional Time Model for PCF—◆Michael Fundator, Sackler Colloquium, National Academy of Sciences
- 2 Single Index Regression Models with Convex Link—◆Rohit Patra, Columbia University; Bodhisattva Sen, Columbia University; Arun Kumar, Indian Statistical Institute
- 3 A Generalization on Combining Estimation Problems Under Quadratic Loss—◆SÈvÈrien Nkurunziza, University of Windsor/UniversitÈ de Sherbrooke
- 4 Estimation of Dosage Frequency of Pre-Exposure Prophylaxis Needed to Protect Against HIV Infection—◆Claire Ruberman,
- 5 Adaptive Quantity Theory of Money—◆Ying Wang; Yundong Tu, Guanghua School of Management, Peking University; Song Xi Chen, Peking University/Iowa State University
- 6 Separating Spike Count Correlation from Trial-to-Trial Firing Rate Correlation—◆Giuseppe Vinci, Carnegie Mellon University; Robert Kass, Carnegie Mellon University; ValÈrie Ventura, Carnegie Mellon University; Matthew A. Smith, University of Pittsburgh

262 CC-4B

Contributed Oral Poster Presentations: Section on Nonparametric Statistics—Contributed

Section on Nonparametric Statistics

Chair(s): Lan Xue, Oregon State University

Section on Nonparametric Statistics

- 7 The Minimization Process in the Correlation Estimation System Compared to Least Squares in Linear Regression—◆Rudy Gideon,
- 8 Personalized Plans with Multiple Treatments—◆Chathura Siriwardhana, University of Louisville; Meng Zhao, Mississippi State University; Somnath Datta, University of Louisville; Karunarathna Kulasekera, University of Louisville
- 9 Local Estimation of Patient Prognosis—◆Alison Kosel; Patrick Heagerty, University of Washington
- 10 Random Forests for Nonhomogeneous Poisson Processes with Excess Zeros—◆Denis Larocque, HEC Montreal; Walid Mathlouthi, HEC montreal; Marc Fredette, HEC Montreal
- 11 A Nonparametric Method of Parameter Estimation in Logistic Regression Under Case-Control Study—◆Pei Geng, Michigan State University
- 12 Semiparametric Efficient Estimation by Reproducing Kernel Hilbert Space—◆Masaaki Imaizumi, The University of Tokyo
- 13 Optimal Bayes Classifiers for Functional Data and Density Ratios—◆Xiongtao Dai; Hans-Georg G. Mueller, UC Davis; Fang Yao, University of Toronto
- 14 A Method for Comparing Treatments When Data Points Are Empirical Distribution Functions—◆Scott Richter, The University of North Carolina at Greensboro; Melinda H. McCann, Oklahoma State University
- 15 On K-Group Classification Procedures Using Precedence Probabilities—◆Rajarshi Dey, University of South Alabama; Paul Nelson, Kansas State University
- 16 Semiparametric Regression Modeling Using Shrinkage Strategies—◆Sara DeVries; Mohamed Amezziane, Central Michigan University
- 17 A New Method of Resampling Resting Nonparametric Hypotheses: Balanced Randomization Tests—◆Oumar Thiero, Tulane University; Sudesh Srivastav, Tulane University; John J. Lefante, Tulane University; Frances Mather, Tulane University
- 18 Weak Identifiability and Optimal Rate of Convergence of Mixing Measures Under Over-Fitted Gaussian Mixture Models—◆Nhat Pham Minh Ho, University of Michigan; XuanLong Nguyen, University of Michigan
- 19 Semiparametric Estimation Procedure Using Local Polynomial Smoothing for Inconsistently Measured Longitudinal Data—◆Lei Ye; Ada Youk, University of Pittsburgh; Lora Burke, University of Pittsburgh; Susan Sereika, University of Pittsburgh; Stewart Anderson, University of Pittsburgh

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 20 Bridging the Gap: A Nonparametric Likelihood Function—◆Mayer Alvo, University of Ottawa
- 21 Random Forest Variable Selection Among Correlated Variables—◆Joy Toyama, UCLA; Christina M. Ramirez, UCLA Fielding School of Public Health

263 **CC-4B**
Contributed Oral Poster Presentations: Section on Bayesian Statistical Science—Contributed Section on Bayesian Statistical Science

Chair(s): Lan Xue, Oregon State University

Section on Bayesian Statistical Science

- 22 A Bayesian Equivalency Index for Two Independent Binomial Proportions—◆Yohei Kawasaki, University of Shizuoka; Asanao Shimokawa, Tokyo University of Science; Naoya Niimura, Mitsubishi Tanabe Pharma Corporation; Hiroshi Yamada, University of Shizuoka; Etsuo Miyaoka, Tokyo University of Science
- 23 Four Likelihoods of a Prior Density in the Empirical Bayes Model with Their Implications—◆Takemi Yanagimoto, Institute of Statistical Mathematics
- 24 The Nonparametric Bayesian Model with Shrinkage Priors and Its Application in Multiple Pesticide Exposures Data—◆Ran Wei, North Carolina State University; Subhashis Ghoshal, North Carolina State University; Brian J. Reich, North Carolina State University
- 25 Some Thoughts on Bayesian Estimation Subject to Uncertainty About Parameter Constraints—◆Taeryon Choi, Korea University; Hea-jung Kim, Dongguk University; Seongil Jo, Korea University
- 26 Prior Elicitation in Parametric Proportional Hazards Models—◆Sommer Blair,
- 27 Ordinal Bayesian Instrument Development: Expediting the Development of Patient-Reported Outcome Measures—◆Lili Garrard, University of Kansas Medical Center; Larry R. Price, Texas State University; Marjorie J. Bott, University of Kansas Medical Center; Byron J. Gajewski, University of Kansas Medical Center
- 28 Bayesian Predictive Inference from a Probability Proportional to Size (PPS) Sample—◆Donald Malec, National Center for Health Statistics
- 29 A Bayesian Model for the Classification of X-Ray Binary Systems—◆Giri Gopalan, Harvard University; Luke Bornn, Harvard University; Saeqa Vrtilek, Harvard-Smithsonian Center for Astrophysics
- 30 Comparison of Bayesian Credible Intervals and Frequentist Confidence Intervals—◆Kathy Gray, California State University at Chico; Casey Bausell, Oregon State University; Brittany Hampton, California State University at Chico; Allison McConnell, California State University at Chico; Tony Silveti-Falls, California State University at Chico
- 31 Model Averaging of Regression Coefficients: Considerations and Practical Guidelines—◆Katharine Banner, Montana State University

- 32 Empirical Bayes Model Averaging Under Model Misfit—◆Junyan Wang, The Ohio State University; Chris Hans, The Ohio State University; Mario Peruggia, The Ohio State University
- 33 Bayesian Hypothesis Testing in Finite Populations: Bernoulli Multivariate Variables—◆Brian Melo; Luís Gustavo Esteves, Universidade de S.,o Paulo
- 34 On the Estimation of the Order of Smoothness of the Regression Function—◆Daniel Taylor Rodriguez, SAMSI/Duke University; Sujit Ghosh, SAMSI/North Carolina State University
- 35 Study on the Effects of Postpartum Depression on Child Neuropsychomotor Development via Item Response Theory with Covariates: A Bayesian Approach—◆Agatha Rodrigues, Universidade de S.,o Paulo; Adriano Polpo, Universidade Federal de S.,o Carlos; Aline Carrara Dias, Universidade Federal de S.,o Carlos; Carlos Alberto de BraganÁa Pereira, University of S.,o Paulo
- 36 Comparing Networks of Different Sizes: An Extension of the HERGM—◆Anna Mohr, The Ohio State University; Catherine Calder, The Ohio State University; Christopher Browning, The Ohio State University
- 37 A Bayesian Approach to Inferring Conditional Independencies for Stationary Time Series—◆Alex Tank; Nicholas Foti, University of Washington; Emily Fox, University of Washington
- 38 An Approximate Bayesian Approach to Modeling Crash Data via a Poisson Markov Random Field—◆Ignacio Alvarez, Iowa State University; Kristian Schmidt, Iowa State University; Alicia Carriquiry, Iowa State University; Jarad Niemi, Iowa State University; Michael Pawlovich, Iowa Department of Transportation
- 39 Improvement on James Stein Estimator in Empirical Bayes Analysis—◆Xiaomu Wang, The Ohio State University; Mark L. Berliner, The Ohio State University
- 40 Transformation and Bayesian Density Estimation—◆Andrew Bean; Steven MacEachern, The Ohio State University; Xinyi Xu, The Ohio State University
- 41 Bayesian Variable Selection for Logistic Regression—◆Yiqing Tian, North Carolina State University; Howard Bondell, North Carolina State University; Alyson Wilson, North Carolina State University

264 **CC-4B**
Contributed Oral Poster Presentations: Section on Statistics and the Environment—Contributed Section on Statistics and the Environment

Chair(s): Lan Xue, Oregon State University

Section on Statistics and the Environment

- 42 Spatial Prediction: The Importance of the Nugget—◆Daniel Ries, Iowa State University; Mark Kaiser, Iowa State University
- 43 Spatio-Temporal Reconstruction of the Global CO₂-Fluxes Using Gaussian Markov Random Fields—◆Unn DahlÈn, Lund University; Johan Lindstrøm, Lund University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 44 Spatial Extreme Value Analysis Using Conditional Modeling Approach—◆ Joanne Lo, North Carolina State University; Elizabeth Mannhardt, North Carolina State University; Montserrat Fuentes, North Carolina State University; Dongsoo Kim, National Climatic Data Center
- 45 Comparison of Linear and Nonlinear Dimension Reduction Techniques for Automated Process Monitoring of a Decentralized Wastewater Treatment Facility—◆ Karen Kazor, Colorado School of Mines
- 46 Forecasting Comparisons of PAR, DLM, ETS, and ARIMA Time Series Models with Weather Data—◆ Yingyu Tang, University of Minnesota, Morris; Jong-Min Kim, University of Minnesota, Morris
- 47 Population Geometric Mean of Positive Variables—◆ Koji Kanefuji, Institute of Statistical Mathematics; Kosei Iwase, Hiroshima University
- 48 Case Study: Global Warming and the Effect of Carbon Dioxide—◆ Raneer Thiagarajah, Illinois State University
- 49 Inverse Distance-Weighted Interpolation for Spatio-Temporal Data—◆ Robert Waken; Soohyun Kwon, Kyungpook National University; GyuWon Lee, Kyungpook National University; Joon Jin Song, Baylor University

Biometrics Section

- 50 A New Measure of Testing Independence—◆ Qingcong Yuan, University of Kentucky; Xiangrong Yin, University of Kentucky

Section on Statistics and the Environment

- 51 Bayesian Analysis of a State-Space Tobit Model for Daily Precipitation Data—◆ Sai Kumar Popuri, University of Maryland, Baltimore County; Nagaraj K. Neerchal, University of Maryland, Baltimore County; Amita Mehta, Joint Center for Earth Systems Technology
- 52 Bayesian Spatial Modeling for Loblolly Pine Seed Source Movements—◆ Alfredo Farjat, North Carolina State University; Brian J. Reich, North Carolina State University
- 53 A Unified Estimator of Environmental Exposure Distribution for Data Subject to Detection Limit—◆ Yuchen Yang, University of Kentucky; Brent Shelton, University of Kentucky; Thomas Tucker, University of Kentucky; Li Li, Case Western Reserve University; Richard J. Kryscio, University of Kentucky; Li Chen, University of Kentucky
- 54 A Review of Split-Plot Design and Its Deviations—◆ Yujin Wen, Texas A&M University; Mark Bailey, SAS Institute
- 55 Dynamic Spatio-Temporal 'Auto' Models with Third-Order Dependence—◆ Xiaomao Xia, University of Missouri; Athanasios Micheas, University of Missouri; Christopher K. Wikle, University of Missouri
- 56 Modeling Atlantic Ocean Salinity and Temperature Using a Multivariate Bayesian Functional Generalized Additive Model—◆ Christopher Krut, North Carolina State University; Montserrat Fuentes, North Carolina State University; Brian J. Reich, North Carolina State

- University; Frederick Bingham, The University of North Carolina at Wilmington
- 57 Climate Model Calibration Across Multiple Spatial Resolutions—◆ Vera Bulaevskaya, Lawrence Livermore National Laboratory; Donald Lucas, Lawrence Livermore National Laboratory
- 58 Reducing Uncertainty in Vref and Ve50 Assessments: 50-Year Wind Gust Estimation Using Onsite and Virtual Meteorological Data in a Bayesian Framework—◆ Elizabeth Traiger, DNV GL Energy; Christopher Hayes, DNV GL Energy

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CC-4B

Contributed Oral Poster Presentations: Mental Health Statistics Section—Contributed Mental Health Statistics Section

Chair(s): Lan Xue, Oregon State University

Mental Health Statistics Section

- 59 Prediction of Change in Overall Performance for Patients with Huntington's Disease (HD) Using a Multilevel Functional Principal Component Analysis (MFPCA) Model—◆ Zhi Pan; Yuanjia Wang, Columbia University; Jeff Goldsmith, Columbia University
- 60 Co-Morbid Conditions Associated with Adolescents and Young Adults with Fragile X Syndrome—◆ Xin Tong,
- 61 Night-Time Awakenings: How Well Do Parent-Report and Videosomnography Reflect Actigraphic Measures?—◆ Ana Maria Iosif, UC Davis
- 62 Joint Models for Longitudinal Quantitative and Binary Data: An Application in Psychiatry—◆ Hanga Galfalvy, Columbia University; Maria A. Oquendo, Columbia University; J. John Mann, Columbia University

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CC-4B

Contributed Oral Poster Presentations: Quality and Productivity Section—Contributed Quality and Productivity Section

Chair(s): Lan Xue, Oregon State University

Quality and Productivity Section

- 63 Rejection Based on Runs in Process Control with Misclassifications and Multiple Quality Levels—◆ William Griffith; Michelle L. Smith, Eastern Kentucky University
- 64 Bootstrap-Based Confidence Intervals in Partially Accelerated Life Testing Under the Generalized Exponential Distribution—◆ Ahmed Eshebli, Missouri University of Science and Technology; V.A. Samaranayake, Missouri University of Science and Technology
- 65 A Stochastic Expectation-Maximization Algorithm for the Analysis of System Lifetime Data with Known Signature—◆ Yandan Yang, Southern Methodist University; Hon Keung Tony Ng, Southern Methodist University; Narayanaswamy Balakrishnan, McMaster University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 66 Improving Decision-Making in Health Care Quality Through Biostatistics—◆Henry Domenico, Vanderbilt University School of Medicine
- 67 Importance of Biostatistics in Academic Research Success—◆Li Wang, Vanderbilt University; Daniel Byrne, Vanderbilt University; Hui Nian, Vanderbilt University; Chang Yu, Vanderbilt University; Frank Harrell, Vanderbilt University

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Contributed Oral Poster Presentations: Section on Physical and Engineering Sciences—Contributed

Section on Physical and Engineering Sciences

Chair(s): Lan Xue, Oregon State University

Section on Physical and Engineering Sciences

- 68 Concerns About Least Squares Estimation for the Three-Parameter Weibull Distribution: Case Study of Statistical Software—◆William Harper; Thomas R. James, Otterbein University
- 69 An Alternative to a Standard Crossover Study to Evaluate the Impact of an Assay Change in NHANES—◆Maya R. Sternberg, CDC; Rosemary Schleicher, CDC
- 70 Statistical Behavior of a Crowd Composed of Individuals and Couples During Panic Evacuation—◆Guillermo Frank, University of Buenos Aires; Claudio Dorso, University of Buenos Aires
- 71 Application of Functional Regression in Modeling Mechanical Properties of Materials—◆Hao Ji, UC Davis; Ana Kupresanin, Lawrence Livermore National Laboratory; Sejin Oh, Lawrence Livermore National Laboratory; Ian Darnell, Lawrence Livermore National Laboratory
- 72 Analysis of Factors Affecting Motorcycle-Motor Vehicle Crash Characteristics—◆Peter Hovey, University of Dayton; Deogratias Eustace, University of Dayton; Di Zhu, University of Dayton
- 73 Examples of Overselling and Under-Applying Big Data—◆Kathryn Hall,

268 **CC-4B**
Contributed Oral Poster Presentations: SSC—Contributed

SSC

Chair(s): Lan Xue, Oregon State University

SSC

- 74 Asymptotics of the Empirical Copula Smoothing Spline and Its Density—◆Ayi Ajavon; Fran ois Perron, University of Montreal

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Contributed Oral Poster Presentations: Health Policy Statistics Section—Contributed

Health Policy Statistics Section

Chair(s): Lan Xue, Oregon State University

Health Policy Statistics Section

- 75 Do Individuals with Private Insurance Use More Prescription Drugs?—◆Yan Cheng, The University of British Columbia Centre for Health Services and Policy Research
- 76 Group-Based Modeling for Survival Outcome—◆Fu-Chi Hsieh,
- 77 On the Exact Interval Estimation for the Many-to-One Comparison in the Probability of Cost-Effectiveness—◆Chi-Rong Li, Chung Shan Medical University; Tsai-Yu Lin, Feng Chia University
- 78 Respondent Fatigue Among Middle-School Respondents to State-Based Youth Tobacco Surveys—◆Robert Gerzoff, CDC; James Tsai, CDC; Anna Teplinsky, DB Consulting
- 79 Study of Predictive Models for Payment Parity and Population Health Management—◆Donghui Wu, LexisNexis Health Care
- 80 Model Selection for Modeling Mesothelioma Mortality—◆Leonid Kopylev, EPA; Thomas Bateson, EPA

270 **CC-4B**
SPEED: Topics on General Methodology in Public Health, Part 2—Contributed

Section on Statistics in Epidemiology

Chair(s): Trent L. Lalonde, University of Northern Colorado

Section on Statistics in Epidemiology

- 1 Searching for Nonlinearity Using Fractional Polynomials—◆G. Kolm, Christiana Care Health System; Daniel Elliot, Christiana Care Health System; Joanne Brice, Christiana Care Health System
- 2 Comparison of Three Methods to Estimate the Relationship Between Physical Activity and Health Indicators Among Adults with and Without Disability—◆Qing Zhang, CDC; Courtney-Long Elizabeth A., CDC; Michelle Sloan, CDC; Stevens Alissa, CDC; Dianna D. Carroll, CDC
- 3 Markov Chains and Continuous Time Multi-State Markov Models Comparisons in Longitudinal Clinical Analysis—◆Lijie Wan, University of Kentucky; Richard J. Kryscio, University of Kentucky
- 4 Predictive Modeling of Cholera Outbreaks in Different Areas of Bangladesh—◆Amanda Koepke, FHCR; Ira M. Longini, University of Florida; M. Elizabeth Halloran, ASA; Jon Wakefield, University of Washington; Vladimir Minin, University of Washington
- 5 A Comparison of Alternative Approaches to Analyzing Subgroup Differences in Survival After AIDS Diagnosis When the Proportional Hazards Assumption Does Not

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- Hold—◆Felicia Hardnett, CDC; Qian An, CDC; Xinjian Zhang, CDC
- 6 A Bayesian Natural Cubic B Spline-Varying Coefficient Method for Nonignorable Dropout—◆Camille Moore, Colorado School of Public Health; Samantha MaWhinney, Colorado School of Public Health; Nichole Carlson, University of Colorado Anschutz Medical Campus; Jeri Forster, Colorado School of Public Health
- 7 The Marginal Structural Models for Modeling Time-Dependent Exposure in the Analysis of Case-Control Studies—◆Lie Hong Chen, Kaiser Permanente; Anny H. Xiang, Kaiser Permanente
- 8 Assessing Bias in the Estimation of Causal Hazard Ratio Among Compliers Using Two-Stage Instrumental Variable Approaches—◆Fei Wan, University of Pennsylvania; Dylan Small, University of Pennsylvania; Nandita Mitra, University of Pennsylvania; Justin Bekelman, University of Pennsylvania
- 9 Assessing Temporal Trends of Central-Line Associated Methicillin-Resistant Staphylococcus Aureus (MRSA) Infections in the U.S. Hospitals—◆Minn Soe,
- 10 Estimating the Causal Effect of Solid Organ Transplantation Treatment Regimes on Survival—◆Jeffrey Boatman; David Vock, University of Minnesota
- 11 Modeling Geo-Located Public Health Data Using Spatio-Temporal Log-Gaussian Cox Processes—◆Theresa Smith, Lancaster University; Peter J. Diggle, Lancaster University; Ben Taylor, Lancaster University
- 12 Regression for Skewed Biomarker Outcomes Subject to Pooling—◆Emily Mitchell, NICHD; Robert H. Lyles, Emory University; Amita K. Manatunga, Emory University; Michelle Danaher, NICHD; Neil J. Perkins, NICHD; Enrique F. Schisterman, NIH
- 13 Imputing Estrogen Receptor Status in a Population-Based Cancer Registry: A Sensitivity Analysis—◆Rebecca Andridge, The Ohio State University; Anne-Michelle Noone, National Cancer Institute
- 14 Variable Selection in Additive Hazards Model with Case-Cohort Design—◆Andy (Ai) Ni, The University of North Carolina at Chapel Hill; Jianwen Cai, The University of North Carolina at Chapel Hill
- 15 Investigating Potential Socioeconomic and Behavioral Factors Influencing Mosquito Net Ownership in Three Countries in Sub-Saharan Africa—◆Benjamin Pope, The University of Arizona; Denise Roe, The University of Arizona; Kacey Ernst, The University of Arizona; Daoqin Tong, The University of Arizona
- 16 An Improved Version of Activity Intensity and Its Comparison with Activity Count, with the Application to Women Health Initiative—◆Jiawei Bai, The Johns Hopkins University; Chongzhi Di, Fred Hutchinson Cancer Research Center; Ciprian Crainiceanu, The Johns Hopkins University; Luo Xiao, The Johns Hopkins University
- 17 Modeling the Relationships with Longitudinal Growth Patterns: Comparing Your Options—◆Brianna Heggeseth,
- 18 A Comparison of Methods for Imputing Missing Longitudinal fMRI Data—◆Maria Josefsson, UmeÅ University; Anders Lundquist, UmeÅ University; Lars Nyberg, UmeÅ University
- 19 Comparison of Missing Imputation Methods for Combining Multiregional Cohort Studies—◆Ayano Takeuchi, Keio University
- 20 Challenges in Full Matching in the Presence of Clustering and Sparse Data—◆Matthew Bryan, University of Pennsylvania; Russell Localio, University of Pennsylvania

Contributed Poster Presentations

3:05 p.m.—3:50 p.m.

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CC-4B

SPEED: Recent Advance of Statistical Methods in Biometrics, Part 2—Contributed

Section on Statistics and the Environment, Biometrics Section

Chair(s): Yuan Jiang, Oregon State University

Biometrics Section

- 1 A Novel Tail Dependence Measure to Quantify the Reproducibility and Quality of Sequencing Experiments—◆Qunhua Li, Penn State; Tao Yang, Penn State
- 2 Predicting Binary Outcome Using Multivariate Longitudinal Data: Monitoring Disease Progression in Patients with Newly Diagnosed Primary Open-Angle Glaucoma—◆Feng Gao, Washington University School of Medicine; Philip Miller, Washington University School of Medicine; Chengjie Xiong, Washington University in St. Louis; Julia Beiser, Washington University School of Medicine; Mae Gordon, Washington University School of Medicine
- 3 Copula Models in the Analysis of Familial Binary Data—◆Yihao Deng, Indiana University Purdue University Fort Wayne
- 4 The Delta Garden Study: A Quasi-Experimental, Cross-Sectional, Nested, Pair-Matched Design with Zero-Inflated Endpoints—◆Page Moore, University of Arkansas for Medical Sciences; Amy Schrader, University of Arkansas for Medical Sciences; Judith L. Weber, University of Arkansas for Medical Sciences
- 5 Assessing the Effect of Spaceflight on the Propensity for Astronauts to Develop Disk Herniation—◆Alan Feiveson, NASA Johnson Space Center; Claudia Mendez, MEI Technologies; Jeffrey T. Somers, Wyle Science
- 6 Evaluations of Transform-Both-Sides Methods for Nonlinear Mixed Effects Models—◆Noa Molshatzki, University of Southern California; Sandra P. Eckel, University of Southern California
- 7 Two-Sample Location-Scale Testing Using Shift Functions and Semiparametric Random Censorship

Monday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- Models—◆Rianka Bhattacharya, New Jersey Institute of Technology; Sundarraman Subramanian, New Jersey Institute of Technology
- 8 An Alternative Estimation Method for the Extended Hazards Model—◆Yinding Wang; Jiajia Zhang, University of South Carolina
- 9 Dunn Index Bootstrap (DIBS): A Procedure to Empirically Select a Cluster Analysis Method That Identifies Biologically and Clinically Relevant Molecular Subgroups—◆Iwona Pawlikowska, St. Jude Children's Research Hospital; Zhifa Liu, St. Jude Children's Research Hospital; Arzu Onar-Thomas, St. Jude Children's Research Hospital; Stan Pounds, St. Jude Children's Research Hospital
- 10 Joint Modeling of Outcomes from Studies with Clustered Reciprocal Control Designs—◆Michael Pennell, The Ohio State University; Abigail Shoben, The Ohio State University; Electra Paskett, The Ohio State University
- 11 Three-Level Nested Logistic Regression with Varying Intraclass Correlations—◆Kyle Irinata,
- 12 A Population-Based Approach to Analyzing Pulses in Time Series of Hormone Data—◆Kenneth Horton,
- 13 Correlation of Probability-Scale Residuals for General Regression Models—◆Qi Liu, Vanderbilt University; Bryan Shepherd, Vanderbilt University; Chun Li, Case Western Reserve University
- 14 Estimating Power for Interaction Tests in Logistic Regression: A Case Study of Tobacco Cessation Among Cancer Survivors—◆Zoran Bursac, University of Tennessee Health Science Center; D. Keith Williams, University of Arkansas for Medical Sciences; C. Heath Gauss, University of Arkansas for Medical Sciences; Bob Klesges, University of Tennessee Health Science Center
- 15 Extending Methods for Clustering Multivariate Continuous and Discrete Longitudinal Data to Accommodate Issues in Developing Prognostic Markers for Kidney Disease—◆Kenneth Wilkins, NIH
- 16 Statistical Methods for Predicting Dengue Diagnosis Using Clinical and LCMS Data—◆Carolyn Cotterman, UC Berkeley; Lionel Gresh, Sustainable Sciences Institute; Natalia Voge, Colorado State University; Rushika Perera, Colorado State University; Eva Harris, UC Berkeley
- 17 Reverse-Engineering the KM Curve to Simulate Individual Data—◆Abhijit Dasgupta, ARAASTAT
- 18 A Simulation Study for Bivariate Wiener Process Models for an Observable Marker and the Latent Health Status—◆Sara Conroy; Michael Pennell, The Ohio State University
- 19 Semiparametric Mixed Beta Regression with Penalized Splines for Disease Severity—◆Pedro Torres-Saavedra, University of Puerto Rico at Mayaguez; Ra'l E. Macchiavelli, University of Puerto Rico at Mayaguez

- 20 2x2 Factorial Design in Randomized Controlled Trials with Binary Outcomes: A Practical Guide on Sample Size Efficiency—◆Shuang Huang, The University of Arizona; Chengcheng Hu, The University of Arizona

Invited Sessions 4:00 p.m.—5:50 p.m.

272 CC-Ballroom 6ABC

ASA President's Invited Address—Invited

ASA, ENAR, IMS, International Chinese Statistical Association, International Indian Statistical Association, International Society for Bayesian Analysis (ISBA), Korean International Statistical Society, SSC, WNAR, Royal Statistical Society, Statistics Without Borders

Organizer(s): David Morganstein, Westat

The Role of Analysis in Supporting Strategic Decisions—◆Christine H. Fox, Johns Hopkins University Applied Physics Laboratory

Invited Sessions 8:00 p.m.—9:30 p.m.

273 CC- Ballroom 6E

IMS Presidential Address and Awards Ceremony—Invited

IMS, International Indian Statistical Association

Organizer(s): Antonio Lijoi, University of Pavia

Chair(s): Richard A. Davis, Columbia University

- 8:05 p.m. Some Thoughts About the Relations Between Statistics and Probability Theory—◆Erwin Bolthausen, University of Zurich

TUESDAY AUGUST 11

Session Tag Descriptions

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

● THEME

JSM theme sessions are directly relevant to the JSM 2015 theme, "Statistics: Making Better Decisions." 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.

JSM Hours

7:00 a.m.—6:00 p.m. Speaker Management Room	CC-604
7:30 a.m.—10:00 p.m. Cyber Center	CC-Atrium Lobby
7:30 a.m.—4:30 p.m. JSM Main Registration	CC-Atrium Lobby
7:30 a.m.—4:30 p.m. ASA Membership/Help Desk/Press Desk	CC-Atrium Lobby
8:00 a.m.—5:30 p.m. JSM Career Service	CC-4A
8:00 a.m.—6:00 p.m. Exhibitor Lounge	CC-4B
9:00 a.m.—6:00 p.m. Seattle Restaurant and Tourism Information Center	CC-Upper Pike Street Lobby
9:00 a.m.—5:30 p.m. EXPO 2015	CC-4B
9:00 a.m.—5:30 p.m. ASA Marketplace	CC-4B
9:00 a.m.—5:30 p.m. American Statistical Association Booth #504	CC-4B

Committee/Business Meetings & Other Activities

7:00 a.m.—8:00 a.m. Marketing Section Executive Business Meeting (Closed) Chair(s): James Wendelberger, Los Alamos National Laboratory	S-Greenwood
7:00 a.m.—8:30 a.m. Ad Hoc Advisory Committee on Forensic Science Business Meeting (Closed) Chair(s): Bruno Sanso, UC Santa Cruz; Dave Higdon, Virginia Tech; Karen Kafadar, University of Virginia	S-Columbia
7:00 a.m.—8:30 a.m. Government Statistics Section Executive Committee Meeting (Closed)	S-Ravenna A
7:00 a.m.—8:30 a.m. Technometrics Editorial Board Meeting Chair(s): Peihua Qiu, University of Florida	S-Seneca
7:00 a.m.—8:30 a.m. ICHPS 2015 Planning Meeting (Closed) Chair(s): Kelly H. Zou, Pfizer Inc.	S-Cirrus Room
7:00 a.m.—8:30 a.m. Committee on Professional Ethics Business Meeting Chair(s): Howard Hogan, U.S. Census Bureau	S-Boren
7:00 a.m.—8:30 a.m.	S-Virginia

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Mental Health Statistics Section Executive Meeting (Closed)

Chair(s): Donald Hedeker, The University of Chicago

7:00 a.m.—8:30 a.m. S-Issaquah A

ASA-MAA Joint Committee on Statistics Education Business Meeting

Chair(s): Michael Posner, Villanova University

7:00 a.m.—8:30 a.m. S-Metropolitan A

Brigham Young University Friends and Alumni Open House

Organizer(s): H. Dennis Tolley, Brigham Young University

7:00 a.m.—8:30 a.m. S-Jefferson A

Journal of Official Statistics Editorial Meeting

Organizer(s): Ingegerd Jansson, Statistics Sweden

7:00 a.m.—8:30 a.m. CC-309

Caucus for Women in Statistics - Sharing Professional Experiences Roundtable Breakfast

Organizer(s): Jessica Kohlschmidt, The Ohio State University

7:00 a.m.—10:00 a.m. S-University

Statistics in Biopharmaceutical Research Editorial Board Meeting

Chair(s): Jose Pinheiro, Johnson & Johnson

7:00 a.m.—10:00 a.m. S-Metropolitan B

Council of Chapters Business Meeting and Breakfast

Chair(s): Linda J. Young, USDA/NASS

7:30 a.m.—8:30 a.m. S-Ravenna B

Centers for AIDS Research Statisticians Annual Meeting

Organizer(s): Susan S. Ellenberg, University of Pennsylvania

7:30 a.m.—9:00 a.m. S-Jefferson B

Ohio State University Department of Statistics Alumni and Friends Breakfast

Organizer(s): Elizabeth Stasny, The Ohio State University

7:30 a.m.—9:00 a.m. S-Ravenna C

CIS Management Committee Meeting

Organizer(s): Elyse Gustafson, IMS; Elyse Gustafson, IMS

8:00 a.m.—9:30 a.m. S-Issaquah B

JASA Editors Meeting (Closed)

Chair(s): Joseph Ibrahim, The University of North Carolina

8:00 a.m.—4:00 p.m. S-Redwood

Meeting Within a Meeting (MWM) Statistics Workshop for Math and Science Teachers: Grades 9-12 Strand

Chair(s): Katherine Halvorsen, Smith College

8:00 a.m.—4:00 p.m. S-Aspen

Meeting Within a Meeting (MWM) Statistics Workshop for**Math and Science Teachers: Grades 5-8 Strand (Closed)**

Chair(s): Katherine Halvorsen, Smith College

8:30 a.m.—10:30 a.m. S-Ballard

Diversity in Statistics Mentoring Program (Closed)

Chair(s): Sydeaka Watson, The University of Chicago

9:00 a.m.—10:30 a.m. TCC-102

Mu Sigma Rho Annual Meeting

Organizer(s): Phyllis Curtiss, Grand Valley State University

9:30 a.m.—10:30 a.m. S-Greenwood

Astrostatistics Interest Group Meeting

Chair(s): Chad Schafer, Carnegie Mellon University

10:00 a.m.— CC-4B, Spotlight Seattle

JSM Coffee House

10:00 a.m.—12:30 p.m. S-Metropolitan A

Mentoring Workshop for New and Seasoned Mentors and Mentees

Chair(s): Erin Tanenbaum, NORC at the University of Chicago

12:00 p.m.—1:30 p.m. S-Boren

Journal of Agricultural, Biological, and Environmental Statistics Editorial Board Meeting (Closed)

Chair(s): Montse Fuentes, North Carolina State University

12:00 p.m.—2:00 p.m. S-Columbia

Stat Editorial Board Meeting

Organizer(s): Marc Genton, KAUST

12:30 p.m.—1:30 p.m. S-Issaquah A

Associate Editor Meeting for Statistics and Public Policy

Chair(s): David Banks, Duke University

12:30 p.m.—2:00 p.m. S-Metropolitan B

JASA AE Luncheon (Closed)

Chair(s): Jamie Hutchens, ASA

12:30 p.m.—2:00 p.m. S-Issaquah B

Interface Board Meeting

Organizer(s): Tim Hesterberg, Google

12:30 p.m.—2:30 p.m. S-Cirrus Room

IMS Council Meeting

Organizer(s): Elyse Gustafson, IMS; Elyse Gustafson, IMS

12:30 p.m.—2:30 p.m. S-Seneca

The American Statistician Editor's Lunch (Closed)

Chair(s): Nicole Lazar, University of Georgia

12:30 p.m.—4:30 p.m. S-Jefferson A

RAB and RECOM Luncheon Meeting (By Invitation Only)

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Organizer(s): Jianwen Cai, ENAR; Jose' Pinheiro, ENAR; Jose' Pinheiro, ENAR

1:30 p.m.— CC-4B, Spotlight Seattle
Popcorn Break, Sponsored by XLSTAT

2:00 p.m.—3:30 p.m. S-Ravenna A
Council of Chapters Traveling Course Committee Meeting
Chair(s): Linda J. Young, USDA/NASS

2:30 p.m.—3:00 p.m. S-Cirrus Room
IMS Business Meeting
Organizer(s): Elyse Gustafson, IMS; Elyse Gustafson, IMS

3:00 p.m.—4:30 p.m. S-Virginia
StatCom Annual Meeting
Organizer(s): Andrew Hoegh, Virginia Tech

3:00 p.m.—4:30 p.m. S-Metropolitan A
Joint Social Mixer and Business Meetings of Committees on Applied Statisticians, Career Development and Member Retention and Recruitment
Chair(s): Elizabeth Margosches, ; Jennifer Gauvin, Novartis; Erin Tanenbaum, NORC at the University of Chicago

3:30 p.m.— CC-4B, Spotlight Seattle
Spotlight Seattle: Northwest Wine Tasting Bar (while supplies last)

4:00 p.m.—5:30 p.m. S-University
Biometrics Editorial Board Meeting (Closed)
Organizer(s): Marie Davidian, North Carolina State University

4:00 p.m.—6:00 p.m. S-Ballard
DIA Bayesian Scientific Working Group Meeting
Organizer(s): Fanni Natanegara, Eli Lilly and Company

4:00 p.m.—6:00 p.m. S-Metropolitan B
Council of Chapters Officer Appreciation Reception and Workshop
Chair(s): Linda J. Young, USDA/NASS

5:00 p.m.—6:00 p.m. CC-303
Section on Statistical Learning and Data Mining Business Meeting
Chair(s): Yufeng Liu, The University of North Carolina

5:00 p.m.—6:30 p.m. S-Ravenna A
Section on Statistics in Epidemiology Business Meeting
Chair(s): Babette Brumback, University of Florida

5:00 p.m.—6:30 p.m. S-Issaquah B
Mental Health Statistics Section Business Meeting
Chair(s): Donald Hedeker, The University of Chicago

5:00 p.m.—6:30 p.m.
Section on Bayesian Statistical Science Business Meeting
Chair(s): Edward I. George, The Wharton School

5:00 p.m.—6:30 p.m. S-Seneca
UIUC Statistics Alumni and Friends Reception
Organizer(s): Douglas Simpson, University of Illinois at Urbana-Champaign

5:30 p.m.—6:30 p.m. S-Issaquah A
Section on Nonparametric Statistics Business Meeting
Chair(s): Hans-Georg G. Mueller, UC Davis

5:30 p.m.—6:30 p.m. CC-613
2017 JSM Program Committee Meeting
Chair(s): Regina Y. Liu, Rutgers University

5:30 p.m.—7:00 p.m. S-Redwood
Statistical Society of Canada Reception
Organizer(s): Brian Allen, Statistical Society of Canada

5:30 p.m.—7:00 p.m. S-Ravenna C
Oregon State University Alumni and Friends Reception
Organizer(s): Virginia Lesser, Oregon State Univeristy

5:30 p.m.—7:30 p.m. S-Aspen
Univeristy of Waterloo Alumni Reception
Organizer(s): Grace Yi, University of Waterloo

5:30 p.m.—7:30 p.m. S-Jefferson B
Section on Statistical Consulting Business Meeting and Mixer
Chair(s): Eric A. Vance, LISA, Virginia Tech

5:30 p.m.—7:30 p.m. S-Cirrus Room
Biopharmaceutical Section Business Meeting
Chair(s): Dionne Price, FDA/CDER

6:00 p.m.—7:30 p.m. S-Columbia
Business and Economic Statistics Section Business Meeting
Chair(s): Bruce Meyer, Harris School

6:00 p.m.—7:30 p.m. S-Greenwood
ASA Committee on Minorities in Statistics Networking Reception and Business Meeting
Chair(s): Sydeaka Watson, The University of Chicago

6:00 p.m.—7:30 p.m. S-Jefferson A
Government Statistics Section Business Meeting
Chair(s): Wendy Martinez, Bureau of Labor Statistics

6:00 p.m.—7:30 p.m. CC-303
Section on Statistical Learning and Data Mining Reception
Chair(s): Yufeng Liu, The University of North Carolina

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

6:00 p.m.—7:30 p.m. TCC-205

Columbia University - Statistics and Biostatistics Joint Reception

Organizer(s): Katy Hardy, Columbia University; Dood Kalicharan, Columbia University

6:00 p.m.—8:00 p.m. TCC-102

Caucus for Women in Statistics Reception and Business Meeting

Organizer(s): Paula Roberson, University of Arkansas for Medical Sciences

6:00 p.m.—8:00 p.m. S-Grand Ballroom A

North Carolina State University Alumni and Friends Reception

Organizer(s): Montse Fuentes, North Carolina State University

6:00 p.m.—8:00 p.m. S-Ravenna B

Wisconsin Welcome Reception

Organizer(s): Brian Yandell, University of Wisconsin - Madison

6:30 p.m.—7:00 p.m. S-Ravenna A

Section on Statistics in Epidemiology Open Business Meeting

Chair(s): Babette Brumback, University of Florida

6:30 p.m.—8:00 p.m. S-Willow B

Statistics without Borders Business Meeting

Chair(s): Cathy Furlong, SWB

6:30 p.m.—8:00 p.m. S-Willow A

Tsinghua Center for Statistical Science Reception

Organizer(s): Jun Liu, Harvard University

6:30 p.m.—8:30 p.m. S-Grand Ballroom D

Joint SPES/Q&P Business Meeting and Mixer

Chair(s): Stephanie DeHart, DuPont

7:00 p.m.—8:00 p.m. S-Ballard

Awards Ceremony for the Section on Statistics in Epidemiology

Chair(s): Babette Brumback, University of Florida

7:00 p.m.—8:00 p.m. S-University

Marketing Section Business Meeting

Chair(s): James Wendelberger, Los Alamos National Laboratory

8:00 p.m.—10:00 p.m. S-University

Marketing Section Mixer

Chair(s): James Wendelberger, Los Alamos National Laboratory

9:30 p.m.—12:00 a.m. S-Metropolitan Ballroom

JSM Dance Party and Lounge

Continuing Education (Added fees)

CE_19C

Quantile Regression in Practice (Added fee \$\$\$)

8:00 a.m.—12:00 p.m.

S-Willow B

ASA

Instructor(s): Yonggang Yao, SAS Institute

CE_20C

Dynamic Treatment Regimes, Sequentially Randomized Trials, and Causal Inference (Added fee \$\$\$)

8:00 a.m.—12:00 p.m.

S-Grand Ballroom D

ASA, Biometrics Section

Instructor(s): Erica Moodie, McGill University; Bibhas Chakraborty, Duke University

CE_21C

Introduction to Statistical Learning for Unsupervised Problems (Added fee \$\$\$)

8:30 a.m.—5:00 p.m.

S-Grand Ballroom C

ASA, Section on Statistical Learning and Data Mining

Instructor(s): Ali Shojaie, University of Washington

CE_22C

Managing Statistical Consulting Projects: Lessons from the Front (Added fee \$\$\$)

8:30 a.m.—5:00 p.m.

S-Grand Ballroom A

ASA, Section on Statistical Consulting

Instructor(s): Michael Greene, Deloitte Consulting; David Steier, Deloitte Consulting

CE_23C

Software Engineering for Statisticians (Added fee \$\$\$)

8:30 a.m.—5:00 p.m.

S-Grand Ballroom B

ASA, Section on Bayesian Statistical Science

Instructor(s): Murray Stokely, Google

CE_24C

Statistical Methods for Ranking Data (Added fee \$\$\$)

8:30 a.m.—5:00 p.m.

S-Willow A

ASA

Instructor(s): Mayer Alvo, University of Ottawa; Philip L.H. Yu, The University of Hong Kong

CE_25C

Introduction to Structural Equation Modeling and Its Applications (Added fee \$\$\$)

1:00 p.m.—5:00 p.m.

S-Willow B

ASA

Instructor(s): Yiu-Fai Yung, SAS Institute

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

CE_26C

Meta-Analysis: Combining the Results of Multiple Studies
(Added fee \$\$\$)

1:00 p.m.—5:00 p.m. S-Grand Ballroom D

ASA, Health Policy Statistics Section

Instructor(s): Christopher Schmid, Brown University; Ingram Olkin, Stanford University

Roundtables with Coffee

7:00 a.m.—8:15 a.m.

274 CC- Ballroom 6E

Section on Physical and Engineering Sciences
A.M. Roundtable Discussion (Added fee \$\$\$)

Section on Physical and Engineering Sciences

Organizer(s): Ananda Sen, University of Michigan

TL01 SWING into a Successful Statistical Career—

◆Stephanie DeHart, DuPont

275 CC- Ballroom 6E

CANCELLED- Health Policy Statistics Section
A.M. Roundtable Discussion (Added fee \$\$\$)

Health Policy Statistics Section

Organizer(s): Frank Yoon, Mathematica Policy Research

276 CC- Ballroom 6E

Section on Statistical Education A.M.
Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Education

Organizer(s): Patricia Humphrey, Georgia Southern University

TL03 Resampling in the Undergraduate Curriculum—

◆Tim Hesterberg, Google

277 CC- Ballroom 6E

Mental Health Statistics Section A.M.
Roundtable Discussion (Added fee \$\$\$)

Mental Health Statistics Section

Organizer(s): Zhehui Luo, Michigan State University

TL04 How to Get Involved with ASA Activities and
Network—◆Douglas Gunzler, Case Western Reserve
University

278

CC- Ballroom 6E

Section on Statistical Consulting A.M.
Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Consulting

Organizer(s): Isabella R. Ghement, Ghement Statistical Consulting
Company Ltd.

TL05 What Makes One an Excellent Statistical
Consultant?—◆Vaneeta Kaur Grover, The Chemours
Company

279

CC- Ballroom 6E

Section on Statistics in Epidemiology A.M.
Roundtable Discussion (Added fee \$\$\$)

Section on Statistics in Epidemiology

Organizer(s): Daniel Gillen, UC Irvine

TL06 Epidemiological Study Designs for Longitudinal
Data—◆Jonathan Schildcrout, Vanderbilt
University

280

CC- Ballroom 6E

Quality and Productivity Section A.M.
Roundtable Discussion (Added fee \$\$\$)

Quality and Productivity Section

Organizer(s): John Louis Szarka,

TL07 The Role of Confirmation in Designed Experiments—
◆Willis A. Jensen, W.L. Gore & Associates

281

CC- Ballroom 6E

Biopharmaceutical Section A.M. Roundtable
Discussion (Added fee \$\$\$)

Biopharmaceutical Section

Organizer(s): Olga Marchenko, Quintiles

TL08 Minimization Randomization: What Are the
Controversial Issues?—◆Boguang Zhen, FDA/CBER

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

282

CC- Ballroom 6E

Introductory Overview Lecture: Statistical
Issues in Computational Neuroscience—Invited
ASA, ENAR, WNA, IMS, SSC, International Indian Statistical
Association, International Chinese Statistical Association, Ko-
rean International Statistical Society, International Society for
Bayesian Analysis (ISBA), Royal Statistical Society, International
Statistical Institute

Organizer(s): Hongtu Zhu, The University of North Carolina at
Chapel Hill

Chair(s): Qiang Sun, Princeton University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 8:35 a.m. Neural Recordings, Computational Neuroscience, and Statistics—◆Robert Kass, Carnegie Mellon University
- 9:05 a.m. Statistical Analysis of Neuroimaging Data—◆Martin A. Lindquist, The Johns Hopkins University
- 9:35 a.m. Big Data Integration in Biomedical Studies—◆Hongtu Zhu, The University of North Carolina at Chapel Hill
- 10:05 a.m. Floor Discussion

Invited Sessions 8:30 a.m.—10:20 a.m.

283 **CC-603**
Recent Advances in Quantile Regression—Invited
 IMS

Organizer(s): Xuming He, University of Michigan
 Chair(s): Xuming He, University of Michigan

- 8:35 a.m. Computational Methods in Quantile Regression—◆Roger Koenker, IMS
- 9:05 a.m. Comparing Censored Quantile Regression Models in Prediction Performances—◆Ruosha Li, The University of Texas School of Public Health; Limin Peng, Emory University
- 9:35 a.m. Multiple-Output Functional Quantile Regression—◆Davy Paindaveine, Université libre de Bruxelles; Germain Van Bever, The Open University
- 10:05 a.m. Floor Discussion

284 **CC-201**
Innovations in Survey Statistics with Applications—Invited

IMS, Government Statistics Section, Statistics Without Borders, Committee on Applied Statisticians

Organizer(s): Jean D. Opsomer, Colorado State University
 Chair(s): Sarah Nusser, Iowa State University

- 8:35 a.m. Measurement Error in Dual Frame Designs—◆Lynne Stokes, Southern Methodist University; Dong Lin, Capital One
- 9:00 a.m. Design and Estimation Considerations for Stratum Jumping in the National Survey of College Graduates—◆Jay Breidt, Colorado State University; Jean D. Opsomer, Colorado State University; Michael White, U.S. Census Bureau

- 9:25 a.m. Multiply Robust Imputation Procedures for the Treatment of Item Nonresponse in Surveys—◆David Haziza, University of Montreal; Sixia Chen, Westat
- 9:50 a.m. Remedies for Informative Sampling in Small-Area Estimation and Imputation—◆Emily Berg, Iowa State University
- 10:15 a.m. Floor Discussion

285 **CC-4C3**
Key Subgroup Analysis Issues in Clinical Trials—Invited

ENAR, International Chinese Statistical Association

Organizer(s): Alex Dmitrienko, Quintiles
 Chair(s): Alex Dmitrienko, Quintiles

- 8:35 a.m. Do Subgroup Analyses Harm? Usually Not. Are They Helpful? It Depends. A Regulatory and Practical Review—◆Christoph Muysers, Bayer HealthCare
- 8:55 a.m. Common Practices in Industry for Subgroups Identification and Analysis in Clinical Trials—◆Cristiana Mayer, Janssen R&D/Johnson & Johnson
- 9:15 a.m. Many Faces of Subgroup Analysis in Clinical Drug Development—◆Ilya Lipkovich, Quintiles; Alex Dmitrienko, Quintiles
- 9:35 a.m. Disc: Gary Koch, The University of North Carolina at Chapel Hill
- 9:55 a.m. Disc: H.M. James Hung, FDA

286 **CC-607**
Functional Data Analysis I—Invited
 IMS

Organizer(s): John Aston, University of Cambridge
 Chair(s): John Aston, University of Cambridge

- 8:35 a.m. Variable Selection in Fully Functional Regression Models—◆Alexander Aue, UC Davis; Holger Dette, Ruhr University Bochum; Siegfried H[^]rmann, Université libre de Bruxelles
- 9:05 a.m. Amplitude and Phase Variation of Generalized Functional Data—◆Victor Michael Panaretos, EPFL
- 9:35 a.m. Regression Analysis for Multivariate Random Functions—◆Jeng-Min Chiou, Academia Sinica
- 10:05 a.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

287 CC-206 ■ ● Complex Data, Inhomogeneous Data, and Big Data—Invited

Section on Nonparametric Statistics, Government Statistics Section

Organizer(s): Haonan Wang, Colorado State University

Chair(s): Zhengjun Zhang, University of Wisconsin

- 8:35 a.m. Heterogeneous Data Analysis Based on HDLSS Asymptotics—◆James Stephen Marron, The University of North Carolina
- 9:00 a.m. Statistical Inference for Complex Data Objects—◆Haonan Wang, Colorado State University; Ela Sienkiewicz, Colorado State University
- 9:25 a.m. Heterogeneous Graph Estimation—Yang Ning, Princeton University; ◆Han Liu, Princeton University
- 9:50 a.m. Statistical Analysis of Heterogeneous Data in Forensic Science—◆Hari Iyer, National Institute of Standards and Technology; Soweon Yoon, Michigan State University/National Institute of Standards and Technology; Elham Tabassi, National Institute of Standards and Technology
- 10:15 a.m. Floor Discussion

288 TCC-101 ■ ● Functional Data Analysis in Medical Imaging—Invited

Section on Statistics in Imaging, Mental Health Statistics Section, SSC, Biometrics Section

Organizer(s): Jianhua Hu, MD Anderson Cancer Center

Chair(s): Jianhua Hu, MD Anderson Cancer Center

- 8:35 a.m. Correlated Curve Estimation with Application to Perfusion CT—Yuan Wang, MD Anderson Cancer Center; Jianhua Hu, MD Anderson Cancer Center; Kim-Anh Do, MD Anderson Cancer Center; ◆Brian Hobbs, MD Anderson Cancer Center
- 8:55 a.m. Partially Functional Linear Regression in High Dimensions—◆Fang Yao, University of Toronto; Kaijie Xue, University of Toronto; Dehan Kong, The University of North Carolina at Chapel Hill; Hao Helen Zhang, The University of Arizona
- 9:15 a.m. Nonparametric Analysis of Tracer Kinetics from Dynamically Acquired PET Imaging Data—◆Finbarr O'Sullivan, University College Cork
- 9:35 a.m. EEG/MEG Source Reconstruction with Spatial-Temporal Two-Way Regularized Regression—◆Jianhua Huang, Texas A&M University

- 9:55 a.m. Quantifying Functional Connectivity in Brain Imaging: The Functional Data Approach—◆Jane-Ling Wang, UC Davis; Jingjiang He, UC Davis; Xiaoke Zhang, UC Davis; Owen Carmichael, UC Davis; Hans-Georg G. Mueller, UC Davis

10:15 a.m. Floor Discussion

289 CC-2B ■ Computational Methods for Network Data Analysis—Invited

Section on Statistical Computing, Section on Statistics in Defense and National Security, Government Statistics Section

Organizer(s): Yuguo Chen, University of Illinois at Urbana-Champaign

Chair(s): Yuguo Chen, University of Illinois at Urbana-Champaign

- 8:35 a.m. Statistical Analysis of Network Data Objects, with Applications in Functional Neuroimaging—◆Eric Kolaczyk, Boston University; Cedric Ginestet, Boston University; Steve Rosenberg, Boston University; Lizhen Lin, The University of Texas at Austin
- 9:05 a.m. Multilinear Models for Longitudinal Relational Tensor Data—◆Peter Hoff, University of Washington
- 9:35 a.m. Variational Methods for Modeling Large Networks—Duy Q. Vu, The University of Melbourne; ◆David R. Hunter, Penn State; Michael Schweinberger, Rice University
- 10:05 a.m. Floor Discussion

290 CC-4C4 ■ ● Estimands and Their Role in Clinical Trials: Defining Suitable Primary Scientific Questions of Interest—Invited

Biopharmaceutical Section, Biometrics Section, Section on Medical Devices and Diagnostics

Organizer(s): Frank Bretz, Novartis

Chair(s): Mouna Akacha, Novartis

- 8:35 a.m. Evaluating Effectiveness of a New Treatment Indication: A Succession of Clinical Trials with Varying Estimands—◆Scott Emerson, University of Washington
- 9:00 a.m. Considerations and Consequences of De-Jure and De-Facto Estimands—◆Craig H. Mallinckrodt, Eli Lilly and Company
- 9:25 a.m. What to Estimate in Symptom Trials—◆Thomas Permutt, FDA
- 9:50 a.m. Disc: Roderick Little, University of Michigan
- 10:15 a.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

291 CC-4C2 ■ Statistical Innovations for Genetic Association Studies—Invited

International Chinese Statistical Association, Biometrics Section, International Indian Statistical Association

Organizer(s): Yi-Juan Hu, Emory University

Chair(s): Yi-Juan Hu, Emory University

- 8:35 a.m.** Genetic Association Analysis Under Complex Survey Sampling—◆Danyu Lin, The University of North Carolina
- 9:00 a.m.** Developing Polygenic Risk Prediction Models Based on Winner's Curse Correction and Multidimensional Thresholding—◆Nilanjan Chatterjee, National Cancer Institute; Jianxin Shi, National Cancer Institute
- 9:25 a.m.** Incorporating Functional Information in Tests of Excess De Novo Load—◆Andrew Allen, Duke University; Yu Jiang, Duke University; Slave Petrovski, Duke University; Kouros Owzar, Duke University; David Goldstein, Duke University
- 9:50 a.m.** Analysis for Multiple Phenotypes in Genome-Wide Association Studies—◆Xihong Lin, Harvard School of Public Health; Zhonghua Liu, Harvard University
- 10:15 a.m.** Floor Discussion

292 CC-310 ■ New Horizons in Phylogenetic Inference—Invited

International Indian Statistical Association

Organizer(s): Arindam RoyChoudhury, Columbia University

Chair(s): Arindam RoyChoudhury, Columbia University

- 8:35 a.m.** Phylogenetic Experimental Design in the Era of Big Data—◆Jeffrey P. Townsend, Yale University
- 9:05 a.m.** Parameter Identifiability and Inference for Species Phylogenies Under the Coalescent—◆Laura Kubatko, The Ohio State University; Julia Chifman, Wake Forest University
- 9:35 a.m.** Making the Most of Data Augmentation in Phylogenetics—◆Vladimir Minin, University of Washington
- 10:05 a.m.** Floor Discussion

293 CC-608 ● Statistics in Practice for National Security Risk Analysis—Invited

Section on Risk Analysis, Section on Statistics in Defense and National Security, International Indian Statistical Association, Committee on Applied Statisticians

Organizer(s): Robert Brigantic, PNNL

Chair(s): Robert Brigantic, PNNL

- 8:35 a.m.** A Primer on National Security Risk Analysis—◆Samrat Chatterjee, Pacific Northwest National Laboratory
- 8:50 a.m.** Large-Scale Visual Exploration of Radiological and Nuclear Risk-Assessment Methods—◆Landon Sego, Pacific Northwest National Laboratory; Daniel Fortin, Pacific Northwest National Laboratory; Robert Brigantic, PNNL
- 9:05 a.m.** Systems Modeling for Rapid Containment and Casualty Mitigation—◆Eva Lee, Georgia Institute of Technology
- 9:20 a.m.** Approaches and Concerns with Incorporating Available Statistical Information in Terrorism Risk Analyses—◆Eric Tollar, Battelle Memorial Institute
- 9:35 a.m.** Techniques for Risk Scoring of Automated National Security Watchlist Checks—◆Tony Kassekert, DHS/U.S. Citizenship and Immigration Services; Mark Montezemolo, DHS/U.S. Citizenship and Immigration Services
- 9:50 a.m.** Toward a Science of Security Games: Key Algorithmic Principles, Deployed Applications, and Research Challenges—◆Milind Tambe, University of Southern California
- 10:05 a.m.** Floor Discussion

294 CC-609 ■ ● The Statistics Identity Crisis: Are We Really Data Scientists?—Invited

Section on Statistical Education, SSC, Section on Statistical Consulting, Committee on Applied Statisticians

Organizer(s): Jeffrey T. Leek, Johns Hopkins Bloomberg School of Public Health

Chair(s): Jeffrey T. Leek, Johns Hopkins Bloomberg School of Public Health

- 8:35 a.m.** 'Am I a Data Scientist?': The Applied Statistics Student's Identity Crisis—◆Alyssa Frazee, Stripe
- 9:00 a.m.** How Industry Views Data Science Education in Statistics Departments—◆Chris Volinsky, AT&T
- 9:25 a.m.** Evaluating Data Science Contributions in Teaching and Research—◆Lance Waller, Emory University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 9:50 a.m. Teach Data Science and They Will Come—◆Jennifer Bryan, The University of British Columbia
- 10:15 a.m. Floor Discussion

Invited Panels 8:30 a.m.—10:20 a.m.

295 CC-3B

■ ● Getting It Right with Practical Ethics: How Academia, Government, and Industry Can Implement Standards of Practice for Quantitative Sciences—Invited

Committee on Professional Ethics, Section on Statistical Education

- Organizer(s): Pandurang M. Kulkarni, Eli Lilly and Company
- Chair(s): Jonathan Gelfond, The University of Texas at San Antonio
- Panelists: ◆Pandurang M. Kulkarni, Eli Lilly and Company
- ◆Lisa LaVange, FDA/CDER
- ◆Rochelle Tractenberg, Georgetown University
- ◆Sastry Pantula, Oregon State University

- 10:15 a.m. Floor Discussion

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

296 CC-617

■ ● Designs and Statistical Methods Used in Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS): A Partnership for Actionable Science—Topic-Contributed

Mental Health Statistics Section, Health Policy Statistics Section

- Organizer(s): Tzu-Cheg Kao, Uniformed Services University of the Health Sciences
- Chair(s): Juned Siddique, Northwestern University

- 8:35 a.m. The Army STARRS Project: Statistical Design and Methods for an Integrated Investigation of the Epidemiological, Biological, and Neurocognitive Predictors of Suicidal Behavior—◆Steven Heeringa, University of Michigan Institute for Social Research; Paul C. Schulz, Institute for Social Research; Heather M. Schroeder, Institute for Social Research
- 8:55 a.m. Statistical Design and Methods for Integrating

Biomarker and Genetic Data into the Army STARRS Epidemiological Study of Suicidality—◆Colter Mitchell, University of Michigan

- 9:15 a.m. The Army STARRS Project: Extracting Administrative Data and Early Findings—◆Alan Zaslavsky, Harvard Medical School
- 9:35 a.m. The Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS): Statistical Designs and Methods for Predicting Nonfatal Suicidal Behaviors—◆Tzu-Cheg Kao, Uniformed Services University of the Health Sciences; Steven Heeringa, University of Michigan Institute for Social Research; Alan Zaslavsky, Harvard Medical School; James Naifeh, CSTS, USUHS; Pablo Aliaga, CSTS, USUHS; Patti Vegella, CSTS, USUHS; Tsz Ng, CSTS, USUHS; Bailey Zhang, CSTS, USUHS; Christina Buckley, CSTS, USUHS; Carol Fullerton, CSTS, USUHS; Gary Wynn, CSTS, USUHS; James McCarroll, CSTS, USUHS; Nancy Sampson, Harvard Medical School; Lisa Colpe, NIH/NIMH; Michael Schoenbaum, NIH/NIMH; Kenneth Cox, U.S. Army Public Health Command; Ronald Kessler, Harvard Medical School; Murray Stein, UC San Diego/VA San Diego Healthcare System; Robert Ursano, CSTS, USUHS
- 9:55 a.m. Disc: Knashawn H. Morales, University of Pennsylvania Perelman School of Medicine
- 10:15 a.m. Floor Discussion

297 CC-2A

Clustering Data in Many Forms—Topic-Contributed

Section on Statistical Learning and Data Mining, Government Statistics Section, Section on Statistics and the Environment

- Organizer(s): Tanzy Love, University of Rochester
- Chair(s): David S. Matteson, Cornell University

- 8:35 a.m. Joint Modeling and Clustering Paired Generalized Longitudinal Trajectories with Application to Cocaine Abuse Treatment Data—◆Yehua Li, Iowa State University; Hui Huang, Peking University; Yongtao Guan, University of Miami
- 8:55 a.m. On K-Means Algorithm with Membership Constraints—◆Volodymyr Melnykov, The University of Alabama; Igor Melnykov, Colorado State University - Pueblo
- 9:15 a.m. Simultaneous Model-Based Clustering and Variable Selection: Extension to Mixed-Distribution Data—◆Tanzy Love, University of Rochester; Katie Evans, DuPont; Sally W. Thurston, University of Rochester
- 9:35 a.m. Bayesian Clustering of Multi-Source Data—◆Eric Lock, University of Minnesota

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

9:55 a.m. Clustering of Spatiotemporal Data with Applications to Wind Speeds—◆Laura Tupper, Cornell University; David S. Matteson, Cornell University; C. Lindsay Anderson, Cornell University

10:15 a.m. Floor Discussion

298 CC-620

● Statistical Innovations in Failure-Time Modeling of Complex Systems: Pathway to a Better Decision—Topic-Contributed

Section on Physical and Engineering Sciences, Section on Statistics in Defense and National Security, Quality and Productivity Section

Organizer(s): Sanjib Basu, Northern Illinois University

Chair(s): Arpita Chatterjee, Georgia Southern University

8:35 a.m. Inference Based on Data from Superpositions of Renewal Processes—◆William Meeker, Iowa State University; Ye Tian, Facebook; Luis Escobar, Louisiana State University

8:55 a.m. Parametric Analysis of Repairable Systems Under Competing Risks—◆Ananda Sen, University of Michigan; Anupap Somboonsawatdee, Chulalongkorn University

9:15 a.m. Inference for Step-Stress Models—◆Nandini Kannan, National Science Foundation

9:35 a.m. A General Class of Multicomponent System Models with Limited Failure—◆Sanjib Basu, Northern Illinois University; Qi Jiang, Northern Illinois University

9:55 a.m. Floor Discussion

299 TCC-204

■ ● Calibration and Semiparametric Techniques in Survey and Biostatistical Research—Topic-Contributed

Survey Research Methods Section, SSC, Biometrics Section

Organizer(s): Yan Li, University of Maryland

Chair(s): Barry I. Graubard, National Cancer Institute

8:35 a.m. Calibration and Model-Robustness: How Close Can We Get to Full Efficiency?—◆Thomas Lumley, The University of Auckland

8:55 a.m. Range-Restricted Calibration Weights and Related Inference Problems—◆Wilson Lu, Acadia University; Changbao Wu, University of Waterloo

9:15 a.m. Weighted Estimating Equations Based on Response Propensities in Terms of Covariates That Are Observed Only for Responders—◆Eric Slud, U.S. Census Bureau

9:35 a.m. Improving Efficiency Under Two-Phase Sampling—

◆Takumi Saegusa, Fred Hutchinson Cancer Research Center; Jon August Wellner, University of Washington

9:55 a.m. Longitudinal Functional Additive Model with Continuous Proportional Outcomes—◆Haocheng Li, University of Calgary; Raymond Carroll, Texas A&M University; Sarah Kozey-Keadle, National Cancer Institute

10:15 a.m. Floor Discussion

300 CC-612

■ ● Clinical Trials: With So Many Assumptions, How Reliable Are the Results?—Topic-Contributed

Biopharmaceutical Section, Government Statistics Section, Section for Statistical Programmers and Analysts

Organizer(s): Donna L. Kowalski, Astellas

Chair(s): Donna L. Kowalski, Astellas

8:35 a.m. Consequences of Misspecified Clusters in Group Randomized Trials—◆Abigail Shoben, The Ohio State University; Rebecca Andridge, The Ohio State University; David M. Murray, NIH

8:55 a.m. Sensitivity Analyses for Handling Sample Heterogeneity and Missing Data in Clinical Trials in Alcohol Dependence—◆Ralitza Gueorguieva, Yale University; Stephanie O'Malley, Yale University; John H. Krystal, Yale University

9:15 a.m. Impact of Length Difference in Risk and Comparison Windows: A Cautionary Note—◆Xiaoming Li, Gilead Sciences

9:35 a.m. How to Strengthen Analyses by Dropping Risky Assumptions: Three Examples—◆Devan Mehrotra, Merck

9:55 a.m. Floor Discussion

301 CC-610

■ ● Are There Cancer Clusters in Florida? Five Answers—Topic-Contributed

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

Organizer(s): David Banks, Duke University

Chair(s): David Banks, Duke University

8:35 a.m. A Cluster Analysis of Pediatric Cancer Incidence Rates in Florida: 2000–2010—◆Raid Amin, University of West Florida; Michael Hendryx, Indiana University; Matthew Shull, University of West Florida; Alexander Bohnert, Nuremberg University-Erlangen

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- 8:55 a.m. Wombling Analysis of Childhood Tumor Rates in Florida—◆Matthew Heaton, Brigham Young University
- 9:15 a.m. Identifying Pediatric Cancer Clusters in Florida Using Loglinear Models and Generalized Lasso Penalties—◆Hao Wang, Michigan State University; Abel Rodriguez, UC Santa Cruz
- 9:35 a.m. Childhood Brain Cancer in Florida: A Bayesian Clustering Approach—◆Chawarat Rotejanaprasert, CC-214
- 9:55 a.m. Disc: Lurdes Inoue, University of Washington
- 10:15 a.m. Floor Discussion

302 **CC-214**
Student Paper Competition—Topic-Contributed
Section on Statistics and the Environment

Organizer(s): Edward Boone, Virginia Commonwealth University
 Chair(s): Megan Higgs, Montana State University

- 8:35 a.m. Regression-Based Covariance Functions for Nonstationary Spatial Modeling—◆Mark Risser, The Ohio State University; Catherine Calder, The Ohio State University
- 8:55 a.m. A Multi-Scale Reconstruction of Bivariate Paleoclimate from Tree Rings Using a Mechanistic Growth Model—◆John Tipton, Colorado State University; Mevin Hooten, Colorado State University
- 9:15 a.m. A Monte Carlo Approach to Quantifying Model Error in Intractable Bayesian Hierarchical Models—◆Staci White, The Ohio State University; Radu Herbei, The Ohio State University
- 9:35 a.m. Bayesian Melding of the Dead-Reckoned Path and GPS Measurements for an Accurate and High-Resolution Path of Marine Mammals—◆Yang Liu, The University of British Columbia; Brian C. Battaile, The University of British Columbia Marine Mammal Research Unit; James Zidek, The University of British Columbia; Andrew W. Trites, The University of British Columbia Marine Mammal Research Unit
- 9:55 a.m. Floor Discussion

303 **CC-618**
■ Dose Uncertainty and Risk Estimation in Radiation Epidemiology—Topic-Contributed
Section on Teaching of Statistics in the Health Sciences

Organizer(s): Ruth Pfeiffer, National Cancer Institute
 Chair(s): Ruth Pfeiffer, National Cancer Institute

- 8:35 a.m. Risk Estimation in the NCI Study of Thyroid Disease in Kazakhstan: Methods and Findings to Account

- for Complex Uncertainty in Radiation Dosimetry—◆Deukwoo Kwon, University of Miami; F. Owen Hoffman, Oak Ridge Center for Risk Analysis; Brian E. Moroz, National Cancer Institute; Steven Simon, National Cancer Institute
- 8:55 a.m. Application of Measurement Error Techniques to Radiation Epidemiology—◆Mark Peter Little, National Cancer Institute
- 9:15 a.m. A Two-Dimensional Monte Carlo Approach to Radiation Dose Reconstruction for Epidemiologic Studies—◆Steven Simon, National Cancer Institute; Owen Hoffman, Oak Ridge Center for Risk Analysis; Eduard Hofer, Retired
- 9:35 a.m. Accounting for Shared Dosimetry Error in Epidemiologic Analyses—◆Daniel Stram, University of Southern California
- 9:55 a.m. Disc: Dale Preston, Hirosoft International
- 10:15 a.m. Floor Discussion

304 **CC-3A**
■ ● Advances in the Statistical Analysis of Text—Topic-Contributed
Section on Statistics in Defense and National Security

Organizer(s): Wendy Martinez, Bureau of Labor Statistics
 Chair(s): David Marchette, Naval Surface Warfare Center

- 8:35 a.m. B-Privy Dynamics in the Probability Plane: Quantitative Horizon Scanning from a Physics Perspective—◆Jeffrey L. Solka, NSWCCD; Dan Parks, NSWCCD; Richard Tatum, NSWCCD
- 8:55 a.m. Evaluation of Automated Storytelling Procedures—◆John Rigsby, Naval Surface Warfare Center; Daniel Barbar, George Mason University
- 9:15 a.m. Categorizing Sentiment Using Unstructured Text—◆Wendy Martinez, Bureau of Labor Statistics; Lucilla Tan, Bureau of Labor Statistics
- 9:35 a.m. Tracking Evolution in Text Data Streams via Online Density-Based Clustering—◆Avory Bryant, Naval Surface Warfare Center
- 9:55 a.m. Disc: David Jakubek, Defense Science Board
- 10:15 a.m. Floor Discussion

305 **CC-212**
SBSS Student Travel Award Winners - Session 2—Topic-Contributed
Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)

Organizer(s): Catherine Calder, The Ohio State University
 Chair(s): David B. Dahl, Brigham Young University

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 8:35 a.m. Bayesian Sparse Reduced Rank Multivariate Regression—◆Gyuhyeong Goh, University of Connecticut; Kun Chen, University of Connecticut; Dipak K. Dey, University of Connecticut
- 8:55 a.m. Functional Gaussian Process Model for Bayesian Nonparametric Analysis—◆Leo Duan; Xia Wang, University of Cincinnati; Rhonda Szczesniak, Cincinnati Children's Hospital Medical Center
- 9:15 a.m. Scalable Bayesian Variable Selection Using Non-Local Prior Densities in Ultrahigh-Dimensional Settings—◆Minsuk Shin, Texas A&M University; Anirban Bhattacharya, Texas A&M University; Valen E. Johnson, Texas A&M University
- 9:35 a.m. The Bayesian Group Bridge for Bilevel Variable Selection—◆Himel Mallick, The University of Alabama at Birmingham; Nengjun Yi, The University of Alabama at Birmingham
- 9:55 a.m. Efficient Bayesian Estimation and Uncertainty Quantification in Differential Equation Models—◆Prithwish Bhaumik, North Carolina State University; Subhashis Ghosal, North Carolina State University
- 10:15 a.m. Floor Discussion

306 CC-308

Statistical Computing and Graphics Student Paper Competition—Topic-Contributed Section on Statistical Graphics, Section on Statistical Computing

Organizer(s): Aarti Munjal, University of Colorado Denver
Chair(s): Feng Liang, University of Illinois at Urbana-Champaign

- 8:35 a.m. PhyViz: Phylogenetic Visualization of Genealogical Information in R—◆Lindsay Rutter, Iowa State University; Dianne Cook, Iowa State University; Susan Ruth VanderPlas, Iowa State University
- 8:55 a.m. Efficient Penalty Search for Multiple Change-point Detection in Big Data—◆Kaylea Haynes, Lancaster University; Idris Eckley, University of Lancaster; Paul Fearnhead, Lancaster University
- 9:15 a.m. An R Package for the Analysis of Spatially Explicit Capture-Recapture Data—◆Ben Stevenson, University of St. Andrews; David Borchers, University of St. Andrews
- 9:35 a.m. Introducing Statistics with IntRo—◆Andrea Kaplan, Iowa State University; Eric Hare, Iowa State University
- 9:55 a.m. Disc: Hadley Wickham, Rice University
- 10:15 a.m. Floor Discussion

Topic-Contributed Panels

8:30 a.m.—10:20 a.m.

307 CC-606

■ ● Vital Collaborations Among Academia, Industry, and Government—Topic-Contributed Health Policy Statistics Section, SPAIG Committee, Korean International Statistical Society, International Chinese Statistical Association, Government Statistics Section, Section on Statistical Consulting

Organizer(s): Kelly H. Zou, Pfizer Inc.

Chair(s): Kelly H. Zou, Pfizer Inc.

Panelists: ◆Dongseok Choi, Oregon Health & Science University

◆John E. Kolassa, Rutgers University

◆Mani Lakshminarayanan, Pfizer Inc.

◆Barry D. Nussbaum, EPA

◆A. James O'Malley, Dartmouth College

◆Wei Shen, Eli Lilly and Company

10:15 a.m. Floor Discussion

Contributed Sessions

8:30 a.m.—10:20 a.m.

308 CC-4C1

SPEED: Health Policy and Mental Health Statistics—Contributed

Health Policy Statistics Section, Mental Health Statistics Section

Chair(s): Abhijit Dasgupta, ARAASTAT

8:35 a.m. Developing Reliability-Adjusted Rates to Profile the Quality of Home- and Community-Based Services Delivered to Medicaid Beneficiaries Using an Empirical Bayes Framework—◆Sheng Wang, Mathematica Policy Research; Alex Bohl, Mathematica Policy Research, Inc.; Dejene Ayele, Mathematica Policy Research, Inc.

8:40 a.m. An Interrupted Time Series Analysis of the Mental Health Parity and Addiction Equity Act's Impact on Utilization and Expenditures Among Behavioral Health Care 'Carve-In' Enrollees—◆Jessica Harwood; Susan L. Ettner, UCLA

8:45 a.m. The Impact of Modeling Strategy and Informative Censoring on Estimated Readmission Risk—◆Brittney Bailey, The Ohio State University;

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- Abigail Shoben, The Ohio State University; Randi Foraker, The Ohio State University
- 8:50 a.m. Signal Drift and Calibration for Magnetic Resonance Spectroscopy—◆Laura Mariano, Draper Laboratory; Ben Rowland, Brigham and Women's Hospital; John Irvine, The Charles Stark Draper Laboratory; Alexander Lin, Brigham and Women's Hospital
- 8:55 a.m. Comprehensive Risk Prediction Using Interactive Graph-Guided Fused Lasso Penalty—◆Zhaonan Sun, IBM T.J. Watson Research Center; Fei Wang, University of Connecticut; Jianying Hu, IBM T.J. Watson Research Center
- 9:00 a.m. Evaluating Missing Data Methods for Health Disparities Study Using HCUP State Inpatient Databases—◆Wei Zhang, The George Washington University; Andrew Gelman, Columbia University; Stephen Lyman, Hospital for Special Surgery; Yan Ma, The George Washington University
- 9:05 a.m. A Localized Prediction Algorithm for Personalized Trauma Care—◆Sara Moore; Alan Hubbard, UC Berkeley; Mitchell J. Cohen, UC San Francisco
- 9:10 a.m. A Comparison of Longitudinal Data Analysis Methods to Evaluate the Impact of HIV Legislation—◆Simone Gray, CDC; Patricia Sweeney, CDC; David Purcell, CDC; Jenny Sewell, CDC; Aruna Surendera Babu, CDC; Brett Tarver, CDC; Joseph Prejean, CDC; Jonathan Mermin, CDC
- 9:15 a.m. Quantifying Telemedicine Intensive Care in the Veterans Health Administration (VHA)—◆Amy O'Shea, Department of Veterans Affairs; Lynelle Johnson, VA Healthcare System of Ohio; Mary Vaughan Sarrazin, CADRE, Iowa City VA Health Care System; Peter Cram, University Health Network and Mount Sinai Hospital/University of Toronto; Heather Schacht Reisinger, CADRE, Iowa City VA Health Care System
- 9:20 a.m. Comparisons of Survival Analysis Methods for Doubly Truncated Data—◆Lior Rennert, University of Pennsylvania; Sharon X. Xie, University of Pennsylvania
- 9:30 a.m. Combining Item Response Theory with Multiple Imputation to Crosswalk Between Health Assessment Questionnaire—◆Chenyang Gu; Roe Gutman, Brown University; Vincent Mor, Brown University
- 9:35 a.m. Estimating Causal Effects of Treatment in RCTs with Provider and Subject Noncompliance—◆Elisa Sheng, University of Washington; Xiao-Hua Zhou, University of Washington
- 9:40 a.m. Multiple Decision Allocation Strategies in Kidney Paired Donation Program—◆Wen Wang, University of Michigan; Mathieu Bray, University of Michigan; Peter X.K. Song, University of Michigan; Alan Leichtman, University of Michigan;

- Michael Rees, University of Toledo Medical Center; Valerie Ashby, University of Michigan; Richard Eikstadt, University of Michigan; Audrey Goulding, University of Michigan; John D. Kalbfleisch, University of Michigan
- 9:45 a.m. Teen Pregnancy and STI Prevention Research: Lessons Learned in Hawaii—◆Tamara Tom, University of Hawaii
- 9:50 a.m. An Analysis of Factors Associated with Depression in Adults Based on Data from the Behavioral Risk Factor Surveillance System (BRFSS) Survey—◆Charlotte Mann, Iowa State University; Ulrike Genschel, Iowa State University; Heike Hofmann, Iowa State University
- 9:55 a.m. Understanding Activity Patterns via Functional Data Approach and Quantifying Similarities Across Species—◆Haochang Shou, University of Pennsylvania; Vadim Zipunnikov, Johns Hopkins Bloomberg School of Public Health; Lihong Cui, National Institute of Mental Health; Kathleen Merikangas, National Institute of Mental Health; Sonja Greven, LMU; Ciprian Crainiceanu, The Johns Hopkins University
- 10:00 a.m. Predicting Low Accrual in Cooperative Group Oncology Trials—◆Caroline Bennette, University of Washington; Scott D. Ramsey, Fred Hutchinson Cancer Research Center; Cara L. McDermott, University of Washington; Josh J. Carlson, University of Washington; Anirban Basu, University of Washington; David L. Veenstra, University of Washington
- 10:05 a.m. State-Level Estimates from the NHIS Restricted Data: Analyses to Support States' Implementation and Evaluation of the ACA—◆Joanna Turner, University of Minnesota, SHADAC; Heather Mattson Dahlen, University of Minnesota, SHADAC
- 10:10 a.m. Know Your Control Group: Comparison of Military and Civilian Controls in the Study of Traumatic Brain Injury—◆John Irvine, The Charles Stark Draper Laboratory; Laura Mariano, Draper Laboratory; Ben Rowland, Brigham and Women's Hospital; Kristin Heaton, U.S. Army Institute of Environmental Medicine; Alexander Lin, Brigham and Women's Hospital

309

CC-401

SPEED: Methods in Machine and Data Mining—Contributed

Section on Statistical Learning and Data Mining, Section for Statistical Programmers and Analysts

Chair(s): Haim Bar, University of Connecticut

- 8:35 a.m. Innovated Interaction Screening for High-Dimensional Nonlinear Classification—◆Yinfei

Tuesday

- Kong; Yingying Fan, University of Southern California; Daoji Li, University of Southern California; Zemin Zheng, University of Southern California
- 8:40 a.m. Functional Template Learning for Type Ia Supernova—◆Shiyuan He, Texas A&M University; Jianhua Huang, Texas A&M University; Lifan Wang, Texas A&M University
- 8:45 a.m. Sparse Generalized PCA for Selectable High-Dimensional Analysis—◆Qiaoya Zhang; Yiyuan She, Florida State University; M. Ross Kunz, Idaho National Laboratory
- 8:50 a.m. Understanding Signed Networks Using Balance Theory—◆Derek Feng,
- 8:55 a.m. Mining of Differential Correlation—◆Kelly Nicole Bodwin, The University of North Carolina at Chapel Hill; Andrew Nobel, The University of North Carolina at Chapel Hill; Kai Zhang, The University of North Carolina at Chapel Hill
- 9:00 a.m. A Significance Test for Graph-Constrained Estimation—◆Sen Zhao, University of Washington; Ali Shojaie, University of Washington
- 9:05 a.m. Analysis of Contour Data Using Shape Analysis Methods—◆Marepalli Rao, University of Cincinnati; Qin Wang, University of Cincinnati; Subramanyam Kasala, The University of North Carolina
- 9:10 a.m. Dynamic Stratification in Panels—◆Etienne Josserand, Nielsen; William Waldron, Nielsen
- 9:15 a.m. A Computationally Enhanced Fuzzy Clustering Method for Big Biomedical Data—◆Chanpaul Jin Wang, University of Massachusetts Medical School; Hua Fang, University of Massachusetts Medical School; Honggang Wang, University of Massachusetts Dartmouth
- 9:20 a.m. Mediation-Based Integrative Genomic Analysis—◆Sheila Gaynor, Harvard University; Xihong Lin, Harvard School of Public Health
- 9:25 a.m. Robust Adaptive Group WLAD-LASSO—◆Nedret Billor, Auburn University; Kristin Lilly, Auburn University
- 9:30 a.m. A Compromise Between the Reduction of Collinearity Problems and Bias of Estimation in Ridge Regression: With the Perspective of Loss Function—◆Xiyuan Liu, The George Washington University
- 9:35 a.m. Cohesive Regression Over Networks—◆Tianxi Li, University of Michigan; Elizaveta Levina, University of Michigan; Ji Zhu, University of Michigan
- 9:40 a.m. Multi-Sample Equal-Covariance Function Testing—◆Jia Guo, National University of Singapore; Jin-Ting Zhang, National University of Singapore
- 9:45 a.m. Identification of Outliers for Periodic Multivariate

- Functional Data—◆Pallavi Sawant, Kansas State University
- 9:50 a.m. Binormal ROC and Precision-Recall Classification with Nonparametric Functions—◆Yingzi Xu, North Carolina State University; Howard Bondell, North Carolina State University
- 9:55 a.m. Consistent Estimation of Dynamic and Multi-Layer Networks—◆Qiuyi Han, Harvard University; Edo Airoldi, Harvard University; Kevin Xu, Technicolor
- 10:00 a.m. Multiple Imputation in the Presence of High-Dimensional Data—◆Domonique Watson Hodge, Emory University; Qi Long, Emory University
- 10:05 a.m. Data-Adaptive Shrinkage to Non-Null Target: Applications in Environmental Epidemiology—◆Yin-Hsiu Chen, University of Michigan
- 10:10 a.m. The Continuous Configuration Model and Community Detection for Weighted Networks—◆John Palowitch, The University of North Carolina at Chapel Hill; Shankar Bhamidi, The University of North Carolina; Andrew Nobel, The University of North Carolina at Chapel Hill
- 10:15 a.m. Floor Discussion

Contributed Sessions

8:30 a.m.—10:20 a.m.

310 TCC-202 Spatial and Time Series Modeling—Contributed Business and Economic Statistics Section, Government Statistics Section, Section on Statistics and the Environment

Chair(s): Kai-Sheng Song, University of North Texas

- 8:35 a.m. A Parameter-Driven Logit Regression Model for Binary Time Series—◆Rongning Wu, Baruch College; Yunwei Cui, University of Houston Downtown
- 8:50 a.m. State-Space Modeling for Binomial Time Series with Excess Zeros—◆Fan Tang, The University of Iowa; Joseph Cavanaugh, The University of Iowa
- 9:05 a.m. Moment-Based Estimation of VARMA Parameters—◆Anindya Roy, University of Maryland, Baltimore County; Tucker Sprague McElroy, U.S. Census Bureau
- 9:20 a.m. Hierarchical Vector Autoregression—◆William B. Nicholson, Cornell University; David S. Matteson, Cornell University; Jacob Bien, Cornell University
- 9:35 a.m. Estimation in Threshold Autoregressive Models with Adaptive LASSO: A Computational Evaluation—◆Yiannis Kamarianakis, Arizona State University;

- ◆ Maria van Schaijik, Arizona State University
- 9:50 a.m. Matrix Polynomial Factorization for Solving Vector Linear Rational Expectations Models and Computing Matrix Spectral Factorizations—◆ Peter Zadrozny, Bureau of Labor Statistics
- 10:05 a.m. A Variable Selection Method for Spatial Autoregressive Models—◆ Liqian Cai, Michigan State University; Tapabrata Maiti, Michigan State University; Arnab Bhattacharjee, Heriot-Watt University

311 **CC-203**
Models and Inference for Patterns of Dependence—Contributed
 IMS

Chair(s): Masanao Yajima, Fred Hutchinson Cancer Research Center

- 8:35 a.m. Distance Matrix Estimation from Noisy Observation of Low Rank Position Matrix—◆ Zijian Guo, University of Pennsylvania; Tony Cai, University of Pennsylvania
- 8:50 a.m. A Well-Conditioned and Sparse Estimate of Covariance and Inverse Covariance Matrix Using Joint Penalty—◆ Ashwini Maurya, Michigan State University
- 9:05 a.m. Two-Sample Test for High-Dimensional Covariance Matrices—◆ Jing He, Peking University; Song Xi Chen, Peking University/Iowa State University
- 9:20 a.m. Estimation of High-Dimensional Covariance Matrices with Incomplete Data—◆ Anru Zhang, University of Pennsylvania; Tony Cai, University of Pennsylvania
- 9:35 a.m. Asymptotics of Empirical Eigen-Structure for Ultra-High-Dimensional Spiked Covariance Model—◆ Weichen Wang, Princeton University; Jianqing Fan, Princeton University
- 9:50 a.m. Nonparametric Estimates of Correlation Matrices via Block Thresholding—◆ Linjun Zhang, University of Pennsylvania; Tony Cai, University of Pennsylvania
- 10:05 a.m. Local and Global Inference for High-Dimensional Gaussian Copula Graphical Models—◆ Quanquan Gu, University of Virginia; Yang Ning, Princeton University; Yuan Cao, Princeton University; Han Liu, Princeton University

312 **CC-304**
Advanced Topics in Statistical Programming—Contributed

Section for Statistical Programmers and Analysts, Government Statistics Section

Chair(s): Dhuly Chowdhury, RTI International

- 8:35 a.m. A Compendium Platform for Reproducible Statistical Analysis and Programming, Dynamic Document in Clinical Development and Research—◆ Qinfang Steve Xiang, Endo Pharmaceuticals
- 8:50 a.m. Generalized Linear Models for Non-Normal Data—◆ Theresa Ngo,
- 9:05 a.m. NanoStringDiff: A Novel Statistical Method for Differential Expression Analysis Based on NanoString NCounter Data—◆ Hong Wang, University of Kentucky; Arnold Stromberg, University of Kentucky; Chi Wang, University of Kentucky
- 9:20 a.m. Examining Model Fit for Logistic Regression on Large Data Sets—◆ Todd Connelly,
- 9:35 a.m. Variable Selection Methods for Big Data: A Comparative Study—◆ Jun Liu; Xuejing Mao, AT&T
- 9:50 a.m. R Package PRIMsrc: Bump Hunting by Patient Rule Induction Method for Survival, Regression, and Classification—◆ Jean-Eudes Dazard, Case Western Reserve University; Michael Choe, Case Western Reserve University; Michael LeBlanc, Fred Hutchinson Cancer Research Center; J. Sunil Rao, University of Miami
- 10:05 a.m. T-Cauchy Family of Distributions and Its Properties—◆ Ayman Alzaatreh, Nazarbayer University; Carl Lee, Central Michigan University; Felix Famoye, Central Michigan University

313 **CC-210**
Bayesian Graphical Modeling—Contributed
 Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)

Chair(s): Rajarshi Guhaniyogi, UC Santa Cruz

- 8:35 a.m. Learning Bayesian Networks from Correlated Data—◆ Harold Bae, Oregon State University; Stefano Monti, Boston University School of Medicine; Monty Montano, Harvard Medical School; Thomas T. Perls, Boston University School of Medicine; Paola Sebastiani, Boston University
- 8:50 a.m. Suitable Prior Distributions for Additive Bayesian Networks Models—◆ Marta Pittavino, University of Zurich; Reinhard Furrer, University of Zurich

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 9:05 a.m. Sparse Multidimensional Graphical Models: A Unified Framework—◆Yang Ni, Rice University; Francesco Stingo, MD Anderson Cancer Center; Veera Baladandayuthapani, MD Anderson Cancer Center
- 9:20 a.m. Hyper Markov Laws for Correlation Matrices—◆Jeremy Gaskins, University of Louisville
- 9:35 a.m. High-Dimensional Posterior Convergence Rates for Decomposable Graphical Models—◆Ruoxuan Xiang, University of Florida; Kshitij Khare, University of Florida; Malay Ghosh, University of Florida
- 9:50 a.m. Sparse Estimation of Network: An Approximate Bayesian Approach—◆Nilabja Guha, Texas A&M University
- 10:05 a.m. BicMix: A Bayesian Biclustering Model with Application to Differential Gene Networks—◆Chuan Gao, Duke University; Shiwen Zhao; Ian C. McDowell, Duke University; Christopher D. Brown, University of Pennsylvania; Barbara Engelhardt, Princeton University

314 CC-213 Environmental Model Estimation and Inference—Contributed

Section on Statistics and the Environment

Chair(s): Huang Huang, KAUST

- 8:35 a.m. Data-Driven Spatial Basis Functions in Fixed Rank Kriging for Large Spatial Data Sets—◆Emily L. Kang, University of Cincinnati
- 8:50 a.m. Intrinsic Random Functions and Universal Kriging on the Circle—◆Haimeng Zhang, The University of North Carolina at Greensboro; Chunfeng Huang, Indiana University - Bloomington; Scott Robeson, Indiana University - Bloomington
- 9:05 a.m. Covariance Modeling by Means of Eigenfunctions of Laplace Operator—◆Marie Turcicova, Charles University in Prague; Jan Mandel, University of Colorado Denver; Krystof Eben, Institute of Computer Science AS CR
- 9:20 a.m. Using Random Spline Coefficients to Estimate Non-Constant Factor Loadings—◆Zhenzhen Zhang, University of Michigan
- 9:35 a.m. Estimation and Prediction for Geostatistical Regression Models via a Corrected SURE—◆Chun-Shu Chen, National Changhua University of Education; Hong-Ding Yang, National Changhua University of Education
- 9:50 a.m. Two-Dimensional Wavelet Decompositions on Irregularly Spaced Grids with Application to PM2.5 in New England—◆Joseph Antonelli, Harvard University; Brent Coull, Harvard University
- 10:05 a.m. Confidence Regions for the Contour Lines of Spatial Data—◆Joshua French, University of Colorado Denver

315 CC-605 SIE CP5: Disease Prediction—Contributed

Section on Statistics in Epidemiology, Biometrics Section, Statistics Without Borders

Chair(s): Jessica Young, Harvard School of Public Health

- 8:35 a.m. Clustering Growth Trajectories Leading to Early Childhood Obesity in Groups and Characterizing Their Co-Morbidities—◆Md Jobayer Hossain, Nemours/A.I. DuPont Children's Hospital; H. Timothy Bunnell, Nemours; Samuel S. Gidding, Nemours/A.I. DuPont Children's Hospital; Thomas H. Shaffer, Nemours
- 8:50 a.m. Maximum Likelihood Estimation in Semiparametric Transformation Models with Length-Biased Data—◆Yu-Jen Cheng, National Tsing Hua University
- 9:05 a.m. Parametric Mixture Models for Competing Risks Analysis of African-American Breast Cancer Patients—◆Ram C. Kafle, Sam Houston State University; Minh Pham, University of South Florida; Chris P. Tsokos, University of South Florida
- 9:20 a.m. Embedding a Nonparametric Weighting Scheme in Latent Class Regression Procedure to Evaluate Risk Factors for Multiple Pathogens of Diseases—◆Nong Shang, CDC
- 9:35 a.m. Density-Dependent Markov Jump Process Approximations for Network-Based SIR Models—◆Mark Burch,
- 9:50 a.m. Making Better Decisions in Optimizing Medical Sample Transportation for Ebola: Sensitivity to Incidence Assumptions—◆Thomas Moore, Sandia National Laboratories; Walt Beyeler, Sandia National Laboratories; Robert Jeffers, Sandia National Laboratories; Monear Makvandi, Sandia National Laboratories; Gregory Lambert, Sandia National Laboratories; Patrick Finley, Sandia National Laboratories; Jennifer Gaudio, Sandia National Laboratories
- 10:05 a.m. Principal Component Scores in Predicting Cardiovascular Health—◆Tamika Royal-Thomas, University of the West Indies; Daniel McGee, Florida State University

316 CC-204 Analysis of Basketball and Hockey Data—Contributed

Section on Statistics in Sports, Section for Statistical Programmers and Analysts

Chair(s): Tim Swartz, Simon Fraser University

- 8:35 a.m. Ranking NAIA Men's Basketball—◆Jack Follis, University of St. Thomas
- 8:50 a.m. Building an NCAA Men's Basketball Predictive

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Model and Quantifying Its Success—◆Gregory J. Matthews, Loyola University Chicago; Michael J. Lopez, Skidmore College

- 9:05 a.m. Finding Most-Efficient Entries for a Cost-Constrained NCAA Tournament Contest—◆Douglas Noe, Miami University; Alexander L. Martishius, Miami University; Stephen E. Wright, Miami University
- 9:20 a.m. Statistical Methods to Find the Top NBA Players from 1979 to 2014—◆Audry Alabiso, The University of Akron; Desale Habtzghi, The University of Akron
- 9:35 a.m. Developing an Analytics Program for Major Junior Hockey—◆Joshua Pohlkamp-Hartt, Queen's University; Dave Riegert, Queen's University
- 9:50 a.m. Predicting NHL Playoff Outcomes Based on Regular Season Data—◆Nilesh Shah, University of Pittsburgh
- 10:05 a.m. Predicting the Winners of Hockey Games—◆Samuel Buttrey, Naval Postgraduate School

317 CC-306 Modeling and Estimation—Contributed SSC

Chair(s): Sudhir Paul, University of Windsor

- 8:35 a.m. A Class of Stein-Rules in Multivariate Regression Model with Structural Changes—◆Fuqi Chen, Fields Institute; SÈvÈrien Nkurunziza, University of Windsor/UniversitÈ de Sherbrooke
- 8:50 a.m. Modeling Temporally Correlated Multivariate Counts with Excess Zeros—◆Gary Sneddon, Mount Saint Vincent University; Tariqul Hasan, University of New Brunswick; Renjun Ma, University of New Brunswick
- 9:05 a.m. New Powerful Goodness-of-Fit Tests for Ordinal Logistic Regressions—◆Zheng Sun, Simon Fraser University
- 9:20 a.m. Simulation-Based Estimation in Generalized Linear Models with Categorical Response Variable and Mismeasured Covariates—◆Rojiar Haddadian, University of Manitoba; Yuliya Martsynyuk, University of Manitoba; Liqun Wang, University of Manitoba
- 9:35 a.m. Imputation Strategies for Missing Continuous Covariates in Cluster-Randomized Trials—◆Jinhui Ma, Children's Hospital of Eastern Ontario
- 9:50 a.m. Estimating the Size and Distribution of Networked Populations with Snowball Sampling—◆Kyle Vincent, Bank of Canada; Steve Thompson, Simon Fraser University
- 10:05 a.m. Student's T-Distribution: Improved Formulae for Moments of Order Statistics—◆David Vaughan, Wilfrid Laurier University

318 CC-205 Advances in Nonparametric Modeling: Part 5— Contributed

Section on Nonparametric Statistics, SSC

Chair(s): Bilin Zeng, California State University at Bakersfield

- 8:35 a.m. Signed-Rank Analysis of a Partial Linear Model with B-Splines Estimated Monotone Nonparametric Function—◆Eddy Kwessi, Trinity University; Brice Merlin Nguelifack, Auburn University
- 8:50 a.m. On Predictions from Observations Only—◆Marco Shum, University of Waterloo; Tony Wirjanto, University of Waterloo; Paul Marriott, University of Waterloo
- 9:05 a.m. Aranda-Ordaz Quantile Regression for Student Performance Assessment—◆Mario Cortina-Borja, University College London; Hakim-Moulay Dehbi, Imperial College London; Marco Geraci, University of South Carolina
- 9:20 a.m. Robust Regression for Handling Cell-Wise and Case-Wise Contamination—◆Andrew Leung, The University of British Columbia; Hongyang Zhang, The University of British Columbia; Ruben Zamar, The University of British Columbia
- 9:35 a.m. Nonparametric and Semiparametric Density Estimation on the Sphere by Solving the Heat Equation—◆Jonathan Odumegwu, Central Michigan University; Mohamed Amezziane, Central Michigan University; Leela Rakesh, Central Michigan University
- 9:50 a.m. Optimal Bandwidth Selection for Kernel Functional Estimation of Location and Scale Parameters—◆Su Chen, University of Memphis
- 10:05 a.m. Nonparametric Tests of Uniform Stochastic Ordering—◆Chuan-Fa Tang, University of South Carolina; Joshua M. Tebbs, University of South Carolina; Dewei Wang, University of South Carolina

319 CC-614 Causal Inference—Contributed Biometrics Section

Chair(s): Philip Hougaard, H. Lundbeck A/S

- 8:35 a.m. Estimating Mediation Effects for the Cox Proportional Hazards Model in a Survival Context—◆Wei Wang, University of Mississippi Medical Center; Jeffrey M. Albert, Case Western Reserve University
- 8:50 a.m. Bayesian Dynamic Mediation Analysis—◆Jing Huang,
- 9:05 a.m. Extensions of Generalized Causal Mediation Analysis—◆Jeffrey M. Albert, Case Western Reserve University

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- 9:20 a.m. Assessing Moderation from Intensive Longitudinal Data: Application to MHealth Interventions—
◆ Audrey Boruvka, University of Michigan; Daniel Almirall, University of Michigan; Katie Witkiewitz, University of New Mexico; Predrag Klasnja, University of Michigan; Susan A. Murphy, University of Michigan
- 9:35 a.m. Double Robust Goodness-of-Fit Test of Coarse Structural Nested Mean Models with Application to Initiating HAART in HIV-Positive Patients—◆ Shu Yang, Harvard School of Public Health; Judith Lok, Harvard School of Public Health
- 9:50 a.m. Causal Analysis of a Random Coefficients Model in Multisite Randomized Trials—◆ Yongyun Shin, Virginia Commonwealth University; Stephen W. Raudenbush, The University of Chicago
- 10:05 a.m. **Floor Discussion**

320 CC-615

■ Methods for RNA-Sequencing Data—Contributed

Biometrics Section

Chair(s): Reid Landes, Radiation Effects Research Foundation

- 8:35 a.m. Fast and Flexible Determination of Differential Alternative Splicing from RNA-Seq Data—◆ Naim Rashid,
- 8:50 a.m. Big Data Approaches for Clinical RNA Sequencing (RNA-Seq)—◆ Shihao Shen, UCLA
- 9:05 a.m. Bayesian Estimation of Negative Binomial Parameters with Applications to RNA-Seq Data—
◆ Claudio Fuentes, Oregon State University; Luis Leon-Novelo, The University of Texas at Houston; Sarah Emerson, Oregon State University
- 9:20 a.m. Statistical Issues in the Analysis of Data from RNA-Seq Experiments—◆ David Rocke, UC Davis; Sharon Aviran, UC Davis; Blythe Durbin-Johnson, UC Davis; Luyao Ruan, UC Davis
- 9:35 a.m. Identification of Differential Alternative Splicing Events Using Paired RNA-Seq Data—◆ Cheng Jia, University of Pennsylvania; Mingyao Li, University of Pennsylvania
- 9:50 a.m. Discrete Kernel Density Estimation for RNA-Sequence Data Sets—◆ Samuel Benidt, Iowa State University
- 10:05 a.m. Outlier Detection for RNA-Seq Data via Improved Surprise Index—◆ Ching-Wei Chang, National Center for Toxicological Research; Claire Boyle, Florida State University; Yu-Chung Wei, NCTR; Nysia George, FDA/NCTR

321 CC-619

Experimental Designs II—Contributed

Section on Physical and Engineering Sciences, Quality and Productivity Section

Chair(s): Frederick Phoa, Academia Sinica

- 8:35 a.m. Ensuring Covariate Balance in Factorial Designs via Rerandomization—◆ Zach Branson, Harvard University; Tirthankar Dasgupta, Harvard University
- 8:50 a.m. Evaluating a High-Dimensional Constrained Mixture Experiment Design with Replacement Points—
◆ Scott K. Cooley, Pacific Northwest National Laboratory; Greg F. Piepel, Pacific Northwest National Laboratory; John D. Vienna, Pacific Northwest National Laboratory; Michael J. Schweiger, Pacific Northwest National Laboratory
- 9:05 a.m. Generating and Comparing Pareto Fronts of Experiment Designs to Simultaneously Account for Multiple Experimental Objectives—◆ Byran Jay Smucker, Miami University; Yongtao Cao, Indiana University of Pennsylvania; Timothy Robinson, University of Wyoming
- 9:20 a.m. Robust Parameter Design: A Penalized Likelihood Approach—◆ Kwame Kankam, Penn State; James L. Rosenberger, Penn State
- 9:35 a.m. Central Composite Designs Built from Strength 2 Orthogonal Arrays—◆ Robert Mee,
- 9:50 a.m. Randomization-Based Inference for Industrial Experiments—◆ Tirthankar Dasgupta, Harvard University; Joseph Lee, Harvard University; Donald B. Rubin, Harvard University
- 10:05 a.m. **Floor Discussion**

322 CC-307

Statistical Computing and Scalable Learning—Contributed

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

Chair(s): Seyoung Park, University of Michigan

- 8:35 a.m. Software for Scalable Ensemble Learning—◆ Erin LeDell,
- 8:50 a.m. Variants of GA-Ensemble—◆ Dong-Yop Oh, The University of Texas Pan American; J. Brian Gray, The University of Alabama
- 9:05 a.m. On Deconstructing Ensemble Models—◆ William Heavlin, Google
- 9:20 a.m. Application of ADMM Method for Large-Scale Statistical Models—◆ Ganesh Subramaniam, AT&T Labs Research; Ravi Varadhan, The Johns Hopkins University; Todd Larchuk, AT&T Labs

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Research; Huitong Qiu, The Johns Hopkins University

- 9:35 a.m. An Efficient GLS Algorithm for Periodic Regression with Autoregressive Errors—◆Jaechoul Lee, Boise State University; Anthony Dini, Boise State University; William Negri, Boise State University
- 9:50 a.m. A Study on the Stochastic Approximation Algorithms with Decreasing Gain—◆Samira Sadeghi,
- 10:05 a.m. Stochastic Optimization via Forward Slice—◆Bob Salim; Lurdes Inoue, University of Washington

323 CC-616

■ Statistical Consulting: Technical Aspects, Applications, and Development—Contributed Section on Statistical Consulting, International Chinese Statistical Association, Committee on Applied Statisticians

Chair(s): Timothy Hall, PQI Consulting

- 8:35 a.m. Statistical Consulting: Exploring Bayesian Latent Class Models as a Potential Statistical Tool to Estimate Sensitivity and Specificity in Presence of an Imperfect or No Gold Standard—◆Jayawant Mandrekar, Mayo Clinic
- 8:50 a.m. Modeling Breast Cancer Survival Data with Time-Varying Effects When Proportional Hazards Assumption of Cox Model Is in Violation—◆Muditha Devamitta-Perera; Chris P. Tsokos, University of South Florida
- 9:05 a.m. Increasing the Efficiency of Consumer Tests Using Robust Statistical Procedures—◆Jason Parcon, PepsiCo
- 9:20 a.m. A Multivariate Sensory Study on Impact of Flavor Component Separation—◆Shankang Qu, PepsiCo; Olga Sellmann, PepsiCo; Sandhya Srihar, PepsiCo; Yuan Fang, PepsiCo
- 9:35 a.m. Some Notes on Applications of Exploratory Factor Analysis—◆Xiaohui Wang, The University of Texas Pan American
- 9:50 a.m. Consulting on an Island: A Novel Approach to Teaching Statistical Collaboration Skills—◆Ann Brearley, University of Minnesota; Barbara R. Kuzmak, University of Minnesota; Marta D. Shore, University of Minnesota; Laura J. Le, University of Minnesota
- 10:05 a.m. LISA 2020: Developing Statistical Collaboration Capacity in Nigeria—◆Ian Crandell; Eric A. Vance, LISA, Virginia Tech; Olawale Awe, Obafemi Awolowo University

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CC-611

Emerging Topics in Benefit-Risk Assessment in Clinical Development Decision-Making—Contributed

Biopharmaceutical Section

Chair(s): John Han,

- 8:35 a.m. The Use of Adaptive Designs in Antiviral Drug Development—◆Fraser Smith, FDA/CDER/OTS/OB/DBIV; Karen Qi, FDA/CDER/OTS/OB/DBIV
- 8:50 a.m. Missing Data Handling for Composite Endpoints—◆Sabrina Wan, Merck; G. Frank Liu, Merck; Weili He, Merck
- 9:05 a.m. Graphical Presentation of Benefit-Risk Profile—◆Weili He, Merck; Shihua Wen, AbbVie; Scott R. Evans, Harvard University
- 9:20 a.m. What Is the Role of Statisticians in Benefit-Risk Adoption Within Our Companies?—◆Susan P. Duke, GlaxoSmithKline; Greg Anglin, Eli Lilly Corporation
- 9:35 a.m. Multiplicity and Subgroups in Benefit-Risk Assessment—◆Jonathan Norton,
- 9:50 a.m. Structured Benefit-Risk Assessment Across the Lifecycle of Products: Methods, Examples, and Challenges—◆Chunlei Ke; George Quartey, Roche; Christy Chuang-Stein, Pfizer Inc.; John Scott, FDA; Qi Jiang, Amgen; Weili He, Merck; Ramin Aramin, AstraZeneca; Guochen Song, Quintiles; Kao-tai Tsai, Celgene; Yujun Wu, Sanofi
- 10:05 a.m. Some Thoughts on Benefit-Risk Assessment for Drug Development—◆Qi Jiang, Amgen

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CC-613

Multiple Testing Procedures—Contributed Biopharmaceutical Section, Biometrics Section, International Indian Statistical Association

Chair(s): Jagadish Gogate, PAREXEL International

- 8:35 a.m. Multiple Testing in Clinical Trials: Some New Applications—◆Yunzhi Lin, AbbVie; Kefei Zhou, Amgen; Jeetu Ganju, Hyperion Therapeutics
- 8:50 a.m. General Multistage Gatekeeping and Graphical Multiple Testing Procedures in Clinical Trial Applications: A Case Study via Simulation—◆Yihan Li, AbbVie; Xin Wang, AbbVie; Deli Wang, AbbVie; Walt Offen, AbbVie
- 9:05 a.m. On Generalized Fixed Sequence Procedures for Controlling the FWER—◆Zhiying Qiu, Sanofi-Aventis; Wenge Guo, New Jersey Institute of Technology; Gavin Lynch, New Jersey Institute of Technology

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 9:20 a.m. Multiplicity Adjustment in Clinical Trials with Multiple Correlated Testing—◆Boris Zaslavsky, FDA/CBER; Fang Chen, SAS Institute
- 9:35 a.m. Building a More Powerful Test Procedure for Correlated Endpoints—◆Sadhvi Khanna, Novartis; Vishwanath Iyer, Novartis
- 9:50 a.m. General Mixture-Based Gatekeeping Procedures in an Adaptive-Design Setting—◆George Kordzakhia, FDA; Alex Dmitrienko, Quintiles ; Eiji Ishida, FDA
- 10:05 a.m. Identifying Treatment Responder Group Using Multiple Biomarkers—◆Zhaoling Meng, Sanofi-Aventis; Hui Quan, Sanofi; Tianle Chen, Biogen

326 CC-211

Network Estimation—Contributed Section on Statistical Learning and Data Mining

Chair(s): Munni Begum, Ball State University

- 8:35 a.m. On Semiparametric Exponential Family Graphical Models—◆Yang Ning, Princeton University; Zhuoran Yang, Tsinghua University; Han Liu, Princeton University
- 8:50 a.m. Multilevel Joint Gaussian Graphical Model—◆Liang Shan; Inyoung Kim, Virginia Tech
- 9:05 a.m. Estimation of Individual Network Size from a Randomly Sampled Subnetwork—◆Apratim Ganguly, Boston University; Eric Kolaczyk, Boston University
- 9:20 a.m. Social Network Inference from Grouped Observations Using Star Models—◆Yunpeng Zhao, George Mason University; Charles Weko, George Mason University
- 9:35 a.m. Optimality of Fast Matching Algorithms for Random Networks with Applications to Structural Controllability—◆Mohamad Kazem Shirani Faradonbeh, University of Michigan; Ambuj Tewari, University of Michigan; George Michailidis, University of Florida
- 9:50 a.m. Variable Selection for Dynamic Citation Networks—◆Xizhen Cai, Carnegie Mellon University; David R. Hunter, Penn State
- 10:05 a.m. Network Modeling of High-Dimensional Time Series in the Presence of Factors—◆Sumanta Basu, UC Berkeley/Lawrence Berkeley National Laboratory; George Michailidis, University of Florida

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

327 CC-611

● Recent Advances in Statistical Methods for Complex Longitudinal Data—Invited

Biometrics Section, Government Statistics Section, SSC

Organizer(s): Yanqing Sun, The University of North Carolina at Charlotte

Chair(s): Peter B. Gilbert, Fred Hutchinson Cancer Research Center

- 10:35 a.m. Robust Estimation for Longitudinal Data with Informative Observation Times—◆Xingqiu Zhao, The Hong Kong Polytechnic University; Kin-yat Liu, The Hong Kong Polytechnic University
- 11:00 a.m. Analysis of Semiparametric Regression Model for Longitudinal Data with Censored Time Origin—◆Yanqing Sun, The University of North Carolina at Charlotte; Qiong Shou, Merck; Peter B. Gilbert, Fred Hutchinson Cancer Research Center; Xiyuan Qian, East China University of Science and Technology
- 11:25 a.m. Regression Analysis of Longitudinal Networked Data—◆Peter X.K. Song, University of Michigan; Yan Zhou, University of Michigan
- 11:50 a.m. Dealing with Disease Progression Data Under Nonignorable Inspection Processes: A New Perspective from Incomplete Longitudinal Data Analysis—◆Grace Yi, University of Waterloo; Baojiang Chen, University of Nebraska Medical Center; Richard Cook, University of Waterloo
- 12:15 p.m. Floor Discussion

328 CC-607

■ Functional Data Analysis II—Invited

IMS

Organizer(s): Victor Michael Panaretos, EPFL

Chair(s): Victor Michael Panaretos, EPFL

- 10:35 a.m. Optimal Designs for Longitudinal Studies via Functional Data Analysis—◆Hans-Georg G. Mueller, UC Davis; Hao Ji, UC Davis
- 11:00 a.m. Modeling Covariance in Functional Data Analysis—◆Giles Hooker, Cornell University; Cecelia Earls, Cornell University
- 11:25 a.m. New Methods for Analyzing Partially Observed Functional Data—◆Aurore Delaigle, The University of Melbourne; Peter Hall, The University of Melbourne

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

11:50 a.m. Reconstructing Ancient Sounds Using FDA—◆John Aston, University of Cambridge; John Coleman, University of Oxford; Davide Pigoli, University of Cambridge; Nathaniel Shiers, University of Warwick; Jim Smith, University of Warwick

12:15 p.m. Floor Discussion

329 **CC-608**

■ ● Novel Change-Point Detection Methods for Analyzing Complex Data—Invited Technometrics

Organizer(s): Peihua Qiu, University of Florida

Chair(s): Peihua Qiu, University of Florida

10:35 a.m. An Adaptive Sampling Strategy for Online High-Dimensional Process Monitoring—◆Kaibo Liu, University of Wisconsin - Madison; Yajun Mei, Georgia Institute of Technology; Jianjun Shi, Georgia Institute of Technology

11:00 a.m. The Uncertainty of Storm Season Changes: Quantifying the Uncertainty of Autocovariance Changepoints—◆Christopher Nam, Amazon; John Aston, University of Cambridge; Idris Eckley, University of Lancaster; Rebecca Killick, University of Lancaster

11:25 a.m. An Efficient Online Monitoring Method for High-Dimensional Data Streams—◆Changliang Zou, Nankai University

11:50 a.m. Disc: Willis A. Jensen, W.L. Gore & Associates

12:15 p.m. Floor Discussion

330 **CC-211**

■ Data-Driven Variable Selection for Causal Inference—Invited

SSC

Organizer(s): Mireille E. Schnitzer, Université de Montréal

Chair(s): Mireille E. Schnitzer, Université de Montréal

10:35 a.m. A New Criterion for Confounder Selection—◆Tyler VanderWeele, Harvard University; Ilya Shpitser, University of Southampton

11:00 a.m. Dimension Reduction in Causal Inference: Theory and Data-Driven Algorithms—◆Xavier de Luna, UmeÅ University; Ingeborg Waernbaum, UmeÅ University; Jenny Hoggström, UmeÅ University; Emma Persson, UmeÅ University

11:25 a.m. A Bayesian Causal Effect Estimation Algorithm—◆Denis Talbot, Université Laval; Genevieve Lefebvre, Université du Québec # Montréal; Juli Atherton, Université du Québec # Montréal

11:50 a.m. Model Averaging for Causal Inference—◆Matthew Cefalu, RAND Corporation

12:15 p.m. Floor Discussion

331 **CC-606**

● Modern Inferential Methods for Big Data Analysis—Invited

Section on Statistical Learning and Data Mining, Government Statistics Section

Organizer(s): Han Liu, Princeton University

Chair(s): Han Liu, Princeton University

10:35 a.m. Confidence Intervals and Hypothesis Testing for High-Dimensional Regression—◆Andrea Montanari, Stanford University; Adel Javanmard, Stanford University

11:00 a.m. Uniform Post Selection Inference for Median Regression and Other Z-Estimation Problems—◆Victor Chernozhukov, MIT; Alexandre Belloni, Duke University; Kengo Kato, The University of Tokyo

11:25 a.m. Achieving Optimal Misclassification Proportion in Stochastic Block Model—Chao Gao, Yale University; ◆Harrison Zhou, Yale University; Zongming Ma, University of Pennsylvania; Anderson Ye Zhang, Yale University

11:50 a.m. Disc: Jonathan Taylor, Stanford University

12:15 p.m. Floor Discussion

332 **CC-2B**

■ ● Sampling Issues in the Environment—Invited

Section on Statistics and the Environment, Government Statistics Section, Statistics Without Borders

Organizer(s): Edward Boone, Virginia Commonwealth University

Chair(s): Bo Li, University of Illinois at Urbana-Champaign

10:35 a.m. Modeling and Clustering Time Series Pairs: Evaluating Temperature Patterns in Southeastern U.S. Brook Trout Streams—◆Eric P. Smith, Virginia Tech; Xinwei Deng, Virginia Tech; Han P. Li, Virginia Tech

11:05 a.m. Improving Inference by Using Times-to-Detection on Ecological Surveys—◆David Borchers, University of St. Andrews; Roland Langrock, University of St. Andrews; Greg Distiller, University of St. Andrews; Martin Cox, Australian Antarctic Division

11:35 a.m. Noninvasive Sampling of Animal Populations—◆Matthew Schofield, University of Otago; Richard Barker, University of Otago

12:05 p.m. Floor Discussion

Tuesday

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CC-4C3

● ● Recent Developments in Biomarker Evaluation—Invited

Section on Medical Devices and Diagnostics, International Chinese Statistical Association, Biometrics Section

Organizer(s): Qin Li, FDA/CDRH

Chair(s): Yuying Jin, FDA/CDRH

- 10:35 a.m. Some Statistical Method in Bridging Efficacy Studies for Companion Diagnostic Tests—◆Xiao-Hua Zhou, University of Washington
- 11:00 a.m. Evaluation of the Programmatic Performance (Repeated Application) of a Screening Test—◆Gene Anthony Pennello, FDA
- 11:25 a.m. Measures to Evaluate Biomarkers as Predictors of Incident Cases and Connection to Information Theory—◆Patrick Heagerty, University of Washington ; Jason Liang, University of Washington
- 11:50 a.m. Disc: Li Meijuan, FDA
- 12:15 p.m. Floor Discussion

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TCC-101

● Statistical Advances of Large-Scale Factor Models, VAR Models, and Functional Time Series Models—Invited

Business and Economic Statistics Section

Organizer(s): Zhengjun Zhang, University of Wisconsin

Chair(s): Lan Zhang, University of Illinois at Chicago

- 10:35 a.m. Estimating Large Covariance Matrices with Covariates—◆Jianqing Fan, Princeton University; Yuan Liao, University of Maryland; Weichen Wang, Princeton University
- 11:00 a.m. Functional Time Series Analysis with Applications—◆Ruey Tsay, The University of Chicago
- 11:25 a.m. Reduced-Rank Covariance Estimation in Vector Autoregressive Modeling—◆Richard A. Davis, Columbia University; Pengfei Zang, Columbia University; Tian Zheng, Columbia University
- 11:50 a.m. Disc: Beth Andrews, Northwestern University
- 12:10 p.m. Floor Discussion

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CC-213

● ● Complex and High-Dimensional Inference in Astrostatistics—Invited

Section on Physical and Engineering Sciences, Quality and Productivity Section

Organizer(s): Jessi Cisewski, Carnegie Mellon University

Chair(s): Byran Jay Smucker, Miami University

- 10:35 a.m. Incomplete Data and Measurement Error in the Galactic Mass Estimation Problem—◆Gwendolyn Eadie, McMaster University; William Harris, McMaster University
- 11:00 a.m. Detecting Unspecified Structure in Low-Count Images—◆David A. van Dyk, Imperial College London; Nathan Stein, University of Pennsylvania; Vinay L. Kashyap, Smithsonian Astrophysical Observatory; Aneta Siemiginowska, Smithsonian Astrophysical Observatory
- 11:25 a.m. Gaussian Process Modeling of Irregularly Observed Periodic Functions with Applications to Period Luminosity Relations in Astronomy—Shiyuan He, Texas A&M University; Wenlong Yuan, Texas A&M University; ◆James Patrick Long, Texas A&M University; Lucas Maeri, Texas A&M University; Jianhua Huang, Texas A&M University
- 11:50 a.m. Nonparametric Inference for Complex Data and Models in Astronomy—◆Ann Lee, Carnegie Mellon University
- 12:15 p.m. Floor Discussion

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CC- Ballroom 6E

● Annals of Statistics Special Invited Session: Recent Advances in Estimation of High-Dimensional Matrix—Invited

IMS, Korean International Statistical Society, International Indian Statistical Association

Organizer(s): Runze Li, Penn State; Peter Hall, The University of Melbourne

Chair(s): Runze Li, Penn State

- 10:35 a.m. Matrix Estimation by Universal Singular Value Thresholding—◆Sourav Chatterjee, Stanford University
- 11:00 a.m. ROP: Matrix Recovery via Rank-One Projections—◆Tony Cai, University of Pennsylvania; Anru Zhang, University of Pennsylvania
- 11:25 a.m. Asymptotic Normality and Optimality in the Estimation of Large Gaussian Graphical Model—Zhao Ren, University of Pittsburgh; Tingni Sun, University of Maryland; ◆Cun-Hui Zhang, Rutgers University; Harrison Zhou, Yale University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

11:50 a.m. Optimal Shrinkage of Eigenvalues in the Spiked Covariance Model—◆Iain Johnstone, Stanford University; David Donoho, Stanford University; Matan Gavish, Stanford University

12:15 p.m. Floor Discussion

337 CC-4C4

■ ● Bayesian Adaptive Designs for Better Clinical Decision-Making—Invited

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

Organizer(s): Christine E. McLaren, UC Irvine

Chair(s): Christine E. McLaren, UC Irvine

10:35 a.m. Bayesian Adaptive Optimization of Sedative Dose in Preterm Infants Being Treated for Respiratory Distress Syndrome—◆Peter F. Thall, MD Anderson Cancer Center; Hoang Q. Nguyen, MD Anderson Cancer Center; Sarah Zohar, INSERM UMR 1138; Pierre Maton, Service NÉonatal, CHC St. Vincent

11:00 a.m. Using Novel Phase I Clinical Trial Designs in Practice—◆Ying Yuan, MD Anderson Cancer Center

11:25 a.m. A Modified Continual Reassessment Method for Balancing Individual- and Population-Ethics in Phase I Clinical Trials—◆Daniel Gillen, UC Irvine; Steven Kim, UC Irvine

11:50 a.m. Disc: Kun He, DBV/OB/CDER/FDA

12:15 p.m. Floor Discussion

338 CC-4C2

■ ● Analyzing Survey Data with Regression Trees—Invited

Survey Research Methods Section, Government Statistics Section

Organizer(s): Polly Phipps, Bureau of Labor Statistics

Chair(s): Dan Liao, RTI International

10:35 a.m. Regression Tree Analysis of Survey Data—◆Wei-Yin Loh, University of Wisconsin

11:05 a.m. Using Classification and Regression Trees to Model Survey Nonresponse—◆Sharon Lohr, Westat; Valerie Hsu, Westat; Jill Montaquila, Westat

11:35 a.m. A Linear Representation of Regression Trees with Applications to Survey Data—◆John L. Eltinge, Bureau of Labor Statistics; Daniell Toth, Bureau of Labor Statistics

12:05 p.m. Floor Discussion

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CC-2A

● Unifying Foundation for Statistical Inference for BFF (Bayesian, Fiducial, and Frequentist) and Beyond—Invited

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

Organizer(s): Minge Xie, Rutgers University

Chair(s): Minge Xie, Rutgers University

10:35 a.m. Confidence Distribution (CD) as a Unifying Framework for BFF Inference—◆Regina Y. Liu, Rutgers University; Minge Xie, Rutgers University

11:00 a.m. There's Personalized Medicine. Why Not Personalized Inference?—◆Xiao-Li Meng, Harvard University; Keli Liu, Stanford University

11:25 a.m. Recent Development of Reference Priors Under a General Class of Divergence—◆Dongchu Sun, University of Missouri - Columbia

11:50 a.m. Prior-Free Probabilistic Inference: Inferential Models—◆Chuanhai Liu, Purdue University

12:15 p.m. Floor Discussion

Invited Panels 10:30 a.m.—12:20 p.m.

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TCC-204

■ ● Value Added Models: A Primer and Discussion—Invited

Council of Chapters, Section on Statistical Education, Committee on Applied Statisticians, Scientific and Public Affairs Advisory Committee

Organizer(s): Jennifer Broatch, Arizona State University

Chair(s): Dan Goldhaber, University of Washington

Panelists: ◆Jennifer Broatch, Arizona State University

◆Jennifer L. Green, Montana State University

◆Robert Meyer, University of Wisconsin - Madison

◆Henry Braun, Boston College

12:15 p.m. Floor Discussion

Topic-Contributed Sessions**10:30 a.m.—12:20 p.m.****341 TCC-202****■ Interlaboratory Testing: Youden Award Session—Topic-Contributed****W.J. Youden Award in Interlaboratory Testing**

Organizer(s): Michael J. Messner, Office of Management and Budget

Chair(s): Michael J. Messner, Office of Management and Budget

10:35 a.m. Analysis of Nano-Cytotoxicity from an Interlaboratory Dose-Response Experiment—
◆Blaza Toman, NIST; Matthias R[^]sslein, EMPA;
John Elliott, NIST

10:55 a.m. Bayesian Local Contamination Models for Multivariate Outliers—◆Garritt L. Page, Pontificia Universidad Cat[^]lica de Chile; David Dunson, Duke University

11:15 a.m. Nonparametric Bayesian Multiple Imputation for Missing Data Due to Mid-Study Switching of Measurement Methods—◆Lane Burgette, RAND Corporation; Jerry Reiter, Duke University

11:35 a.m. Comparing and Combining Data Across Multiple Sources via Integration of Paired-Sample Data to Correct for Measurement Error—◆Yunda Huang; Ying Huang, Fred Hutchinson Cancer Research Center; Zoe Moodie, Fred Hutchinson Cancer Research Center; Sue Li, Fred Hutchinson Cancer Research Center; Steve Self, Fred Hutchinson Cancer Research Center

11:55 a.m. Floor Discussion

342 CC-214**■ ● Statistical Methods for Remote Sensing Data—Topic-Contributed****Quality and Productivity Section, Section on Physical and Engineering Sciences, Section on Statistics and the Environment**

Organizer(s): Amy Braverman, Jet Propulsion Laboratory

Chair(s): Snigdhansu Chatterjee, University of Minnesota

10:35 a.m. Using the Wild Bootstrap Method on Wavelet-Decomposed Climate Time Series—◆Megan Heyman, University of Minnesota; Snigdhansu Chatterjee, University of Minnesota; Amy Braverman, Jet Propulsion Laboratory; Noel Cressie, University of Wollongong

10:55 a.m. Spatial and Temporal Data Fusion for Remotely Sensed Albedo Products—◆Elizabeth Mannshardt, North Carolina State University; Brian J. Reich, North Carolina State University; Jessica Matthews, NOAA National Climatic Data Center

11:15 a.m. Statistical Analysis of Remote Sensing Data Sets Using Basis-Function Representations—◆Matthias Katzfuss, Texas A&M University

11:35 a.m. Predicting Meteorological Fields: Parallelization for Near Real-Time Forecasting Using Bayesian Hierarchical Models—◆Dorit Hammerling, National Center for Atmospheric Research; Matthias Katzfuss, Texas A&M University

11:55 a.m. Disc: Amy Braverman, Jet Propulsion Laboratory

12:15 p.m. Floor Discussion

343 CC-609**■ Genomic Biomarker Discovery: Issues with Developing and Translating Genomic Biomarkers—Topic-Contributed****Section on Statistics in Genomics and Genetics, Biometrics Section**

Organizer(s): Jeffrey T. Leek, Johns Hopkins Bloomberg School of Public Health

Chair(s): Yumou Qiu, University of Nebraska - Lincoln

10:35 a.m. Assessing the Reproducibility and Value of Genomic Signatures—◆Prasad Patil, The Johns Hopkins University; Jeffrey T. Leek, Johns Hopkins Bloomberg School of Public Health

10:55 a.m. Single-Cell Sequencing and Its Implications for Biomarker Development in Cancer—◆Christina Kendzioriski, University of Wisconsin; Jee Choi, University of Wisconsin - Madison; Keegan Korthauer, University of Wisconsin - Madison

11:15 a.m. Addressing Reproducibility in Genomic Signatures by Characterizing Variance and Estimation Stability—◆Hector Bravo, University of Maryland

11:35 a.m. Reproducibility or Bust: Design and Methodological Considerations for Biomarker Validation—◆Shannon McWeeney, Oregon Health & Science University

11:55 a.m. Cross-Study Validation of Genomic Predictions—◆Levi Waldron, Hunter College

12:15 p.m. Floor Discussion

344 CC-201**● New Horizons of Quantile Regression Analysis: Longitudinal and Recurrent Event Data—Topic-Contributed****Korean International Statistical Society, International Chinese Statistical Association, International Indian Statistical Association**

Organizer(s): Mi-Ok Kim, Cincinnati Children's Hospital Medical Center

Chair(s): Mi-Ok Kim, Cincinnati Children's Hospital Medical Center

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 10:35 a.m. Copula-Based Quantile Regression for Longitudinal Data—◆Xingdong Feng, SHUFE; Huixia Judy Wang, The George Washington University
- 10:55 a.m. Generalizing Quantile Regression for Counting Processes with Applications to Recurrent Events—◆Limin Peng, Emory University; Xiaoyan Sun, Emory University; Yijian Huang, Emory University; Huichuan J. Lai, University of Wisconsin - Madison
- 11:15 a.m. Quantile Marginal Regression for Longitudinal Data with Dropouts—◆Hyokyong Hong, Michigan State University; Mi-Ok Kim, Cincinnati Children's Hospital Medical Center; Hyunkeun Cho, Western Michigan University
- 11:35 a.m. Zero-Inflated Quantile Regression with Its Application in NOMAS—◆Ying Wei, Columbia University; Ken Cheung, Columbia University
- 11:55 a.m. Disc: Andreas Hagemann, University of Michigan
- 12:15 p.m. Floor Discussion

345 CC-619

■ Some Challenges and Advances in Heterogeneous Treatment Effect Evaluation and Trial Design Considerations—Topic-Contributed

Biopharmaceutical Section, Biometrics Section

Organizer(s): Mike Shi, Takeda Pharmaceuticals

Chair(s): Wei Zhong, Takeda Pharmaceuticals

- 10:35 a.m. Repeated Measures vs. Crossover: Selecting an Optimal Design for a Pivotal Trial—◆Theodore Lystig, Medtronic, Inc.
- 10:55 a.m. Detecting Outlying Trials in Network Meta-Analysis—◆Jing Zhang, University of Maryland; Haoda Fu, Eli Lilly and Company; Bradley P. Carlin, University of Minnesota
- 11:15 a.m. Challenges of Psychiatric Clinical Trials: Methods to Mitigate Placebo Responses—◆Mike Shi, Takeda Pharmaceuticals; Wei Zhong, Takeda Pharmaceuticals
- 11:35 a.m. Systemic Utilization of Phase II Interim Efficacy Analysis to Expedite Drug Development—◆Jie Huang, Genentech, Inc./Roche
- 11:55 a.m. Assessing Consistency of Treatment Effect in Multiregional Clinical Trials—◆Bin Zhang, Millennium Pharmaceutical, Inc.; Zhaoyang Teng, Takeda Pharmaceutical International Co.; Jing Wang, Gilead Sciences
- 12:15 p.m. Floor Discussion

346 CC-612

Modern Statistical Method for Survival Analysis—Topic-Contributed

ENAR, Government Statistics Section, International Indian Statistical Association

Organizer(s): Kevin He, University of Michigan

Chair(s): Yi Li, University of Michigan

- 10:35 a.m. Longitudinal PET Image Biomarkers for Conversions of Mild Cognitive Impairment to Alzheimer's Disease—◆Yanming Li, University of Michigan; Bin Nan, University of Michigan; Ji Zhu, University of Michigan
- 10:55 a.m. A Pairwise-Likelihood Augmented Estimator for Cox Model Under Left-Truncation—◆Fan Wu; Sehee Kim, University of Michigan; Jing Qin, National Institute of Allergy and Infectious Diseases; Peter Kotanko, Renal Research Institute; Rajiv Saran, Kidney Epidemiology and Cost Center; Yi Li, University of Michigan
- 11:15 a.m. Covariance-Enhanced Screening for Ultra-High-Dimensional Variable Selection—◆Kevin He, University of Michigan; Yanming Li, University of Michigan; Ji Zhu, University of Michigan; Yi Li, University of Michigan
- 11:35 a.m. Jackknife Empirical Likelihood for Linear Transformation Models with Censored Data—◆Yichuan Zhao, Georgia State University; Hanfang Yang, Renmin University of China; Shen Liu, Renmin University of China
- 11:55 a.m. Floor Discussion

347 CC-204

■ ● New Developments in Empirical Likelihood—Topic-Contributed Section on Nonparametric Statistics

Organizer(s): Yichuan Zhao, Georgia State University

Chair(s): Zhezhen Jin, Columbia University

- 10:35 a.m. Small-Area Quantile Estimation—◆Jiahua Chen, The University of British Columbia; Yukun Liu, East China Normal University
- 10:55 a.m. Shrinkage Empirical Likelihood Estimator in Longitudinal Analysis with Time-Dependent Covariates: Application to Modeling the Health of Filipino Children—◆Dylan Small, University of Pennsylvania; Denis Heng-Yan Leung, Singapore Management University; Min Zhu, Queensland University of Technology; Jing Qin, National Institute of Allergy and Infectious Diseases
- 11:15 a.m. Extending the Empirical Likelihood by Domain Expansion—◆Min Tsao,
- 11:35 a.m. Marginal Empirical Likelihood and Independence

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Feature Screening—◆Chengyong Tang, Temple University; Yichao Wu, North Carolina State University; Jinyuan Chang, The University of Melbourne

11:55 a.m. Improving Estimation Efficiency by an Easy Empirical Likelihood Approach—◆Fei Tan, Indiana University Purdue University Indianapolis; Hanxiang Peng, Indiana University Purdue University Indianapolis

12:15 p.m. Floor Discussion

348 CC-620 ■ ● Innovative and Integrative Analysis of Disease and Biological Systems Using High-Dimensional Genomic Data Sets—Topic-Contributed

WNAR, Biometrics Section

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

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

10:35 a.m. Discovery of Principles of Nature from Matrix and Tensor Modeling of Large-Scale Molecular Biological Data—◆Orly Alter, University of Utah

10:55 a.m. Utilizing Patient-Level Characteristics for Identification of Cancer Driver Genes—◆Bin Zhu, National Cancer Institute

11:15 a.m. Intratumor Heterogeneity Analysis Using High-Throughput DNA Sequencing—◆Ronglai Shen, Memorial Sloan Kettering Cancer Center; Venkatraman Seshan, Memorial Sloan Kettering Cancer Center

11:35 a.m. A Full Bayesian Model for Integrative Clustering Analysis of Multi-Type Genomic Data—◆Qianxing Mo, Baylor College of Medicine; Cui Guo, University of Michigan; Ronglai Shen, Memorial Sloan Kettering Cancer Center

11:55 a.m. Further Statistical Methods for the Analysis of Ribosome Profiling Data—◆Adam Olshen, UC San Francisco; Richard Olshen, Stanford University; Saurabh Asthana, UC San Francisco

12:15 p.m. Floor Discussion

349 CC-210 SBSS Student Travel Award Winners - Session 1—Topic-Contributed

Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), Section on Statistics in Sports

Organizer(s): Catherine Calder, The Ohio State University

Chair(s): Catherine Calder, The Ohio State University

10:35 a.m. Parallel Partial Gaussian Process Emulation for Computer Models with Massive Output—◆Mengyang Gu, Duke University; James Berger, Duke University

10:55 a.m. A Multiresolution Stochastic Process Model for Predicting Basketball Possession Outcomes—◆Daniel Cervone, Alex D'Amour, Harvard University; Luke Bornn, Harvard University; Kirk Goldsberry, Harvard University

11:15 a.m. Probability Aggregation in Time-Series: Dynamic Hierarchical Modeling of Sparse Expert Beliefs—◆Ville Satoppa, University of Pennsylvania

11:35 a.m. Functional Time Series Models for Ultrafine Particle Distributions—◆Heidi Fischer; Robert E. Weiss, UCLA; Yifang Zhu, UCLA; Qunfang Zhang, UCLA

11:55 a.m. Thresholded Multiscale Gaussian Processes with Application to Bayesian Feature Selection for Massive Neuroimaging Data—◆Ran Shi, Emory University Rollins School of Public Health; Jian Kang, Emory University

12:15 p.m. Floor Discussion

350 CC-610 ■ Recent Advances in Statistical Methods for Genetic Study of Complex Disease—Topic-Contributed

International Chinese Statistical Association, Biometrics Section

Organizer(s): Peng Wei, The University of Texas School of Public Health

Chair(s): Swati Biswas, The University of Texas at Dallas

10:35 a.m. Detecting Gene-Environment Interaction by Linear Mixed Effects Models—◆Chao Xing, The University of Texas Southwestern Medical Center; Hung-Chih Ku, The University of Texas Southwestern Medical Center; Guan Xing, Gilead Sciences

10:55 a.m. Detecting Rare Haplotype-Environment Interaction Under Uncertainty of Gene-Environment Independence Assumption—◆Yuan Zhang, The University of Texas at Dallas; Swati Biswas, The University of Texas at Dallas; Shili Lin, The Ohio State University

11:15 a.m. Functional Logistic Regression Approach to Detecting Gene by Longitudinal Environmental Exposure Interaction—◆Peng Wei, The University of Texas School of Public Health

11:35 a.m. Base-Resolution Methylation Patterns Accurately Predict Transcription Factor Bindings in Vivo—◆Hao Wu, Emory University; Steve Qin, Emory University; Ben Li, Emory University; Tianlei Xu, Emory University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

11:55 a.m. A Score Test for a Proportional Odds Model with Application to Neuroimaging Genetic Data—
◆Junghi Kim, University of Minnesota; Wei Pan, University of Minnesota

12:15 p.m. Floor Discussion

351 CC-3B

■ ● **Small-Area Estimation: New Methods and Applications to Epidemiology—Topic-Contributed**

Government Statistics Section, Section on Statistics and the Environment

Organizer(s): Kyle Foreman, Institute for Health Metrics and Evaluation

Chair(s): Jon Wakefield, University of Washington

10:35 a.m. Large-Scale Gaussian Processes for Spatiotemporal Modeling of Disease Incidence—◆Seth Flaxman,

10:55 a.m. Bayesian Space-Time Models for Small-Area Estimation with Sampling Weights—◆Laina Mercer, University of Washington; Jon Wakefield, University of Washington

11:15 a.m. Small-Area Estimates as Covariates: A Measurement Error Approach—◆Susanna M. Makela, Columbia University; Andrew Gelman, Columbia University

11:35 a.m. Multivariate Small-Area Forecasting: Jointly Modeling Cause-Specific Mortality in U.S. Counties—◆Kyle Foreman, Institute for Health Metrics and Evaluation

11:55 a.m. Disc: Marie Ng, Institute for Health Metrics and Evaluation

12:15 p.m. Floor Discussion

Topic-Contributed Panels

10:30 a.m.—12:20 p.m.

352 CC-206

The Nontechnical Skills Needed to Be an Effective Statistical Consultant—Topic-Contributed

Section on Statistical Consulting, Section on Statistical Education, Section for Statistical Programmers and Analysts, Committee on Applied Statisticians

Organizer(s): Harry Dean Johnson, Washington State University

Chair(s): Harry Dean Johnson, Washington State University

Panelists: ◆Murray Clayton, University of Wisconsin

◆Bruce Craig, Purdue University

◆Christopher Holloman, The Ohio State University

◆Michelle Wiest, University of Idaho

12:15 p.m. Floor Discussion

Contributed Sessions

10:30 a.m.—12:20 p.m.

353 CC-4C1

SPEED: Topics in Genetics and Biopharmaceutical Applications—Contributed

Section on Statistics in Genomics and Genetics, Biopharmaceutical Section, WNAR, Biometrics Section

Chair(s): Duo Jiang, Oregon State University

10:35 a.m. Error Bounds of L1 Penalized Estimator for High-Dimensional Support Vector Machine—◆Bo Peng, University of Minnesota; Lan Wang, University of Minnesota; Yichao Wu, North Carolina State University

10:40 a.m. Unified Approach to Variable Selection in Missing Data via Least Squares Approximation—◆Eric Reyes; Cody Roberts, Rose-Hulman Institute of Technology

10:45 a.m. Variable Selection in Linear Models—◆Ondrej Blaha, LSU Health Sciences Center; Julia Volaufova, LSU Health Sciences Center; Lynn Roy LaMotte, LSU Health Sciences Center

10:50 a.m. Incorporating ENCODE Information into SNP-Based Phenotype Prediction—◆Yue-Ming Chen, The University of Texas at Houston; Peng Wei, The University of Texas School of Public Health

10:55 a.m. Genome-Wide Haplotypic Testing in a Finnish Cohort Identifies a Novel Association with Low-Density Lipoprotein Cholesterol—◆Qian Zhang, University of Washington; Sharon Browning, University of Washington; Brian Browning, University of Washington

11:00 a.m. Prediction of Subcellular Locations for Fungal Proteins—◆James Munyon, Youngstown State University; Sepideh Khavari, Youngstown State University; Guang-Hwa Chang, Youngstown State University; Xiangjia Min, Youngstown State University

11:05 a.m. Unconditional Exact Tests for Binomial Proportions in the Group Sequential Setting—◆Navneet Hakhu, Axio Research; Scott Emerson, University of Washington

11:10 a.m. The Q-MFG Test: A Linear Mixed Effect Model

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- to Detect Maternal-Offspring Genetic Effects—
◆Michelle M. Creek, UCLA; Eric M. Sobel, UCLA;
Janet S. Sinsheimer, UCLA
- 11:15 a.m. Misclassification of the Strata in Stratified
Randomized Clinical Trials in Diabetic Study—
◆Anjun Cao, Johnson & Johnson
- 11:20 a.m. A New Statistical Test of Null Effect in Treatment
Response—◆Lin Taft, Indiana University Richard
M. Fairbanks School of Public Health; Changyu
Shen, Indiana University
- 11:25 a.m. MvGST: Multivariate and Directional Gene Set
Testing—◆John Stevens, Utah State University;
Dennis Mecham, Utah State University; Garrett
Saunders, Brigham Young University - Idaho; S.
Clay Isom, Utah State University
- 11:30 a.m. Quality-Adjusted Survival Analysis: An Application
to a Phase III Randomized Study in Multiple
Myeloma—◆Suddhasatta Acharyya, Novartis
Pharmaceuticals; Ashok Panneerselvam,
Novartis Pharmaceuticals; Sofia Paul, Novartis
Pharmaceuticals
- 11:35 a.m. Tail-Based Robust Test to Detect Gene Differential
Expression in RNA-Seq Data—◆Jiong Chen,
MD Anderson Cancer Center; Jianhua Hu, MD
Anderson Cancer Center
- 11:40 a.m. Dose Escalation with Over-Dose and Under-Dose
Control in Phase I/II Clinical Trials—◆Zhengjia
Chen, Emory University; Ying Yuan, MD Anderson
Cancer Center; Zheng Li, Emory University;
Michael Kutner, Emory University; Taofeek
Owonikoko, Emory University; Walter J. Curran,
Emory University; Fadlo Khuri, Emory University;
Jeanne Kowalski, Emory University
- 11:45 a.m. Tipping Point Analysis for Tolvaptan Clinical Study
in Patients with ADPKD—◆Junfang Li; John
Ouyang, Otsuka ; Matilda Hsieh, Otsuka
- 11:50 a.m. Missing Data Methods When Analyzing a Phase
III Trial in an Orphan Indication—◆Changlu Liu,
Novartis; Mark Baillie, Novartis; Melanie Wright,
Novartis; Mouna Akacha, Novartis
- 11:55 a.m. A Simulation Study of Bias Due to Missing
Longitudinal Data—◆Katherine Kirkwood, Icahn
School of Medicine at Mount Sinai; Michael
Parides, Icahn School of Medicine at Mount Sinai
- 12:00 p.m. Bayesian Semiparametric Analysis of Recurrent
Events Data: Investigating Risk Factors for
Cardiovascular Disease Changes Over Event
History—◆Li-An Lin, The University of Texas
Health Science Center; Sheng Luo, The University
of Texas Health Science Center; Barry R. Davis,
The University of Texas Health Science Center
- 12:05 p.m. Statistics to Evaluate Biomarkers in Predicting
Residual Cardiovascular Risk in a Case-Cohort
Study—◆Warren Bao, Pfizer Inc.; Rana Fayyad,
Pfizer Inc.; Sarah Young, Pfizer Inc.; Peter Ganz,

- San Francisco General Hospital/University of
California
- 12:10 p.m. Model Selection for mRNA Counts—◆Burcin
Simsek, University of Pittsburgh; Satish Iyengar,
University of Pittsburgh

12:15 p.m. Floor Discussion

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CC-401

SPEED: Bayesian Models and Inference— Contributed

Section on Bayesian Statistical Science, Section on Statistics
and the Environment, Mental Health Statistics Section

Chair(s): April Galyardt, The University of Georgia

- 10:35 a.m. The Validity of Bayesian Information Criteria in
Misspecified Models—◆Yoichi Miyata, Takasaki
City University of Economics
- 10:40 a.m. Bayes Factor Approaches for Hypothesis Testing
in ANOVA Models—◆Min Wang, Michigan
Technological University
- 10:45 a.m. An Integrated Population Dynamics Model of North-
American Mourning Doves Using Band-Recovery
and Harvest Surveys—◆Mark Otto, Fish and
Wildlife Service
- 10:50 a.m. Bivariate Left-Censored Bayesian Model for
Predicting Exposure: Preliminary Analysis of Worker
Exposure During the Deepwater Horizon Oil Spill—
◆Caroline Groth, University of Minnesota; Sudipto
Banerjee, UCLA; Gurumurthy Ramachandran,
University of Minnesota; Mark R. Stenzel,
Exposure Assessment Applications, LLC; Dale
P. Sandler, National Institute of Environmental
Health Sciences; Aaron Blair, National Cancer
Institute; Richard K. Kwok, National Institute of
Environmental Health Sciences; Patricia Stewart,
Stewart Exposure Assessments, LLC; Lawrence S.
Engel, The University of North Carolina at Chapel
Hill
- 10:55 a.m. Empirical Comparison of the Frequentist and
Bayesian Inferences in (Zero-One Inflated) Beta
Regression—◆Evercita Eugenio, University of
Notre Dame; Fang Liu, University of Notre Dame
- 11:00 a.m. Exploring Factor Analysis for Dimension Reduction
in the Context of Traits on a Phylogenetic Tree—
◆Max Tolkoﬀ; Marc A. Suchard, UCLA
- 11:05 a.m. Bayesian Inference of Evolutionary History of
Populations/Species Based on Importance Sampling
of Gene Trees—◆Yujin Chung,
- 11:10 a.m. Bayesian Modeling for Change-Points Detection in
Longitudinal Clinical Proteomics Experiments—
◆Xia Wang, University of Cincinnati
- 11:15 a.m. Order-Invariant Prior Specification in Bayesian
Factor Analysis—◆Dennis Leung, University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

of Washington; Mathias Drton, University of Washington

- 11:20 a.m. A Bayes Interpretation of Stacking for M-Open Settings—◆Tri Le, University of Nebraska - Lincoln; Bertrand Clarke, University of Nebraska - Lincoln
- 11:30 a.m. Bayesian Species Delimitation Combining Multiple Genes and Traits in a Unified Framework—◆Claudia Solis-Lemus, University of Wisconsin - Madison; Cecile Ane, University of Wisconsin - Madison; L. Lacey Knowles, University of Michigan
- 11:35 a.m. Group Elicitation for Bayesian Prior—◆Grace Zhang, Merck; Faiz Ahmad, GSK; Timothy H. Montague, GlaxoSmithKline
- 11:40 a.m. Degree, Curvature, and Mixing of Random Walks on the Phylogenetic Subtree-Prune-Regraft Graph and What It Tells Us About Phylogenetic Inference via MCMC—◆Frederick Matsen, Fred Hutchinson Cancer Research Center; Chris Whidden, Fred Hutchinson Cancer Research Center
- 11:45 a.m. Model Selection Criteria for Misspecified Quantile Regression Models in High Dimensions—◆Alexander Giessing, University of Michigan; Xuming He, University of Michigan
- 11:50 a.m. Bayesian Inference for Truncated and Interval-Valued Regression Models—◆Alicia Lloro, FDIC; Phillip Li, Office of the Comptroller of the Currency
- 11:55 a.m. Robust Bayesian Inference via Coarsening—◆Jeffrey Miller, Duke University; David Dunson, Duke University
- 12:00 p.m. Application of a Hierarchical Model to Paleoenvironmental Time Series with Latent Times—◆Aaron Springford, Queen's University at Kingston; David J. Thomson, Queen's University at Kingston
- 12:05 p.m. Adaptive Weight Function Estimation in Functional Linear Models via Fixed Form Variational Bayes—◆Bruce Bugbee, MD Anderson Cancer Center; Jeffrey Morris, MD Anderson Cancer Center; Veera Baladandayuthapani, MD Anderson Cancer Center
- 12:10 p.m. A Bayesian Model for Multivariate Functional Principal Components Analysis—◆Kevin Cummins, UC San Diego; Wesley Thompson, UC San Diego
- 12:15 p.m. **Floor Discussion**

Contributed Sessions

10:30 a.m.—12:20 p.m.

355 **CC-203**

Functional Data Analysis and Nonparametrics—Contributed
IMS, Government Statistics Section

Chair(s): Jason Estes, UCLA

- 10:35 a.m. Efficient Estimation of Quantile Regression via Semiparametric Mixture Model—◆Hiroyuki Taniai, Waseda University
- 10:50 a.m. Kernel Estimation in Semiparametric and Nonparametric Regression for One-Dimensional Transformation of Gaussian Processes—◆Sucharita Ghosh, Swiss Federal Research Institute WSL
- 11:05 a.m. Functional Principal Component Analysis with Long-Range Dependent Errors—Jan Beran, University of Konstanz; ◆Haiyan Liu, Universitaet Konstanz; Klaus Telkmann, Universitaet Konstanz
- 11:20 a.m. Most-Predictive Domain Selection for Functional Linear Regression—◆Ah Yeon Park, University of Cambridge; John Aston, University of Cambridge; FrÉdÉric Ferraty, Institut de MathÉmatiques de Toulouse
- 11:35 a.m. Regularized Functional Canonical Correlation Analysis for Stochastic Processes—◆David King,
- 11:50 a.m. Convolutional Functional Autoregressive Models: Inference and Prediction—◆Xialu Liu, Rutgers University; Han Xiao, Rutgers University; Rong Chen, Rutgers University
- 12:05 p.m. Seasonally Nonstationary Smoothing Splines: Post-Processing of Satellite Data—◆Johan Lindstr m, Lund University

356 **CC-306**

● Clinical Trials, Causal Inference, and Psychometrics—Contributed
Mental Health Statistics Section, Biometrics Section

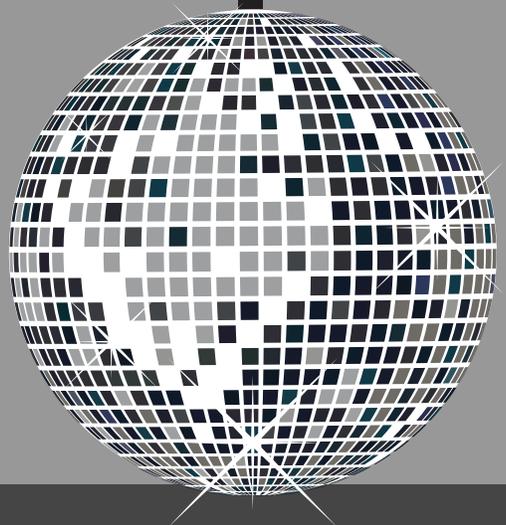
Chair(s): Zhehui Luo, Michigan State University

- 10:35 a.m. Nonparametric Generated Effect Modifiers for Placebo Response—◆Eva Petkova, New York University School of Medicine; Thaddeus Tarpey, Wright State University; Adam Ciarleglio, New York University; Bei Jiang, New York University School of Medicine; R. Todd Ogden, Columbia University; Zhe Su, New York University

Tuesday

JSM

**DANCE
PARTY**



Join more than 700 attendees for music, food, and dancing at the Sheraton Metropolitan from 9:30 p.m. – midnight on Tuesday!

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 10:50 a.m.** Graphical Representation of Treatment Effect Variability in Randomized Clinical Trials—◆Joseph Rausch, Cincinnati Children's Hospital Medical Center
- 11:05 a.m.** On Causal Mediation Effect for Nonlinear Outcomes—◆Pan Wu, CHRISTIANACARE
- 11:20 a.m.** Psychometric Properties of Post-Traumatic Growth Inventory in a Sample of Military Active Duty Service Members—◆Weimin Zhang, Samuelli Institute
- 11:35 a.m.** A Weighted Summed Score for the Center for Epidemiologic Studies: Depression Scale for Systemic Sclerosis—◆Daphna Harel, New York University; Russell Steele, McGill University; Brett Thombs, McGill University; Murray Baron, Jewish General Hospital; Marie Hudson, Jewish General Hospital
- 11:50 a.m.** A Method for Constructing a Score from Items in an Instrument with the Concept of Agreement—◆Lijia Wang, Emory University; Limin Peng, Emory University; Ying Guo, Emory University; Amita K. Manatunga, Emory University
- 12:05 p.m.** Floor Discussion

357 CC-205

Bayesian Methods for Clinical Trials and Survival Analysis—Contributed

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

Chair(s): Lindsay Renfro, Mayo Clinic

- 10:35 a.m.** A March Toward Efficient Clinical Trial Designs for Rare Endpoints: A Fixed Bayesian Design—◆Yang Lei, Susan Carlson, KUMC; Byron J. Gajewski, University of Kansas Medical Center
- 10:50 a.m.** Novel Hierarchical Bayesian Modeling Enables Multi-Cancer-Type 'Basket Trial' in Rare Cancers—◆Elizabeth Krachey, Berry Consultants; Kert Viele, Berry Consultants; Donald Berry, MD Anderson Cancer Center; Allison Florance, GlaxoSmithKline
- 11:05 a.m.** Noninferiority Hypothesis Testing in Two-Arm Trials with Log-Normal Data—◆Lahiru Wickramasinghe, University of Manitoba; Saman Muthukumarana, University of Manitoba
- 11:20 a.m.** Covariate-Adjusted Borrowing of Historical Control Data in Randomized Clinical Trials—◆Baoguang Han, Biogen Idec; Jia (Joyce) Zhan, Indiana University; John Zhong, Biogen Idec; Dawei Liu, Biogen Idec; Stacy Rachelle Lindborg, Biogen Idec
- 11:35 a.m.** Bayesian Hazard Change-Point Estimation with Incomplete Data—◆Deniz Yenigun, Istanbul Bilgi University; Ulku Gurler, Bilkent University
- 11:50 a.m.** Multiple Frailty Model for Clustered Interval-Censored—◆Chun Pan, Novartis ; Bo Cai, University of South Carolina; Lianming Wang, University of South Carolina

- 12:05 p.m.** Adaptive Bayesian Prediction of Patient Accrual in Multicenter Clinical Trials—◆Yu Jiang, Yale University/VA CSPCC Connecticut Health Care; Cen Wu, Yale University; Byron J. Gajewski, University of Kansas Medical Center; Shuangge Ma, Yale University; Peter Guarino, VA CSPCC Connecticut Health Care/Yale University

358 CC-304

Disparities and Other Important Issues in Health Policy Research—Contributed

Health Policy Statistics Section

Chair(s): Tanya P. Garcia, Texas A&M University

- 10:35 a.m.** Improving Response Rates and Representation of Spanish-Preferring Patients in Surveys Assessing Provider Quality: Results from a Randomized Experiment of National Disenrollment Survey—◆Marc Elliott, RAND Corporation; Ann Haas, RAND Corporation; Megan Beckett, RAND Corporation; Cheryl Damberg, RAND Corporation
- 10:50 a.m.** Making Better Decisions About Health Disparity Measurement: Slope Index of Inequality Confidence Interval Width Depends More on Number of Groups Than Overall Sample Size—◆Stuart Gansky, UC San Francisco; Nancy F. Cheng, UC San Francisco; Gloria C. Mejia, Australian Research Centre for Population Oral Health; Wael Sabbah, King's College London Dental Institute; Eduardo Bernab , King's College London Dental Institute
- 11:05 a.m.** The Concentration of Health Care Expenditures in the U.S. and Predictions of Future Spending—◆Steven Cohen, AHRQ
- 11:20 a.m.** Location, Location, Location: Leveraging Interactive Maps, Administrative and Census Data to Find and Describe the Remaining Eligible for Coverage in the ACA Marketplaces—◆Brett Fried, SHADAC/University of Minnesota; Elizabeth Lukanen, SHADAC/University of Minnesota; Karen Turner, SHADAC/University of Minnesota
- 11:35 a.m.** Spatial Patterns of Emergency Department Use for Low Severity Conditions Among Medicare Beneficiaries in 2012—◆Colleen Kummet, General Dynamics Information Technology; Michelle Roozeboom-Baker, General Dynamics Information Technology
- 11:50 a.m.** Matching the National Hospital Care Survey and the National Death Index—◆Shaleah Levant, National Center for Health Statistics; Monica Wolford, National Center for Health Statistics
- 12:05 p.m.** A Bayesian Meta-Analysis of the Effect of Alcohol Use on HCV-Treatment Outcomes with a Comparison of Resampling Methods to Assess Uncertainty in Parameter Estimates—◆Katherine Cauthen,

Sandia National Laboratories; Gregory Lambert, Sandia National Laboratories; Patrick Finley, Sandia National Laboratories; David Ross, U.S. Department of Veterans Affairs; Maggie Chartier, U.S. Department of Veterans Affairs; Victoria J. Davey, U.S. Department of Veterans Affairs

359 CC-614 ■ ● SIE CP10: Genetic Epidemiology—Contributed

Section on Statistics in Epidemiology, Biometrics Section

Chair(s): Judy Li, FDA

- 10:35 a.m.** Penalized Joint Regression Analysis with Application to Feature Selection for Correlated Genetic Data—
 ◆ Shu-Ching Chang, Fred Hutchinson Cancer Research Center; Chad He, Fred Hutchinson Cancer Research Center
- 10:50 a.m.** Mediation Analysis in the Presence of Partially Missing Data on the Mediator in Genomic Studies—
 ◆ Richard Barfield; Xihong Lin, Harvard School of Public Health
- 11:05 a.m.** A Geometric Perspective on the Powers of Principal Component Association Tests for Multiple Phenotypes in Genetic Association Studies—
 ◆ Zhonghua Liu, Harvard University; Xihong Lin, Harvard School of Public Health
- 11:20 a.m.** Constrained Functional Linear Model for Multi-Loci Genetic Mapping—
 ◆ Jiayu Huang, SUNY Stony Brook; Song Wu, SUNY Stony Brook
- 11:35 a.m.** Secondary Phenotype Analysis in Ascertained Family Studies—
 ◆ Roula Tsonaka, Leiden University Medical Center; Renaud Tissier, Leiden University Medical Center; Jeanine Houwing-Duistermaat, Leiden University Medical Center
- 11:50 a.m.** Multi-SNP Association Analysis Using Linkage Disequilibrium Block Construction—
 ◆ Yun Joo Yoo, Seoul National University; Sun Ah Kim, Seoul National University; Shelley Bull, The Lunenfeld-Tanenbaum Research Institute of Mount Sinai Hospital
- 12:05 p.m.** Sparse Structure Equation Models and Integer Programming for Joint Imaging and Genomic Data Analysis and Its Application to Kidney Renal Clear Cell Carcinoma—
 ◆ Nan Lin; Panpan Wang, The University of Texas Health Science Center; Yun Zhu, Tulane University; Momiao Xiong, The University of Texas Health Science Center

360 CC-307 ■ ● Statistical Methods for Neuroimaging Data Analysis II—Contributed

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

Chair(s): Benjamin Risk, Cornell University

- 10:35 a.m.** Assessing Monte Carlo Error in Diffusion MRI—
 ◆ Yang Yang, University of Minnesota
- 10:50 a.m.** Data-Analytical Stability of Second-Level Inference in fMRI Data Analysis—
 ◆ Sanne P. Roels, Ghent University; Beatrijs Moerkerke, Ghent University; Tom Loeys, Ghent University
- 11:05 a.m.** Predicting Disease Status Using Imaging Data from Various Modalities—
 ◆ Wenqiong Xue, Boehringer Ingelheim; DuBois Bowman, Columbia University; Jian Kang, Emory University; Daniel Drake, Columbia University
- 11:20 a.m.** Multiple-Response Prediction and Region Selection in Neuroimaging Analysis—
 ◆ Zhou Li, North Carolina State University; Lexin Li, UC Berkeley
- 11:35 a.m.** Optimizing Region-of-Interest Composites for Capturing Treatment Effects on Brain Amyloid in Clinical Trials—
 ◆ Volha Tryputsen, Janssen R&D
- 11:50 a.m.** Prediction of Lower Bounds for the Number of Sampling Points for Approximating Shapes of Planar Contours—
 ◆ Chalani Prematilake, Texas Tech University; Leif Ellingson, Texas Tech University
- 12:05 p.m.** Generating Data-Driven ROIs for Quantifying Structural Brain Changes in Frontotemporal Dementia—
 ◆ Aleksandr Pankov; Richard Binney, Temple University; Suneth Attygalle, UC San Francisco; John Kornak, UC San Francisco; Howard Rosen, UC San Francisco

361 CC-3A Adaptive Design—Contributed

Survey Research Methods Section, Government Statistics Section

Chair(s): Nancy Bates, U.S. Census Bureau

- 10:35 a.m.** Monitoring Response Data and Respondent Representativeness to Develop Adaptive Survey Design Interventions—
 Stephanie Coffey, U.S. Census Bureau; Benjamin Reist, U.S. Census Bureau; Gina Walejko, U.S. Census Bureau; ◆ Allison Zotti, U.S. Census Bureau
- 10:50 a.m.** Implementing Static Adaptive Design in the National Survey of College Graduates Using the Results of an Incentive Timing Experiment—
 Benjamin Reist, U.S. Census Bureau; ◆ Stephanie Coffey, U.S. Census Bureau; Allison Zotti, U.S. Census Bureau
- 11:05 a.m.** Correcting for Preferential Recruitment in

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Respondent-Driven Sampling—◆ Isabelle Beaudry, University of Massachusetts Amherst; Krista J. Gile, University of Massachusetts Amherst; Corinne M. Mar, University of Washington

11:20 a.m. Evaluating Variance Estimators for Respondent-Driven Sampling—◆ Michael Spiller, CDC; Krista J. Gile, University of Massachusetts Amherst; Mark S. Handcock, UCLA; Corinne M. Mar, University of Washington; Cyprian Wejnert, CDC

11:35 a.m. Monitoring Field Procedures to Develop Adaptive Survey Design Interventions—◆ Gina Walejko, U.S. Census Bureau; Stephanie Coffey, U.S. Census Bureau

11:50 a.m. Examining the Predictive Power of Response Propensity Models in Varied Survey Designs—◆ Chandra Erdman, U.S. Census Bureau

12:05 p.m. Floor Discussion

362 CC-308 Demography and Education—Contributed Social Statistics Section, Government Statistics Section, Section on Statistical Education

Chair(s): Morgan Earp, Bureau of Labor Statistics

10:35 a.m. Mortality Experiences of National Health Interview Survey Respondents in the 2011 NHIS-Linked Mortality Files—◆ Deborah Ingram, National Center for Health Statistics; Eric Miller, National Center for Health Statistics

10:50 a.m. Measuring Changes in Early Child Survival: Using Individual-Level Data to Estimate Mortality Risk Across All Births—◆ Antonio Ramos, UCLA; Robert E. Weiss, UCLA

11:05 a.m. Quantile Regression for Assessing Educational Interventions: Developing Critical Thinking Skills Among Elementary School Students—◆ Mack Shelley, Iowa State University; Luke Fostvedt, Pfizer Inc. Global Research and Development

11:20 a.m. The Impact of Shifting Demographics on High-School Performance in STEM Subjects, Interests in College Majors and Career Occupations, and College and Career Readiness—◆ Edwin Ndum, ACT, Inc.

11:35 a.m. A Framework for Synthetic Control Methods with High-Dimensional, Micro-Level Data: Applications to Neighborhood-Specific Crime Interventions—◆ Michael Robbins, RAND Corporation

11:50 a.m. Single World Object Oriented Plates (SWOOPS): A Graphical Framework for Causal Reasoning in Multivariate, Multilevel, and Longitudinal Settings—◆ Roddy Theobald, University of Washington; Thomas S. Richardson, University of Washington

12:05 p.m. Effect of Music Lessons on the Intelligence of Children—◆ Prantik Bera,

363 CC-617 Methods for Risk Prediction—Contributed Biometrics Section, International Chinese Statistical Association

Chair(s): David Fardo, University of Kentucky

10:35 a.m. Evaluating the Predictive Performance of Biomarkers in Survival Models—◆ Chao-Kang Jason Liang, University of Washington; Patrick Heagerty, University of Washington

10:50 a.m. A Within-Subjects Permutation Approach for Comparing Predictive Ability of Two Continuous Predictors for a Survival Outcome—◆ Ming-Wen An, Vassar College; Gwenael Le Teuff, Université Paris Sud; Stefan Michiels, Université Paris Sud

11:05 a.m. Prognostic Accuracy for Mixture Cure Models—◆ Yilong Zhang, New York University School of Medicine; Yongzhao Shao, New York University School of Medicine

11:20 a.m. Simple Approaches to Analyzing Self-Controlled Case Series (SCCS) Data—◆ Sally Hunsberger, NIAID; Michael Proschan, NIH/NIAID

11:35 a.m. Comparison of Conventional and Novel Risk-Prediction Methods Under High-Dimensional Setting—◆ Cathy Jenkins, Vanderbilt University; Dandan Liu, Vanderbilt University; Sean Collins, Vanderbilt University; Alan Storrow, Vanderbilt University; Frank Harrell, Vanderbilt University

11:50 a.m. Compare the Discriminatory Ability of Biomarkers Subject to LOD Using Semiparametric Transformation Model—◆ Lixuan Yin, George Mason University; Guoqing Diao, George Mason University; Aiyi Liu, NICHD/NIH

12:05 p.m. Using Available Information in the Assessment of Diagnostic Protocols—◆ Cecilia Cotton, University of Waterloo; Oana Danila, University of Waterloo; Stefan Steiner, University of Waterloo; Daniel Severn, University of Waterloo; R. Jock MacKay, University of Waterloo

364 CC-212 Applications and Methods for Human and Environmental Risk Assessment—Contributed Section on Risk Analysis, Section on Statistics and the Environment

Chair(s): Jing Zhang, Miami University

10:35 a.m. Two-Stage Modified Toxicity Probability Interval Design for Low Target Toxicity Rate—◆ Sheau-Chiann Chen, Vanderbilt University; Yu Shyr, Vanderbilt University

10:50 a.m. Quantifying Human Variability for Health Risk Assessment via Bayesian Hierarchical Model—◆ Kan Shao,

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 11:05 a.m.** Risk Analysis of Invasive Species and Pests Using Citizen Science Data: Evaluation of Existing Analysis Techniques Using Layered Simulation—◆Marijke Welvaert, CSIRO; Peter Caley, CSIRO
- 11:20 a.m.** Including Treatment Assignment in Statistical Analyses for Risk-Based Monitoring—◆Kaitlyn Fernandez, Rho; Henry Bahnson, Rho; James Rochon, Rho
- 11:35 a.m.** Nonparametric Benefit-Risk Assessment Using Marker Processes in the Presence of a Terminal Event—◆Yifei Sun, The Johns Hopkins University; Chiung-Yu Huang, The Johns Hopkins University; Mei-Cheng Wang, The Johns Hopkins University
- 11:50 a.m.** Evaluating Geographically Weighted Regression Models for Environmental Chemical Risk Analysis—◆Jenna Czarnota; Chris Gennings, Icahn School of Medicine at Mount Sinai; David Wheeler, Virginia Commonwealth University
- 12:05 p.m.** The Impact on the U.S. Blood Supply of Allocating Younger Blood for Transfusion: A New Allocation Method—◆Arianna Simonetti, FDA/CBER; Hussein Ezzeldin, FDA/CBER; Mikhail Menis, FDA/CBER; Stephen McKean, Acumen LLC; Hector Izurieta, FDA/CBER; Steven Anderson, FDA/CBER; Richard Forshee, FDA/CBER

365 CC-613 Bayesian Modeling—Contributed

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

Chair(s): Anjishnu Banerjee, Medical College of Wisconsin

- 10:35 a.m.** Bayesian Composite Quantile Regression—◆Hanwen Huang, University of Georgia; Zhongxue Chen, Indiana University - Bloomington
- 10:50 a.m.** A Bayesian Method for Simultaneous Registration and Clustering of Functional Observations—◆Zizhen Wu
- 11:05 a.m.** Estimating the Strength Parameter in the Dirichlet Process Mixture Model for Defining Meaningful Groups—◆Yuhyun Song, Virginia Tech; Scotland Leman, Virginia Tech
- 11:20 a.m.** Bayesian Region Selection in Functional Data Regression—◆Yizhi Sun, Virginia Tech; Hongxiao Zhu, Virginia Tech
- 11:35 a.m.** Genomic Prediction Model Based on Haplotype Clusters—◆Stephen Kachman, University of Nebraska
- 11:50 a.m.** Clustering of RNA-Seq Data Controlling for Batch Effects—◆Kushal Dey; Matthew Stephens, The University of Chicago
- 12:05 p.m.** Partial Bayesian Estimation: To Be, to Not Be, or to Be Simultaneously?—◆Evan Greif,

366 CC-310 Simulation-Based Curricula and Statistical Literacy—Contributed

Section on Statistical Education

Chair(s): Kathryn Hanford, University of Nebraska - Lincoln

- 10:35 a.m.** How to Handle Intervals in a Simulation-Based Curriculum?—◆Robin Lock, St. Lawrence University
- 10:50 a.m.** Comparison of Bootstrap Methods and T-Methods: Capture Rates of Confidence Intervals and Probability of Type I Errors in Hypothesis Tests—◆Jeff Kollath, Oregon State University
- 11:05 a.m.** Using Physical Manipulatives in Teaching Randomization Tests—◆Victoria Weber,
- 11:20 a.m.** Reading Assignments for the Statistics Classroom—◆Scott Mcclintock; Steve Soltys, Elizabethtown College
- 11:35 a.m.** Quantitative Writing: Communicating Data—◆Kimberly Massaro, The University of Texas at San Antonio; Gail Pizzola, The University of Texas at San Antonio
- 11:50 a.m.** Children Statistical Literacy: Empowering and Informing Our Future Decision-Makers—◆Matilde Sanchez-Pena, Purdue University; Joyce B. Main, Purdue University
- 12:05 p.m.** Statistical Literacy for Managers—◆Milo Schield, Augsburg College

367 CC-618 Misclassification and Measurement Error—Contributed

Biometrics Section

Chair(s): Bahman Shafii, University of Idaho

- 10:35 a.m.** Proportional Hazards Regression Modeling with Dichotomized Longitudinal Biomarkers Measured with Error—◆Rong Fu, University of Washington; Peter B. Gilbert, Fred Hutchinson Cancer Research Center
- 10:50 a.m.** Continuous Covariate Effects in Survival Analysis with Uncertain Outcomes and an Internal Validation Subsample—◆Jarcy Zee, Arbor Research Collaborative for Health; Sharon X. Xie, University of Pennsylvania
- 11:05 a.m.** Proportional Hazards Model with a Mixture of Berkson and Classical Errors in Covariates and Calibration Data—◆Jean de Dieu Tapsoba, Fred Hutchinson Cancer Research Center; Ching-Yun Wang, Fred Hutchinson Cancer Research Center
- 11:20 a.m.** Evaluation of Group Testing Algorithms in the Presence of Misclassification—◆Yaakov

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Malinovsky, University of Maryland, Baltimore County; Paul S. Albert, Eunice Kennedy Shriver National Institute of Child Health and Human Development; Anindya Roy, University of Maryland, Baltimore County

- 11:35 a.m. Case Identification and Regression Estimation in Group Testing When Dilution Effect Is Present—◆Dewei Wang, University of South Carolina; McMahan S. Christopher, Clemson University; Colin Gallagher, Clemson University
- 11:50 a.m. Misclassified Outcomes in Case-Control Data with Composite Sampling—◆Tianyi Cai, Harvard University; Tianxi Cai, Harvard University
- 12:05 p.m. Analysis in Case-Control Sequencing Association Studies with Different Sequencing Depths—◆Sixing Chen, Harvard School of Public Health; Xihong Lin, Harvard School of Public Health

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■ ● Longitudinal Analysis—Contributed Biopharmaceutical Section, Biometrics Section

Chair(s): T. Ceesay, Merck

- 10:35 a.m. Making Better Dose Decisions—◆Zachary Skrivanek, Eli Lilly and Company
- 10:50 a.m. Two-Stage Approach to Evaluate Cardiovascular Risk of New Anti-Diabetic Therapies—◆Raymond Lam, Merck; Shailaja Suryawanshi, Merck
- 11:05 a.m. A New Durability Analysis Method in Clinical Studies—◆John Xie, Johnson & Johnson; Gordon Law, Johnson & Johnson; Norm Bohidar, Johnson & Johnson; Surya Mohanty, Johnson & Johnson; Jiahui Li, Celgene Corporation
- 11:20 a.m. Joint Modeling of Longitudinal Responses and Survival Outcomes in Latent Class Framework—◆Yue Liu, Merck; Lei Liu, Northwestern University; Jianhui Zhou, University of Virginia
- 11:35 a.m. Assessing Association Between the Risk of Clinical Outcome Event and Patient's Disease Status That Vary by Time—◆Yiran Hu, Bo Fu, AbbVie; Yuanyuan Tang, AbbVie
- 11:50 a.m. On Two-Sample McNemar Test—◆Jim Xiang, Ortho McNeil Pharmaceutical
- 12:05 p.m. Methods of Assessing Treatment Failure/Response with Informative Censoring—◆Jun Zhao, AbbVie; Qi Tang, AbbVie; Bo Fu, AbbVie; Claire L. Tsao, AbbVie

369 CC-605

Nonparametric Regression—Contributed Section on Statistical Learning and Data Mining

Chair(s): Glen Colopy, University of Oxford

- 10:35 a.m. A Method for Confounder Adjustment in Tree-Based Survival Analysis—◆Dawei Liu, Biogen Idec; John Zhong, Biogen Idec; Stacy Rachele Lindborg, Biogen Idec; Lei Xu, Biogen Idec; Donald Johns, Biogen Idec
- 10:50 a.m. Heteroscedastic Regression Trees for Joint Modeling of Means and Variances—◆Thomas Loughin, Simon Fraser University; Andrew Henrey, Simon Fraser University
- 11:05 a.m. High-Dimensional Heteroscedastic Regression—◆Yuwen Gu, University of Minnesota; Hui Zou, University of Minnesota
- 11:20 a.m. L1 Splitting Rule in Survival Forests—◆Hooraa Moradian; Denis Larocque, HEC Montreal; Fran ois Bellavance, HEC Montreal
- 11:35 a.m. Model Selection in High-Dimensional Misspecified Models—◆Pallavi Basu, University of Southern California
- 11:50 a.m. A Flexible Procedure to Analyze High-Dimensional Data with Discrete Responses—◆Xiang Liu, University of South Florida; Tian Chen, University of Rochester; Yuanzhang Li, Walter Reed Army Institute of Research; Hua Liang, The George Washington University
- 12:05 p.m. Augmenting Traditional Estimation with Nondesignated Data: Application to the U.S. Unemployment Rate—◆Robert Montgomery, NORC at the University of Chicago; Martin Barron, NORC at the University of Chicago; Nicki Dunnivant, NORC at the University of Chicago; Yongheng Lin, NORC at the University of Chicago; Ilana Ventura, NORC at the University of Chicago

370 CC-603

Improving Analysis of Defense Systems Using Statistical Methods—Contributed

Section on Statistics in Defense and National Security

Chair(s): Elizabeth Leeds Hohman, NSWG

- 10:35 a.m. Bayesian Hierarchical Models for Common Components Across Multiple System Configurations—◆Kassie Fronczyk, Institute for Defense Analyses; Rebecca Dickinson, Institute for Defense Analyses; Alyson Wilson, North Carolina State University; Caleb Browning, North Carolina State University; Laura Freeman, IDA
- 10:50 a.m. A Bayesian Reliability Growth Grounded Assurance Test—◆Rebecca Dickinson, Institute for Defense

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Analyses; Kassie Fronczyk, Institute for Defense Analyses; Alyson Wilson, North Carolina State University; Caleb Browning, North Carolina State University; Laura Freeman, IDA

- 11:05 a.m. Ordinal Response Variables Observed Continuously Over Time: Data from Shadow, Gray Eagle, and OSRVT—◆Matthew Avery, Institute for Defense Analyses
- 11:20 a.m. Best Practices for Statistically Validating Modeling and Simulation (MandS) Tools Used in Operational Testing—◆Kelly McGinnity, Institute for Defense Analyses; Rebecca Dickinson, Institute for Defense Analyses; Laura Freeman, IDA
- 11:35 a.m. Experimental Design and Statistical Analysis: Improving Testing of the AN/BQQ-10 Submarine Sonar System—◆Laura Freeman, IDA
- 11:50 a.m. Convergence of Different Computationally Efficient Approximations of the Weight of the Forensic Evidence—Christopher Saunders, South Dakota State University; ◆Danica M. Ommen, South Dakota State University; Cedric Neumann, South Dakota State University
- 12:05 p.m. A Statistical Approach to Crime Linkage—◆Michael Porter, The University of Alabama

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CC-615

● **Power and Sample Size I—Contributed**
Biopharmaceutical Section, Survey Research Methods Section

Chair(s): Hong Tian,

- 10:35 a.m. Robust Bayesian Dose-Finding Design for Phase I/II Clinical Trials—◆Suyu Liu, MD Anderson Cancer Center; Valen E. Johnson, Texas A&M University
- 10:50 a.m. Association of Dosimetric Parameters with Toxicities in Breast Brachytherapy Treatment with Multi-Lumen Balloon—◆Jian Kang, Virginia Commonwealth University
- 11:05 a.m. Using Simulation to Compare Performance of Various Prognostic Propensity Scores, Propensity Scores, and Inverse Probability Treatment Weighting (IPTW) Using Propensity Scores—◆In-Lu Liu, Kaiser Permanente; Jiaxiao Shi, Kaiser Permanente Southern California; Wansu Chen, Kaiser Permanente Southern California
- 11:20 a.m. Challenges and Considerations on Sample Size Estimation in Preclinical Discovery Research: Replace, Reduce, Refine—◆Catherine Tuglus, Amgen; Lei Zhou, Amgen
- 11:35 a.m. A Dynamic Alpha Spending (DAS) Function with

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Informative B-Value for a Stratified Study Design—
◆Das Purkayastha, Novartis; Jagannath Ghosh,
Novartis Pharmaceuticals

11:50 a.m. Evaluation of Multiplicity Control Strategies for
a New Study with Multiple Endpoints and Two
Doses—◆Hua Guo, Actavis; Kaifeng Lu,

12:05 p.m. A Novel Tipping Point Approach—◆Gregory Levin,
FDA; Thomas Permutt, FDA; Daniel Rubin, FDA

Contributed Poster Presentations

10:30 a.m.—12:20 p.m.

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CC-4B

Contributed Oral Poster Presentations: Biopharmaceutical Section—Contributed Biopharmaceutical Section

Chair(s): Lan Xue, Oregon State University

Biopharmaceutical Section

- 1 Practical Approach to Missing Item Imputation in Asthma
Quality-of-Life Questionnaire—◆Tulin Shekar, Merck
- 2 Optimal Designs for Multiregional Clinical Trials with
Regional Consistency Requirement—◆Zhaoyang Teng,
Takeda Pharmaceutical International Co.; Mark Chang,
AMAG Pharmaceuticals
- 3 Continuous Blinding Monitoring for Randomized
Controlled Clinical Trials—◆Yufan Zhao, Incyte
Corporation ; Yingqi Zhao, University of Wisconsin -
Madison; Kevin Hou, Incyte Corporation
- 4 Statistical Methods for MIMIC Assay Data—◆Robert D.
Small, Sanofi Pasteur
- 5 Reducing Alpha Adjustment When Tests Are Structurally
Correlated—◆Jonathan Siegel, Bayer HealthCare
Pharmaceuticals
- 6 Improved Power for 2x2, 3x3, and 4x4 Crossover
Trials with Baselines—◆Thomas Jemielita; Mary Putt,
University of Pennsylvania; Devan Mehrotra, Merck
- 7 A Computational Procedure for Mean Kinetic
Temperature Using Unequally Spaced Data—◆Amy B.
Lock, USDA; Christopher Tong, USDA
- 8 Network Meta-Analysis Combining Aggregated and
Individual Patient Data—◆Anna Wiksten, Novartis
Pharma AG; Ekkehard Glimm, Novartis
- 9 Performance Evaluation of New Trial-Level Surrogacy
Measures in Binary-Binary Endpoint Scenario in Clinical
Trials—◆Yiyi Chu, The University of Texas Health
Science Center; Qian Shi, Mayo Clinic; Daniel Sargent,
Mayo Clinic
- 10 Hypothesis Testing of Covariate-Adaptive Randomized
Clinical Trials with Survival Outcomes—◆Lu Wang, The
University of Texas Health Science Center; Hongjian Zhu,
The University of Texas School of Public Health; Jing
Ning, MD Anderson Cancer Center
- 11 Bayesian Modeling and Prediction of Accrual in Multi-
Regional Clinical Trials—◆Yi Deng, Emory University;
Xiaoxi Zhang, Pfizer Inc.; Qi Long, Emory University
- 12 Bayesian Decision-Making on Opening Higher Dose
Cohort with Limited Safety Data—◆Lixin Lang, Bristol-
Myers Squibb; Kay Tatsuoka, Bristol-Myers Squibb
- 13 Unblinded Sample Size Re-Estimation and the Negative
Binomial Model in Clinical Trials—◆Jerry Weaver,
Novartis Pharmaceuticals; Paul Gallo, Novartis
Pharmaceuticals
- 14 Correlations of Patient-Reported Outcomes with PSA
and Survival Endpoints in Prostate Cancer Patients—
◆Xuemei Li, Janssen R&D
- 15 Using Simulations for Regulatory Decision-Making:
How Many Simulations Do We Need to Run?—◆Paul
Schuette, FDA/CDER
- 16 A Bayesian Approach for Designing Phase II Clinical
Trials with Rare Tumor Types in Oncology—◆Santosh
Sutradhar, Novartis Pharmaceuticals; Satrajit
Roychoudhury, Novartis Pharmaceuticals
- 17 Generalized Error Rates for Subgroup Analyses—
◆Xiaolei Xun, Novartis; Frank Bretz, Novartis; Willi
Maurer, Novartis
- 18 Sizing Clinical Trials When Comparing Two Interventions
Using Two Time-to-Event Outcomes—◆Tomoyuki
Sugimoto, Hirotsuki University; Toshimitsu Hamasaki,
National Cerebral and Cardiovascular Center; Scott
R. Evans, Harvard University; Takashi Sozu, Kyoto
University School of Public Health
- 19 Exact Statistical Tests for Comparing Tumor Incidence
Trend in Transgenic Mouse Carcinogenicity Studies—
◆Lei Shu, AbbVie; Lanju Zhang, AbbVie; Bo Yang,
AbbVie
- 20 Evaluating Methods for Estimating a Treatment
Effect During Treatment-Switching in Time-to-Event
Clinical Trials—◆Carl Dicasoli, Bayer HealthCare
Pharmaceuticals; Martin Homering, Bayer HealthCare
Pharmaceuticals; Christian Kappeler, Bayer HealthCare
Pharmaceuticals; Harald Siedentop, Bayer HealthCare
Pharmaceuticals; Thomas Schmelter, Bayer HealthCare
Pharmaceuticals; Daniel Haverstock, Bayer HealthCare
Pharmaceuticals
- 21 A Guidance of Using Meta-Analysis Method for Data with
Rare Event—◆Yao Yu, AbbVie; Yuanyuan Tang, AbbVie;
Qi Tang, AbbVie; Shihua Wen, AbbVie
- 22 Evidence for Model-Based Dose Response for Biological
Products for Rheumatoid Arthritis and Psoriasis—
◆Anindita Banerjee, Pfizer Inc.; Joseph Wu, Pfizer Inc.;
Bo Jin, Pfizer Inc.; Steven Martin, Pfizer Inc.
- 23 Regularized Outcome Weighted Subgroup Identification
for Differential Treatment Effects—◆Yaoyao Xu, AbbVie;
Menggang Yu, University of Wisconsin - Madison; Yingqi
Zhao, University of Wisconsin - Madison; Quefeng
Li, Princeton University; Sijian Wang, University of

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- Wisconsin - Madison; Jun Shao, University of Wisconsin - Madison
- 24 Exact Inference for 3-Treatment, 3-Period, 6-Sequence Crossover Design—◆Ching-Ray Yu, Pfizer Inc.; Michael Riggs, Pfizer Inc.; Sam Weerahandi, Pfizer Inc.
- 25 Randomness and Variability in Restricted Randomization—◆Hui Shao; William F. Rosenberger, George Mason University
- 26 An Adaptive Method for the Normalization of MicroRNA Array Data—◆Qing Zhao; Yuda Zhu, Genentech, Inc.; Karin Staflin, Genentech, Inc.
- 27 Assessing Agreement: A Graphical Approach—◆Paul Hsieh, CBER/FDA; Tie-Hua Ng, FDA/CBER
- 28 Graphical Approaches to Evaluate Liver Safety Data in Clinical Trials—◆Melissa Schultz, University of Wisconsin; Scott Diegel, University of Wisconsin
- 29 Statistical Assessment of Clinical Trials with Discordant Pairs of Observations—◆James Lee, Daiichi Sankyo Pharma Development; Dar Shong Hwang, B.R.S.I.; Chyi-Hung Hsu, Janssen R&D
- 30 Generalized Log Transformation in Radiographic Data Analyses—◆Jiacheng Yuan, Novartis; Didier Renard, Novartis; Heinz Schmidli, Novartis Pharma AG; Gregory Ligozio, Novartis; Peter Mesenbrink, Novartis; Luminita Pricop, Novartis; Micha Levi, Novartis; Shephard Mpopu, Novartis
- 31 Agreement on the Interpretations of Beta-Amyloid Images—◆Jonathan Mahnken, The University of Kansas Medical Center; Alvin Beltramo, The University of Kansas Medical Center
- 32 Extending Logistic Regression Likelihood Ratio Test Analysis to Detect Signals of Vaccine-Vaccine Interactions in Vaccine Safety Surveillance—◆Kijoeng Nam, CBER/FDA; Nicholas C. Henderson, University of Wisconsin - Madison; Patricia Rohan, CBER/FDA; Emily Jane Woo, CBER/FDA; Estelle Russek-Cohen, FDA
- 33 Blinded Sample Size Recalculation for Survival Data—◆Kentaro Sakamaki, Yokohama City University
- 34 Bayesian Isotonic Regression Dose-Response—◆Wen Li, Accenture Accelerated R&D Services; Jeffrey A. Davidson, Accenture Accelerated R&D Services; Haoda Fu, Eli Lilly and Company
- 35 Bayesian-Commensurate Approach for Safety Assessment in Clinical Studies with Count Outcomes—◆Wei-Chen Chen, FDA; Judy Li, FDA
- 36 Hierarchical Bayesian Models for Understanding the Pharmacokinetics and Pharmacodynamics of Lorenzo's Oil—◆Cynthia Basu, University of Minnesota; Mariam Ahmed, University of Minnesota; James C. Cloyd, University of Minnesota; Richard C. Brundage, University of Minnesota; Bradley P. Carlin, University of Minnesota
- 37 Construction of Tolerance Interval Based on Small Data Sets—◆Yuanyuan Duan, AbbVie; Lanju Zhang, AbbVie; Jorge Quiroz, AbbVie Pharmaceutical Research & Development
- 38 Modern Ideas of Better DMC Report—◆Yao Yao, Axio Research; David Kerr, Axio Research; Tingting Li, Axio Research; Kent Koprowicz, Axio Research
- 39 Application of a Class of Copula-Type Models in Early-Phase Dose Drug Combination Trials Using Conditional Escalation with Overdose Control—◆Galen Cook-Wiens, Cedars Sinai Medical Center; Mourad Tighiouart, Cedars Sinai Medical Center; Andre Rogatko, Cedars Sinai Medical Center
- 40 A Simulation Study Using Inverse Probability Weighting to Adjust for Multiple Types of Bias in Observational Studies—◆Diqiong Xie, FDA
- 41 A Case Study on Practical Patient-Level Benefit-Risk Assessment in a Clinical Trial—◆Bo Fu, AbbVie; Shihua Wen, AbbVie
- 42 Shortcomings of the CONSORT 2010 Statement in the Reporting of Adaptive Trials—◆Steven A. Julious, University of Sheffield; Munyaradzi Dimairo, University of Sheffield; Abigail Stevely, University of Sheffield; Susan Todd, University of Reading
- 43 Predicting Survival Probability in Clinical Trials Beyond Follow-Up Periods—◆Jerry Cheng, Rutgers University; John Kostis, Rutgers University; Javier Cabrera, Rutgers University
- 44 A Bayesian Meta-Analysis Method for Estimating Risk Difference of Rare Events—◆Qi Tang; Yuanyuan Tang, AbbVie; Yao Yu, AbbVie; Shihua Wen, AbbVie
- 45 Dose-Finding for Drug Combination in Early Cancer Phase I Trials Using Conditional Continual Reassessment Method—◆Quanlin Li; Mourad Tighiouart, Cedars Sinai Medical Center
- 46 Dose-Finding for Drug Combination in Early Cancer Phase I Trials in the Presence of a Baseline Binary Covariate Using Conditional Escalation with Overdose Control—◆Sungjin Kim, Cedars Sinai Medical Center; Mourad Tighiouart, Cedars Sinai Medical Center
- 47 More Balanced Treatment Allocation When Randomization by Site—◆Ruji Yao; Norman Ying Yao, Miller Institute for Basic Research in Science
- 48 Identification of Stably Expressed Genes from Arabidopsis RNA-Seq Data—◆Bin Zhuo; Yanming Di, Oregon State University; Sarah Emerson, Oregon State University
- 49 A Novel Method of Subgroup Identification by Using Virtual Twins and GUIDE (VG) for Development of Personalized Medicines—◆Jia Jia; Qi Tang, AbbVie; Wangang Xie, AbbVie; Richard Rode, AbbVie
- 50 Statistical Analysis on Models Defined by Differential Equations—◆Hongyuan Wang; David Allen, University of Kentucky
- 51 Retrospective Meta-Analyses for Phase I Studies—◆Sarah Zohar, INSERM UMR 1138; Anand Vidyashankar, George Mason University; Jie Xu, George Mason University
- 52 Data-Driven Prior Distributions for a Phase II COPD Dose-Finding Clinical Trial—◆Shuyen Ho, GSK; Steven

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Novick, GlaxoSmithKline

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Contributed Oral Poster Presentations: Business and Economic Statistics Section—Contributed Business and Economic Statistics Section

Chair(s): Lan Xue, Oregon State University

Business and Economic Statistics Section

- 53 Reasons for Misreporting Government Transfers: Evidence from Multiple Surveys and Programs—◆Pablo Celhay,
- 54 A Capital Asset Pricing Model in the Presence of Market Structural Breaks—◆Su Yang, Mount Sinai High School; Haipeng Xing, SUNY Stony Brook
- 55 Resampling Inhomogeneous Marked Point Processes—◆William Garner, Gilead Sciences; Dimitris Politis, UC San Diego
- 56 On the Limit of Conditional Spearman's Rho Under the Common Factor Model—◆Taehan Bae, University of Regina; Ian Iscoe, IBM
- 57 Examining Diagnostics for Trading-Day Effects from X13-ARIMA-SEATS—◆Osbert Pang, U.S. Census Bureau; Brian Monsell, U.S. Census Bureau
- 58 The Citation Pattern for Business and Statistics Journals: Changes in the 21st Century—◆Mary Whiteside, The University of Texas at Arlington; Mark Eakin, The University of Texas at Arlington; Sridhar Nerur, The University of Texas at Arlington
- 59 Change in Trading Rules and Its Impact on the Distributional Properties of Commodity Futures—◆Yoshinori Kawasaki, Institute of Statistical Mathematics; Yoshimitsu Aoki, Quick Corp.
- 60 Business Failure Prediction for Canadian Charitable Organizations Using Data Mining Methods—◆Xu Wang, St. Francis Xavier University; Zhouqin He, St. Francis Xavier University
- 61 Approximate Bayesian Computation for Lorenz Curves from Grouped Data—◆Kazuhiko Kakamu, Kobe University; Genya Kobayashi, Chiba University
- 62 Dependence Modeling via Voronoi-Based Cluster Analysis—◆Ricardo Couto, IBMEC; Luiz Duczmal, Universidade Federal de Minas Gerais; Denise Burgarelli, UFMG; Felipe ilvares da Silva, UFMG
- 63 Multivariate Statistical Methods in Multi-Criteria Decision-Making—◆Fassil Nebebe, Concordia University; Tak Kwan Mak, Concordia University
- 64 Bayesian Nonparametrics with Moment Conditions—◆Reza Solgi, Harvard University; Luke Bornn, Harvard University; Neil Shephard, Harvard University
- 65 An Investigation of the Day-of-the-Week Effect on the Volatility of Returns of Individual S&P 500 Sectors—◆V.A. Samaranyake, Missouri University of Science and Technology; Juan Liu, Missouri University of Science and Technology

- 66 Causal Inference in Large-Scale Observational Studies: A Case Study of eBay Mobile App Releases—◆Vadim von Brzeski, UC Santa Cruz/eBay Research Labs; Matt Taddy, The University of Chicago; David Draper, UC Santa Cruz/eBay Research Labs

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Contributed Oral Poster Presentations: Section on Medical Devices and Diagnostics—Contributed

Section on Medical Devices and Diagnostics

Chair(s): Lan Xue, Oregon State University

Section on Medical Devices and Diagnostics

- 67 Correction of Verification Bias by Application of Homogeneous Log-Linear Models for a Single Binary-Scale Diagnostic Test—◆Haresh Rochani, Georgia Southern University; Robert Vogel, Georgia Southern University; Hani Samawi, Georgia Southern University; JingJing Yin, Georgia Southern University
- 68 Reference Databases for Ophthalmic Optical Coherence Tomography Devices—◆Arkendra De, FDA/CDRH
- 69 Modeling Brain Desynchronization by EEG Sensor Variance in Epileptic Patients—◆Craig Krebsbach, University of Rhode Island; Gavino Puggioni, University of Rhode Island
- 70 A Nonparametric Test for Comparing ROC Curves from a Paired Design—◆María Carmen Pardo, Complutense University of Madrid; Alba María Franco-Pereira, Complutense University of Madrid

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Contributed Oral Poster Presentations: Section on Statistics in Imaging—Contributed

Section on Statistics in Imaging

Chair(s): Lan Xue, Oregon State University

Section on Statistics in Imaging

- 71 Clustering High-Dimensional Manifold Data in Symmetric Spaces—◆Chao Huang, The University of North Carolina at Chapel Hill; Hongtu Zhu, The University of North Carolina at Chapel Hill
- 72 Random Graph Mixture Model for Estimating the Shared Latent Structure in Groups of Brain Networks—◆Christopher Bryant, The University of North Carolina at Chapel Hill; Hongtu Zhu, The University of North Carolina at Chapel Hill; Joseph Ibrahim, The University of North Carolina
- 73 ROIs Analysis: Comparison of the Activation Pattern Differences Between Two Occasions by Using Feature Extraction—◆Jinae Lee, Yonsei University; Cheolwoo Park, University of Georgia; Kara A. Dyckman, University of Georgia; Nicole A. Lazar, University of Georgia; Benjamin P. Austin, University of Wisconsin ; Qingyang Li, Child Mind Institute; Jennifer E. McDowell, University of Georgia; Hyungwook Park, Ulsan National

- Institute of Science and Technology
- 74 Induced Correlation Resulting from Respiration and Motion Correction Processing Operations in fMRI—◆Emily Paulson, Marquette University; Daniel Rowe, Marquette University
- 75 Global Intensity Normalization Induces Correlation in fMRI—◆Kevin Liu, Marquette University; Daniel Rowe, Marquette University
- 76 Scalar-to-Image Linear Mixed Effects Models for Longitudinal Image Data—◆Baiguo An, The University of North Carolina at Chapel Hill
- 77 Spatio-Temporal Gaussian Process Models for Neuroimaging Data—◆Jung Won Hyun, St. Jude Children's Research Hospital; Yimei Li, St. Jude Children's Research Hospital; Chao Huang, The University of North Carolina at Chapel Hill; Hongtu Zhu, The University of North Carolina at Chapel Hill

376 CC-4B**Contributed Oral Poster Presentations: Transportation Statistics Interest Group—Contributed****Transportation Statistics Interest Group**

Chair(s): Lan Xue, Oregon State University

Transportation Statistics Interest Group

- 78 Applying Structural Equation Modeling to Public Transit Supply and Demand—◆John Handley, Xerox Corporation

377 CC-4B**SPEED: Health Policy and Mental Health Statistics, Part 2—Contributed****Mental Health Statistics Section, Health Policy Statistics Section**

Chair(s): Abhijit Dasgupta, ARAASTAT

Health Policy Statistics Section

- 1 Developing Reliability-Adjusted Rates to Profile the Quality of Home- and Community-Based Services Delivered to Medicaid Beneficiaries Using an Empirical Bayes Framework—◆Sheng Wang, Mathematica Policy Research
- 2 An Interrupted Time Series Analysis of the Mental Health Parity and Addiction Equity Act's Impact on Utilization and Expenditures Among Behavioral Health Care 'Carve-In' Enrollees—◆Jessica Harwood; Susan L. Ettner, UCLA
- 3 The Impact of Modeling Strategy and Informative Censoring on Estimated Readmission Risk—◆Brittney Bailey, The Ohio State University; Abigail Shoben, The Ohio State University; Randi Foraker, The Ohio State University

Mental Health Statistics Section

- 4 Signal Drift and Calibration for Magnetic Resonance Spectroscopy—◆Laura Mariano, Draper Laboratory; Ben

Rowland, Brigham and Women's Hospital; John Irvine, The Charles Stark Draper Laboratory; Alexander Lin, Brigham and Women's Hospital

Health Policy Statistics Section

- 5 Comprehensive Risk Prediction Using Interactive Graph-Guided Fused Lasso Penalty—◆Zhaonan Sun, IBM T.J. Watson Research Center; Fei Wang, University of Connecticut; Jianying Hu, IBM T.J. Watson Research Center
- 6 Evaluating Missing Data Methods for Health Disparities Study Using HCUP State Inpatient Databases—◆Wei Zhang, The George Washington University; Andrew Gelman, Columbia University; Stephen Lyman, Hospital for Special Surgery; Yan Ma, The George Washington University
- 7 A Localized Prediction Algorithm for Personalized Trauma Care—◆Sara Moore; Alan Hubbard, UC Berkeley; Mitchell J. Cohen, UC San Francisco
- 8 A Comparison of Longitudinal Data Analysis Methods to Evaluate the Impact of HIV Legislation—◆Simone Gray, CDC; Patricia Sweeney, CDC; David Purcell, CDC; Jenny Sewell, CDC; Aruna Surendera Babu, CDC; Brett Tarver, CDC; Joseph Prejean, CDC; Jonathan Mermin, CDC
- 9 Quantifying Telemedicine Intensive Care in the Veterans Health Administration (VHA)—◆Amy O'Shea, Department of Veterans Affairs; Lynelle Johnson, VA Healthcare System of Ohio; Mary Vaughan Sarrazin, CADRE, Iowa City VA Health Care System; Peter Cram, University Health Network and Mount Sinai Hospital/University of Toronto; Heather Schacht Reisinger, CADRE, Iowa City VA Health Care System

Mental Health Statistics Section

- 10 Comparisons of Survival Analysis Methods for Doubly Truncated Data—◆Lior Rennert, University of Pennsylvania; Sharon X. Xie, University of Pennsylvania

Health Policy Statistics Section

- 11 Combining Item Response Theory with Multiple Imputation to Crosswalk Between Health Assessment Questionnaire—◆Chenyang Gu; Roe Gutman, Brown University; Vincent Mor, Brown University

Mental Health Statistics Section

- 12 Estimating Causal Effects of Treatment in RCTs with Provider and Subject Noncompliance—◆Elisa Sheng, University of Washington; Xiao-Hua Zhou, University of Washington

Health Policy Statistics Section

- 13 Multiple Decision Allocation Strategies in Kidney Paired Donation Program—◆Wen Wang, University of Michigan; Mathieu Bray, University of Michigan; Peter X.K. Song, University of Michigan; Alan Leichtman, University of Michigan; Michael Rees, University of Toledo Medical Center; Valerie Ashby, University of Michigan; Richard Eikstadt, University of Michigan; Audrey Goulding, University of Michigan; John D. Kalbfleisch, University of Michigan
- 14 Teen Pregnancy and STI Prevention Research: Lessons

Learned in Hawaii—◆ Tamara Tom, University of Hawaii

Mental Health Statistics Section

- 15 An Analysis of Factors Associated with Depression in Adults Based on Data from the Behavioral Risk Factor Surveillance System (BRFSS) Survey—◆ Charlotte Mann, Iowa State University; Ulrike Genschel, Iowa State University; Heike Hofmann, Iowa State University
- 16 Understanding Activity Patterns via Functional Data Approach and Quantifying Similarities Across Species—◆ Haochang Shou, University of Pennsylvania; Vadim Zipunnikov, Johns Hopkins Bloomberg School of Public Health; Lihong Cui, National Institute of Mental Health; Kathleen Merikangas, National Institute of Mental Health; Sonja Greven, LMU; Ciprian Crainiceanu, The Johns Hopkins University

Health Policy Statistics Section

- 17 Predicting Low Accrual in Cooperative Group Oncology Trials—◆ Caroline Bennette, University of Washington; Scott D. Ramsey, Fred Hutchinson Cancer Research Center; Cara L. McDermott, University of Washington; Josh J. Carlson, University of Washington; Anirban Basu, University of Washington; David L. Veenstra, University of Washington
- 18 State-Level Estimates from the NHIS Restricted Data: Analyses to Support States' Implementation and Evaluation of the ACA—◆ Joanna Turner, University of Minnesota, SHADAC; Heather Mattson Dahlen, University of Minnesota, SHADAC

Mental Health Statistics Section

- 19 Know Your Control Group: Comparison of Military and Civilian Controls in the Study of Traumatic Brain Injury—◆ John Irvine, The Charles Stark Draper Laboratory; Laura Mariano, Draper Laboratory; Ben Rowland, Brigham and Women's Hospital; Kristin Heaton, U.S. Army Institute of Environmental Medicine; Alexander Lin, Brigham and Women's Hospital

Contributed Poster Presentations

11:35 a.m.—12:20 p.m.

378 CC-4B SPEED: Methods in Machine and Data Mining, Part 2—Contributed

Section for Statistical Programmers and Analysts, Section on Statistical Learning and Data Mining

Chair(s): Haim Bar, University of Connecticut

Section on Statistical Learning and Data Mining

- 1 Innovated Interaction Screening for High-Dimensional Nonlinear Classification—◆ Yinfei Kong; Yingying Fan, University of Southern California; Daoji Li, University of Southern California; Zemin Zheng, University of

Southern California

- 2 Functional Template Learning for Type Ia Supernova—◆ Shiyuan He, Texas A&M University; Jianhua Huang, Texas A&M University; Lifan Wang, Texas A&M University

Section for Statistical Programmers and Analysts

- 3 Sparse Generalized PCA for Selectable High-Dimensional Analysis—◆ Qiaoya Zhang; Yiyuan She, Florida State University; M. Ross Kunz, Idaho National Laboratory

Section on Statistical Learning and Data Mining

- 4 Understanding Signed Networks Using Balance Theory—◆ Derek Feng,
- 5 Mining of Differential Correlation—◆ Kelly Nicole Bodwin, The University of North Carolina at Chapel Hill; Andrew Nobel, The University of North Carolina at Chapel Hill; Kai Zhang, The University of North Carolina at Chapel Hill
- 6 A Significance Test for Graph-Constrained Estimation—◆ Sen Zhao, University of Washington; Ali Shojaie, University of Washington

Biometrics Section

- 7 Analysis of Contour Data Using Shape Analysis Methods—◆ Marepalli Rao, University of Cincinnati; Qin Wang, University of Cincinnati; Subramanyam Kasala, The University of North Carolina

Section on Statistical Learning and Data Mining

- 8 Dynamic Stratification in Panels—◆ Etienne Josserand, Nielsen; William Waldron, Nielsen
- 9 A Computationally Enhanced Fuzzy Clustering Method for Big Biomedical Data—◆ Chanpaul Jin Wang, University of Massachusetts Medical School; Hua Fang, University of Massachusetts Medical School; Honggang Wang, University of Massachusetts Dartmouth
- 10 Mediation-Based Integrative Genomic Analysis—◆ Sheila Gaynor, Harvard University; Xihong Lin, Harvard School of Public Health
- 11 Robust Adaptive Group WLAD-LASSO—◆ Nedret Billor, Auburn University; Kristin Lilly, Auburn University

Social Statistics Section

- 12 A Compromise Between the Reduction of Collinearity Problems and Bias of Estimation in Ridge Regression: With the Perspective of Loss Function—◆ Xiyuan Liu, The George Washington University

Section on Statistical Learning and Data Mining

- 13 Cohesive Regression Over Networks—◆ Tianxi Li, University of Michigan; Elizaveta Levina, University of Michigan; Ji Zhu, University of Michigan
- 14 Multisample Equal-Covariance Function Testing—◆ Jia Guo, National University of Singapore; Jin-Ting Zhang, National University of Singapore
- 15 Identification of Outliers for Periodic Multivariate Functional Data—◆ Pallavi Sawant, Kansas State University
- 16 Binormal ROC and Precision-Recall Classification with

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Nonparametric Functions—◆Yingzi Xu, North Carolina State University; Howard Bondell, North Carolina State University

- 17 Consistent Estimation of Dynamic and Multi-Layer Networks—◆Qiuyi Han, Harvard University; Edo Airoldi, Harvard University; Kevin Xu, Technicolor

Section on Statistics in Epidemiology

- 18 Multiple Imputation in the Presence of High-Dimensional Data—◆Domonique Watson Hodge, Emory University; Qi Long, Emory University
- 19 Data-Adaptive Shrinkage to Non-Null Target: Applications in Environmental Epidemiology—◆Yin-Hsiu Chen, University of Michigan

Section on Statistical Learning and Data Mining

- 20 The Continuous Configuration Model and Community Detection for Weighted Networks—◆John Palowitch, The University of North Carolina at Chapel Hill; Shankar Bhamidi, The University of North Carolina; Andrew Nobel, The University of North Carolina at Chapel Hill

Speaker with Lunch

12:30 p.m.—1:50 p.m.

379 CC-303

Economic Outlook Luncheon (Added fee \$\$\$)—Speaker with Lunch

Business and Economic Statistics Section

Organizer(s): Robert A. Cage, Bureau of Labor Statistics

- TL09 **Big Data and the Social Sciences—◆Seth Stephens-Davidowitz, The New York Times/Social Science Research Council**

Roundtables with Lunch

12:30 p.m.—1:50 p.m.

380 CC- Ballroom 6E

Biopharmaceutical Section P.M. Roundtable Discussion (Added fee \$\$\$)

Biopharmaceutical Section

Organizer(s): Olga Marchenko, Quintiles

- TL10 **Challenges and Opportunities in Early Oncology Trials—◆Rong Liu, Bayer HealthCare**
- TL11 **Logistics and Implementation of Adaptive Design Trials—◆Eva Miller, InVentiv Health Clinical**

381 CC- Ballroom 6E

Government Statistics Section P.M. Roundtable Discussion (Added fee \$\$\$)

Government Statistics Section

Organizer(s): Morgan Earp, Bureau of Labor Statistics

- TL12 **Writing for Publication—◆Ingegerd Jansson, Statistics Sweden**

382 CC- Ballroom 6E

Health Policy Statistics Section P.M. Roundtable Discussion (Added fee \$\$\$)

Health Policy Statistics Section

Organizer(s): Frank Yoon, Mathematica Policy Research

- TL13 **Developing a Research Institute of Health Care Delivery Science—◆Madhuchhanda Mazumdar, Icahn School of Medicine at Mount Sinai**

383 CC- Ballroom 6E

Mental Health Statistics Section P.M. Roundtable Discussion (Added fee \$\$\$)

Mental Health Statistics Section

Organizer(s): Zhehui Luo, Michigan State University

- TL14 **Closing the Research Practice Gap in Personalized Medicine—◆Eric Laber, North Carolina State University**

384 CC- Ballroom 6E

Quality and Productivity Section P.M. Roundtable Discussion (Added fee \$\$\$)

Quality and Productivity Section

Organizer(s): John Louis Szarka,

- TL15 **Considerations, Challenges, and Opportunities in the Use of Outsourced Statisticians for CMC Statistical Support—◆Benjamin Ahlstrom, Amgen**

385 CC- Ballroom 6E

Section on Bayesian Statistical Science P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Bayesian Statistical Science

Organizer(s): David B. Dahl, Brigham Young University

- TL16 **Bayes and Big Data—◆Steven Scott, Google**

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

386 **CC- Ballroom 6E**
Section on Risk Analysis P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Risk Analysis

Organizer(s): Michael Pennell, The Ohio State University

TL17 **What Can Be the Extent of Contributions of Statistical Sciences to Cyber-Risk and CLOUD Computing Domain in a Security- and Privacy-Conscious World?—◆ Mehmet Sahinoglu, Auburn University**

387 **CC- Ballroom 6E**
Section on Statistical Computing P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Computing

Organizer(s): Wendy Martinez, Bureau of Labor Statistics

TL18 **How Many Simulations Do We Need to Run?—◆ Paul Schuette, FDA/CDER**

388 **CC- Ballroom 6E**
Section on Statistical Consulting P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Consulting

Organizer(s): Isabella R. Ghement, Ghement Statistical Consulting Company Ltd.

TL19 **Managing Analytic Projects: What Works and What Doesn't—◆ Chuck Kincaid, Experis Business Analytics**

389 **CC- Ballroom 6E**
Section on Statistical Education P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Statistical Education

Organizer(s): Patricia Humphrey, Georgia Southern University

TL20 **Innovative Ways for Teaching Large Statistics Courses—◆ Stacey Hancock, UC Irvine**

390 **CC- Ballroom 6E**
Section on Teaching of Statistics in the Health Sciences P.M. Roundtable Discussion (Added fee \$\$\$)

Section on Teaching of Statistics in the Health Sciences

Organizer(s): Amy Nowacki, Cleveland Clinic

TL21 **Statistical Training for Residents, Fellows, and Staff: How, What, and How Often?—◆ William Brady, Roswell Park Cancer Institute**

391 **CC- Ballroom 6E**
Health Policy Statistics Section P.M. Roundtable Discussion (Added fee \$\$\$)

Health Policy Statistics Section

Organizer(s): Frank Yoon, Mathematica Policy Research

WL12 **The Future of Public Use Data—◆ John Czajka, Mathematica Policy Research Invited Sessions 2:00 p.m.—3:50 p.m.**

392 **CC-615**
● Coverage of Nonparametric Credible Sets—Invited

IMS

Organizer(s): Subhashis Ghoshal, North Carolina State University

Chair(s): Igor Pruenster, University of Torino

2:05 p.m. Bayesian Inference for Quantile Estimation—◆ Catia Scricciolo, Bocconi University; Judith Rousseau, Université Paris-Dauphine/CREST

2:30 p.m. Semiparametric Estimation of the Weights and the Number of Components in a Finite Nonparametric Mixture—◆ Judith Rousseau, Université Paris-Dauphine/CREST; Elisabeth Gassiat, Université Paris Sud; Elodie Vernet, Université Paris Sud

2:55 p.m. Coverage of Uniform Credible Regions for Regression Function and Derivatives—William Weimin Yoo, North Carolina State University; ◆ Subhashis Ghoshal, North Carolina State University

3:20 p.m. Coverage of Credible Sets Based on Gaussian Process Priors—◆ Aad van der Vaart, Leiden University

3:45 p.m. Floor Discussion

393 **CC- Ballroom 6E**
■ Medallion Lecture III: Recent Developments in Machine Learning for Personalized Medicine—Invited

IMS, Korean International Statistical Society, Biometrics Section, International Indian Statistical Association

Organizer(s): Igor Pruenster, University of Torino

Chair(s): Moulinath Banerjee, University of Michigan

2:05 p.m. Medallion Lecture: Recent Developments in Machine Learning for Personalized Medicine—◆ Michael Kosorok, The University of North Carolina at Chapel Hill

3:35 p.m. Floor Discussion

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

394 CC-201

■ ● Bringing Joint Models in the Toolbox of Practicing Statisticians: Recent Software Advances—Invited

Section for Statistical Programmers and Analysts

Organizer(s): Dimitris Rizopoulos, Erasmus Medical Center
Chair(s): Jeanine Howing-Duistermaat, Leiden University Medical Center

- 2:05 p.m.** Fitting Joint Models in R Using Packages JM and JMbayes—◆Dimitris Rizopoulos, Erasmus Medical Center
- 2:35 p.m.** The stjm Package in Stata: Joint Modeling of Longitudinal and Survival Data—◆Michael Crowther, University of Leicester
- 3:05 p.m.** JMFit: A SAS Macro for Joint Models of Longitudinal and Survival Data—◆Mark Ernest Boye, Eli Lilly and Company
- 3:35 p.m.** Disc: Paul S. Albert, Eunice Kennedy Shriver National Institute of Child Health and Human Development
- 3:45 p.m.** Floor Discussion

395 CC-204

■ ● Bayesian Decision Analysis: Making the Best Decisions—Invited

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

Organizer(s): Abel Rodriguez, UC Santa Cruz
Chair(s): Emily Fox, University of Washington

- 2:05 p.m.** Making Robust Decisions with Approximate Models in Complex Data Domains—◆Chris Holmes, University of Oxford
- 2:30 p.m.** Decision-Focused Inference on Networked Probabilistic Systems—◆Jim Smith, University of Warwick
- 2:55 p.m.** A Framework for Strategic Financial Risk Management—◆Jesus Rios, IBM Research
- 3:20 p.m.** Dynamics, Sparsity, and Optimization in High-Dimensional Portfolio Decisions—◆Mike West, Duke University; Kaoru Irie, Duke University
- 3:45 p.m.** Floor Discussion

396 CC-4C2

■ ● Advances in Space-Time Covariance Estimation and Serially Dependent Extremes—Invited

JABES-Journal of Agricultural, Biological, and Environmental Statistics, Korean International Statistical Society, Section on Statistics and the Environment, International Indian Statistical Association

Organizer(s): Dipankar Bandyopadhyay, University of Minnesota
Chair(s): Dipankar Bandyopadhyay, University of Minnesota

- 2:05 p.m.** Low-Rank Spatially Varying Cross-Covariance Estimation—◆Rajarshi Guhaniyogi, UC Santa Cruz; Andrew O. Finley, Michigan State University; Sudipto Banerjee, UCLA; Rich Kobe, Michigan State University
- 2:30 p.m.** A Hierarchical Model for Serially Dependent Extremes: A Study of Heat Waves in the Western U.S.—◆Brian J. Reich, North Carolina State University; Benjamin Shaby, Penn State; Dan Cooley, Colorado State University
- 2:55 p.m.** Nonparametric Estimation of Spatial and Space-Time Covariance Function—◆Bo Li, University of Illinois at Urbana-Champaign; InKyung Choi, United Nations; Xiang Wang, Purdue University
- 3:20 p.m.** Disc: Sudipto Banerjee, UCLA
- 3:45 p.m.** Floor Discussion

397 CC-214

■ ● Health Surveillance via Social Media—Invited

Section on Statistics in Defense and National Security, Government Statistics Section, Biometrics Section, Statistics Without Borders, Scientific and Public Affairs Advisory Committee

Organizer(s): Jeffrey L. Solka, NSWCCD
Chair(s): Ivory Bryant, Naval Surface Warfare Center

- 2:05 p.m.** Quantified Temporal and Geographic Mental Health Signals from Social Media—◆Glen Coppersmith, The Johns Hopkins University
- 2:30 p.m.** Digital Surveillance of Foodborne Illnesses and Outbreaks—◆Elaine O. Nsoesie, Boston Children's Hospital; Sheryl Kluberg, Boston Children's Hospital; Jared Hawkins, Harvard Medical School; John S. Brownstein, Boston Children's Hospital
- 2:55 p.m.** Biosurveillance Using Twitter Data—◆David Marchette, Naval Surface Warfare Center
- 3:20 p.m.** Disc: Jeffrey L. Solka, NSWCCD
- 3:45 p.m.** Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

398 **CC-2B**
● Current Issues in Assessing Performance of Medical Facilities—Invited

Health Policy Statistics Section, Scientific and Public Affairs Advisory Committee

Organizer(s): Susan S. Ellenberg, University of Pennsylvania

Chair(s): Susan S. Ellenberg, University of Pennsylvania

- 2:05 p.m. The COPSS Report on the CMS Model for Comparing Hospitals—◆Steven Fienberg, Carnegie Mellon University
- 2:30 p.m. Statistical Considerations in Assessing Hospital Performance—◆Sharon-Lise Normand, Harvard Medical School; Ann Lovett, Harvard Medical School; Robert Wolf, Harvard Medical School; Treacy Silbaugh, Harvard Medical School; Katya Zelevinsky, Harvard Medical School; Matthew Cioffi, Harvard Medical School; Caroline Wood, Harvard Medical School
- 2:55 p.m. Hospital Mortality Rate Estimation for Public Reporting—◆Edward I. George, The Wharton School; Veronika Rockova, University of Pennsylvania; Ville Satoppa, University of Pennsylvania; Paul Rosenbaum, University of Pennsylvania; Jeffrey Silber, University of Pennsylvania; Nabanita Mukherjee, Novartis Healthcare Pvt. Ltd.
- 3:20 p.m. Models and Methods for Profiling Medical Providers—◆John D. Kalbfleisch, University of Michigan; Kevin He, University of Michigan; Yanming Li, University of Michigan
- 3:45 p.m. Floor Discussion

399 **CC-608**
■ ● Evaluation of Strategies to Assess Cardiovascular Risk in Patients with Type 2 Diabetes—Invited

ENAR, Health Policy Statistics Section

Organizer(s): Qi Jiang, Amgen

Chair(s): Qi Jiang, Amgen

- 2:05 p.m. Assessing CV Risk in T2DM Products: Regulatory Experiences and Examples at CDER/FDA—◆Janelle K. Charles, FDA
- 2:25 p.m. Are There Alternative Strategies to the Current Practice of Large Cardiovascular Outcome Trials for Assessing CV Risk of Products for Type 2 Diabetes?—◆Christy Chuang-Stein, Pfizer Inc.
- 2:45 p.m. Disc: Estelle Russek-Cohen, FDA
- 3:05 p.m. Disc: Matilde Sanchez-Kam, Arena Pharmaceuticals
- 3:25 p.m. Disc: Frank Rockhold, GSK
- 3:45 p.m. Floor Discussion

400 **CC-4C3**
● Prior-Less Distributional/Posterior Statistical Inference: Methods and Applications—Invited

General Methodology

Organizer(s): Xiao-Li Meng, Harvard University

Chair(s): Regina Y. Liu, Rutgers University

- 2:05 p.m. Prior-Less Posterior Inference with Double Empirical Bayes—◆Ryan Martin, University of Illinois at Chicago
- 2:30 p.m. Generalized Fiducial Inference for Covariance Estimation—◆Jan Hannig, The University of North Carolina at Chapel Hill; Wei Jenny Shi, The University of North Carolina at Chapel Hill; Thomas C.M. Lee, UC Davis; Randy C.S. Lai, UC Davis
- 2:55 p.m. Fusion Learning by Individual-to-Clique (FLIC): Efficient Approach to Enhancing Individual Inference Through Adaptive Combination of Confidence Distributions—◆Minge Xie, Rutgers University; Regina Y. Liu, Rutgers University; Jieli Shen, Rutgers University
- 3:20 p.m. Uncertainty Quantification for Massive Data Problems with Application to Solar Physics—◆Thomas C.M. Lee, UC Davis; Jan Hannig, The University of North Carolina at Chapel Hill; Randy C.S. Lai, UC Davis
- 3:45 p.m. Floor Discussion

401 **CC-609**
Causality—Invited

Section on Statistics in Epidemiology, Biometrics Section

Organizer(s): Tyler VanderWeele, Harvard University

Chair(s): Thomas S. Richardson, University of Washington

- 2:05 p.m. Causal Inference and Sensitivity Analysis with Interference—◆M. Elizabeth Halloran, ASA
- 2:30 p.m. Structural Nested Models and G-Estimation: The Partially Realized Promise—◆Stijn Vansteelandt, Ghent University; Marshall Joffe, University of Pennsylvania
- 2:55 p.m. Epidemiology Meets Quantum: Statistics, Causality, and Bell's Theorem—◆Richard David Gill, Leiden University
- 3:20 p.m. Disc: James M. Robins, Harvard University
- 3:40 p.m. Floor Discussion

Tuesday

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—Forrest Williamson

GStat, PhD Candidate,
Department of Statistical Science at Baylor University

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- 402** **CC-2A**
■ ● Adherence in Clinical Research—Invited
Mental Health Statistics Section, Health Policy Statistics Section, Biometrics Section
 Organizer(s): Douglas Gunzler, Case Western Reserve University
 Chair(s): Nathan Morris, Case Western Reserve University
- 2:05 p.m.** Predictors of Clinical Appointment Attendance for Individuals with Serious Mental Illness and Diabetes—◆Douglas Gunzler, Case Western Reserve University
- 2:30 p.m.** From LATE to ATE—◆Zhehui Luo, Michigan State University
- 2:55 p.m.** Improved Methods to Assess the Impact of Nonadherence to Medications—◆Majnu John, North Shore LIJ Health System; Todd Lencz, North Shore LIJ Health System; Janina Ferbinteanu, SUNY Downstate Medical Center; Juan Gallego, North Shore LIJ Health System; Delbert Robinson, North Shore LIJ Health System
- 3:20 p.m.** Statistical Inference for the Mean Outcome Under a Possibly Non-Unique Optimal Treatment Strategy—◆Alexander R. Luedtke, UC Berkeley; Mark Johannes van der Laan, UC Berkeley
- 3:45 p.m.** Floor Discussion
- 404** **CC-206**
● Statistics Education Through Online Education—Invited
Section on Teaching of Statistics in the Health Sciences, Section on Statistical Education
 Organizer(s): Ananda Jayawardhana, Pittsburg State University
 Chair(s): Patricia Humphrey, Georgia Southern University
 Panelists: ◆John McGready, Johns Hopkins Bloomberg School of Public Health
 ◆James L. Rosenberger, Penn State
 ◆Simon Sheather, Texas A&M University
 ◆Camille Fairbourn, Utah State University
- 3:35 p.m.** Floor Discussion
- 405** **TCC-204**
■ ● From Consulting to Collaboration to Leadership: Increasing the Impact of Statistical Practice (W. J. Dixon Award Winners)—Invited
Section on Statistical Consulting, Statistics Without Borders, Committee on Applied Statisticians
 Organizer(s): Kim Love-Myers, University of Georgia
 Chair(s): Eric A. Vance, LISA, Virginia Tech
 Panelists: ◆Doug Zahn, Zahn & Associates
 ◆Dallas Johnson, Kansas State University
 ◆Michael Kutner, Emory University
 ◆Ronald Snee, Snee Associates LLC
 ◆Frank Harrell, Vanderbilt University
- 3:35 p.m.** Floor Discussion

Invited Panels 2:00 p.m.—3:50 p.m.

- 403** **CC-3B**
■ Career Insights from Women in Leadership—Invited
Committee on Women in Statistics, Government Statistics Section, Joint Committee on Women in the Mathematical Sciences, Caucus for Women in Statistics, Statistics Without Borders, Section on Statistical Consulting, Scientific and Public Affairs Advisory Committee
 Organizer(s): Satkartar Kinney, NISS; Huixia Judy Wang, The George Washington University; Dalene Stangl, Duke University
 Chair(s): Stacy Rachele Lindborg, Biogen Idec
 Panelists: ◆Nancy Geller, NIH/NHLBI
 ◆Alicia Carriquirry, Iowa State University
 ◆Jing Shyr, IBM
 ◆Nell Sedransk, NISS
- 3:35 p.m.** Floor Discussion

Topic-Contributed Sessions

2:00 p.m.—3:50 p.m.

- 406** **CC-607**
■ ● Moving Beyond Fixed Biomarker Trial Designs—Topic-Contributed
Section on Medical Devices and Diagnostics
 Organizer(s): Nusrat Rabbee, UC Berkeley
 Chair(s): Nusrat Rabbee, UC Berkeley
- 2:05 p.m.** Adaptive Enrichment Designs with Population Selection Based on an Ordinal Biomarker—◆Michael Rosenblum, Johns Hopkins Bloomberg School of Public Health; Yu Du, The Johns Hopkins University; Aaron Fisher, The Johns Hopkins University; Tianchen Qian,

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 2:25 p.m. Auto-Adaptive Alpha Allocation: A Strategy to Mitigate Risk on Study Assumptions—◆Yue Shentu, Merck; Cong Chen, Merck Research Laboratories; Lei Pang, Merck
- 2:45 p.m. The Application of Group Sequential Stopping Boundaries to Evaluate the Effect of an Experimental Agent Across a Range of Marker Expression—◆Eric Holmgren, Oncomed
- 3:05 p.m. Designing a Confirmatory Trial with a Continuous Biomarker Endpoint and an Undetermined Threshold Tested at Both the Interim and Final—◆Adarsh Joshi, Gilead Sciences; Jenny Zhang, Gilead Sciences; Nusrat Rabbee, UC Berkeley; Liang Fang, Gilead Sciences
- 3:25 p.m. The Statistical Issues and Challenges for Follow-On Companion Diagnostic Devices—◆Meijuan Li, FDA
- 3:45 p.m. Floor Discussion

407 CC-620 Biometrics Section Student Paper Award Session 2—Topic-Contributed Biometrics Section

Organizer(s): Rebecca Hubbard, University of Pennsylvania
Chair(s): Michael J. Daniels, The University of Texas at Austin

- 2:05 p.m. PLEMT: A Novel Pseudolikelihood-Based EM Test for Homogeneity in Generalized Exponential Tilt Mixture Models—◆Chuan Hong, The University of Texas School of Public Health; Yong Chen, The University of Texas School of Public Health; Yang Ning, Princeton University; Shuang Wang, Columbia University Mailman School of Public Health; Hao Wu, Emory University; Raymond Carroll, Texas A&M University
- 2:25 p.m. Tensor Generalized Estimating Equations for Longitudinal Imaging Analysis—◆Xiang Zhang; Lexin Li, UC Berkeley; Hua Zhou, North Carolina State University; Dinggang Shen, The University of North Carolina at Chapel Hill
- 2:45 p.m. Generalized Linear Models for Longitudinal Data with Biased Sampling Designs: A Sequential Offsetted Regressions Approach—◆Lee McDaniel, Louisiana State University Health Sciences Center; Jonathan Schildcrout, Vanderbilt University; Enrique F. Schisterman, NIH; Paul J. Rathouz, University of Wisconsin - Madison
- 3:05 p.m. Comparing Treatment Policies with Assistance from the Structural Nested Mean Model—◆Xi Lu, University of Michigan; Kevin Lynch, University of Pennsylvania; David Oslin, University of Pennsylvania; Susan A. Murphy, University of Michigan

- 3:25 p.m. Regression Analysis of Bivariate Failure Time Data—◆Shanshan Zhao, NIEHS; Ross Prentice, Fred Hutchinson Cancer Research Center
- 3:45 p.m. Floor Discussion

408 CC-205 ■ ● Innovations and New Frontiers in Statistics Education—Topic-Contributed Section on Statistical Education, Government Statistics Section

Organizer(s): Davit Khachatryan, Babson College
Chair(s): Ani Eloyan, The Johns Hopkins University

- 2:05 p.m. Revamping the Undergraduate Curriculum in Light of the ASA Guidelines—◆Kari Lock Morgan, Penn State
- 2:25 p.m. Messy Data: Teaching Students Early on About the Realities of Data—◆Ann Cannon, Cornell College
- 2:45 p.m. Incorporating Statistical Consulting Case Studies in Introductory Time Series Courses—◆Davit Khachatryan, Babson College
- 3:05 p.m. A Study of Peer-Review Grading Within Graduate Courses in Biostatistics—◆Elizabeth Colantuoni, The Johns Hopkins University; Zhenke Wu, The Johns Hopkins University; Jeffrey T. Leek, Johns Hopkins Bloomberg School of Public Health; Hongkai Ji, Johns Hopkins Bloomberg School of Public Health
- 3:25 p.m. Floor Discussion

409 CC-310 ■ ● Evaluating Alternative Imputation Methods for Economic Census Products: The Cook-Off—Topic-Contributed Survey Research Methods Section, Government Statistics Section

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

- 2:05 p.m. Exploratory Data Analysis of Economic Census Products: Methods and Results—◆Yukiko Ellis, U.S. Census Bureau; Katherine Jenny Thompson, U.S. Census Bureau
- 2:25 p.m. Implementation of Ratio Imputation and Sequential Regression Multivariate Imputation on Economic Census Products—◆Maria M. Garcia, U.S. Census Bureau; Darcy Steeg Morris, U.S. Census Bureau; L. Kaili Diamond, U.S. Census Bureau
- 2:45 p.m. Implementation of Hot Deck Imputation on Economic Census Products—◆Kevin Tolliver, Auburn University; Laura Betchel, U.S. Census Bureau

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 3:05 p.m. Evaluation of Alternative Imputation Methods for Economic Census Products: The Cook-Off—
◆Jeremy Knutson, U.S. Census Bureau; Jared Martin, U.S. Census Bureau
- 3:25 p.m. Disc: Trivellore Raghunathan, University of Michigan
- 3:45 p.m. Floor Discussion

410 **CC-211**

■ ● Scalable Bayesian Learning and Computing—Topic-Contributed
Section on Statistical Computing, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), Section on Statistics in Defense and National Security

Organizer(s): Tian Zheng, Columbia University
Chair(s): Tian Zheng, Columbia University

- 2:05 p.m. Bayesian Inference for Social Networks Using Aggregated Relational Data—◆Shirin Golchi, Columbia University; Tian Zheng, Columbia University
- 2:25 p.m. Asymptotics of Variational Inference—◆Ted Westling, University of Washington; Tyler McCormick, University of Washington
- 2:45 p.m. A Hierarchical Relational Topic Model with Latent Impact Factors for Large Document Networks—
◆Linda Tan, National University of Singapore; Tian Zheng, Columbia University
- 3:05 p.m. Bayesian Nonparametric Inference on Latent Graphs—◆James Johndrow; Anirban Bhattacharya, Texas A&M University; David Dunson, Duke University
- 3:25 p.m. Disc: Francesca Petralia, Mount Sinai Medical School
- 3:45 p.m. Floor Discussion

411 **CC-307**

● Protecting Privacy While Maximizing the Utility of Government Data: Evaluating Current Approaches and Exploring New Alternatives—Topic-Contributed

Government Statistics Section, Section on Statistical Consulting, Committee on Applied Statisticians, Scientific and Public Affairs Advisory Committee

Organizer(s): Michael B. Hawes, U.S. Department of Education
Chair(s): Michael B. Hawes, U.S. Department of Education

- 2:05 p.m. Standards and Guidelines for Data Disclosure Control: A Review—◆Thomas Krenzke, Westat; Shep Roey, Westat; Lin Li, Westat; Jane Li, Westat

- 2:25 p.m. Quality Assessment of the National Survey on Drug Use and Health (NSDUH) Public Use Files—
◆Neeraja Sathe, RTI International; Feng Yu, RTI International; Lanting Dai, RTI International; Jonaki Bose, Substance Abuse and Mental Health Services Administration; Art Hughes, Substance Abuse and Mental Health Services Administration
- 2:45 p.m. Assessing the Utility of Top-Coded Consumer Expenditure Survey Data—◆Daniel Yang, Bureau of Labor Statistics; Daniell Toth, Bureau of Labor Statistics
- 3:05 p.m. Developing and Testing the Microdata Analysis System—◆Michael Freiman, U.S. Census Bureau; Amy Lauger, U.S. Census Bureau; Marlow Lemons, U.S. Census Bureau; Bryan Schar, U.S. Census Bureau
- 3:25 p.m. Synthetic Longitudinal Business Databases for International Comparisons—◆Joerg Drechsler, Institute for Employment Research; Lars Vilhuber, Cornell University
- 3:45 p.m. Floor Discussion

412 **CC-610**

■ ● Practical Issues with the PFS Endpoint in Cancer Clinical Trial—Topic-Contributed
Biopharmaceutical Section

Organizer(s): Sudhakar Rao, Janssen R&D
Chair(s): Sudhakar Rao, Janssen R&D

- 2:05 p.m. A Model to Analyze Survival in a Clinical Trial Where the Treatment Is Primarily Expected to Delay Disease Progression—◆Dianne M. Finkelstein, Massachusetts General Hospital/Harvard University; David A. Schoenfeld, Massachusetts General Hospital/Harvard University
- 2:25 p.m. Is the Median PFS Difference Meaningful for Assessing Treatment Effect?—◆Steven Snapinn, Amgen
- 2:45 p.m. An Audit Plan in Oncology Clinical Trials—◆Steven Sun, Johnson & Johnson
- 3:05 p.m. Use of PFS and PFS2 in Cancer Clinical Trials—
◆Tommy Fu, Celgene; Marie-Laure Bravo, Celgene; Chengqing Wu, Celgene; Guang Chen, Celgene; Zhinuan Yu, Celgene; Qiang Xu, Celgene
- 3:25 p.m. Disc: Surya Mohanty, Johnson & Johnson
- 3:45 p.m. Floor Discussion

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 413** **CC-4C4**
■ Linking Survey Data to Administrative Records: Issues in Consent, Bias, and Efficiency—Topic-Contributed
 Social Statistics Section, Government Statistics Section, Section on Statistical Consulting
 Organizer(s): Scott Fricker, Bureau of Labor Statistics
 Chair(s): Randall Powers, Bureau of Labor Statistics
- 2:05 p.m. Demographic and Attitudinal Predictors of Respondent Reactions to Using Administrative Records—◆Jennifer Childs, U.S. Census Bureau; Gina Walejko, U.S. Census Bureau; Casey Eggleston, U.S. Census Bureau
- 2:25 p.m. Methods for Exploratory Assessment of Consent-to-Link in a Household Survey—◆Scott Fricker, Bureau of Labor Statistics; John L. Eltinge, Bureau of Labor Statistics; Daniel Yang, Bureau of Labor Statistics
- 2:45 p.m. Record-Linkage Refusal and Chronic Health Conditions in the National Health Interview Survey—◆Jennifer D. Parker, National Center for Health Statistics; Judith Weissman, National Center for Health Statistics; Renee Gindi, National Center for Health Statistics; Donna Miller, National Center for Health Statistics; Eric Miller, National Center for Health Statistics
- 3:05 p.m. Linking the Survey of Earned Doctorates to University Administrative Records—◆Wan-Ying Chang, National Science Foundation/NCSES; Julia Lane, American Institutes for Research; Michelle Yin, American Institutes for Research; Joshua Tokle, American Institutes for Research
- 3:25 p.m. Disc: Joseph Sakshaug, Institute for Employment Research
- 3:45 p.m. Floor Discussion
- 414** **CC-4C1**
■ ● Statistical Advances and Challenges in Energy Economics, Risk, and Business Analytics—Topic-Contributed
 Business and Economic Statistics Section, International Chinese Statistical Association
 Organizer(s): Kai-Sheng Song, University of North Texas
 Chair(s): Ta-Hsin Li, IBM T.J. Watson Research Center
- 2:05 p.m. Copula-Structured M4 Processes with Application to High-Frequency Financial Data—◆Zhengjun Zhang, University of Wisconsin; Bin Zhu, AIG
- 2:25 p.m. Uncertainty Estimation in Electricity Demand Forecasting—◆Bei Chen, IBM Research; Mathieu Sinn, IBM Research
- 2:45 p.m. Statistical Challenges in Solar Power Forecasting—◆YoungDeok Hwang, IBM T.J. Watson Research Center
- 3:05 p.m. Evaluation of Wine Judge Performance Through Three Characteristics: Bias, Discrimination, and Variation—◆Jing Cao; Lynne Stokes, Southern Methodist University
- 3:25 p.m. New Econometric Models in Consumer Demand—◆Kai-Sheng Song, University of North Texas
- 3:45 p.m. Floor Discussion
- 415** **CC-3A**
■ ● Statistical Methods for Improved Processing and Analysis of fMRI Data—Topic-Contributed
 Section on Statistics in Imaging
 Organizer(s): Ranjan Maitra, Iowa State University
 Chair(s): Ranjan Maitra, Iowa State University
- 2:05 p.m. False Activation in Partially Sampled Dual Task fMRI—◆Mary Kociuba, Marquette University; Daniel Rowe, Marquette University
- 2:25 p.m. Single Coil Multi-Slice Aliasing and Separation for fMRI—◆Daniel Rowe, Marquette University; Mary Kociuba, Marquette University
- 2:45 p.m. Improved Activation Detection via Complex-Valued AR(P) Modeling of fMRI Voxel Time Series—◆Daniel Adrian, Grand Valley State University; Ranjan Maitra, Iowa State University; Daniel Rowe, Marquette University
- 3:05 p.m. Disentangling Brain Graphs: The Conflation of Network and Connectivity Analyses—◆Sean Simpson, Wake Forest School of Medicine; Paul Laurienti, Wake Forest School of Medicine
- 3:25 p.m. Spatially Weighted Reduced-Rank Framework for Neuroimaging Data with Application to Alzheimer's Disease—◆Mihye Ahn, The University of Nevada, Reno; Haipeng Shen, The University of North Carolina at Chapel Hill; Chao Huang, The University of North Carolina at Chapel Hill; Yong Fan, University of Pennsylvania; Hongtu Zhu, The University of North Carolina at Chapel Hill
- 416** **CC-612**
Biopharmaceutical Section Student Paper Award Session—Topic-Contributed
 Biopharmaceutical Section
 Organizer(s): Girish Aras, Amgen
 Chair(s): Richard McNally, Covance Inc.
- 2:05 p.m. A Bayesian Credible Subgroups Approach to Identifying Patient Subgroups with Positive Treatment

Effects—◆Patrick M. Schnell, University of Minnesota; Qi Tang, AbbVie; Walt Offen, AbbVie; Bradley P. Carlin, University of Minnesota

- 2:25 p.m. Optimal Dynamic Treatment Regimes for Treatment Initiation with Continuous Random Decision Points—◆Yebin Tao, University of Michigan; Lu Wang, University of Michigan; Haoda Fu, Eli Lilly and Company
- 2:45 p.m. Sequential Multiple Assignment Randomization Trials with EnRichment (SMARTer) Design—◆Ying Liu, Columbia University; Yuanjia Wang, Columbia University; Donglin Zeng, The University of North Carolina
- 3:05 p.m. Dose-Finding Strategies in Combination Therapy—◆Priyam Mitra, Rutgers University; Helen Zhou, Bristol-Myers Squibb; Yun Shen, Bristol-Myers Squibb
- 3:25 p.m. Semiparametric Proportional Rates Regression for the Composite Endpoint of Recurrent and Terminal Events—◆Lu Mao; Danyu Lin, The University of North Carolina
- 3:45 p.m. Floor Discussion

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

417 CC-606

■ ● Decisions and Challenges: Generating Objective Evidence in Integrative Health Research—Topic-Contributed

Biometrics Section

Organizer(s): Qian H. Li, NCCAM/NIH

Chair(s): Laura Lee Johnson, FDA

Panelists: ◆Qian H. Li, NCCAM/NIH

- ◆Kerry Lee, Duke University
- ◆Tor Tosteson, Dartmouth College
- ◆Claudia Witt, University of Zurich
- ◆Ming Tan, Georgetown University

3:45 p.m. Floor Discussion

Topic-Contributed Poster Presentations 2:00 p.m.—3:50 p.m.

418 CC-4B
2015 SPAAC Poster Competition—Topic-Contributed

Scientific and Public Affairs Advisory Committee

Chair(s): Daniel F. McCaffrey, Educational Testing Service

Scientific and Public Affairs Advisory Committee

- 1 Linear Mixed Joint Model with Trigonometric Basis for Longitudinal Outcomes—◆Peng Wu, Columbia University; Yuanjia Wang, Columbia University; Bernard Timothy Walsh, Columbia University Medical Center; Evelyn Attia, Columbia University Medical Center
- 2 Low Physical and Emotional Wellness Among Canadian Child Care Workers Associated with Productivity, Absenteeism, and Turnover—◆Oluwabohunmi Awosoga, University of Lethbridge; Jon Doan, University of Lethbridge; Megan Kornblum, University of Lethbridge
- 3 Cluster Analysis and Data Mining Techniques with Several Applications—◆Kelly H. Zou, Pfizer Inc.; Ching-Ray Yu, Pfizer Inc.; Franklin W. Sun, Pfizer Inc.
- 4 Spatial Bayesian Hierarchical Modeling of the Association Between Air Pollution Exposures and Birth Outcomes—◆An-Ting Jhuang, 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
- 5 Metric-Based Boxplots for Functional Data in the Presence of Time-Warping Variability—◆Weiyi Xie, The Ohio State University; Sebastian Kurtek, The Ohio State University
- 6 The Principal Direction of Mediation—◆Oliver Ch'En, Johns Hopkins Bloomberg School of Public Health; Elizabeth Ogburn, Johns Hopkins Bloomberg School of Public Health; Ciprian Crainiceanu, The Johns Hopkins University; Brian Caffo, The Johns Hopkins University; Martin A. Lindquist, The Johns Hopkins University
- 7 Population Reconstruction Using a State-Space Model Based on an In Situ Mark-Resighting Method to Assess the Abundance of Spawners at Fish-Spawning Aggregation—◆Lynn Waterhouse; Brice X. Semmens, Scripps Institution of Oceanography; Christy Pattengill-Semmens, REEF; Croy McCoy, Department of Environment, Cayman Islands Government; Bradley Johnson, Department of Environment, Cayman Islands Government; Phillipe Bush, Department of Environment, Cayman Islands Government; Scott Heppell, Department of Environment, Cayman Islands Government

- 8 Oscope: A Statistical Approach for Identifying Oscillatory Genes in a Static RNA-Seq Experiment—
◆Jeea Choi, University of Wisconsin - Madison;
Shuyun Ye, University of Wisconsin - Madison;
Christina Kendziorski, University of Wisconsin

Section on Physical and Engineering Sciences

- 9 Statistical Evaluation of Surface Metrology Data in Firearm Identification—◆Tracy Morris, University of Central Oklahoma; Deion Christophe, University of Central Oklahoma

Scientific and Public Affairs Advisory Committee

- 10 Results on a Robust Class of Multiple Testing Procedure—◆Nasrine Bendjilali, Rowan University; Boualem Bendjilali, RVCC; Wei-Min Huang, Lehigh University
- 11 Effect of Data Transformations on the Interpretability of Principal Component Analysis Results—◆Melanie Edwards, Exponent, Inc.; Mihai Aldea, Exponent, Inc.
- 12 Analysis of Weather, Temporal, Population, and Socio-Economic Factors in Determining Crime Rates in Five U.S. Cities and Projections for the Future—◆Zhangxin Xue, Southern Methodist University
- 13 Comparing Missing Data Approaches in Structural Equation Modeling with Data Missing Not at Random—◆Jin-Wen Hsu, Kaiser Permanente; Wansu Chen, Kaiser Permanente Southern California; Kristi Reynolds, Kaiser Permanente; Mary Helen Black, Kaiser Permanente

Contributed Sessions

2:00 p.m.—3:50 p.m.

419 CC-308

Time Series, Regression, Quantiles, and Interval-Valued Data—Contributed

Business and Economic Statistics Section, Government Statistics Section, International Indian Statistical Association

Chair(s): Laura Tupper, Cornell University

- 2:05 p.m. Interval Response Data in Experimental Economics—◆Daniel Walton, Brigham Young University; James McDonald, Brigham Young University; Olga Stoddard, Brigham Young University
- 2:20 p.m. Time Series Analysis for Symbolic Interval-Valued Data—◆Seyed Yaser Samadi, Southern Illinois University Carbondale; Lynne Billard, University of Georgia
- 2:35 p.m. A Generalized Regression Specification Using the Skewed Generalized T Distribution—◆Carter Davis, Brigham Young University; Daniel Walton,

Brigham Young University; James McDonald, Brigham Young University

- 2:50 p.m. Partially Adaptive Quantile Estimation—◆James McDonald, Brigham Young University; David J. Mauler, Brigham Young University
- 3:05 p.m. On Threshold Quantile Regression with Heteroskedasticity: Stock Return-Volume Relations—◆Cathy W.S. Chen, Feng Chia University; Mike K.P. So, The Hong Kong University of Science and Technology; Thomas C. Chiang, Drexel University
- 3:20 p.m. Structural Change Detection for Regression Quantiles Under Time Series Nonstationarity—◆Weichi Wu; Zhou Zhou, University of Toronto
- 3:35 p.m. Discrepancy-Based Parameter Estimation for Balancing Efficiency and Robustness in Fitting State-Space Models—◆Nan Hu, The University of Iowa; Joseph Cavanaugh, The University of Iowa

420 CC-611
Statistical Methods in Genetics and Subgroup Identification—Contributed

ENAR, Biometrics Section

Chair(s): Wei Chen, University of Pittsburgh Children's Hospital of Pittsburgh

- 2:05 p.m. Evaluation of Biomarkers for Treatment Selection Using Individual Participant Data Meta-Analysis—◆Chaeryon Kang, University of Pittsburgh; Holly Janes, Fred Hutchinson Cancer Research Center
- 2:20 p.m. An Omnibus Test for Differential Abundance Analysis of Metagenomic Data—◆Jun Chen, Mayo Clinic; Diane Grill, Mayo Clinic; Karla Ballman, Mayo Clinic
- 2:35 p.m. Multiple Biomarkers Algorithms for Optimal Disease Prediction—◆Ping Xu, University of South Florida; Jeffrey Krischer, University of South Florida
- 2:50 p.m. Subgroup Mixable Inference with Time-to-Event Outcomes in Personalized Medicine Development—◆Ying Ding, University of Pittsburgh
- 3:05 p.m. Analysis of Genomic Data via Likelihood Ratio Test in Composite Kernel Machine Regression—◆Ni Zhao, Fred Hutchinson Cancer Research Center; Michael C. Wu, Fred Hutchinson Cancer Research Center
- 3:20 p.m. Association Analysis of Survival Traits at Gene Level by Functional Regression Models—◆Ruzong Fan, Eunice Kennedy Shriver National Institute of Child Health and Human Development; Yifan Wang, FDA; Qi Yan; Ying Ding, University of Pittsburgh; Daniel E. Weeks, University of Pittsburgh; Haobo Ren, Regeneron Pharmaceuticals; Richard Cook, University of Waterloo; momiao Xiong, The University of Texas at Houston; Wei Chen,

University of Pittsburgh Children's Hospital of Pittsburgh

3:35 p.m. Cancer Is Not a 'Bad Luck' Disease—◆Chi Zhang, University of Georgia; Sha Cao, University of Georgia; Ying Xu, University of Georgia

421 CC-605

Bayesian Modeling in the Life Sciences and Medicine—Contributed

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

Chair(s): Christine Peterson,

2:05 p.m. Analysis of Proteomics Data: Bayesian Alignment of Functions—◆David Hitchcock, University of South Carolina; Wen Cheng, Wells Fargo; Ian Dryden, University of Nottingham; Huiling Le, University of Nottingham

2:20 p.m. Bayesian Spectral Analysis of Replicated Multiple Time Series with Multiple Covariates—◆Ori Rosen, The University of Texas at El Paso; Robert Krafty, Temple University; Sally Wood, The University of Sydney Business School

2:35 p.m. Bayesian Methods for Detecting Boundaries of Images—◆Meng Li; Subhashis Ghosal, North Carolina State University; Aad van der Vaart, Leiden University

2:50 p.m. Identifying Significant Regions of Brain Activation with the Use of fMRI Metadata—◆Meredith Ray, University of Memphis; Hongmei Zhang, University of Memphis; Jian Kang, Emory University

3:05 p.m. A Bayesian Model for Saliency-Based Analysis of Eye-Tracking Data—◆Daniel Campbell, Boston Scientific; Frederick Shic, Yale University; Joseph Chang, Yale University

3:20 p.m. Modeling Pulsatile Hormone Association with Cox Cluster Models—◆Huayu Liu, University of Colorado Anschutz Medical Campus; Nichole Carlson, University of Colorado Anschutz Medical Campus; Alex Polotsky, University of Colorado Anschutz Medical Campus

3:35 p.m. Optimum Covariate Space in Random Change Point Models—◆Kumar Rajan; Denis A. Evans, Rush University Medical Center

422 CC-306

Statistical Quality and Estimation Validation: Measuring the Benefits—Contributed

Government Statistics Section, Committee on Applied Statisticians

Chair(s): Tamara Rib, IRS

2:05 p.m. Estimation Process Used in the Occupational Requirements Survey—◆Brad Rhein, Bureau of Labor Statistics; Chester Ponikowski, Bureau of Labor Statistics

2:20 p.m. Occupational Requirements Survey (ORS) Estimate Validation—◆Kristin Smyth, Bureau of Labor Statistics

2:35 p.m. Measuring Benefits from Improving Accuracy of the 2020 Census: Apportionment of the U.S. House of Representatives and Allocation of Federal Funds—◆Zachary H. Seeskin, Northwestern University; Bruce D. Spencer, Northwestern University

2:50 p.m. Improving the Annual Survey of Local Government Finances' Sample Design and Estimation—◆Joseph Barth, U.S. Census Bureau; Elizabeth Love, U.S. Census Bureau

3:05 p.m. Are State-Level Estimates for the American Housing Survey Feasible?—◆Ernest Lawley, U.S. Census Bureau; Stephen Ash, U.S. Census Bureau; Kathy Zha, U.S. Census Bureau

3:20 p.m. Has the Quality of Official Statistics Improved Over the Last 25 Years?—◆David Marker, Westat

3:35 p.m. Floor Discussion

423 CC-304

Disclosure Avoidance, Data Privacy, and Perturbed Data: Protecting Sensitive Data—Contributed

Government Statistics Section

Chair(s): Gwyn Ferguson, Bureau of Labor Statistics

2:05 p.m. Disclosure Avoidance Techniques at the U.S. Census Bureau—◆William Wisniewski, U.S. Census Bureau; Laura McKenna, U.S. Census Bureau; Amy Lauger, U.S. Census Bureau

2:20 p.m. Data Privacy Protection via Integration of Data Synthesis and Differential Privacy—◆Claire Bowen, University of Notre Dame; Fang Liu, University of Notre Dame

2:35 p.m. Measuring the Degree of Difference in Perturbed Data—Marlow Lemons, U.S. Census Bureau; ◆Aref Dajani, U.S. Census Bureau; Jiashen You, U.S. Census Bureau

2:50 p.m. Synthetic Data Satisfying the Requirements of a New Attribute Disclosure Risk Criterion—◆Anna Oganyan, National Center for Health Statistics

3:05 p.m. Comparing Sensitivity Rules for Protecting Tabular Data—◆Jacob Bournazian, Energy Information Administration

3:20 p.m. On a Comparison of Singly and Multiply Imputed Partially Synthetic Data Under Plug-In Sampling—

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

◆Martin Klein, U.S. Census Bureau

3:35 p.m. Generalized Linear Models with Variables Subject to Post-Randomization Method, with Dependent Covariates—◆Yong Ming Jeffrey Woo, University of Virginia; Aleksandra B. Slavkovic, Penn State

424 CC-210 Environmental Health and Monitoring— Contributed

Section on Statistics and the Environment, Statistics Without Borders

Chair(s): Emily L. Kang, University of Cincinnati

2:05 p.m. Multivariate Statistical Methods for Sediment Contaminant Exposure and Effects—◆Margaret Nikolov, U.S. Naval Academy; Virginia Brodie, USNA, Marine Corps

2:20 p.m. Pollution Mixtures and Risk of Low Birth Weight—◆Boubakari Ibrahimou, Florida International University; Yiliang Zhu, University of South Florida; Hamisu Salihu, University of South Florida

2:35 p.m. Prediction of SPM and PM2.5 Concentration Using Land Use Data and Spatial Correlation—◆Tomoshige Nakamura; Mihoko Minami, Keio University

2:50 p.m. Modeling Carbon Edge Effects Detected by Remote Sensing Across the Pantropics—◆Ivan Ramler, St. Lawrence University; Rebecca Chaplin-Kramer, Natural Capital Project; Richard Sharp, Natural Capital Project; Nick Haddad, North Carolina State University

3:05 p.m. Estimating Species Abundance and Basal Area of Oaks in Shenandoah National Park—◆Jing Zhang, Miami University; M. Henry H. Stevens, Miami University

3:20 p.m. Approaches to Effective Sample Size Estimation for Trend Detection in Time Series—◆Christopher Comiskey; Charlotte Wickham, Oregon State University; Alix I. Gitelman, Oregon State University

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

425 CC-617

● Causal Inference—Contributed

Section on Statistics in Epidemiology, Biometrics Section

Chair(s): David Vock, University of Minnesota

2:05 p.m. Causal Analysis in Large Marketing Data Sets—◆Igor Mandel, Telmar, Inc.

2:20 p.m. Methods to Overcome Violations of an Instrumental Variable Assumption: Converting a Confounder into an Instrument—◆Michelle Shardell, National

Institute on Aging

2:35 p.m. Causal Inference Framework for PCOR Using Observational Data—◆Yi Zhang, Medical Technology and Practice Patterns Institute; Mae Thamer, Medical Technology and Practice Patterns Institute; Onkar Kshirsagar, MTPPI

2:50 p.m. An Extended Propensity Score Approach for Comparative Effectiveness in Main-Validation Study Designs to Account for Missing Confounders—◆Katherine Evans, Harvard University; Eric Tchetgen Tchetgen, Harvard University

3:05 p.m. Comparison of Approaches for Handling Missingness in Covariates for Propensity Score Models—◆Donna Coffman, Penn State; Jiangxiu Zhu, Penn State

3:20 p.m. Issues in Methodological Strategies for Marginal Structural Models with Large Data Sets—◆Bret Zeldow; Jason Roy, University of Pennsylvania

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

426 CC-401 Data Quality—Contributed

Survey Research Methods Section, Government Statistics Section, Committee on Applied Statisticians, Committee on Applied Statisticians

Chair(s): Barbara Carlson, Mathematica Policy Research

2:05 p.m. Decomposing the Interviewer Variance Introduced by Standardized and Conversational Interviewing—◆Brady T. West, University of Michigan Institute for Social Research; Frederick G. Conrad, Institute for Social Research; Frauke Kreuter, Joint Program in Survey Methodology; Felicitas Mittereder, Institute for Social Research; Jen Durow, Institute for Social Research

2:20 p.m. Assessing Measurement Errors in a Survey on Energy Use by Manufacturing Businesses—◆Kenneth Pick, U.S. Census Bureau; Tom Lorenz, U.S. Energy Information Administration; Mary Susan Bucci, U.S. Census Bureau; Leif E. Crider, U.S. Census Bureau

2:35 p.m. Quality and Measurement Error Assessment of Juvenile Interviews in the NCVS—◆Caroline Blanton, RTI International; Marcus Berzofsky, RTI International; Kimberly Peterson, RTI International; Philip Lee, RTI International; Lynn Langton, Bureau of Justice Statistics; Michael Planty, Bureau of Justice Statistics

2:50 p.m. Repeating After You: Dependent Interviewing in Establishment Surveys—◆Jennifer Edgar, Bureau of Labor Statistics; Heather Ridolfo, NASS

3:05 p.m. Improving Editing Efficiency: How a Comprehensive Program Interface Reduces the Time Cost of the Comment Review Process—◆Richard Windle, Federal Reserve Board

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

3:20 p.m. Using Mixture Models for Heaped Data with Rounded Responses and True Spikes—◆Minsun Riddles, Westat; Sharon Lohr, Westat; Ardeshrif Eftekharzadeh, IRS3:35 p.m. Characterizing Discrepancies in Reported Acreage Between the Census of Agriculture and June Agricultural Survey—◆Michael Bellow, USDA/NASS; Heather Ridolfo, NASS

427 **CC-603**

Advances in Nonparametric Testing: Part 1—Contributed

Section on Nonparametric Statistics

Chair(s): Yehua Li, Iowa State University

2:05 p.m. A Permutation Test for Three-Dimensional Rotation Data—◆Melissa Bingham, University of Wisconsin - La Crosse; Daniel Bero, Iowa State University

2:20 p.m. Rank Repeated Measures Analysis of Covariance—◆Chunpeng Fan, Sanofi U.S. Inc.; Donghui Zhang, Sanofi U.S. Inc.

2:35 p.m. Bayesian Tapering Test for Comparing Two Estimated Spectral Densities with Application to EEG Data—◆Chenyi Pan; Dan Spitzner, University of Virginia

2:50 p.m. A Novel Rank-Sum Test for Clustered Data When the Number of Subjects in a Group Within a Cluster Is Informative—◆Sandipan Dutta, University of Louisville; Somnath Datta, University of Louisville

3:05 p.m. Dynamics of DNA Minicircles in Motion via Fourier Analysis of Functional Time Series—◆Shahin Tavakoli, University of Cambridge; Victor Michael Panaretos, EPFL

3:20 p.m. A Permutation-Based Framework for Accurate Predication of Differentially Expressed Genes—◆Weichun Huang, NIH/NIEHS

3:35 p.m. Significance Testing in Nonparametric Multiplicative Error Models Based on the Bootstrap—◆Shuo Li, Guanghua School of Management, Peking University; Xiaojun Song, Guanghua School of Management, Peking University; Yundong Tu, Guanghua School of Management, Peking University

428 **CC-619**

Health Applications with Missing Data—Contributed

Biometrics Section, Government Statistics Section

Chair(s): Rebecca Scherzer, UC San Francisco

2:05 p.m. Statistical Analysis and Handling of Missing Data in Cluster Randomized Trials: A Systematic Review—

◆Mallorie Fiero, The University of Arizona; Shuang Huang, The University of Arizona; Melanie L. Bell, The University of Arizona

2:20 p.m. Imputing the Transcriptome in Inaccessible Tissues in and Beyond the GTEx Project—◆Jiebiao Wang, The University of Chicago; Eric Gamazon, Vanderbilt University; Barbara Stranger, The University of Chicago; Hae Kyung Im, The University of Chicago; Nancy Cox, Vanderbilt University; Dan L. Nicolae, The University of Chicago; Lin S. Chen, The University of Chicago

2:35 p.m. Analysis of Self-Report and Biochemically Verified Tobacco Abstinence Outcomes with Missing Data: A Two-Stage Imputation Approach—◆Xianghua Luo, University of Minnesota; Yiwen Zhang, University of Minnesota; Janet L. Thomas, University of Minnesota

2:50 p.m. The Effects of the Order of Applying Multiple Imputation in Subset Analysis Examining the Association Between Body Mass Index (BMI) and Transrectal Ultrasound Prostate Weight—◆Irene Helenowski, Northwestern University; Hakan Demirtas, University of Illinois at Chicago; Jennifer A. Doll, University of Wisconsin - Milwaukee; Borko D. Jovanovic, Northwestern University; Michael J. Gurley, Northwestern University; Timothy M. Kuzel, Northwestern University

3:05 p.m. Using Two-Fold Fully Conditional Specification to Impute Longitudinal Healthy Aging Index Scores—◆Elizabeth L. McCabe, Boston University School of Public Health; Joanne M. Murabito, National Heart, Lung, and Blood Institute/Boston University Framingham Heart Study; Kathryn L. Lunetta, Boston University School of Public Health; Susan Cheng, Brigham and Women's Hospital; Martin G. Larson, Boston University

3:20 p.m. Using Multiple Imputation to Address the Inconsistent Distribution of a Controlling Variable When Modeling an Infrequent Outcome—◆Yujia Zhang, CDC; Sara Crawford, CDC; Sheree Boulet, CDC; Michael Monsour, CDC; Bruce Cohen, Massachusetts Department of Public Health; Patricia McKane, Michigan Department of Community Health; Karen Freeman, Florida Department of Health

3:35 p.m. Estimation to Assess Surrogate Marker in Vaccine Trials—◆SoYoung Kim, Fred Hutchinson Cancer Research Center; Ying Huang, Fred Hutchinson Cancer Research Center

Tuesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

429 **CC-618**
■ Methods for Next-Generation Sequencing and -Omics Data—Contributed

Biometrics Section

Chair(s): Dongmei Li, University of Rochester

- 2:05 p.m. Modeling the Next Generation Sequencing Read Count Data for DNA Copy Number Variant Study—
◆Tieming Ji, University of Missouri - Columbia; Jie Chen, Georgia Regents University
- 2:20 p.m. Bayesian Functional Data Methods in Copy Number Alteration Studies: Applications in Urothelial Bladder Carcinoma—◆Miranda Lynch, University of Connecticut Health Center; Jessica M. Clement, University of Connecticut Neag Comprehensive Cancer Center
- 2:35 p.m. A Network-Based Approach for Detecting Differentially Expressed Metabolic Pathways with Adjustments for Background Features—
◆Teal Guidici, University of Michigan; George Michailidis, University of Florida
- 2:50 p.m. Estimating Dynamic Gene Regulation Network—
◆Yunlong Nie, Simon Fraser University
- 3:05 p.m. A Bayesian Approach to Biomarker Selection Through miRNA Regulatory Network—◆Francesco Stingo, MD Anderson Cancer Center; Thierry Chekouo, MD Anderson Cancer Center; Kim-Anh Do, MD Anderson Cancer Center; James Doecke, CSIRO

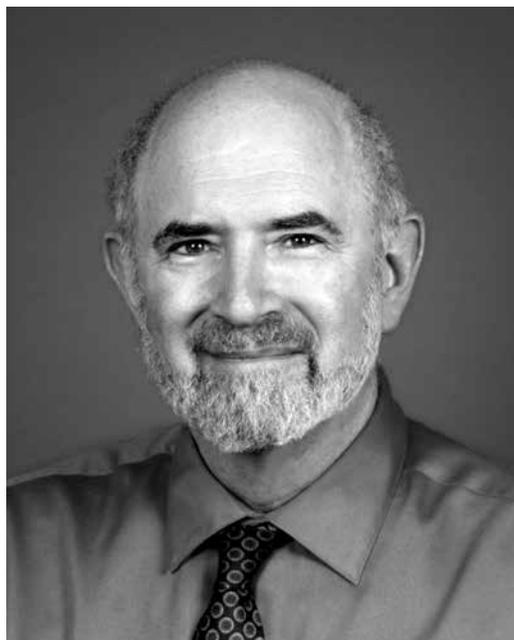
- 3:20 p.m. Increasing the Accuracy of Gene Expression Classifiers by Incorporating Pathway Information: A Latent Group Selection Approach—◆Yaohui Zeng, The University of Iowa; Patrick Breheny, The University of Iowa
- 3:35 p.m. A Comparison of Aggregate P-Value Methods and Multivariate Statistics for Self-Contained Tests of Metabolic Pathway Analysis—◆Matthew Mitchell, Metabolon Inc.

430 **TCC-202**
■ ● Statistical Process Control and QA—Contributed

Quality and Productivity Section, Section on Physical and Engineering Sciences, Committee on Applied Statisticians

Chair(s): Vaneeta Kaur Grover, The Chemours Company

- 2:05 p.m. Robust Techniques for Phase I Profile Monitoring—
◆Abdel-Salam Gomaa, Qatar University
- 2:20 p.m. Statistical Methods in Data Harmonization—◆Yan Wang, UCLA; Jian Zhang, Kaiser Permanente Southern California; Honghu Liu, UCLA
- 2:35 p.m. A Study of the Robustness of the AEWMA Chart—
◆Rong Zheng, The University of Alabama; Subha Chakraborti, The University of Alabama
- 2:50 p.m. An Adaptive Exponentially Weighted Moving Average Control Chart—◆Amitava Mitra, Auburn University; Kang Bok Lee, Auburn University



ASA President’s Address and Founders & Fellows Recognition

2015 ASA President **David Morganstein** will give the talk “Statistics: Making Better Decisions” and honor new **Fellows and Founders Award winners** tonight at 7:00.
CC-Ballroom 6ABC

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 3:05 p.m. Effect of Phase I Sample Size on the Performance of the Multivariate Sign EWMA Chart—◆Yinaze Dovoedo, University of North Alabama; Subha Chakraborti, The University of Alabama
- 3:20 p.m. An Empirical Depth-Based Statistical Process Control Scheme for Multivariate Data—◆Junvie Pailden, Southern Illinois University Edwardsville
- 3:35 p.m. Building Quality Assurance for the Occupational Requirements Survey—◆Tamara Harney, Bureau of Labor Statistics; Karen Brown, Bureau of Labor Statistics

431 CC-616

Semiparametric Methods—Contributed

Biometrics Section

Chair(s): Dong Wang, Dow AgroSciences, LLC

- 2:05 p.m. Maximum Likelihood Estimation for Multivariate Semiparametric Density Ratio Model—◆Scott Marchese,
- 2:20 p.m. Concordance-Assisted Learning for Estimating Optimal Individualized Treatment Regimes—◆Caiyun Fan, Shanghai University of Finance and Economics; Wenbin Lu, North Carolina State University; Rui Song, North Carolina State University; Yong Zhou, Academy of Mathematics and Systems Science Chinese Academy of Sciences
- 2:35 p.m. Parameter Estimation in Multivariate Single Index Model—◆Jingwei Wu, Indiana University School of Medicine; Hanxiang Peng, Indiana University Purdue University Indianapolis; Wanzhu Tu, Indiana University School of Medicine
- 2:50 p.m. Varying Index Coefficient Model for Dynamic Gene-Environment Interactions—◆Jingyi Zhang, Michigan State University; Xu Liu, Michigan State University; Yuehua Cui, Michigan State University
- 3:05 p.m. Generalized Semiparametric Varying-Coefficient Regression Models for Longitudinal Data with Applications to Treatment Switching—◆Li Qi; Yanqing Sun, The University of North Carolina at Charlotte; Peter B. Gilbert, Fred Hutchinson Cancer Research Center
- 3:20 p.m. Change-Plane Analysis for Subgroup Identification and Sample Size Calculation—◆Ailin Fan, North Carolina State University; Wenbin Lu, North Carolina State University; Rui Song, North Carolina State University
- 3:35 p.m. Goodness-of-Fit Test for Smoothing Spline ANOVA Models: Missing Covariates and Interaction Terms—◆Sebastian Teran Hidalgo; Michael Kosorok, The University of North Carolina at Chapel Hill; Michael C. Wu, Fred Hutchinson Cancer Research Center

432 CC-212

Advances in Graphical Frameworks and Methods Part 2—Contributed

Section on Statistical Graphics

Chair(s): Mahbulul Majumder, University of Nebraska - Omaha

- 2:05 p.m. Dynamic Causal Networks with Multi-Scale Temporal Structure—◆Xinyu Kang, Boston University; Apratim Ganguly, Boston University; Eric Kolaczyk, Boston University
- 2:20 p.m. Structural Factor Equation Models for Causal Network Construction via Acyclic Directed Mixed Graphics—◆Yan Zhou, University of Michigan; Peter X.K. Song, University of Michigan; Xiaoquan William Wen, University of Michigan
- 2:35 p.m. Discovering and Evaluating Trend Patterns in Financial Time Series—◆James Shine; James Gentle, George Mason University; Charles Perry, USDA (Retired)
- 2:50 p.m. Network Visualization in Ggplot2: Geom_Net—◆Samantha Tyner, Iowa State University; Heike Hofmann, Iowa State University
- 3:05 p.m. Oracally Efficient Estimation for Single-Index Link Function with Simultaneous Confidence Band—◆Lijie Gu, Soochow University; Lijian Yang, Soochow University
- 3:20 p.m. Nonparametric Confidence Regions for L-Moments—◆Jonathan Hosking,
- 3:35 p.m. Comparing Means Using Adjusted Confidence Intervals—◆Kimihiko Noguchi, Western Washington University; Fernando Marmolejo-Ramos, Stockholm University

433 CC-203

Statistical Learning Applications—Contributed

Section on Statistical Learning and Data Mining

Chair(s): Eric P. Smith, Virginia Tech

- 2:05 p.m. Detecting Signal Regions in Whole-Genome Association Studies—◆Zilin Li; Xihong Lin, Harvard School of Public Health
- 2:20 p.m. On the Estimation of Population Eigenvalues and the Asymptotic Properties of PCA in High-Dimensional Data—◆Rounak Dey, University of Michigan; Seunggeun Lee, University of Michigan
- 2:35 p.m. Comparison of Batch Effect Correction Methods in DNA Methylation Data—◆Xinhui Wang; Susan Groshen, University of Southern California; Juan Pablo Lewinger, University of Southern California; Kimberly Siegmund, University of Southern California

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 2:50 p.m. Latent U.S. Auto Industry Network Under Spatial Autoregressive Error Structure—◆Sayan Chakraborty, Michigan State University; Tapabrata Maiti, Michigan State University
- 3:05 p.m. Summarizing Topics: From Word Lists to Phrases—◆Lauren Hannah, Columbia University; Hanna Wallach, Microsoft Research
- 3:20 p.m. Words Segmentation in Chinese Language Processing—◆Xinxin Shu, Merck; Annie Qu, University of Illinois at Urbana-Champaign; Junhui Wang, City University of Hong Kong; Xiaotong Shen, University of Minnesota
- 3:35 p.m. Topic Analysis for Chinese Micro-Blog Data—◆Wenqian Cheng, London School of Economics and Political Science; Piotr Fryzlewicz, London School of Economics

434 CC-213

Functional Data Analysis—Contributed

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

Chair(s): Douglas Noe, Miami University

- 2:05 p.m. Nonlinear Dimension Reduction for Functional Data—◆Jun Song, Penn State; Bing Li, Penn State
- 2:20 p.m. Functional Regression with Functional Response by Signal Compression—◆Ruiyan Luo, Georgia State University; Xin Qi, Georgia State University
- 2:35 p.m. Combined Analysis of Amplitude and Phase Variations in Functional Data—◆Sung Lee, University of Pittsburgh; Sungkyu Jung, University of Pittsburgh
- 2:50 p.m. Interactive Inference for Spatial Image Analysis—◆Hannah Director, Los Alamos National Laboratory; James Gattiker, Los Alamos National Laboratory
- 3:05 p.m. Estimation and Inference in Regime-Switching Dynamic Networks—◆Jing Ma, University of Michigan; George Michailidis, University of Florida
- 3:20 p.m. Variable Selection for Model-Based Clustering of Functional Data—◆Kyra Singh, University of Rochester; Tanzy Love, University of Rochester; Jacqueline Williams, University of Rochester; Jacob Finkelstein, University of Rochester; Carl Johnston, University of Rochester
- 3:35 p.m. Submodularity in Statistics—◆Kory Johnson, The Wharton School; Robert Stine, The Wharton School; Dean Foster, Yahoo Lab

435 CC-613

Clinical Trial Design III—Contributed

Biopharmaceutical Section

Chair(s): Wanjie Sun,

- 2:05 p.m. Evaluation of QT Correction Methods and Gender Effect on QTc Intervals Following Moxifloxacin Administration—◆Bhavnaba Solanki, Janssen R&D; Jayalakshmi Natarajan, Janssen R&D
- 2:20 p.m. Drug Exposure and Dose-Limiting Toxicities in Early-Phase Oncology Trials—◆Yihua Zhao, Boehringer Ingelheim; Shu Zhang, Boehringer Ingelheim
- 2:35 p.m. A Profile-Based Stratified Randomization and Its Application to a Double-Blind, Placebo-Controlled Clinical Trial—◆Andrew Francis Magyar, Allergan, Inc.; Jihao Zhou, Allergan, Inc.; Brenda Jenkins, Allergan, Inc.; Cornelia Haag-Molkenteller, Allergan, Inc.
- 2:50 p.m. Shelf Life Estimation: Bayesian Augmented Mixed Model Approach—◆Maryna Ptukhina, University of Nebraska - Lincoln; Walter Stroup, University of Nebraska - Lincoln
- 3:05 p.m. Improving the Operational Efficiency of Phase II and III Trials—◆Jitendra Ganju, Hyperion Therapeutics
- 3:20 p.m. Bias-Corrected Estimation of Treatment Effects in Biomarker-Based Randomized Clinical Trials—◆Kiichiro Toyozumi, Shionogi & Co., Ltd. ; Shigeyuki Matsui, Nagoya University Graduate School of Medicine
- 3:35 p.m. Statistical Tests on Concentration-QTc Hysteresis—◆Kuenhi Tsai, Merck; Li Fan, Merck; Fang Liu, Merck; Devan Mehrotra, Merck; Georg Ferber, Statistical Consultant

436 TCC-101

Media Metrics—Contributed

Section on Statistics in Marketing, Committee on Applied Statisticians

Chair(s): Michael Baker, Nielsen

- 2:05 p.m. Optimal Internet Media Selection—◆Courtney Paulson; Gareth James, University of Southern California; Lan Luo, University of Southern California
- 2:20 p.m. How Social Media Can Improve Donation Campaigns—◆Chen Wang, University of Maryland; William Rand, University of Maryland; Shawn Mankad, University of Maryland
- 2:35 p.m. Optimization and Clustering for Mobile Offer-Targeting Campaigns—◆Alex Zolot, Nokia

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 2:50 p.m. A Case Study on the Effectiveness of Facebook Advertising to College Students—◆Margaretha Hsu, Shippensburg University; April Bailey, St. Petersburg College
- 3:05 p.m. Cross-Panel Imputation—◆Yunting Sun, Google
- 3:20 p.m. The Impact of Audience Imputation on Standard Errors of TV Ratings—◆Lukasz Chmura; Scott Bell, Nielsen; Victoria Tsay, Nielsen
- 3:35 p.m. Business Analytics in Telecommunication Marketing: A Case Study—◆Kamrar Moud

437 CC-614 Statistical Issues Specific to Therapeutic Areas III—Contributed Biopharmaceutical Section

Chair(s): Richard Zink, SAS Institute

- 2:05 p.m. Bayesian Adaptive Design Implementation in Oncology Early Phase Trials—◆Yuehui Wu, GlaxoSmithKline; Allison Florance, GlaxoSmithKline
- 2:20 p.m. Statistical Methods for Adding New Arms to an Ongoing Response-Adaptive Trial—◆Matteo Cellamare; Lorenzo Trippa, Dana-Farber Cancer Institute; Steffen Venz, Dana-Farber Cancer Institute
- 2:35 p.m. Improving ELISA Assay Efficiency in Pharmacokinetic Studies—◆Anna Decker; William Forrest, Genentech, Inc.; Hanine Anezinos, Genentech, Inc.; Kelly Loyet, Genentech, Inc.; Moulay Hicham Alaoui Ismaili, Genentech, Inc.
- 2:50 p.m. Imputing a ‘Small’ Number of Categorical Missing Values in a Clinical Trial—◆Derek Janszen, AstraZeneca
- 3:05 p.m. Estimation of a Linear Parametric Function Associated with the Lognormal Distribution—◆Jiangtao Gou, Northwestern University; Ajit Tamhane, Northwestern University
- 3:20 p.m. An Ensemble of Classifiers for Time Course Classification of Response to Treatment in Psoriatic Patients—◆Joel Correa da Rosa, Rockefeller University; Sandra Garcet, Rockefeller University; Mayte Suarez Farinas, Rockefeller University
- 3:35 p.m. Optimal Design for a Survival Study for Low Incidence Failure Time Data—◆Birtukan Adamu, University of Alberta; Keumhee Carriere Chough, University of Alberta

Contributed Poster Presentations

2:00 p.m.—3:50 p.m.

438 CC-4B Contributed Oral Poster Presentations: Section on Statistics in Marketing—Contributed Section on Statistics in Marketing

Chair(s): Lan Xue, Oregon State University

Section on Statistics in Marketing

- 14 Prediction of Opening Weekend Box Office Performance—◆Animesh Mitra,
- 15 Effective-Experience Model for Analyzing Data Given by Age and Period for Food/Dish Preference—◆Nobutane Hanayama, Shobi University

439 CC-4B Contributed Oral Poster Presentations: Section on Statistics in Sports—Contributed Section on Statistics in Sports

Chair(s): Lan Xue, Oregon State University

Section on Statistics in Sports

- 16 The Effect of ‘Freebies’ on Runs Allowed and Winning in NCAA Division I Baseball—◆Daniel Mundfrom, Eastern Kentucky University; Michelle L. Smith, Eastern Kentucky University
- 17 Effect of Pressure on PGA Golfer’s Performance—◆Jeffrey Wu, Eastside High School; Russell Zaretski, University of Tennessee; Yunfeng Dai, University of Florida
- 18 Does Fast-Paced Offense Pay off in the NFL?—◆Masaru Teramoto, University of Utah; Chad L. Cross, Nevada State College; Vincent J. Dalbo, Central Queensland University
- 19 Analysis of Bowling Effectiveness in Twenty20 Cricket—◆Ananda Manage, Sam Houston State University; Yang Liu, Baylor Scott & White Healthcare

440 CC-4B Contributed Oral Poster Presentations: Section on Teaching of Statistics in the Health Sciences—Contributed Section on Teaching of Statistics in the Health Sciences

Chair(s): Lan Xue, Oregon State University

Section on Teaching of Statistics in the Health Sciences

- 20 Measurement Error in a Bivariate Model—Application in Nutrition—◆Hui Lin, DuPont Pioneer
- 21 PowerPoint Macro-Enabled Shows for Computer Tutorials—◆David Groh, Good Samaritan College
- 22 An Application of Joint Hypothesis Testing in a Randomized Clinical Trial—◆Nicole Zimmerman,

Cleveland Clinic; Edward Mascha, Cleveland Clinic;
Negmeldeen Mamoun, Cleveland Clinic

441 CC-4B

Contributed Oral Poster Presentations: Social Statistics Section—Contributed

Social Statistics Section

Chair(s): Lan Xue, Oregon State University

Social Statistics Section

- 23 Estimations of the Roman Life Expectancy Using Ulpian's Table—◆Peter Pflaumer,
- 24 Group-Level Outcomes in Multi-Level Designs: An Empirical Comparison of Analysis Strategies—◆Jeffrey Kromrey, University of South Florida; V. Lynn Foster-Johnson, Dartmouth College
- 25 Cross-Validation on Network Models—◆Beau Dabbs, Carnegie Mellon University
- 26 Modified Peters-Belson: Bias in Treatment-Prognostic Score Interaction—◆Josh Errickson, University of Michigan
- 27 Latent Space Modeling Approach for Temporal Networks—◆Samrachana Adhikari, Carnegie Mellon University; Brian Junker, Carnegie Mellon University
- 28 Modeling the Impact of a School-Based Optometry Intervention on Longitudinal Academic Performance Measures—◆Erin Lindsey Duffy, UCLA; Rebecca Dudovitz, UCLA; David Elashoff, UCLA
- 29 Measurement Error and Penalized Likelihoods for Variable and Factor Selection in Factor Analysis—◆Alana Unfried, North Carolina State University; Dennis Boos, North Carolina State University; Leonard Stefanski, North Carolina State University

442 CC-4B

Contributed Oral Poster Presentations: Section on Statistical Consulting—Contributed

Section on Statistical Consulting

Chair(s): Lan Xue, Oregon State University

Section on Statistical Consulting

- 30 Effect Size Measures and Meta-Analysis for Alternating Treatment Single-Case Design Data—◆Leann Long, West Virginia University; Mathew Bruckner, West Virginia University; Regina Carroll, West Virginia University; George Kelley, West Virginia University
- 31 Case Study: Improved Statistical Exploration and Analytics of Categorical Survey Data Related to Food Safety—◆Andy Mauromoustakos, University of Arkansas; Phil Crandall, University of Arkansas; Corliss Obryan, University of Arkansas; Kevin Thompson, University of Arkansas
- 32 Rank-Based Statistical Methods for Longitudinal Studies—◆Raymond Hoffmann, Medical College of Wisconsin

- 33 An Effective Strategy for Initializing the EM Algorithm in Finite Mixture Models—◆Semhar Michael, The University of Alabama; Volodymyr Melnykov, The University of Alabama

443 CC-4B

Contributed Oral Poster Presentations: Section on Statistical Education—Contributed

Section on Statistical Education

Chair(s): Lan Xue, Oregon State University

Section on Statistical Education

- 34 Prediction of True Scores from Observed Scores and Ancillary Data—◆Lili Yao, Educational Testing Service; Shelby Haberman, Educational Testing Service; Sandip Sinharay, CTB
- 35 The What, Why, and How of Guided Inquiry Exercises (GIEs)—◆Kenneth Brown, College of San Mateo
- 36 Applied Statistics at Penn State Online: Maximizing the Peer Review of Teaching—◆Mosuk Chow, Penn State; Glenn Johnson, Penn State; James L. Rosenberger, Penn State
- 37 An Examination of the Factors Affecting the Efficacy of the Jumbo-Hybrid Model for Introductory Statistics Courses—◆Robin Jeffries, California State University at Chico; Kathy Gray, California State University at Chico
- 38 Classroom Demonstration: Data Visualization in Introductory Statistics Classes—Maps and Bubble Charts—◆Eric Sues, California State University at East Bay
- 39 Lexical Ambiguity in Statistics: The Interaction Between Normal and Average—◆Neal Rogness, Grand Valley State University; Chao Beatrice Zhang, University of Georgia; Diane Fisher, University of Louisiana at Lafayette; Jennifer Kaplan, University of Georgia
- 40 Student-Designed Data-Oriented Class Projects for a Forensic Science Course—◆Elizabeth J. Malloy, American University; Laurel MacMillan, American University; James E. Girard, American University; Richard Bennett, American University
- 41 Comparison Between Face-to-Face and Online Teaching in Statistics—◆Shalima Zalsha, Sam Houston State University; Ferry Butar Butar, Sam Houston State University
- 42 Teaching Graduate-Level Statistics Courses in a Hybrid Format—◆Lisa Kay, Eastern Kentucky University

444 CC-4B

Contributed Oral Poster Presentations: Government Statistics Section—Contributed

Government Statistics Section

Chair(s): Lan Xue, Oregon State University

Government Statistics Section

- 43 The Political Districting of Kuwait: Heuristic Approaches—

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- ◆ Shafiqah Alawadhi, Kuwait University; Rym Mahallah, Kuwait University
- 44 Three Elections and Three Tests: Applying Electoral Forensics to the Rajapaksa Era in Sri Lanka—◆ Ole Forsberg, Oklahoma State University
- 45 The Analysis of Pilot Survey Data for the 2020 Rolling Census in Statistics Korea—◆ KyungMi Kim, Statistics Korea
- 46 Education and Child Development Research at NORC—◆ Stephen Cohen, NORC at the University of Chicago; Jake Bartolone, NORC at the University of Chicago; Tom Hoffer, NORC at the University of Chicago; Michael Yang, NORC at the University of Chicago; Marie Halverson, NORC at the University of Chicago
- 47 Community Development Stakeholder Data: Exploring Economic Inclusion and Emerging Issues Using Diffusion Indexes—◆ Barbara Robles, Board of Governors of the Federal Reserve System; Kelly Edmiston, Federal Reserve Bank of Kansas City
- 48 Consumer Use of Mobile Financial Services: Results from the 2012–2015 Reports—◆ Alexandra Brown, Federal Reserve Board of Governors
- 49 Maternal Demographic Trends for Five Metropolitan Atlanta Counties, 1968–2013—◆ Clinton J. Alverson, CDC/ONDIEH/NCBDDD; Michael J. Atkinson, CDC/ONDIEH/NCBDDD
- 50 Community Credit: A New Perspective on America's Communities—◆ Kausar Hamdani, Federal Reserve Bank of New York
- 51 Conditional AIC Under Covariate Shift with Application to Small-Area Prediction—◆ Yuki Kawakubo; Shonosuke Sugasawa, The University of Tokyo; Tatsuya Kubokawa, The University of Tokyo
- 52 Visualizing the Suburban Poor: Who Are They?—◆ Eunjoo Jeung, University of Nebraska - Omaha; Jace Crist, University of Nebraska - Omaha; Venkata Sesha Raghava Gorajala, University of Nebraska - Omaha; B. Shine Cho, University of Nebraska - Omaha; Jonah Williams, University of Nebraska - Omaha
- 53 Time Series Analysis in UK Office for National Statistics—◆ Ping Zong, UK Office for National Statistics; Duncan Elliott, Office for National Statistics; Tariq Aziz, UK Office for National Statistics; Jennifer Davis, UK Office for National Statistics; Cathy Jones, UK Office for National Statistics
- 54 A Study on Program Evaluation via Difference-in-Difference Approach—◆ Heungsun Park, Hankuk University of Foreign Studies; Bonyong Koo, LIG Insurance
- 445** **CC-4B**
Contributed Oral Poster Presentations: Survey Research Methods Section—Contributed Survey Research Methods Section
 Chair(s): Lan Xue, Oregon State University
Survey Research Methods Section
- 55 Examples of Singletons for Which Variance Software Fixes Are Not Adequate—◆ Iris Shimizu, National Center for Health Statistics; Roberto Valverde, National Center for Health Statistics
- 56 Use of Smartphones as a New Survey Mode: A Feasibility Study—◆ Shaohua Hu, CDC; Naomi Freedner-Maguire, ICF International; James Dayton, ICF International; Linda Neff, CDC
- 57 Better Mean Estimation After Post-Stratification—◆ Jesse Frey, Villanova University; Timothy Feeman, Villanova University
- 58 Targeted Sampling, Mixed Mode, Incentives, and Paying for Completion: What Works for Reaching Hard-to-Survey Low-Income Households with Civil Legal Needs?—◆ Danna Moore, Washington State University Social & Economic Science Research Center; Arina Gertseva, Social & Economic Sciences Research Center; Nathan Palmer, Social & Economic Sciences Research Center
- 59 Resident Physician's Knowledge and Attitudes Toward Biostatistics and Research Methods Concepts—◆ Bahaa Abaalkhail, King Abdulaziz University; Sami Alzahrani, King Abdulaziz University
- 60 Adjusting for Effects of Survey Mode Difference Across a Longitudinal Mixed-Mode Study—◆ Heather Kitada, Oregon State University; Virginia Lesser, Oregon State University; Lan Xue, Oregon State University
- 61 Sampling Allocation Strategies for the Redesigned National Health Interview Survey (NHIS)—◆ Van Parsons, National Center for Health Statistics; Erin Dienes, National Center for Health Statistics
- 62 Making Better Decisions in Item Selection for Computerized Adaptive Testing—◆ Hua-Hua Chang, University of Illinois; Hyeon-Ah Kang, University of Illinois at Urbana-Champaign
- 63 Semiparametric Estimation for Generalized Linear Models with Missing Covariates—◆ Yinan Fang, Iowa State University; Jae-kwang Kim, Iowa State University
- 64 A Dynamic Systems Approach to Patterns of Affect and Cognitive Difficulty in Interviewer-Respondent Interactions—◆ Matt Jans, UCLA
- 65 Health Care Access for Adults with Disabilities—◆ Frances Chevarley, AHRQ; Amy Taylor, AHRQ
- 66 Using Calibration Training to Improve the Reliability of Conversational Interviewing—◆ William Mockovak, Bureau of Labor Statistics; Morgan Earp, Bureau of Labor Statistics; Alice Yu, Bureau of Labor Statistics
- 67 Box-Cox Transformed Linear Mixed Models for Small-Area Estimation—◆ Shonosuke Sugasawa, The University of Tokyo; Tatsuya Kubokawa, The University of Tokyo

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 68 The Accuracy of a National Generalized Variance Function for Subnational Estimation—◆ Philip Lee, RTI International; Bonnie Shook-Sa, RTI International; Marcus Berzofsky, RTI International; Lynn Langton, Bureau of Justice Statistics; Michael Planty, Bureau of Justice Statistics
- 69 Developing Generalized Variance Functions for Estimates of Recidivism Rates—◆ Karol Krotki, RTI International; Marcus Berzofsky, RTI International; David Heller, RTI International
- 70 Income Interpolation from Categories Using a Percentile-Constrained Inverse-CDF Approach—◆ George Couzens, RTI International; Marcus Berzofsky, RTI International; Kimberly Peterson, RTI International
- 71 Factors Associated with Change in Retrospective Reports of Life Events—◆ Mary Beth Ofstedal, University of Michigan; William Chopik, University of Michigan; Jacqui Smith, University of Michigan
- 72 Weighting Approach for a 2014 Statewide Dual Frame RDD Survey—◆ Liza Nirelli McNamee, University of Idaho; Monica Reyna, University of Idaho; Priscilla Salant, University of Idaho; J.D. Wulfhorst, University of Idaho
- 73 A Data Management Model for Multinational Surveys Toward Meta-Analysis—Maureen Kelly, RTI International; ◆ Annette Green, RTI International; Safaa Amer, RTI International
- 74 A Practical Balancing for a Random Sample from a Finite Population by Systematic Selection—◆ Hee-Choon Shin, National Center for Health Statistics; Jibum Kim, Sungkyunkwan University
- 75 On the Use of Recursive Residuals in Small-Area Estimation—◆ Yahia S. El-Horbaty, University of Southampton/Helwan University

446 **CC-4B**
Contributed Oral Poster Presentations:
International Chinese Statistical Association—
Contributed

International Chinese Statistical Association

Chair(s): Lan Xue, Oregon State University

International Chinese Statistical Association

- 76 Testing Equality of Average Cost-Effectiveness Ratios in Multiple Treatments—◆ Tsai-Yu Lin, Feng Chia University; Chi-Rong Li, Chung Shan Medical University

447 **CC-4B**
Contributed Oral Poster Presentations:
Statistical Society of Canada—Contributed
SSC

Chair(s): Lan Xue, Oregon State University

SSC

- 77 Ties in the National Hockey League: An Overtime Bonus—◆ Paramjit Gill, The University of British Columbia

448 **CC-4B**
Contributed Oral Poster Presentations: Section
for Statistical Programmers and Analysts—
Contributed

Section for Statistical Programmers and Analysts

Chair(s): Lan Xue, Oregon State University

Section for Statistical Programmers and Analysts

- 78 Jury Simulation—◆ Catherine Durso, University of Denver

449 **CC-4B**
SPEED: Topics in Genetics and
Biopharmaceutical Applications, Part 2—
Contributed

Section on Statistics in Genomics and Genetics, Biometrics
Section, Biopharmaceutical Section, WNAR

Chair(s): Duo Jiang, Oregon State University

Section on Statistics in Genomics and Genetics

- 1 Error Bounds of L1 Penalized Estimator for High-Dimensional Support Vector Machine—◆ Bo Peng, University of Minnesota; Lan Wang, University of Minnesota; Yichao Wu, North Carolina State University

Biopharmaceutical Section

- 2 Unified Approach to Variable Selection in Missing Data via Least Squares Approximation—◆ Eric Reyes; Cody Roberts, Rose-Hulman Institute of Technology
- 3 Variable Selection in Linear Models—◆ Ondrej Blaha, LSU Health Sciences Center; Julia Volaufova, LSU Health Sciences Center; Lynn Roy LaMotte, LSU Health Sciences Center

Section on Statistics in Genomics and Genetics

- 4 Incorporating ENCODE Information into SNP-Based Phenotype Prediction—◆ Yue-Ming Chen, The University of Texas at Houston; Peng Wei, The University of Texas School of Public Health

WNAR

- 5 Genome-Wide Haplotypic Testing in a Finnish Cohort Identifies a Novel Association with Low-Density Lipoprotein Cholesterol—◆ Qian Zhang, University of Washington; Sharon Browning, University of Washington; Brian Browning, University of Washington

Section on Statistics in Genomics and Genetics

- 6 Prediction of Subcellular Locations for Fungal Proteins—◆ James Munyon, Youngstown State University; Sepideh Khavari, Youngstown State University; Guang-Hwa Chang, Youngstown State University; Xiangjia Min, Youngstown State University

Biopharmaceutical Section

- 7 Unconditional Exact Tests for Binomial Proportions in the Group Sequential Setting—◆ Navneet Hakhu, Axio Research; Scott Emerson, University of Washington

Section on Statistics in Genomics and Genetics

- 8 The Q-MFG Test: A Linear Mixed Effect Model to Detect

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Maternal-Offspring Genetic Effects—◆Michelle M. Creek, UCLA; Eric M. Sobel, UCLA; Janet S. Sinsheimer, UCLA

Biopharmaceutical Section

- 9 Misclassification of the Strata in Stratified Randomized Clinical Trials in Diabetic Study—◆Anjun Cao, Johnson & Johnson
- 10 A New Statistical Test of Null Effect in Treatment Response—◆Lin Taft, Indiana University Richard M. Fairbanks School of Public Health; Changyu Shen, Indiana University

Section on Statistics in Genomics and Genetics

- 11 MvGST: Multivariate and Directional Gene Set Testing—◆John Stevens, Utah State University; Dennis Mechem, Utah State University; Garrett Saunders, Brigham Young University - Idaho; S. Clay Isom, Utah State University

Biopharmaceutical Section

- 12 Quality-Adjusted Survival Analysis: An Application to a Phase III Randomized Study in Multiple Myeloma—◆Suddhasatta Acharyya, Novartis Pharmaceuticals; Ashok Panneerselvam, Novartis Pharmaceuticals; Sofia Paul, Novartis Pharmaceuticals

Biometrics Section

- 13 Tail-Based Robust Test to Detect Gene Differential Expression in RNA-Seq Data—◆Jiong Chen, MD Anderson Cancer Center; Jianhua Hu, MD Anderson Cancer Center

Biopharmaceutical Section

- 14 Dose Escalation with Over-Dose and Under-Dose Control in Phase I/II Clinical Trials—◆Zhengjia Chen, Emory University; Ying Yuan, MD Anderson Cancer Center; Zheng Li, Emory University; Michael Kutner, Emory University; Taofeek Owonikoko, Emory University; Walter J. Curran, Emory University; Fadlo Khuri, Emory University; Jeanne Kowalski, Emory University
- 15 Tipping Point Analysis for Tolvaptan Clinical Study in Patients with ADPKD—◆Junfang Li; John Ouyang, Otsuka ; Matilda Hsieh, Otsuka
- 16 Missing Data Methods When Analyzing a Phase III Trial in an Orphan Indication—◆Changlu Liu, Novartis; Mark Baillie, Novartis; Melanie Wright, Novartis; Mouna Akacha, Novartis
- 17 A Simulation Study of Bias Due to Missing Longitudinal Data—◆Katherine Kirkwood, Icahn School of Medicine at Mount Sinai; Michael Parides, Icahn School of Medicine at Mount Sinai
- 18 Bayesian Semiparametric Analysis of Recurrent Events Data: Investigating Risk Factors for Cardiovascular Disease Changes Over Event History—◆Li-An Lin, The University of Texas Health Science Center; Sheng Luo, The University of Texas Health Science Center; Barry R. Davis, The University of Texas Health Science Center

- 19 Statistics to Evaluate Biomarkers in Predicting Residual Cardiovascular Risk in a Case-Cohort Study—◆Warren Bao, Pfizer Inc.; Rana Fayyad, Pfizer Inc.; Sarah Young, Pfizer Inc.; Peter Ganz, San Francisco General Hospital/ University of California

Biometrics Section

- 20 Model Selection for mRNA Counts—◆Burcin Simsek, University of Pittsburgh; Satish Iyengar, University of Pittsburgh

Contributed Poster Presentations

3:05 p.m.—3:50 p.m.

450

CC-4B

SPEED: Bayesian Models and Inference, Part 2—Contributed

Section on Bayesian Statistical Science, Mental Health Statistics Section, Section on Statistics and the Environment

Chair(s): Jianfei Zheng,

Section on Bayesian Statistical Science

- 1 The Validity of Bayesian Information Criteria in Misspecified Models—◆Yoichi Miyata, Takasaki City University of Economics
- 2 Bayes Factor Approaches for Hypothesis Testing in ANOVA Models—◆Min Wang, Michigan Technological University

Section on Statistics and the Environment

- 3 An Integrated Population Dynamics Model of North-American Mourning Doves Using Band-Recovery and Harvest Surveys—◆Mark Otto, Fish and Wildlife Service
- 4 Bivariate Left-Censored Bayesian Model for Predicting Exposure: Preliminary Analysis of Worker Exposure During the Deepwater Horizon Oil Spill—◆Caroline Groth, University of Minnesota; Sudipto Banerjee, UCLA; Gurumurthy Ramachandran, University of Minnesota; Mark R. Stenzel, Exposure Assessment Applications, LLC; Dale P. Sandler, National Institute of Environmental Health Sciences; Aaron Blair, National Cancer Institute; Richard K. Kwok, National Institute of Environmental Health Sciences; Patricia Stewart, Stewart Exposure Assessments, LLC; Lawrence S. Engel, The University of North Carolina at Chapel Hill

Section on Bayesian Statistical Science

- 5 Empirical Comparison of the Frequentist and Bayesian Inferences in (Zero-One Inflated) Beta Regression—◆Evercita Eugenio, University of Notre Dame; Fang Liu, University of Notre Dame
- 6 Exploring Factor Analysis for Dimension Reduction in the Context of Traits on a Phylogenetic Tree—◆Max Tolkoﬀ; Marc A. Suchard, UCLA

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 7 Bayesian Inference of Evolutionary History of Populations/Species Based on Importance Sampling of Gene Trees—◆Yujin Chung,

Quality and Productivity Section

- 8 Bayesian Modeling for Change-Points Detection in Longitudinal Clinical Proteomics Experiments—◆Xia Wang, University of Cincinnati

Section on Bayesian Statistical Science

- 9 Order-Invariant Prior Specification in Bayesian Factor Analysis—◆Dennis Leung, University of Washington; Mathias Drton, University of Washington
- 10 A Bayes Interpretation of Stacking for M-Open Settings—◆Tri Le, University of Nebraska - Lincoln; Bertrand Clarke, University of Nebraska - Lincoln
- 11 Bayesian Species Delimitation Combining Multiple Genes and Traits in a Unified Framework—◆Claudia Solis-Lemus, University of Wisconsin - Madison; Cecile Ane, University of Wisconsin - Madison; L. Lacey Knowles, University of Michigan
- 12 Group Elicitation for Bayesian Prior—◆Grace Zhang, Merck; Faiz Ahmad, GSK; Timothy H. Montague, GlaxoSmithKline
- 13 Degree, Curvature, and Mixing of Random Walks on the Phylogenetic Subtree-Prune-Regraft Graph and What It Tells Us About Phylogenetic Inference via MCMC—◆Frederick Matsen, Fred Hutchinson Cancer Research Center; Chris Whidden, Fred Hutchinson Cancer Research Center
- 14 Model Selection Criteria for Misspecified Quantile Regression Models in High Dimensions—◆Alexander Giessing, University of Michigan; Xuming He, University of Michigan
- 15 Bayesian Inference for Truncated and Interval-Valued Regression Models—◆Alicia Lloro, FDIC; Phillip Li, Office of the Comptroller of the Currency
- 16 Robust Bayesian Inference via Coarsening—◆Jeffrey Miller, Duke University; David Dunson, Duke University

Section on Statistics and the Environment

- 17 Application of a Hierarchical Model to Paleoenvironmental Time Series with Latent Times—◆Aaron Springford, Queen's University at Kingston; David J. Thomson, Queen's University at Kingston

Section on Bayesian Statistical Science

- 18 Adaptive Weight Function Estimation in Functional Linear Models via Fixed Form Variational Bayes—◆Bruce Bugbee, MD Anderson Cancer Center; Jeffrey Morris, MD Anderson Cancer Center; Veera Baladandayuthapani, MD Anderson Cancer Center

Mental Health Statistics Section

- 19 A Bayesian Model for Multivariate Functional Principal Components Analysis—◆Kevin Cummins, UC San Diego; Wesley Thompson, UC San Diego

Invited Sessions 4:00 p.m.—5:50 p.m.

451 CC-Ballroom 6ABC

Deming Lecture—Invited

ASA, Deming Lectureship Committee, ENAR, IMS, International Chinese Statistical Association, International Indian Statistical Association, International Society for Bayesian Analysis (ISBA), Korean International Statistical Society, SSC, WNAR, Royal Statistical Society, Statistics Without Borders, Conference on Statistical Practice Steering Committee

Organizer(s): Nancy Gordon,

- 4:05 p.m. Reliability: The Other Dimension of Quality—◆William Meeker, Iowa State University

- 5:35 p.m. Floor Discussion

452 CC-Ballroom 6E

Wald Lecture I—Invited

IMS, Korean International Statistical Society, International Indian Statistical Association

Organizer(s): Antonio Lijoi, University of Pavia

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

- 4:05 p.m. Sequential Decision-Making and Personalized Treatment: The Future Is Now!—◆Susan A. Murphy, University of Michigan

- 5:45 p.m. Floor Discussion

Invited Sessions 8:00 p.m.—9:30 p.m.

453 CC-Ballroom 6ABC

ASA President's Address and Founders and Fellows Recognition—Invited

ASA, ENAR, IMS, International Chinese Statistical Association, International Indian Statistical Association, International Society for Bayesian Analysis (ISBA), Korean International Statistical Society, SSC, WNAR, Royal Statistical Society, Statistics Without Borders, Conference on Statistical Practice Steering Committee

Organizer(s): David Morganstein, Westat

Chair(s): Nathaniel Schenker, ASA

- Statistics: Making Better Decisions—◆David Morganstein, Westat

WEDNESDAY AUGUST 12

Session Tag Descriptions

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

● THEME

JSM theme sessions are directly relevant to the JSM 2015 theme, "Statistics: Making Better Decisions." 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.

JSM hours

7:00 a.m.—6:00 p.m. Speaker Management Room	CC-604
7:30 a.m.—4:30 p.m. JSM Main Registration	CC-Atrium Lobby
7:30 a.m.—6:00 p.m. Cyber Center	CC-Atrium Lobby
7:30 a.m.—4:30 p.m. ASA Membership/Help Desk/Press Desk	CC-Atrium Lobby
8:00 a.m.—2:30 p.m. Exhibitor Lounge	CC-4B
8:00 a.m.—6:30 p.m. JSM Luggage Storage	CC-454
8:00 a.m.—2:30 p.m. JSM Career Service	CC-4A
9:00 a.m.—2:30 p.m. EXPO 2015	CC-4B
9:00 a.m.—2:30 p.m. ASA Marketplace	CC-4B
9:00 a.m.—2:30 p.m. American Statistical Association Booth #504	CC-4B

9:00 a.m.—6:00 p.m. CC-Upper Pike Street Lobby
Seattle Restaurant and Tourism Information Center—Other

2:30 p.m.—9:00 p.m. CC-4B
Exhibitor Move Out—Other

Committee/Business Meetings & Other Activities

7:00 a.m.—8:30 a.m. Scientific and Public Affairs Committee Business Meeting Chair(s): Jerry Reiter, Duke University	S-Aspen
7:00 a.m.—8:30 a.m. Conference on Statistical Practice Steering Committee Business Meeting (Closed) Chair(s): Jim Rutherford, Chevron Oronite Company, LLC	CC-309
7:00 a.m.—8:30 a.m. Working Group on Media Training for Statisticians Chair(s): Rob Santos, The Urban Institute	S-University
7:00 a.m.—8:30 a.m. Working Group on Prioritizing the Statistics Education Research Agenda (Closed) Chair(s): Ronald Wasserstein, ASA	S-Columbia
7:30 a.m.—9:00 a.m.	S-Virginia

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Statistics Surveys Editors Meeting

Organizer(s): Elyse Gustafson, IMS; Elyse Gustafson, IMS

8:00 a.m.—4:00 p.m. S-Redwood A

Meeting Within a Meeting (MWM) Statistics Workshop for Math and Science Teachers: Day 2 (Closed)

Chair(s): Katherine Halvorsen, Smith College

8:00 a.m.—4:00 p.m. S-Redwood B

Beyond AP Statistics (BAPS) Workshop

Chair(s): Roxy Peck, California Polytechnic State University

8:30 a.m.—10:30 a.m. S-Boren

Diversity in Statistics Mentoring Program (Closed)

Chair(s): Sydeaka Watson, The University of Chicago

8:30 a.m.—12:00 p.m. S-Seneca

NISS/ASA/IMS Writing Workshop

Chair(s): Keith Crank, Retired

10:00 a.m. CC-4B, Spotlight Seattle

JSM Coffee House

10:00 a.m.—11:00 a.m. S-University

Advisory Committee on Continuing Education Debriefing

Chair(s): Steven McKay, ASA

11:00 a.m.—12:30 p.m. S-Willow B

JSM Docent Orientation (Closed)

Chair(s): Mary Kwasny, ASA Board

12:00 p.m.—1:30 p.m. S-Virginia

Working Group on Getting Information About Careers in Statistics into High School Statistics Classes (Closed)

Chair(s): Anna Nevius, ASA

12:00 p.m.—2:00 p.m. CC-309

ENAR 2016 Spring Meeting Planning Luncheon (By Invitation Only)

Organizer(s): Jianwen Cai, ENAR; Jose' Pinheiro, ENAR

12:30 p.m.—2:00 p.m. S-University

NISS/ASA/IMS Writing Workshop

Chair(s): Keith Crank, Retired

12:30 p.m.—2:00 p.m. TCC-102

JASA Reviews Editors Meeting (Closed)

Chair(s): David van Dyk, Imperial College London

12:30 p.m.—2:00 p.m. S-Aspen

Committee on Meetings Business Meeting (Closed)

Chair(s): Xuming He, University of Michigan

1:30 p.m.— CC-4B, Spotlight Seattle

Popcorn Break, Sponsored by XLSTAT

3:00 p.m.—3:30 p.m. S-Grand Ballroom D

Lifetime Data Analysis Interest Group Meeting

Chair(s): Mei-Ling Ting Lee, University of Maryland

5:00 p.m.—6:30 p.m. S-Willow B

Section on Statistics and the Environment Mixer

Chair(s): Catherine Calder, The Ohio State University

6:00 p.m.—7:00 p.m. S-Willow A

PStat/GStat Reception

Chair(s): Donna LaLonde, ASA

6:00 p.m.—7:30 p.m. S-Grand Ballroom B

Section on Statistical Education Business Meeting

Chair(s): William Notz, The Ohio State University

6:00 p.m.—7:30 p.m. CC-303

2015 JSM Program Committee/Committee on Meetings**Appreciation Reception (By Invitation Only)**

Chair(s): TBD TBD,

6:00 p.m.—8:00 p.m. S-Grand Ballroom D

Survey Research Methods Business Meeting

Chair(s): Michael Elliott, University of Michigan

6:00 p.m.—9:00 p.m. S-Grand Ballroom C

ICSA General Member Meeting

Organizer(s): Zhezhen Jin, Columbia University

6:00 p.m.—9:00 p.m. S-Aspen

ADSWG Face-to-Face Meeting

Organizer(s): Zoran Antonijevic

Continuing Education (Added Fee)

CE_27T**Introducing the SAS BCHOICE Procedure for Bayesian Choice Models (ADDED FEE)**

8:00 a.m.—9:45 a.m. S-Grand Ballroom A

ASA, SAS

Instructor(s): Amy Shi, SAS Institute

CE_28T**Introduction to Data Mining with CART Classification and Regression Trees (ADDED FEE)**

8:00 a.m.—9:45 a.m. S-Grand Ballroom B

ASA, Salford Systems

Instructor(s): Kaitlin Onthank; Ling Chen

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

CE_29T**Predicting the Future Course of a Trial (ADDED FEE)**

8:00 a.m.—9:45 a.m. S-Willow A

ASA, Cytel Inc.

Instructor(s): Cyrus Mehta, Cytel Inc.

CE_30T**Enter a Data Science Competition. You Don't Need to Be an Expert! (ADDED FEE)**

8:00 a.m.—9:45 a.m. S-Grand Ballroom B

ASA, Salford Systems

Instructor(s): Kaitlin Onthank; Ling Chen

CE_31T**Analyzing Item Responses with the IRT Procedure: An Introduction with Applications (ADDED FEE)**

10:00 a.m.—11:45 a.m. S-Grand Ballroom A

ASA, SAS

Instructor(s): Xinming An, SAS Institute

CE_32T**Applied Data Mining Analysis: A Step-by-Step Introduction Using Real-World Data Sets (ADDED FEE)**

10:00 a.m.—11:45 a.m. S-Grand Ballroom B

ASA, Salford Systems

Instructor(s): Kaitlin Onthank; Ling Chen

CE_33T**Modern Dose Escalation Trial Designs for Oncology in East (ADDED FEE)**

10:00 a.m.—11:45 a.m. S-Willow A

ASA, Cytel Inc.

Instructor(s): Lingyun Liu, Cytel Inc.

CE_34T**Practical Finite Mixture Modeling with SAS (ADDED FEE)**

1:00 p.m.—2:45 p.m. S-Grand Ballroom A

ASA, SAS

Instructor(s): Dave Kessler, SAS Institute

CE_35T**Evolution of Classification: From Logistic Regression and Decision Trees to Bagging/Boosting and Netlift Modeling (ADDED FEE)**

1:00 p.m.—2:45 p.m. S-Grand Ballroom B

ASA, Salford Systems

Instructor(s): Kaitlin Onthank; Ling Chen

CE_36T**Power and Sample-Size Analysis in Stata (ADDED FEE)**

1:00 p.m.—2:45 p.m. S-Willow A

ASA, Stata

Instructor(s): Yulia Marchenko, StataCorp LP

CE_37T**Interactive Model Building in JMP Pro (ADDED FEE)**

3:00 p.m.—4:45 p.m. S-Grand Ballroom A

ASA, SAS

Instructor(s): Mia Stephens, SAS Institute; Clay Barker, SAS Institute; Michael Crotty, SAS Institute

CE_38T**Improve Your Regression with Modern Regression Analysis Techniques: Linear, Logistic, Nonlinear, Regularized, GPS, LARS, LASSO, Elastic Net, MARS, TreeNet Gradient Boosting, Random Forests (ADDED FEE)**

3:00 p.m.—4:45 p.m. S-Grand Ballroom B

ASA, Salford Systems

Instructor(s): Kaitlin Onthank; Ling Chen

CE_39T**Multilevel and Mixed Models in Stata (ADDED FEE)**

3:00 p.m.—4:45 p.m. S-Willow A

ASA, Stata

Instructor(s): Bill Rising

Roundtables with Coffee**7:00 a.m.—8:15 a.m.****454****CC- Ballroom 6E****Section on Physical and Engineering Sciences A.M. Roundtable Discussion (Added fee)****Section on Physical and Engineering Sciences**

Organizer(s): Ananda Sen, University of Michigan

WL01 **Infusing Bayesian Thinking in Collaborative Projects—◆Alyson Wilson, North Carolina State University****455****CC- Ballroom 6E****Health Policy Statistics Section A.M. Roundtable Discussion (Added fee)****Health Policy Statistics Section**

Organizer(s): Frank Yoon, Mathematica Policy Research

WL02 **Using Electronic Health Records to Enhance Health Policy Research—◆Thomas E. Love, Case Western Reserve University**

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

456 **CC- Ballroom 6E**
Section on Statistical Education A.M.
Roundtable Discussion (Added fee)

Section on Statistical Education

Organizer(s): Patricia Humphrey, Georgia Southern University
WL03 Don't Forget: Quantitative Statistics Courses Are Very Qualitative—◆ Leanna House, Virginia Tech; Scotland Leman, Virginia Tech

457 **CC- Ballroom 6E**
Mental Health Statistics Section A.M.
Roundtable Discussion (Added fee)

Mental Health Statistics Section

Organizer(s): Zhehui Luo, Michigan State University
WL04 Applying Item Response Theory to Develop and Improve Patient-Reported Outcome Measures—◆ Lan Yu, University of Pittsburgh

458 **CC- Ballroom 6E**
Section on Statistical Learning and Data Mining A.M. Roundtable Discussion (Added fee)

Section on Statistical Learning and Data Mining

Organizer(s): Howard Bondell, North Carolina State University
WL05 A Statistician's Journey to Big Data—◆ James Hess,

459 **CC- Ballroom 6E**
Survey Research Methods Section A.M.
Roundtable Discussion (Added fee)

Survey Research Methods Section

Organizer(s): Yan Li, University of Maryland
WL06 Record Linkage: Introductory Overview—◆ William E. Winkler, U.S. Census Bureau

460 **CC- Ballroom 6E**
Section on Teaching of Statistics in the Health Sciences A.M. Roundtable Discussion (Added fee)

Section on Teaching of Statistics in the Health Sciences

Organizer(s): Amy Nowacki, Cleveland Clinic
WL07 Teaching Statistics in a Hybrid or Online Format—◆ Kirk Anderson, Grand Valley State University

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

461 **CC-4C2**
Introductory Overview Lecture: Recent Advances in Machine Learning and Data Mining—Invited

ASA, ENAR, WNAR, IMS, International Chinese Statistical Association, International Indian Statistical Association, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA), Royal Statistical Society, International Statistical Institute, SSC, Section on Statistical Consulting

Organizer(s): Xiaotong Shen, University of Minnesota

Chair(s): Annie Qu, University of Illinois at Urbana-Champaign

8:35 a.m. Heterogeneous Treatment Effects in Digital Experimentation—◆ Matt Taddy, The University of Chicago

9:05 a.m. Introduction to Statistical Network Analysis—◆ Ji Zhu, University of Michigan

9:35 a.m. The Multi-Facets of a Data Science Project to Answer: How Are Organs Formed?—◆ Bin Yu, UC Berkeley

10:05 a.m. Floor Discussion

462 **CC- Ballroom 6E**
Late-Breaking Session II: Meeting the Challenges of a Pandemic: The Statistical Aspects of Dealing with Ebola—Invited

ASA, ENAR, IMS, International Chinese Statistical Association, International Indian Statistical Association, International Statistical Institute, International Society for Bayesian Analysis (ISBA), Korean International Statistical Society, Royal Statistical Society, SSC, WNAR, Statistics Without Borders, Scientific and Public Affairs Advisory Committee

Organizer(s): Estelle Russek-Cohen, FDA

Chair(s): Boguang Zhen, FDA/CBER

8:35 a.m. Design, Analysis, and Interpretation of Ebola Vaccine Efficacy Trials in West Africa—◆ Ira M. Longini, University of Florida; Natalie Dean,

9:00 a.m. Statistical Challenges in Developing Immune Correlates to Support Licensure of Ebola Vaccines—◆ Ivan S.F. Chan, Merck Research Laboratories; Kenneth Liu, Merck Research Laboratories; Sheri A. Dubey, Merck Research Laboratories; John Konz, Merck Research Laboratories

9:25 a.m. A Flexible Randomized Clinical Trial for Evaluating Therapeutics for Ebola Disease—◆ Michael Proschan, NIH/NIAID; Lori Dodd, NIAID/NIH

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 9:50 a.m. Disc: Estelle Russek-Cohen, FDA
- 10:05 a.m. Disc: Dionne Price, FDA/CDER
- 10:15 a.m. Floor Discussion

Invited Sessions 8:30 a.m.—10:20 a.m.

463 CC-607

■ ● Markov Chain Monte Carlo for Contemporary Statistical Applications—Invited International Society for Bayesian Analysis (ISBA), Conference on Statistical Practice Steering Committee, Section on Bayesian Statistical Science

Organizer(s): James M. Flegal, UC Riverside
Chair(s): James M. Flegal, UC Riverside

- 8:35 a.m. Toward Efficient MCMC for Some High-Dimensional Latent Variable Models—◆Murali Haran, Penn State
- 9:00 a.m. An Unbiased and Scalable Monte Carlo Method for Bayesian Inference for Big Data—◆Murray Pollock, University of Warwick; Paul Fearnhead, Lancaster University; Adam Michael Johansen, University of Warwick; Gareth O. Roberts, University of Warwick
- 9:25 a.m. Parallelization of MCMC Algorithms—◆Natesh Pillai, Harvard University; Guillaume Basse, Harvard University; Aaron Smith, University of Waterloo; Ben Calderhead, Imperial College London
- 9:50 a.m. High-Dimensional MCMC Output Analysis—◆Galin Jones, University of Minnesota; Dootika Vats, University of Minnesota; James M. Flegal, UC Riverside
- 10:15 a.m. Floor Discussion

464 CC-608

■ ● Power Priors: Past and Present—Invited ENAR, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)

Organizer(s): Fang Chen, SAS Institute
Chair(s): Fang Chen, SAS Institute

- 8:35 a.m. The Power Prior in Bayesian Designs of Clinical Trials—◆Ming-Hui Chen, University of Connecticut
- 9:00 a.m. The Power Prior: Theory and Applications—◆Joseph Ibrahim, The University of North Carolina; Ming-Hui Chen, University of Connecticut; Fang Chen, SAS Institute; Yeongjin Gwon, University of Connecticut

- 9:25 a.m. Borrowing from Historical Data in Clinical Trials: Power Priors and Alternative Methods of Borrowing—◆Scott M. Berry, Berry Consultants
- 9:50 a.m. Disc: Beat Neuenschwander, Novartis Pharma AG
- 10:15 a.m. Floor Discussion

465 CC-610

■ ● Post-Selection Inference—Invited IMS, International Indian Statistical Association

Organizer(s): Jonathan Taylor, Stanford University
Chair(s): Jonathan Taylor, Stanford University

- 8:35 a.m. Inference Conditional on Model Selection with a Focus on Procedures Characterized by Quadratic Inequalities—◆Joshua Loftus, Stanford University
- 9:00 a.m. Phase Transitions for High-Dimensional Clustering and Related Problems—◆Zheng Tracy Ke, The University of Chicago; Jiashun Jin, Carnegie Mellon University; Wanjie Wang, University of Pennsylvania
- 9:25 a.m. Valid Post-Selection Inference—◆Kai Zhang, The University of North Carolina at Chapel Hill; Richard Berk, University of Pennsylvania; Lawrence D. Brown, University of Pennsylvania; Andreas Buja, University of Pennsylvania; Linda Zhao, University of Pennsylvania
- 9:50 a.m. Reasoning About Uncertainty in High-Dimensional Regression—◆Adel Javanmard, University of Southern California
- 10:15 a.m. Floor Discussion

466 CC-4C3

■ ● Perils and Potentials of Self-Selected Entry to Epidemiological Studies and Surveys—Invited

Royal Statistical Society, Biometrics Section, Section on Statistical Consulting

Organizer(s): Peter J. Diggle, Lancaster University
Chair(s): Peter J. Diggle, Lancaster University

- 8:35 a.m. Perils and Potentials of Self-Selected Entry to Epidemiological Studies and Surveys: Part II, Survey Focus—◆Thomas A. Louis, Johns Hopkins Bloomberg School of Public Health/U.S. Census Bureau
- 9:05 a.m. Perils and Potentials of Self-Selected Entry to Epidemiological Studies and Surveys: Part I, Epidemiology Focus—◆Niels Keiding, University of Copenhagen
- 9:35 a.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

467 CC-611 Statistical Inference for Stochastic Differential Equations—Invited

IMS

Organizer(s): Michael Sørensen, University of Copenhagen

Chair(s): Per A. Mykland, The University of Chicago

- 8:35 a.m.** Estimation of Neuronal Hypocoelliptic or Elliptic Multi-Dimensional Stochastic Models—◆ Adeline Samson, Université Grenoble Alpes; Susanne Ditlevsen, University of Copenhagen; Michele Thieullen, Université Pierre et Marie Curie
- 9:00 a.m.** MCMC Methods for Inference with High-Dimensional SDEs—◆ Omiros Papaspiliopoulos, ICREA-UPF
- 9:25 a.m.** Assessment of Uncertainty in High-Frequency Data: The Observed Asymptotic Variance—Per A. Mykland, The University of Chicago; ◆ Lan Zhang, University of Illinois at Chicago
- 9:50 a.m.** Bridge Simulation and Estimation for Multivariate Stochastic Differential Equations—◆ Michael Sørensen, University of Copenhagen
- 10:15 a.m.** Floor Discussion

468 CC-4C4 ■ ● The Fifth ‘V’ in Big Data Is *Variables*—Invited

Section on Statistical Learning and Data Mining, Section on Statistics in Sports, Government Statistics Section, International Indian Statistical Association

Organizer(s): Cynthia Rudin, MIT

Chair(s): Tyler McCormick, University of Washington

- 8:35 a.m.** Graphical Regression—◆ Hsin-Cheng Huang, Institute of Statistical Science; Xiaotong Shen, University of Minnesota; Wei Pan, University of Minnesota
- 8:55 a.m.** Estimating Managing and Coaching Skills Using Counterfactual Analysis of Fantasy Football Data—◆ Kaiser Fung, New York University
- 9:15 a.m.** Metro Maps of Information—◆ Dafna Shahaf, Stanford University
- 9:35 a.m.** Learning Interpretable Classification Rules via Boolean Compressed Sensing—◆ Dmitry Malioutov, IBM Research; Kush Varshney, IBM Research; Sanjeeb Dash, IBM Research
- 9:55 a.m.** Disc: Tian Zheng, Columbia University
- 10:15 a.m.** Floor Discussion

469 CC-307 ■ ● Causal Inference Meets Big Data—Invited Social Statistics Section, Health Policy Statistics Section, Government Statistics Section, Biometrics Section

Organizer(s): Booil Jo, Stanford University

Chair(s): Megan S. Schuler, Penn State

- 8:35 a.m.** Causal Interaction in High Dimension—◆ Kosuke Imai, Princeton University; Naoki Egami, The University of Tokyo
- 8:55 a.m.** Validation of Trial Results Using Statistical Learning and Propensity Score Approaches—◆ Booil Jo, Stanford University; Phil Lavori, Stanford University; Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health
- 9:15 a.m.** Competing Strategies for Estimating Causal Response Surfaces Using Bayesian Nonparametric Models—◆ Jennifer Hill, New York University; Vincent Dorie, New York University
- 9:35 a.m.** Causal Inference in a Multidimensional Latent Mediator Model for the Relationship Between Predictive Cues and Neural Activity in the Brain's Pain Processing Network—◆ Michael Sobel, Columbia University; Martin A. Lindquist, The Johns Hopkins University
- 9:55 a.m.** Disc: Tyler VanderWeele, Harvard University
- 10:15 a.m.** Floor Discussion

470 CC-612 ■ ● Making Better Decisions via Learning and Integrating Data Information Without Extensive Assumptions—Invited

Section on Nonparametric Statistics, SSC

Organizer(s): Naisyin Wang, University of Michigan

Chair(s): Naisyin Wang, University of Michigan

- 8:35 a.m.** Analysis of Aggregated Functional Data from Mixed Populations with Application to Energy Consumption—◆ Nancy Heckman, The University of British Columbia; Amanda Lenzi, Technical University of Denmark; Camila de Souza, The University of British Columbia; Ronaldo Dias, University of Campinas; Nancy Garcia, University of Campinas
- 9:00 a.m.** Decision-Making in Post Clinical Trials—◆ Heping Zhang, Yale University
- 9:25 a.m.** Estimation and Model Selection in Generalized Additive Partial Linear Models for Correlated Data with Diverging Number of Covariates—◆ Lan Xue, Oregon State University; Lily Wang, Iowa State University; Annie Qu, University of Illinois at Urbana-Champaign; Hua Liang, The George Washington University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

9:50 a.m. Identifying Longitudinal Trends Within EEG Experiments—◆Damla Senturk, UCLA; Kyle Hasenstab, UCLA; Donatello Telesca, UCLA; Catherine Sugar, UCLA; Shafali Jeste, UCLA

10:15 a.m. Floor Discussion

471 **CC-213**
■ ● Modeling for Marine Ecology and Applications—Invited
 Section on Statistics and the Environment

Organizer(s): Margaret Short, University of Alaska - Fairbanks
 Chair(s): Mevin Hooten, Colorado State University

8:35 a.m. Integrated Gaussian Processes for Transfer Functions in Fisheries Applications—◆Bruno Sanso, UC Santa Cruz

9:05 a.m. Habitat Management of Benthic Fishes in the Missouri River Using Hierarchical Bayesian Modeling—◆Ali Arab, Georgetown University; Mark L. Wildhaber, U.S. Geological Survey

9:35 a.m. A Bayesian State Space Model for Movement of Halibut in the Gulf of Alaska—◆Margaret Short, University of Alaska - Fairbanks; Andrew Seitz, University of Alaska Fairbanks School of Fisheries and Ocean Sciences; Julie Nielsen, University of Alaska Fairbanks School of Fisheries and Ocean Sciences; Ani Mikheeva, University of Alaska Institutional Research and Analysis

10:05 a.m. Floor Discussion

472 **CC-2B**
■ ● Doing Good with Data Viz—Invited

Section on Statistical Graphics, Section on Statistics in Defense and National Security, Government Statistics Section, Statistics Without Borders, Scientific and Public Affairs Advisory Committee

Organizer(s): Naomi B. Robbins, NBR
 Chair(s): Naomi B. Robbins, NBR

8:35 a.m. Representing Uncertainty in the Statistical Analysis of War Crimes—◆Patrick Ball, Human Rights Data Analysis Group

9:05 a.m. Data Visualization Literacy in the Social Sector—◆Jake Porway, DataKind

9:35 a.m. Powerful Visualizations for Understanding Gun Violence, Terrorism, Environmental Issues—◆Dino Citraro, Periscopic, Inc.

10:05 a.m. Floor Discussion

473 **CC-609**
■ ● New Challenges in Modern Survival Analysis—Invited

WNAR, International Chinese Statistical Association, Biometrics Section

Organizer(s): Yichuan Zhao, Georgia State University
 Chair(s): Yichuan Zhao, Georgia State University

8:35 a.m. Estimation of Concordance Probability with Censored Regression Models—◆Zhezhen Jin, Columbia University; Xinhua Liu, Columbia University

9:00 a.m. A Computationally Efficient Method for the Analysis of Big Survival Data—Kevin He, University of Michigan; ◆Yi Li, University of Michigan; Yanming Li, University of Michigan; Ji Zhu, University of Michigan

9:25 a.m. Bias Correction in Subgroup Analysis with Survival Outcomes—◆Lu Tian, Stanford University; LJ Wei, Harvard University; Fei Jiang, Harvard University

9:50 a.m. Varying-Coefficient Model with High-Dimensional Network-Structured Covariates as Disease Onset Signature—◆Donglin Zeng, The University of North Carolina; Yuanjia Wang, Columbia University; Xiang Li, Columbia University; Karen Marder, Columbia University

10:15 a.m. Floor Discussion

Invited Panels 8:30 a.m.—10:20 a.m.

474 **CC-3B**
■ ● DMC Decision-Making: Behind Closed Doors—Invited

Biopharmaceutical Section

Organizer(s): David Kerr, Axio Research
 Chair(s): David Kerr, Axio Research

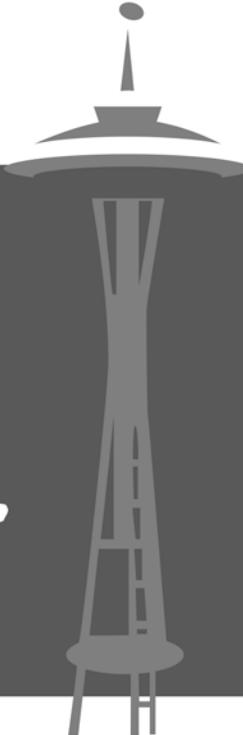
Panelists: ◆John M. Lachin, The George Washington University

◆Catherine M. Tangen, Fred Hutchinson Cancer Research Center

◆KyungMann Kim, University of Wisconsin - Madison

◆Stephen L. George, Duke University

10:15 a.m. Floor Discussion



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● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Topic-Contributed Sessions

8:30 a.m.—10:20 a.m.

475 CC-613

■ Recent Progress in Longitudinal Data Analysis—Topic-Contributed

ENAR, Biometrics Section, International Indian Statistical Association

Organizer(s): Hongyuan Cao, University of Missouri - Columbia

Chair(s): Colin O. Wu, NIH

8:35 a.m. Regression Analysis of Longitudinal Data with Informative and Recurrent Episode Observation Processes—◆ Jianguo Sun, University of Missouri

8:55 a.m. Modeling Repeated Labor Curves in Consecutive Pregnancies: A Latent Process Approach That Characterizes Autoregressive Dependence Across Pregnancies—◆ Paul S. Albert, Eunice Kennedy Shriver National Institute of Child Health and Human Development; Olive Buhule, Eunice Kennedy Shriver National Institute of Child Health and Human Development

9:15 a.m. Simultaneous Nonparametric Regression Analysis for Sparse Longitudinal Data—◆ Hongyuan Cao, University of Missouri - Columbia; Weidong Liu, Shanghai Jiaotong University; Zhou Zhou, University of Toronto

9:35 a.m. Modeling Intensive Longitudinal Study Using a Mixed-Effects Location Scale Model: Examining the Mean and Within-Subject Variance of Time to First Cigarette—◆ Donald Hedeker, The University of Chicago; Robin Mermelstein, University of Illinois at Chicago

9:55 a.m. Modeling Multivariate Conditional Distributions Using Copula for Longitudinal Data—◆ Xin Tian, National Heart, Lung, and Blood Institute; Colin O. Wu, NIH

10:15 a.m. Floor Discussion

476 TCC-204

Recent Advances in Statistical Inference for High-Dimensional and Functional Time Series—Topic-Contributed

International Chinese Statistical Association, International Indian Statistical Association, Business and Economic Statistics Section

Organizer(s): Xiaofeng Shao, University of Illinois at Urbana-Champaign

Chair(s): Xiaofeng Shao, University of Illinois at Urbana-Champaign

8:35 a.m. White Noise Testing and Model Diagnostic Checking for Functional Time Series—◆ Xianyang Zhang, University of Missouri

8:55 a.m. Estimating Time-Varying Networks for High-Dimensional Time Series—◆ Xiaohui Chen, University of Illinois at Urbana-Champaign; Mengyu Xu, The University of Chicago; Wei Biao Wu, The University of Chicago

9:15 a.m. Prediction via Regime Switching for Functional Time Series—◆ Shaojun Guo,

9:35 a.m. Lead-Lag Relationship Among High-Dimensional Time Series—◆ Han Xiao, Rutgers University

9:55 a.m. Functional Lagged Regression—◆ Siegfried H[^]rmann, UniversitE libre de Bruxelles

10:15 a.m. Floor Discussion

477 CC-614

Recent Advances in the Assessment of and Solutions for Measurement Error—Topic-Contributed

Section on Statistics in Epidemiology, SSC

Organizer(s): Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health

Chair(s): Xiaoye Ma, University of Minnesota

8:35 a.m. Bayesian Adjustment for Measurement Error: Under What Conditions Is Adjustment Effective?—◆ Paul Gustafson, The University of British Columbia

8:55 a.m. Bayesian Approach for Addressing Differential Covariate Measurement Error in Propensity Score Methods—◆ Hwanhee Hong; Kara Rudolph, Johns Hopkins Bloomberg School of Public Health; Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health

9:15 a.m. Methods to Estimate Causal Effects with Propensity Scores When Both Treatment and Covariates Are Mismeasured—◆ Danielle Braun, Harvard School of Public Health; Malka Gorfine, Technion-Israel Institute of Technology; Giovanni Parmigiani, Harvard University; Francesca Dominici, Harvard School of Public Health; Corwin Zigler, Harvard School of Public Health

9:35 a.m. Analysis of Multivariate Survival Data Under Semiparametric Copula Models with/Without Measurement Error—◆ Wenqing He, University of Western Ontario; Grace Yi, University of Waterloo; Naisyin Wang, University of Michigan

9:55 a.m. Disc: Daniel F. McCaffrey, Educational Testing Service

10:15 a.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

478 CC-308 Bayesian Approaches for Complex Data in Surveys—Topic-Contributed

Survey Research Methods Section, Korean International Statistical Society, International Society for Bayesian Analysis (ISBA), Section on Bayesian Statistical Science, Government Statistics Section

Organizer(s): Hang Kim, NISS/Duke University

Chair(s): Satkartar Kinney, NISS

- 8:35 a.m. Bayesian Estimation Under Informative Sampling—
◆Terrance Savitsky, Bureau of Labor Statistics; Daniell Toth, Bureau of Labor Statistics; Michael Sverchkov, Bureau of Labor Statistics
- 8:55 a.m. Bayesian Modeling and Imputation for Missing Mixed Ordinal-Categorical Data in Large-Scale Surveys—
◆Maria De Yoreo, Duke University; Jerry Reiter, Duke University
- 9:15 a.m. A Bayesian Semiparametric Area-Level Model for Small-Area Estimation—◆Neung Ha, NISS
- 9:35 a.m. Bipartite Matching Estimation for Record Linkage—
◆Mauricio Sadinle, Carnegie Mellon University
- 9:55 a.m. Bayesian Simultaneous Edit and Imputation for Categorical Microdata—◆Daniel Manrique-Vallier, Indiana University; Jerry Reiter, Duke University
- 10:15 a.m. Floor Discussion

479 CC-3A Recent Developments in Adaptive Designed Clinical Development Programs—Topic-Contributed

Biopharmaceutical Section

Organizer(s): James Bolognese, Cytel Inc.

Chair(s): James Bolognese, Cytel Inc.

- 8:35 a.m. Optimizing Adaptive Design for Phase II Dose-Finding Trials Incorporating Long-Term Success and Financial Considerations—◆Narinder Nangia, AbbVie; Jingjing Gao, AbbVie; James Bolognese, Cytel Inc.; Jaydeep Bhattacharyya, Cytel Inc.; Nitin Patel, Cytel Inc.
- 8:55 a.m. Joint Optimization of Phase II and Phase III Designs When One or Two Doses Can Be Carried into Phase III—◆Nitin Patel, Cytel Inc.; James Bolognese, Cytel Inc.; Jaydeep Bhattacharyya, Cytel Inc.
- 9:15 a.m. Antiviral Treatments for Pandemic Influenza: A Bayesian Adaptive and Open Platform Randomized Trial—◆Benjamin Saville, Berry Consultants

- 9:35 a.m. Finding Disease-Modifying Therapies for Alzheimer's Disease: A Bayesian Adaptive Development Platform—
◆Melanie Quintana, Berry Consultants; Scott M. Berry, Berry Consultants; Mark Fitzgerald, Berry Consultants

9:55 a.m. Disc: Vlad Dragalin, Janssen

10:15 a.m. Floor Discussion

480 CC-204 Statistics at Scale: Applications from Tech Companies—Topic-Contributed

Section on Statistical Computing, Section on Statistics in Defense and National Security, International Indian Statistical Association

Organizer(s): Hilary Parker, Etsy

Chair(s): Alyssa Frazee, Stripe

- 8:35 a.m. Experimentation at Scale: Lessons from Production at Etsy—◆Hilary Parker, Etsy
- 8:55 a.m. Unravelling Bias in Online Experimentation—
◆Chris Harland, Microsoft
- 9:15 a.m. How Credible Are Observational Estimates of Causal Effects from Big Data?—◆Eytan Bakshy, Facebook; Dean Eckles, Facebook
- 9:35 a.m. Automated Forecasting with Big Data—◆Sean Taylor, Facebook; Alex Peysakhovich, Facebook
- 9:55 a.m. Disc: Sandy Griffith, Flatiron Health
- 10:15 p.m. Floor Discussion

481 CC-201 Recent Advances in Independent Component Analysis with Applications to Imaging Studies—Topic-Contributed

Section on Statistics in Imaging

Organizer(s): Ying Guo, Emory University

Chair(s): Ying Guo, Emory University

- 8:35 a.m. Group Parametric Independent Colored Sources: Detection of Hidden Brain Activities from Groups of High-Dimensional Neuroimaging Data—◆Dong Wang; Seonjoo Lee, Columbia University; Haipeng Shen, The University of North Carolina at Chapel Hill; Young Truong, The University of North Carolina at Chapel Hill
- 8:55 a.m. Independent Component Analysis for Large-Scale Discrete Data—◆Jian Kang, Emory University; Ying Guo, Emory University

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- 9:15 a.m. Multilevel Independent Component Analysis to Identify Functional Networks During Multiple Cognitive Tasks—◆Seonjoo Lee, Columbia University
- 9:35 a.m. Likelihood Component Analysis—◆Benjamin Risk, Cornell University; David S. Matteson, Cornell University; David Ruppert, Cornell University
- 9:55 a.m. Implications of Matrix Decomposition Methods in Analyzing Imaging Data—◆Ani Eloyan, The Johns Hopkins University

482 TCC-202
History of Clinical Trials in the Last Fifty Years with Recent Advances—Topic-Contributed

Committee on ASA Archives and Historical Materials, Biometrics Section, International Indian Statistical Association

Organizer(s): Nitis Mukhopadhyay, University of Connecticut
 Chair(s): Nitis Mukhopadhyay, University of Connecticut

- 8:35 a.m. Clinical Trials and Epidemiology: Reflections of the Statistician for the National Wilms Tumor Study—◆Norman Breslow, University of Washington
- 8:55 a.m. The History of Cardiovascular Clinical Trials at the National Heart, Lung, and Blood Institute—◆Myron A. Waclawiw, National Heart, Lung, and Blood Institute; Nancy Geller, NIH/NHLBI
- 9:15 a.m. Recent History of Clinical Trials and Survival Analysis—◆David Harrington, Dana-Farber Cancer Institute
- 9:35 a.m. Early-Phase Clinical Trials—◆Nancy Flournoy, University of Missouri - Columbia; Assaf Oron, Seattle Children's Research Institute
- 9:55 a.m. Statistical Methods and Historical Context in Clinical Trials—◆William F. Rosenberger, George Mason University
- 10:15 a.m. Floor Discussion

483 CC-615
New and Diverse Applications of Cost-Effective Two-Phase Sampling Designs—Topic-Contributed

Biometrics Section, WNAR, Statistics Without Borders, Survey Research Methods Section

Organizer(s): Jie Kate Hu, The Climate Corporation
 Chair(s): Daniel Heitjan, Southern Methodist University

- 8:35 a.m. A Composite Likelihood Approach in Testing for Hardy Weinberg Equilibrium Using Family-Based Genetic Survey Data—◆Yan Li, University of Maryland; Lingxiao Wang, University of Maryland;

- Barry I. Graubard, National Cancer Institute
- 8:55 a.m. Bayesian Hierarchical Models for Smoothing in Two-Phase Studies, with Application to Small-Area Estimation—◆Michelle Ross, University of Pennsylvania; Jon Wakefield, University of Washington
- 9:15 a.m. Analysis of Biased Sampling in Longitudinal Data—◆Leila Zelnick, University of Washington; Patrick Heagerty, University of Washington ; Jonathan Schildcrout, Vanderbilt University
- 9:35 a.m. Using the Additive Hazards Model with Two-Phase Sampling in Atherosclerosis Risk in Community Study—◆Jie Kate Hu, The Climate Corporation; Kwun Chuen Gary Chan, University of Washington; Norman Breslow, University of Washington; David Couper, The University of North Carolina at Chapel Hill
- 10:05 a.m. Floor Discussion

484 CC-304
2015 Student Paper Award (GSS/SSS/SRMS)—Topic-Contributed
 Government Statistics Section

Organizer(s): Jenny Guarino, U.S. Department of Transportation
 Chair(s): Jenny Guarino, U.S. Department of Transportation

- 8:35 a.m. Randomization Inference for Treatment Effect Variation—◆Peng Ding,
- 8:55 a.m. Assessing Feasibility of Respondent-Driven Sampling Using Pilot Data with an Application to Older Lesbian, Gay, and Bisexual Adults—◆Maryclare Griffin, University of Washington; Elena Eroshva, University of Washington; Karen Fredriksen-Goldsen, University of Washington
- 9:15 a.m. Dirichlet Process Mixture Models for Nested Unordered Categorical Data—◆Jingchen Hu, Duke University; Jerry Reiter, Duke University; Quanli Wang, Duke University
- 9:35 a.m. Adapting Threshold Regression to Analyzing Survival Data Collected in Complex Surveys—◆Dandan Liao, University of Maryland; Yan Li, University of Maryland; Mei-Ling Ting Lee, University of Maryland
- 9:55 a.m. An Imputation-Based Solution to Using Mismeasured Covariates in Propensity Score Analysis—◆Yenny Webb-Vargas, Johns Hopkins Bloomberg School of Public Health; Kara Rudolph, Johns Hopkins Bloomberg School of Public Health; David Lenis, Johns Hopkins Bloomberg School of Public Health; Peter Murakami, Johns Hopkins Bloomberg School of Public Health; Elizabeth Stuart, Johns Hopkins Bloomberg School of Public Health
- 10:15 a.m. Floor Discussion

Wednesday

Topic-Contributed Panels**8:30 a.m.—10:20 a.m.****485** **CC-606**
■ ● Creating Collaboration Around All Data Scientists for Better Business Decisions—Topic-Contributed

Section on Physical and Engineering Sciences, International Chinese Statistical Association, Quality and Productivity Section, Section for Statistical Programmers and Analysts, Business and Economic Statistics Section, Section on Statistical Consulting, Committee on Applied Statisticians

Organizer(s): Sarah Kalicin, Intel Corporation

Chair(s): Sarah Kalicin, Intel Corporation

Panelists: ◆ Celeste Fralick, Intel Corporation
◆ Rita R. Chattopadhyay, Intel Corporation
◆ Paula Greve, Intel Corporation
◆ Genetha Gray, Intel Corporation

10:15 a.m. Floor Discussion

486 **CC-206**
■ ● The Current Landscape of Business Analytics and Data Science at Higher Education Institutions: Who Is Teaching What?—Topic-Contributed

Business and Economic Statistics Section, Section on Statistical Education, Statistics in Business Schools Interest Group

Organizer(s): Amy L. Phelps, Duquesne University

Chair(s): Debra Stiver, The University of Nevada, Reno

Panelists: ◆ Amy L. Phelps, Duquesne University
◆ Kathryn Szabat, LaSalle University
◆ Billie Anderson, Ferris State University
◆ Jeffrey Camm, University of Cincinnati
◆ Aric LaBarr, North Carolina State University

12:15 p.m. Floor Discussion

Contributed Sessions**8:30 a.m.—10:20 a.m.****487** **CC-401**
SPEED: Topics in Statistics in Sports and Education—Contributed

Section on Statistical Education, Section on Statistics in Sports

Chair(s): Catherine Crespi, UCLA

- 8:35 a.m.** Major League Baseball Free Agent Fits: Examining Production Output Distributions Through Simulation—◆ Pamela Badian-Pessot, Smith College; Daniel Aucoin, University of Massachusetts Amherst; Austin Champagne, University of Massachusetts Amherst
- 8:40 a.m.** The Winner of the 2014 Heisman Memorial Trophy Is . . .—◆ Jessica Sanders; Tracy Morris, University of Central Oklahoma
- 8:45 a.m.** Survive and Adviance—◆ Caitlin Phelps, North Carolina State University; Nicholas Kapur, North Carolina State University; Marschall Furman, North Carolina State University
- 8:50 a.m.** Punt, Pass, or Kick? What the Numbers Say You Should Do—◆ Mary Bayles; Ariel Webb, University of Central Oklahoma; Yuting Wang Manley, University of Central Oklahoma; Tracy Morris, University of Central Oklahoma
- 8:55 a.m.** Ranking NCAA Football Teams Through Expected Points—◆ Zachary Knowlton; Gilbert Fellingham, Brigham Young University
- 9:00 a.m.** NFL Play Predictions—◆ William Burton, North Carolina State University; Michael Dickey, North Carolina State University
- 9:05 a.m.** The Quality of Pitches in Major League Baseball—◆ Philippa Swartz, Simon Fraser University; Michael Grosskopf, Simon Fraser University; Derek Bingham, Simon Fraser University; Tim Swartz, Simon Fraser University
- 9:10 a.m.** Regression Hoochie Koo: Using Music to Reinforce Regression Concepts—◆ Steven Patch, The University of North Carolina at Asheville
- 9:15 a.m.** The Relationship Between Verbal Reasoning Skills and Statistical Literacy in Undergraduate Students—◆ Elizabeth Johnson, George Mason University; Diana Keosayian, Wilkes University
- 9:20 a.m.** A Randomized Trial in a Massive Online Open Course Shows People Don't Know What a Statistically Significant Relationship Looks Like, but They Can Learn—◆ Aaron Fisher, The Johns Hopkins University; G. Brooke Anderson, Colorado State University; Roger Peng, The Johns Hopkins University; Jeff Leek, The Johns Hopkins University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 9:30 a.m.** Reinforcing Experimental Design with Activities—
◆Paul Stephenson, Grand Valley State University;
Phyllis Curtiss, Grand Valley State University;
Mary Richardson, Grand Valley State University;
Diann Reischman, Grand Valley State University
- 9:35 a.m.** Course Enrollment Optimization System in the
Insufficient Teaching Resources—◆Guanyu Hu,
- 9:40 a.m.** Changing How Students Think About Statistics—
◆Paul Plummer, University of Central Missouri
- 9:45 a.m.** Methods for Improving Student Success in
Introductory Statistics Courses at Oregon State
University—◆Katie Jager, Oregon State University;
Juliann Moore, Oregon State University
- 9:50 a.m.** Using the Raspberry Pi and Arduino for Teaching
Data Analysis—◆Benjamin Ogorek,
- 9:55 a.m.** Are Pie Charts Really So Bad? An Experiment on
Data Visualization—◆Michael Posner, Villanova
University; Joseph Reiter, Villanova University
- 10:00 a.m.** Integrating Statistics Across Disciplines: A Secondary
School Case Study—◆Kyle Barriger, Castilleja
School
- 10:05 a.m.** Statistics Bootcamp: Enhancing Student Performance
During the First Year of Graduate Training in
Biostatistics—◆Jo Wick, University of Kansas
Medical Center; Devin C. Koestler, University of
Kansas Medical Center
- 10:10 a.m.** Floor Discussion

488 **CC-4C1**
**SPEED: Issues in Sample Survey and
Government Statistics—Contributed**
Government Statistics Section, Survey Research Methods Sec-
tion

Chair(s): Xiaochun Li,

- 8:35 a.m.** Who Are the Non-Voters?—◆Bingchen Liu; Lynne
Stokes, Southern Methodist University
- 8:40 a.m.** Census Tract-Level Disparities: Examining Food
Swamps and Food Deserts—◆Lucy D'Agostino
McGowan, Vanderbilt University; Alice Toll,
Vanderbilt University
- 8:45 a.m.** Exploring the Modifiable Areal Unit Problem—
◆Talha Ali, Yale School of Public Health; Owais
Gilani, University of Michigan School of Public
Health
- 8:50 a.m.** Determinants of Poverty in U.S.—◆Guillermo
Basulto-Elias, Iowa State University; Natalia A. Da
Silva, Iowa State University
- 8:55 a.m.** An Assessment of Developmental Trajectory of
Baby Boomers in the United States: A Latent Growth
Curve Modeling Application—◆Kranti Dugar,
University of Denver

- 9:00 a.m.** Optimal and Coherent Data Visualization in R for
the Empirical Study of CPI-U Standard Errors—
◆Harold Gomes, Bureau of Labor Statistics
- 9:05 a.m.** Results from a CATI Follow-Up of Respondents
from a Face-to-Face 2013 National Survey of
Egypt—◆David Peng, D3 Systems; Samuel
Solomon, D3 Systems
- 9:10 a.m.** Sensitivity Analysis of Bias of Estimates from Web
Surveys with Nonrandomized Panel Selection—
◆Vladislav Beresovsky, National Center for Health
Statistics
- 9:15 a.m.** Travel Price Indices: Joy and Headaches of Online
Collection—◆Catherine Deshaies-Moreault,
Statistics Canada; Martin Beaulieu, Statistics Canada
- 9:20 a.m.** The Effect of CE Sample Sizes on CPI Standard
Errors—◆Jenny FitzGerald, Bureau of Labor
Statistics
- 9:25 a.m.** Challenges and Rewards of Editing Complex Survey
Data from the National Ambulatory Medical Care
Survey—◆Kelly Myrick, National Center for
Health Statistics
- 9:30 a.m.** Gravimetric Anomaly Detection Using Compressed
Sensing—◆Ryan Kappedal, Air Force Institute
of Technology; Marina Meila, University
of Washington; Hoyt Koepke, University of
Washington
- 9:35 a.m.** Application of Industry-Specific Sample Strata in PPI
Variance Estimation—◆Teresa E. Hesley, Bureau of
Labor Statistics
- 9:40 a.m.** On the Range of Self-Normalized Cramer-Type
Moderate Deviations—◆Lin Ge, MSU Meridian
- 9:45 a.m.** Field-Testing the Collection of New Data Elements
in the Occupational Employment Statistics Survey—
◆Carrie Jones, Bureau of Labor Statistics; Cori
Martinelli, Bureau of Labor Statistics
- 9:50 a.m.** Decomposing Wage Inequality Using OES Data—
◆Elizabeth Cross, Bureau of Labor Statistics
- 9:55 a.m.** Trend Estimation of Multivariate Time Series
with Controlled Smoothness—◆Lilia L. Ramirez
Ramirez, Instituto Tecnológico Autónomo de
México; Victor Guerrero, Instituto Tecnológico
Autónomo de México; Alejandro Islas-Camargo,
Instituto Tecnológico Autónomo de México
- 10:00 a.m.** Insurgency Prediction Using Multiple High-Volume
Social Media Data Sources—◆Gizem Korkmaz,
Virginia Tech; Shane Reese, Brigham Young
University; Dave Higdon, Virginia Tech; Sallie
Keller, Virginia Tech; Naren Ramakrishnan,
Virginia Tech
- 10:05 a.m.** Accessing and Exploring NCES Data Through
Online Training Modules and Data Tools—
◆Andrew White, National Center for Education
Statistics; Jennifer L. Nielsen, Manhattan Strategy
Group

Wednesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

10:10 a.m. Interactive X-13ARIMA-SEATS Seasonal Adjustment Using R—◆James Livsey, U.S. Census Bureau

10:15 a.m. Floor Discussion

Contributed Sessions

8:30 a.m.—10:20 a.m.

489 CC-210

Time Series, Change Points, and Business Analytics—Contributed

Business and Economic Statistics Section, Government Statistics Section, Section on Statistics and the Environment

Chair(s): Robert A. Cage, Bureau of Labor Statistics

8:35 a.m. Change Point Analyses in Correlated Data—◆Kyungduk Ko, Boise State University

8:50 a.m. Multiple Change-Points Estimation in GARCH Models—◆Sichen Zhou, SUNY Stony Brook; Haipeng Xing, SUNY Stony Brook

9:05 a.m. Temporal Aggregation Effects on a Structural Variance Change of a Time Series Process—◆Bu Hyoung Lee, Temple University; William W.S. Wei, Temple University

9:20 a.m. Martingale Difference Divergence Matrix and Its Application to Dimensional Reduction for Multivariate Time Series—◆Chung Eun Lee; Xiaofeng Shao, University of Illinois at Urbana-Champaign

9:35 a.m. A Multivariate State Space Model for IBNR Reserve—◆Daiane Rodrigues Dos Santos, Pontifícia Universidade Católica; Cristiano Augusto Coelho Fernandes, Pontifícia Universidade Católica; Joel Correia Da Rosa, Rockefeller University

9:50 a.m. Rendezvous of Time Series Model and Temporal Data Mining—◆Seong-Tae Kim,

10:05 a.m. Statistical Challenges for a Crowd-Sourcing-Based Delivery Platform of Software Development—◆Ta-Hsin Li, IBM T.J. Watson Research Center

490 CC-618

Theory and Foundations—Contributed

IMS

Chair(s): Gregory Watson, UCLA

8:35 a.m. The Inverse Weibull Distribution as a Failure Model Under Various Loss Functions and Based on

Progressive First-Failure Censored Data—◆Amal Helu, Carnegie Mellon University Qatar; Hani Samawi, Georgia Southern University

8:50 a.m. An Upper Bound for the Bond Percolation Threshold of the Cubic Lattice—◆John Wierman, The Johns Hopkins University

9:05 a.m. Admissibility of the Usual Confidence Set for the Mean of a Univariate or Bivariate Normal Population: The Unknown-Variance Case—◆Hannes Leeb, University of Vienna; Paul Kabaila, La Trobe University

9:20 a.m. Finite Sample Properties of Tests Based on Prewhitened Nonparametric Covariance Estimators—◆David Preinerstorfer, University of Vienna

9:35 a.m. Network Cross-Validation for Determining the Number of Communities in Network Data—◆Jing Lei, Carnegie Mellon University; Kehui Chen, University of Pittsburgh

9:50 a.m. Post-Selection Inference: A Review and Comparison of the Existing Methods—◆Vikneswaran Gopal; Claudio Fuentes, Oregon State University

10:05 a.m. Causal Inference for Ordinal Outcomes—◆Alexander Volfovsky, Harvard University; Edo Airoldi, Harvard University; Donald B. Rubin, Harvard University

491 CC-212

IISA-Sponsored Session—Contributed

International Indian Statistical Association

Chair(s): Raghavendra Kurada, SAS Institute

8:35 a.m. On the Construction of a Joint Distribution Given Two Discrete Conditionals—◆Indranil Ghosh; Saralees Nadarajah, University of Manchester

8:50 a.m. Copula Based Gaussian Kernel Dependency Measures—◆Angshuman Roy, Indian Statistical Institute, Kolkata

9:05 a.m. Approximate Sufficient Dimension Reduction: A Multiresolution Analysis—◆Siamak Noorbaloochi, VA Medical Center

9:20 a.m. Calibration of Differently Measured Components of a Sum—◆Kaushik Jana, Indian Statistical Institute; Debasis Sengupta, Indian Statistical Institute; Kalyan Rudra, West Bengal

9:35 a.m. A Study of the Performance of Two-Stage Adaptive Optimal Designs in a Logistic Dose-Response Model—◆Karabi Nandy, UCLA; Rajesh Nandy, University of North Texas Health Science Center

9:50 a.m. Non-Marginal Decisions: New Bayesian Multiple Testing Procedures—◆Noirrit Kiran Chandra, Indian Statistical Institute, Kolkata; Sourabh Bhattacharya, Indian Statistical Institute, Kolkata

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

10:05 a.m. Crime-State in India—◆ Pallavi Ray, Indian Statistical Institute

492 CC-605 Bayesian Network Analysis and Applications in Demography—Contributed

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

Chair(s): Oksana Chkrebti, The Ohio State University

8:35 a.m. Bayesian Community Detection—◆ Stephanie van der Pas, Leiden University; Aad van der Vaart, Leiden University

8:50 a.m. Bayesian Zero-Inflated Latent Class Model for Longitudinal Data—◆ Si Yang, University of Rhode Island; Gavino Puggioni, University of Rhode Island

9:05 a.m. Bayesian Probabilistic Projection of International Migration—◆ Jonathan Azose, University of Washington; Adrian Raftery, University of Washington

9:20 a.m. Deterministic Bayesian Variable Selection for Binary Outcomes—◆ Matthew Koslovsky; Michael Swartz, The University of Texas Health Science Center; Anna Wilkinson, The University of Texas at Austin School of Public Health

9:35 a.m. Compact Bayesian Models of Massive Social Graphs—◆ Zehang Li, University of Washington; Tyler McCormick, University of Washington; Joshua Blumenstock, University of Washington

9:50 a.m. Bilinear Mixed Effects Models for Affiliation Networks: Segregation of Adolescents in Their Extracurricular Activities—◆ Yanan Jia, The Ohio State University; Catherine Calder, The Ohio State University; Christopher Browning, The Ohio State University

10:05 a.m. Accounting for HIV Prevalence in Bayesian Projections of Life Expectancy for All Countries—◆ Jessica Godwin, University of Washington; Adrian Raftery, University of Washington

493 CC-306 Modern Statistical Methods for Observational Studies and Survey Data—Contributed

Health Policy Statistics Section, Biometrics Section

Chair(s): Huaihou Chen, University of Florida

8:35 a.m. Helping Fixed Effects Stay Fixed: A Novel Application of Propensity Score Weights—◆ Amelia Haviland, Carnegie Mellon University; Matthew Eisenberg, Carnegie Mellon University

8:50 a.m. The Reduction in ED and Hospital Admissions in Medical Home Practices Is Specific to Primary Care-Sensitive Chronic Conditions—◆ Hsiu-Ching Chang, BlueCross BlueShield of MI; Lee Green, University of Alberta; Amanda Markovitz, Harvard University; Michael Paustian, BlueCross BlueShield of MI

9:05 a.m. Using Causal Framework to Estimate an Impact of Changes in Demand and Pricing on the Health Care Bill—◆ Irina Bondarenko, University of Michigan; Trivellore Raghunathan, University of Michigan; David Catler, NBER; James Shafer, University of Pennsylvania; Kaushik Ghosh, National Bureau of Economic Research

9:20 a.m. Propensity Score Approaches to Estimating Treatment Effect on Censored Cost—◆ Jiaqi Li, University of Pennsylvania; Nandita Mitra, University of Pennsylvania; Elizabeth Handorf, Fox Chase Cancer Center; Justin Bekelman, University of Pennsylvania

9:35 a.m. Semiparametric Instrumental Variable Estimation in an Endogenous Treatment Model—◆ Chan Shen, MD Anderson Cancer Center; Roger Klein, Rutgers University

9:50 a.m. Variable-Ratio Matching with Fine Balance in a Study of Peer Health Exchange—◆ Samuel Pimentel, The Wharton School; Frank Yoon, Mathematica Policy Research; Luke Keele, Penn State

10:05 a.m. Estimates of Potentially Achievable Vaccination Coverage with Simultaneous Administration of Vaccines Among Children in the United States—◆ Zhen Zhao, CDC; Philip J. Smith, CDC; Holly A. Hill, CDC

494 CC-310 Online Surveys—Contributed

Survey Research Methods Section, Government Statistics Section

Chair(s): Catherine Durso, University of Denver

8:35 a.m. Alternative Methods for Inference Based on Nonprobability Samples: A Simulation Study—◆ Hanzhi Zhou, Mathematica Policy Research

8:50 a.m. 2014 Census Test Results on Alternative Methods to Optimize Self-Response for the 2020 Census—◆ Michael Bentley, U.S. Census Bureau; Cynthia Rothhaas, U.S. Census Bureau

9:05 a.m. Asking About Prescription Drugs: Order and Encouragement Experiments—◆ Mick Couper, University of Michigan; Mary Beth Ofstedal, University of Michigan

9:20 a.m. The Income Gap in Survey Research: Nonresponse to Income Questions in Online Panel Research—◆ Nicole Buttermore, GfK; Frances M. Barlas, GfK

Custom Research; Maya Grosul, GfK; Mansour Fahimi, GfK

9:35 a.m. Purposefully Mobile: Experimentally Assessing Device Effects in an Online Survey—◆Frances M. Barlas, GfK Custom Research; Randall K. Thomas, GfK Custom Research; Patricia Graham, GfK Custom Research

9:50 a.m. The Matrix Lives On: Improving Grids for Online Surveys—◆Randall K. Thomas, GfK Custom Research; Frances M. Barlas, GfK Custom Research; Patricia Graham, GfK Custom Research; Thomas Subias, GfK Custom Research

10:05 a.m. Understanding School-Level Nonresponse and Developing Strategies to Maximize Participation in School-Based Substance Use Surveys—◆Ashley Clark, Indiana University; Heather Terhune Marti, Indiana University; Stacey Giroux Wells, Indiana University; Yi-Chun Lin, Indiana University; Julia Strzeszkowski, Indiana University; Randy Layman, Indiana University; Erin Ables, Indiana University; Rosie King, Indiana University; Mikyoung Jun, Indiana University

495 CC-214 Topics in Biostatistics—Contributed

SSC

Chair(s): Angelo Canty, McMaster University

8:35 a.m. Improving Efficiency of Parameter Estimation in Case-Cohort Studies—◆Ying Yan; Haibo Zhou, The University of North Carolina at Chapel Hill; Jianwen Cai, The University of North Carolina at Chapel Hill

8:50 a.m. Modeling Length-Biased Multistate Data from Prospective Cohort Studies—◆Nathalie Moon, University of Waterloo; Leilei Zeng, University of Waterloo; Richard Cook, University of Waterloo

9:05 a.m. Two-Stage Sequential Design for Binary Dose-Response Clinical Trials—◆XIAOLI Yu; Jiahua Chen, The University of British Columbia; Rollin Brant, The University of British Columbia

9:20 a.m. Generalized Levene's Test of Homoscedasticity for Correlated Data with Group Uncertainty—◆David Soave, University of Toronto; Lei Sun, University of Toronto

9:35 a.m. The Generalized Likelihood Ratio for Genetic Association Studies—◆Weili Li, University of Toronto; Lisa J. Strug, The Hospital for Sick Children

9:50 a.m. Latent Growth Mixture Models for Longitudinal and Discrete Survival Data—◆Depeng Jiang, University of Manitoba; Robert Tate, University of Manitoba

10:05 a.m. Floor Discussion

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Topics in Transportation Statistics—Contributed

Transportation Statistics Interest Group

Chair(s): Ching-Ray Yu, Pfizer Inc.

TCC-101

8:35 a.m. Bayesian Random Exposure Poisson Regression Models for Evaluating the Safety Impact of Cellphone Visual-Manual Tasks—◆Youjia Fang, Virginia Tech Transportation Institute; Feng Guo, Virginia Tech

8:50 a.m. Quantifying the Causal Effect of Speed Cameras on Road Traffic Accidents via an Approximate Bayesian Doubly Robust Estimator—◆Daniel Graham, Imperial College London; Haojie Li, Imperial College London

9:05 a.m. Evaluating the Benefits of Satellite-Based Final Approaches in Aviation Using Statistical Techniques and Simplified Queuing Theory—◆Nastaran Coleman, Federal Aviation Administration

9:20 a.m. Factor Importance and Predictive Models for Nonsignalized Intersection Crash Data—◆Ketong Wang, The University of Alabama; Jenna Simandl, The University of Alabama; Michael Porter, The University of Alabama; Andrew Graettinger, The University of Alabama; Randy Smith, The University of Alabama

9:35 a.m. Validating Ramp Crash Prediction Models Used for Roadway Design Decision-Making with a Negative Binomial Generalized Linear Model—◆Lindsay M. Lucas, MRIGlobal; Karin M. Bauer, MRIGlobal

9:50 a.m. Modeling Jointly Low, Moderate, and Heavy Rainfall Intensities Without a Threshold Selection—◆Raphael Huser, KAUST; Philippe Naveau, Laboratoire des Sciences du Climat et l'Environnement

10:05 a.m. Predicting Regolith Depth Using Bayesian Hierarchical Spatial Models—◆Wen-Hsi Yang, CSIRO; David Clifford, The Climate Corporation; Ross Searle, CSIRO Land and Water Flagship; John Wilford, Geoscience Australia

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Advances in Nonparametric Testing: Part 2—Contributed

Section on Nonparametric Statistics

Chair(s): Karunarathna Kulasekera, University of Louisville

CC-619

8:35 a.m. Methods-Improving Estimate of Diagnostic Odds Ratio—◆Yisong Huang, Georgia Southern University; JingJing Yin, Georgia Southern University; Hani Samawi, Georgia Southern University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 8:50 a.m.** Signs of Residuals for Testing Regression Coefficients in Quantile Regression—◆Sergey Tarima, Medical College of Wisconsin; John Meurer, The Medical College of Wisconsin; Peter Tarassenko, Tomsk State University; Rodney Sparapani, Medical College of Wisconsin
- 9:05 a.m.** Partially Sequential Median Ranked Set Sample Test Procedure—◆Michael Matthews, The Ohio State University; Elizabeth Stasny, The Ohio State University; Douglas Wolfe, The Ohio State University
- 9:20 a.m.** Testing the Equality of Multiple Spectral Densities of Time Series in the Frequency Domain—◆Lei Jin, Texas A&M University
- 9:35 a.m.** Application of Pearson's Chi-Square Test for Comparing Zero-Inflated Distributions—◆William Johnson, Pennington Biomedical Research Center; Robbie A. Beyl, Pennington Biomedical Research Center; Jeffrey Burton, Pennington Biomedical Research Center; Jacob Romer, Pennington Biomedical Research Center
- 9:50 a.m.** Asymptotic Permutation Tests in General Factorial Designs—◆Frank Konietzschke, The University of Texas at Dallas
- 10:05 a.m.** **Floor Discussion**

498 **CC-620**
Bayesian Nonparametrics, U-Statistics, Saddle Point, and Quantile Model—Contributed Section on Nonparametric Statistics

Chair(s): Ruiyan Luo, Georgia State University

- 8:35 a.m.** A Semiparametric Bayesian Approach for Quantile Regression with Clustered Data—◆Woo Sung Jang, SAS Institute; Huixia Judy Wang, The George Washington University
- 8:50 a.m.** Semiparametric Bayesian Inference with Correlated Recurrence Time (Gap-Time) Data—◆A.K.M Rahman, Emory University; Edsel Pena, University of South Carolina
- 9:05 a.m.** Nonparametric Bayesian Analysis of the Two-Sample Problem with Censoring—◆Kan Shang, University of Minnesota; Cavan Reilly, University of Minnesota
- 9:20 a.m.** Nonparametric Bernstein-Von Mises Theorem—◆Dana Yang, Yale University
- 9:35 a.m.** Extrapolation Techniques in U-Statistic Variance Estimation—◆Qing Wang, Williams College
- 9:50 a.m.** Small Sample Saddlepoint Confidence Intervals for Survival Function Estimators Under the Proportional Hazards Model—◆Emad Abdurasul; Robert Paige, Missouri University of Science and Technology
- 10:05 a.m.** A Weighted Quantile Regression Model-Based

- Multiple Imputation Method for Left-Censored and Partially Observed Biomarker Data—◆MinJae Lee, The University of Texas Health Science Center; Mohammad Rahbar, The University of Texas Health Science Center; John Reveille, The University of Texas Health Science Center; Michael Weisman, Cedars Sinai Medical Center; Michael M. Ward, NIAMS/NIH; Lianne Gensler, UC San Francisco; Matthew Brown, The University of Queensland Diamantina Institute

499 **CC-616**
Analysis of Recurrent Events—Contributed Biometrics Section, International Chinese Statistical Association

Chair(s): Sean Devlin, Memorial Sloan Kettering Cancer Center

- 8:35 a.m.** Hierarchical Mixed Effect Model Approach for Analysis of Recurrent Events—◆Mojgan Golzy, SUNY Buffalo; Randy Carter, SUNY Buffalo
- 8:50 a.m.** Semiparametric Modeling of Bivariate Recurrent Events—◆Jing Yang, Emory University; Limin Peng, Emory University
- 9:05 a.m.** Joint Dynamic Modeling of Recurrent Competing Risks and a Terminal Event—◆Piaomu Liu, University of South Carolina; Edsel Pena, University of South Carolina
- 9:20 a.m.** Analyzing Recurrent Breast Implant-Associated Anaplastic Large-Cell Lymphoma with Informative Censoring Using a Joint Frailty Model—◆Jun Liu, MD Anderson Cancer Center; Jing Ning, MD Anderson Cancer Center; Roberto Miranda, MD Anderson Cancer Center; Mark Warren Clemens, MD Anderson Cancer Center
- 9:35 a.m.** Estimating the Ratio of Multivariate Recurrent Event Rates with Applications to a Blood Transfusion Study—◆Jin Piao, The University of Texas Health Science Center; Jing Ning, MD Anderson Cancer Center; Mohammad Rahbar, The University of Texas Health Science Center; Sangbum Choi, The University of Texas at Houston; Chuan Hong, The University of Texas School of Public Health; Deborah J. del Junco, The University of Texas Health Science Center; Elaheh Rahbar, Wake Forest University; Erin E. Fox, The University of Texas Health Science Center; John Holcomb, The University of Texas Health Science Center; Mei-Cheng Wang, The Johns Hopkins University
- 9:50 a.m.** Joint Models to Estimate the Early Mortality Hazard and Multiple Recurrent Rates/Ratios of Blood Product Transfusions in Massively Bleeding Patients—◆Elaheh Rahbar, Wake Forest University; Sangbum Choi, The University of Texas at Houston; Mohammad Rahbar, The University of Texas Health Science Center; Jing Ning, MD Anderson Cancer Center; Chuan Hong,

Wednesday



INTERNATIONAL CONFERENCE ON HEALTH POLICY STATISTICS

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American Statistical Association

CONFERENCE HIGHLIGHTS

11 STATE-OF-THE-ART WORKSHOPS
ON TOPICS SUCH AS:

- Causal Inference
- Comparative Effectiveness Research
- Patient-Reported Outcomes
- Predictive Modeling
- Real-World Observational Data
- Research Incubator & Synthesis
- Social Network Analysis

KEYNOTE & PLENARY SESSIONS SPEAKERS

- **Gail R. Wilensky**, Economist and Senior Fellow, Project HOPE
- **Marc L. Berger**, Vice President of Real World Data and Analytics, Pfizer Inc.
- **Constantine A. Gatsonis**, Henry Ledyard Goddard University Professor and Head of the Center for Statistical Sciences, Brown University

AN ARRAY OF INVITED, TOPIC-
CONTRIBUTED, CONTRIBUTED, AND
POSTER SESSIONS WITH TOPICS SUCH AS:

- Bayesian Methods
- Causal Inference
- Decision Analysis
- Medical Record Linkage
- Meta-Analysis
- Personalized Medicine
- Real-World Observational Studies

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The University of Texas School of Public Health; Jin Piao, The University of Texas Health Science Center; Deborah J. del Junco, The University of Texas Health Science Center; Erin E. Fox, The University of Texas Health Science Center; John Holcomb, The University of Texas Health Science Center

10:05 a.m. Floor Discussion

500 CC-2A ROC and Multi-Reader Studies for Diagnostic Devices—Contributed

Section on Medical Devices and Diagnostics

Chair(s): Justin Rogers, Abbott

- 8:35 a.m. Design and Analysis Considerations for Diagnostic Test Studies with Multiple Readers—◆Changhong Song, FDA
- 8:50 a.m. Interpretation of Multi-Reader Diagnostic Radiologic Data-Analysis Parameters, with Applications to Simulation Models and Sample Size Estimation—◆Stephen Hillis, The University of Iowa
- 9:05 a.m. Discriminating Three or More Ordinal Outcomes with Continuous Measurements by Combining Cumulative Logit Regression and ROC Curve Analysis—◆Rey DeCastro, CDC
- 9:20 a.m. Exact Confidence Band for Binormal ROC Curve—◆JingJing Yin, Georgia Southern University; Lili Tian, SUNY Buffalo
- 9:35 a.m. A New Diagnostic Accuracy Measure and Cut-Points Selection Criterion—◆Tuochuan Dong, Novartis
- 9:50 a.m. Optimal Design Strategy to Achieve a Pre-Specified Power When the Biomarker Is Subject to Measurement Error—◆Matthew Thomas White, Boston Children's Hospital; Sharon X. Xie, University of Pennsylvania
- 10:05 a.m. Application of Receiver Operating Characteristic Method for Evaluating Optimal Threshold of Echocardiogram Parameters for Prediction of Clinical Outcome in a Medical Device Trial—◆Hong Wang, Boston Scientific; Peter Lam, Boston Scientific

501 CC-603 Computer Experiments—Contributed

Section on Physical and Engineering Sciences, Quality and Productivity Section

Chair(s): Peter Marcy, Los Alamos National Laboratory

- 8:35 a.m. Maximum Projection Designs for Computer Experiments—◆Shan Ba, Procter & Gamble Company; V. Roshan Joseph, Georgia Institute of Technology; Evren Gul, Georgia Institute of

Technology

- 8:50 a.m. Pareto Optimization of Physical Systems Using Tuned Computer Simulators—◆P.H. Allen Chen, The Ohio State University; Thomas Santner, The Ohio State University; Angela Dean, The Ohio State University
- 9:05 a.m. Uncertainty Quantification Methods with Application to Physical Sciences—◆K. Sham Bhat, Los Alamos National Laboratory; Curtis Storlie, Los Alamos National Laboratory; David Mebane, West Virginia University
- 9:20 a.m. Additive Gaussian Process for Computer Models with Qualitative and Quantitative Factors—◆Xinwei Deng, Virginia Tech; Chunfang Lin, Queen's University
- 9:35 a.m. Computer Experiment Modeling for an Energy-Efficient Data Center—◆Yufan Liu; Ying Hung, Rutgers University
- 9:50 a.m. Model Emulation and Calibration in Radiation Transport Experiments—◆Michael Grosskopf, Simon Fraser University; Derek Bingham, Simon Fraser University; Marv Adams, Texas A&M University; Daryl Hawkins, Texas A&M University; Aaron Holzaepfel, Texas A&M University
- 10:05 a.m. Minimax Clustering Designs—◆Simon Mak,

502 CC-203 Recent Advances in Monte Carlo Methods—Contributed

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

Chair(s): Resmi Gupta, Cincinnati Children's Hospital Medical Center

- 8:35 a.m. When MCMC Goes Online: Stream MCMC—◆Yang Chen; Samuel Kou, Harvard University
- 8:50 a.m. A Practical Sequential Stopping Rule for High-Dimensional Markov Chain Monte Carlo—◆Lei Gong, UC Riverside; James M. Flegal, UC Riverside
- 9:05 a.m. Semiparametric Particle Filters—◆Carles Breto, Universidad Carlos III de Madrid
- 9:20 a.m. Importance Sampling Techniques for Sequentially Choosing Interventions When Reconstructing Directed Networks—◆James Henderson, University of Michigan; George Michailidis, University of Florida
- 9:35 a.m. Multivariate Output Analysis for Markov Chain Monte Carlo—◆Dootika Vats, University of Minnesota; Galin Jones, University of Minnesota; James M. Flegal, UC Riverside
- 9:50 a.m. Parallel and Interacting Stochastic Approximation Annealing Algorithms for Global Optimization—◆Georgios Karagiannis, Purdue University; Bledar

Wednesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Konomi, University of Cincinnati; Guang Lin, Purdue University; Faming Liang, University of Florida

10:05 a.m. Improving Simulated Annealing Through Derandomization—◆Mathieu Gerber, Harvard University; Luke Bornn, Harvard University

503 CC-617 ■ Applied Risk Prediction—Contributed Biometrics Section

Chair(s): Eva Miller, InVentiv Health Clinical

8:35 a.m. Relative Risks Analysis in Dietary Index Modeling for HEI-2005—◆Yanqing Wang, Fred Hutchinson Cancer Research Center; Shujie Ma, UC Riverside; Raymond Carroll, Texas A&M University

8:50 a.m. A Bayesian Screening Approach for Hepatocellular Carcinoma Using Two Longitudinal Biomarkers—◆Nabihah Tayob; Francesco Stingo, MD Anderson Cancer Center; Kim-Anh Do, MD Anderson Cancer Center; Ziding Feng, MD Anderson Cancer Center

9:05 a.m. Long-Term Effects and Over Diagnosis of Chest X-Ray and CT Scan in Lung Cancer—◆Dongfeng Wu, University of Louisville

9:20 a.m. Automatic Adjudication of Symptom-Based Exacerbations in Bronchiectasis Patients Treated with Azithromycin—◆Mark Wheldon, Auckland University of Technology; Alain C. Vandal, Auckland University of Technology; Anne-Cecile Bourien, Ecole Nationale de la Statistique et de l'Analyse de l'Information; Lata Jayaram, Monash Health; Noel Karalus, Waikato District Health Board; Cecilia Tong, Centre for Clinical Trials and Effective Practice; Hans Hockey, Biometrics Matters Ltd.; Conroy Wong, Counties Manukau District Health Board

9:35 a.m. Copula Modeling for Developing a Biomarker Panel for Prediction of Dengue Hemorrhagic Fever—◆Hyunsu Ju, The University of Texas Medical Branch; Jong-Min Kim, University of Minnesota, Morris

9:50 a.m. Personalized Predictions Using Exogenous Covariates—◆Jie Fan; J. Sunil Rao, University of Miami

10:05 a.m. Floor Discussion

504 CC-211 Advances in Machine Learning—Contributed Section on Statistical Learning and Data Mining, ENAR

Chair(s): Qiuyi Han, Harvard University

8:35 a.m. Reinforcement Learning for Categorical Data and Marginalized Transition Models—◆Stephen Carden, Georgia Southern University

8:50 a.m. Exploiting Feature Information in Matrix Completion—◆Anran Wang, North Carolina State University; Lexin Li, UC Berkeley; Hua Zhou, North Carolina State University

9:05 a.m. Spectral Regularization Algorithms for Learning Corrupted Low-Rank Matrices—◆Yiwei Zhang, University of Michigan; Ji Zhu, University of Michigan

9:20 a.m. Projection Test for High-Dimensional Mean with Optimal Direction—◆Yuan Huang, Penn State; Runze Li, Penn State

9:35 a.m. Using Moments and L-Moments to Characterize Graphical Networks—◆Fairul Mohd-Zaid, Air Force Research Lab; Christine Schubert Kabban, Air Force Institute of Technology

9:50 a.m. Convex Modeling of Interactions with Strong Heredity—◆Asad Haris; Daniela Witten, University of Washington; Noah Simon, University of Washington

10:05 a.m. Graph-Guided Matrix Completion—◆Eric Chi, Rice University; Arvind Rao, MD Anderson Cancer Center; Christopher Harshaw, Rice University; Ashok Veeraraghavan, Rice University; Salman Asif, Rice University; Richard Baraniuk, Rice University

505 CC-205 Clinical Trial Design IV—Contributed Biopharmaceutical Section, Mental Health Statistics Section

Chair(s): Lyrica Liu, Amgen

8:35 a.m. Allele-Specific RNA Expression Modeling Using Finite Mixture Models—◆Rong Lu, The Ohio State University; Ryan Smith, The Ohio State University; Michal Seweryn, The Ohio State University; Danxin Wang, The Ohio State University; Amy Webb, The Ohio State University; Wolfgang Sadee, The Ohio State University; Grzegorz Rempala, The Ohio State University

8:50 a.m. A More Powerful Method to Analyze Bioequivalence for Endogenous Substances in a Crossover Design—◆Li Fan, Merck; Lata Maganti, Merck; Lori A. Mixson, Merck; Devan Mehrotra, Merck

9:05 a.m. Incorporating Historical Data in Bayesian Phase I Trial Design: Evaluating the Similarity in Dose-

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- Toxicity Relationship Between Subgroups—
◆Kentaro Takeda, Astellas; Satoshi Morita, Kyoto University Graduate School of Medicine
- 9:20 a.m. On the Similarity of Two Dose-Response Curves—
◆Bo Jin, Pfizer Inc.; Kerry Barker, Pfizer Inc.
- 9:35 a.m. A Comparison of Confidence/Credible Interval Methods for the Area Under the ROC Curve for Continuous Diagnostic Tests with Small Sample Size—◆Dai Feng, Merck Research Laboratories; Giuliana Cortese, University of Padova; Richard Baumgartner, Merck
- 9:50 a.m. Interim Treatment Selection Using Exact Binomial Distribution in Clinical Trials—◆Bob Zhong, Johnson & Johnson; Gordon Lan, Johnson & Johnson; Surya Mohanty, Johnson & Johnson; Jose Pinheiro, Johnson & Johnson; Sudhakar Rao, Janssen R&D; Kyle Wathen, Johnson & Johnson
- 10:05 a.m. Adjusting for Baseline on the Analysis of Repeated Binary Responses with Missing Data—◆Honghua Jiang; Pandurang M. Kulkarni, Eli Lilly and Company; Craig H. Mallinckrodt, Eli Lilly and Company; Linda Shurzinske, Eli Lilly and Company; Geert Molenberghs, Universiteit Hasselt/Katholieke Universiteit Leuven; Ilya Lipkovich, Quintiles

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

506 CC-608

■ ● **Differential and/or Biased Missingness: Myths, Methods, and Manifestations—Invited**
Biometrics Section, Mental Health Statistics Section, Section on Medical Devices and Diagnostics, Section on Statistical Consulting, Committee on Applied Statisticians

Organizer(s): William L. Mielowski, Novartis Oncology
Chair(s): William L. Mielowski, Novartis Oncology

- 10:35 a.m. Knowledge Translation in Statistical Methods: Applied Myth-Busting in the Field of Missing Data—
◆Melanie L. Bell, The University of Arizona; Mallorie Fiero, The University of Arizona; Nicholas Horton, Amherst College; Chiu-Hsieh Hsu, The University of Arizona
- 11:00 a.m. Intention-to-Treat Analysis with Treatment Discontinuation and Missing Data in Clinical Trials—
◆Roderick Little, University of Michigan; Shan Kang, University of Michigan
- 11:25 a.m. Rank-Based Regression Models for Longitudinal Data—◆Xin Tu, University of Rochester; Tian Chen, University of Rochester; Wan Tang, University of Rochester

- 11:50 a.m. Comparison of Three Longitudinal Rank-Based Tests with Progression-Free Survival (PFS) in Randomized Phase II Oncology Studies When the Phase III Design Is Based on Overall Survival—◆Tian Chen, University of Rochester; Weichao Bao, Novartis Oncology; Fei Ma, Novartis Oncology; Yunro Chung, The University of North Carolina at Chapel Hill; William L. Mielowski, Novartis Oncology
- 12:15 p.m. Floor Discussion

507 CC-609

● **Using Biomarkers for Better Decisions in Cancer Clinical Trials—Invited**

ENAR, Biometrics Section

Organizer(s): Ken Cheung, Columbia University
Chair(s): Ken Cheung, Columbia University

- 10:35 a.m. Power Estimation in Biomarker Studies When Events Are Already Observed—◆Mei-Yin Polley, National Cancer Institute
- 11:00 a.m. Using Biomarkers for Better Decisions in Cancer Clinical Trials—◆Yimei Li, University of Pennsylvania; Ming Wang, Penn State; Ken Cheung, Columbia University
- 11:25 a.m. Sequential Designs for Individualized Dosing in Phase I Cancer Clinical Trials—◆Xuezhou Mao, Sanofi-Aventis U.S.; Ken Cheung, Columbia University
- 11:50 a.m. Disc: Daniel Heitjan, Southern Methodist University
- 12:10 p.m. Floor Discussion

508 CC- Ballroom 6E

■ ● **Wald Lecture II—Invited**
IMS

Organizer(s): Antonio Lijoi, University of Pavia
Chair(s): James M. Robins, Harvard University

- 10:35 a.m. Offline Data Analysis Methods and Learning Algorithms for Constructing Mobile Treatment Policies—◆Susan A. Murphy, University of Michigan
- 12:05 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

509 CC-205 ■ ● Statistics for High-Frequency Data—Invited IMS

Organizer(s): Per A. Mykland, The University of Chicago

Chair(s): Michael Sørensen, University of Copenhagen

- 10:35 a.m. Estimating the Degree of Activity of Jumps of a Discretely Observed Semimartingale—
- 11:05 a.m. Between Data Cleaning and Inference: Pre-Averaging and Robust Estimators of the Efficient Price—◆ Per A. Mykland, The University of Chicago; Lan Zhang, University of Illinois at Chicago
- 11:35 a.m. Continuous Time Analysis of Fleeting Discrete Price Moves—◆ Neil Shephard, Harvard University
- 12:05 p.m. Floor Discussion

510 CC-4C3 ■ ● Statistics and Decision-Making in the Supreme Court—Invited

Scientific and Public Affairs Advisory Committee, Conference on Statistical Practice Steering Committee

Organizer(s): Mary W. Gray, American University

Chair(s): Mary W. Gray, American University

- 10:35 a.m. Deadly Statistics: IQ Scores and Capital Punishment in Hall v. Florida—◆ David Kaye, Penn State
- 11:00 a.m. Supreme Court Rulings Implimenting the Sixth Amendment Right to an 'Impartial' Jury—◆ Joseph B. Kadane, Carnegie Mellon University
- 11:25 a.m. Evidence-Based Sentencing and the Scientific Rationalization of Discrimination—◆ Sonja Starr, University of Michigan
- 11:50 a.m. Statistical Issues Arising in Class-Action Equal Employment Cases—◆ Weiwen Miao, Haverford College; Joseph L. Gastwirth, The George Washington University
- 12:15 p.m. Floor Discussion

511 CC-2A Monte Carlo Methods Facing New Challenges in Statistics and Sciences—Invited

Section on Statistical Computing, International Chinese Statistical Association

Organizer(s): Zhiqiang Tan, ASA

Chair(s): Ming-Hui Chen, University of Connecticut

- 10:35 a.m. Local and Stochastic WHAM and Applications in Computational Biophysics—◆ Zhiqiang Tan, ASA; Bin Zhang, Temple University; Ronald Levy, Temple University

- 11:00 a.m. A New Monte Carlo Method for Computing Marginal Likelihoods—Yu-Bo Wang, University of Connecticut; Ming-Hui Chen, University of Connecticut; ◆ Lynn Kuo, University of Connecticut; Paul O. Lewis, University of Connecticut

- 11:25 a.m. Stan: What Comes Next—◆ Andrew Gelman, Columbia University; Bob Carpenter, Columbia University; Daniel Lee, Columbia University; Michael Betancourt, University of Warwick

- 11:50 a.m. A Bootstrap Metropolis-Hastings Algorithm for Bayesian Analysis of Big Data—◆ Faming Liang, University of Florida; Jinsu Kim, Texas A&M University; Qifan Song, Purdue University

- 12:15 p.m. Floor Discussion

512 CC-607 ■ ● Bayesian Models for Neuroimaging Data—Invited

Section on Statistics in Imaging, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)

Organizer(s): Marina Vannucci, Rice University

Chair(s): Mark Fiecas, University of Warwick

- 10:35 a.m. Source Localization in MEG—◆ Robert Kass, Carnegie Mellon University
- 10:55 a.m. A Bayesian Approach to the Study of Dynamic Functional Connectivity Networks in fMRI Data—◆ Michele Guindani, MD Anderson Cancer Center; Marina Vannucci, Rice University; Ryan Warnick, Rice University; Erik Erhardt, University of New Mexico; Elena Allen, University of New Mexico; Vince D. Calhoun, University of New Mexico
- 11:15 a.m. Bayesian Approaches for Simultaneous Inference of Brain Activation and Connectivity in Multi-Subject Studies—◆ Raquel Prado, UC Santa Cruz; Hernando Ombao, UC Irvine; Zhe Yu, UC Irvine
- 11:35 a.m. Toward Real-Time Bayesian Inference for Magnetoencephalography—◆ Adam Michael Johansen, University of Warwick; Alberto Sorrentino; John Aston, University of Cambridge; Tom E. Nichols, University of Warwick; Wilfrid S. Kendall, University of Warwick
- 11:55 a.m. Disc: DuBois Bowman, Columbia University
- 12:15 p.m. Floor Discussion

513 TCC-101 ■ ● Quantifying and Improving Referee Decision-Making in Sports—Invited

Section on Statistics in Sports

Organizer(s): Michael J. Lopez, Skidmore College

Chair(s): Kendra K. Schmid, University of Nebraska Medical Center

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 10:35 a.m. Pecuniary Bias Among College Football Referees—
◆ Ryan Rodenberg, Florida State University
- 10:55 a.m. Refs: They're Just Like Us! Adversarial and Social Pressures in the National Football League—
◆ Michael J. Lopez, Skidmore College
- 11:15 a.m. Umpire Performance Improvements in MLB and Impacts on Run Scoring—◆ Brian Mills, University of Florida
- 11:35 a.m. Acquiring, Visualizing, and Modeling MLB Umpire Strike/Ball Decisions with PITCHf/x Data—
◆ Carson Sievert, Iowa State University
- 11:55 a.m. Disc: Trey Causey, Facebook
- 12:15 p.m. Floor Discussion

514 CC-2B **■ ● Novel Algorithms for Big Data Analytics—Invited**

General Methodology

Organizer(s): Ping Ma, University of Georgia

Chair(s): Ping Ma, University of Georgia

- 10:35 a.m. Variable Screening in Biothreat Detection Using Weighted Leverage Score—◆ Wenxuan Zhong, University of Georgia
- 11:00 a.m. Case-Specific Random Forests for Big Data Prediction—◆ Dan Nettleton, Iowa State University
- 11:25 a.m. Generative Modeling of Convolutional Neural Networks—◆ Ying Nian Wu, UCLA
- 11:50 a.m. Large-Scale Tagging of Unstructured Data—
◆ Junhui Wang, City University of Hong Kong; Xiaotong Shen, University of Minnesota; Yiwen Sun, University of Minnesota; Annie Qu, University of Illinois at Urbana-Champaign
- 12:15 p.m. Floor Discussion

515 CC-3A **Sirken Award Session—Invited** Sirken Award

Organizer(s): Ronald Wasserstein, ASA

Chair(s): John Czajka, Mathematica Policy Research

- 10:35 a.m. Surveys as Social Interactions—◆ Norman M. Bradburn, NORC at the University of Chicago
- 11:05 a.m. Floor Discussion

516 CC-4C2

■ ● Utilizing Administrative Records and Adaptive Design in the 2020 Census—Invited Government Statistics Section, Statistics Without Borders

Organizer(s): Vincent Thomas Mule, U.S. Census Bureau

Chair(s): Vincent Thomas Mule, U.S. Census Bureau

- 10:35 a.m. Adaptive Design Research for the 2020 Census—
◆ Scott Konicki, U.S. Census Bureau
- 11:00 a.m. Imputation Research for the 2020 Census—
◆ Andrew Keller, U.S. Census Bureau
- 11:25 a.m. Administrative Record Research to Reduce Contacts in the 2020 Census—◆ Darcy Steeg Morris, U.S. Census Bureau
- 11:50 a.m. Disc: Michael Larsen, The George Washington University
- 12:15 p.m. Floor Discussion

517 CC-4C4

■ ● Making Better Decisions with Data Science—Invited

Section on Statistical Consulting, Government Statistics Section, Section on Statistical Education, Statistics Without Borders, Committee on Applied Statisticians

Organizer(s): Chuck Kincaid, Experis Business Analytics

Chair(s): Matt Rosales, Experis Business Analytics

- 10:35 a.m. Collaborative Data Science with CoLaboratory—
◆ Kayur Patel, Google
- 11:00 a.m. Going Deep and Living to Tell the Tale: Keys to Delivering Impactful End-to-End Stories to Executive Audiences—◆ Paul Swiontkowski, Microsoft
- 11:25 a.m. Disc: Chuck Kincaid, Experis Business Analytics
- 11:50 a.m. Floor Discussion

518 CC-203

■ ● Recent Advances in Nonparametric Inference Based on Copula-Induced Dependence—Invited

Journal of Nonparametric Statistics

Organizer(s): Irene Gijbels, KU Leuven

Chair(s): Irene Gijbels, KU Leuven

- 10:35 a.m. Nonparametric Copula Estimation Under Bivariate Censoring—◆ Olivier Lopez, CREST-Ensai; Svetlana Gribkova, Université Pierre et Marie Curie
- 11:05 a.m. Nonparametric Conditional Copula Estimation—
◆ Marek Omelka, Charles University in Prague;

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- Irene Gijbels, KU Leuven; Noel Veraverbeke, Hasselt University
- 11:35 a.m. Quantile and Copula Spectra for Time Series—
◆Stanislav Volgushev, Ruhr University Bochum;
Holger Dette, Ruhr University Bochum; Marc
Hallin, ECARES/Princeton; Tobias Kley, Ruhr
University Bochum
- 12:05 p.m. Floor Discussion

519 CC-3B

Noether Award—Invited

Noether Award Committee, ASA, International Statistical Association

Organizer(s): Dennis Boos, North Carolina State University
Chair(s): Dennis Boos, North Carolina State University

- 10:35 a.m. Nonlinear Function-on-Function Regression Models—
◆Arnab Maity, North Carolina State University
- 11:05 a.m. Fifty Years of Nonparametric Statistics—
◆Willem R. van Zwet, University of Leiden
- 11:35 a.m. Floor Discussion

Topic-Contributed Sessions

10:30 a.m.—12:20 p.m.

520 CC-307

■ ● Survival Methods for Risk Analysis— Topic-Contributed

Section on Risk Analysis

Organizer(s): Xin He, University of Maryland
Chair(s): Jing Zhang, University of Maryland

- 10:35 a.m. Risk Analysis Using First Hitting Times and Threshold Regression—
◆Mei-Ling Ting Lee, University of Maryland
- 10:55 a.m. Evaluating Calibration of Risk Prediction Models—
◆Ruth Pfeiffer, National Cancer Institute
- 11:15 a.m. A Model for Time-to-Fracture with a Shock Stream Superimposed on Progressive Degradation: The Study of Osteoporotic Fractures—
◆Xin He, University of Maryland; G.A. Whitmore, McGill University; Geok Yan Loo, University of Maryland; Marc C. Hochberg, University of Maryland, Baltimore; Mei-Ling Ting Lee, University of Maryland

- 11:35 a.m. A Semiparametric Inverse-Gaussian Model and Inference for Survival Data with a Cured Proportion—
◆Sangbum Choi, The University of Texas at Houston; Xuelin Huang, MD Anderson Cancer Center; Janice Cormier, MD Anderson Cancer Center; Kjell Doksum, University of Wisconsin - Madison
- 11:55 a.m. Disc: Yu-Wei Chang, Boehringer Ingelheim
- 12:15 p.m. Floor Discussion

521 CC-310

■ ● Statistical Challenges in Environmental and Ecological Monitoring— Topic-Contributed Section on Statistics and the Environment

Organizer(s): Peter F. Craigmile, The Ohio State University
Chair(s): Peter F. Craigmile, The Ohio State University

- 10:35 a.m. Challenges in Modeling Air Pollution and Understanding Its Impact on Human Health—
◆Alastair Rushworth; Duncan Lee, University of Glasgow; Sujit Sahu, University of Southampton; Sabyasachi Mukhopadhyay, University of Southampton
- 10:55 a.m. Revisiting the Analytic Framework: Spatial Measurement Error in Air Pollution Epidemiology—
◆Adam Szpiro, University of Washington
- 11:15 a.m. A Bayesian Functional Data Model for Coupling High-Dimensional LiDAR and Forest Variables Over Large Geographic Domains—
◆Andrew O. Finley, Michigan State University; Sudipto Banerjee, UCLA; Yuzhen Zhou, Michigan State University; Bruce Cook, NASA Goddard Space Flight Center
- 11:35 a.m. National Aquatic Resource Surveys: Use of Geospatial Data in Their Design and Spatial Prediction at Nonmonitored Locations—
◆Anthony R. Olsen, EPA Western Ecology Division; Thomas M. Kincaid, EPA Western Ecology Division; Marc H. Weber, EPA Western Ecology Division; Ryan A. Hill, ORISE U.S. EPA Western Ecology Division; Scott G. Leibowitz, EPA Western Ecology Division
- 11:55 a.m. Statistical Ecology: Responding to Technological Advances in Field Methods—
◆Stephen Buckland, University of St. Andrews
- 12:15 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

522 CC-612

■ Survey Data Collection: Going Online or Going Off-Track? Exploring Statistical Issues in Online Nonprobability Panels Research—Topic-Contributed

Survey Research Methods Section, Statistics Without Borders, Section on Statistical Consulting, Committee on Applied Statisticians

Organizer(s): Stanislav Kolenikov, Abt SRBI

Chair(s): Stanislav Kolenikov, Abt SRBI

- 10:35 a.m. A Compositional Approach to Survey Inference—
◆J. Brick, Westat
- 10:55 a.m. A Model-Based Approach for Achieving a Representative Sample—◆George Terhanian, NPD Group; John Bremer, Toluna; Jonathan Olmsted, NPD Group
- 11:15 a.m. Variance Estimation for Surveys from Internet Panels—◆Douglas Rivers, Stanford University
- 11:35 a.m. Matching Nonprobability Internet Panel Samples with Probability Samples—◆Charles DiSogra, Abt SRBI; K.P. Srinath, Abt SRBI; Andrew Burkey, Abt SRBI
- 11:55 a.m. Disc: Michael Sverchkov, Bureau of Labor Statistics
- 12:15 p.m. Floor Discussion

523 CC-201

■ ● Recent Developments in Missing Data Methodologies in Nontraditional Missing Data Problems—Topic-Contributed

Mental Health Statistics Section, Health Policy Statistics Section

Organizer(s): Danping Liu, NIH

Chair(s): Zheyu Wang, The Johns Hopkins University

- 10:35 a.m. A Characterization of Missingness-at-Random in a Generalized Shared-Parameter Joint Modeling Framework for Longitudinal and Time-to-Event Data and Sensitivity Analysis—◆Geert Molenberghs, Universiteit Hasselt/Katholieke Universiteit Leuven; Edmund Njeru Njagi, Universiteit Hasselt; Michael G. Kenward, London School of Hygiene and Tropical Medicine; Geert Verbeke, KU Leuven/Universiteit Hasselt; Dimitris Rizopoulos, Erasmus Medical Center
- 10:55 a.m. Handling Missing Data in Multi-Rater Measurement Agreement Data: A Within-Cluster-Resampling Approach—◆Zhen Chen, NICHD/NIH; Yunlong Xie, NICHD/NIH

- 11:15 a.m. Merging Multiple Longitudinal Studies with Study-Specific Missing Covariates—◆Lu Wang, University of Michigan; Peter X.K. Song, University of Michigan; Fei Wang, Ford Motor Credit
- 11:35 a.m. Biomarker Combination with Partially Observed Gold Standard—◆Danping Liu, NIH; Ashok Chaurasia, Eunice Kennedy Shriver National Institute of Child Health and Human Development; Zheyu Wang, The Johns Hopkins University
- 11:55 a.m. Causal Analysis in Multi-Arm Trials with Truncation by Death—◆Linbo Wang, University of Washington; Thomas S. Richardson, University of Washington; Xiao-Hua Zhou, University of Washington
- 12:15 p.m. Floor Discussion

524 CC-210

■ ● Advances in Bayesian Computation Motivated by Applications—Topic-Contributed

IMS, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), International Indian Statistical Association

Organizer(s): James M. Flegal, UC Riverside

Chair(s): Murali Haran, Penn State

- 10:35 a.m. Fast, Fully Bayesian Spatiotemporal Inference for fMRI Data—◆John Hughes, University of Minnesota; Donald Musgrove, University of Minnesota; Lynn Eberly, University of Minnesota
- 10:55 a.m. Estimating Standard Errors for Importance Sampling Estimators with Multiple Markov Chains—◆Vivekananda Roy, Iowa State University; Aixin Tan, The University of Iowa; James M. Flegal, UC Riverside
- 11:15 a.m. Relative Fixed-Width Stopping Rules for High-Dimensional MCMC—◆James M. Flegal, UC Riverside; Lei Gong, UC Riverside
- 11:35 a.m. An MCMC Algorithm for Parameter Estimation in Signals with Hidden Intermittent Instability—◆Radu Herbei, The Ohio State University; Nan Chen, New York University; Dimitrios Giannakis, New York University; Andrew J. Majda, New York University
- 11:55 a.m. A Modified Conditional Metropolis-Hastings Sampler—◆Alicia Johnson, Macalester College
- 12:15 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

525 TCC-202 ■ ● Causal Inference and Experiments in Networks—Topic-Contributed

Business and Economic Statistics Section, Government Statistics Section

Organizer(s): Dean Eckles, Facebook

Chair(s): Elizabeth Ogburn, Johns Hopkins Bloomberg School of Public Health

- 10:35 a.m. Protocols for Randomized Experiments to Identify Network Contagion—◆Andrew C. Thomas, University of Florida
- 10:55 a.m. Identification and Estimation of Spatial Causal Effects—◆Peter M. Aronow, Yale University; Cyrus Samii, New York University
- 11:15 a.m. Design and Analysis of Experiments in Networks: Reducing Bias from Interference—◆Dean Eckles, Facebook; Brian Karrer, Facebook; Johan Ugander, Microsoft Research
- 11:35 a.m. Estimation of Monotone Treatment Effects in Network Experiments—◆David Choi, Carnegie Mellon University
- 11:55 a.m. Disc: Guido Imbens, Stanford University Graduate School of Business
- 12:15 p.m. Floor Discussion

526 CC-615 ■ ● New Challenges in Multiplicity Adjustments—Topic-Contributed

Biopharmaceutical Section

Organizer(s): Frank Bretz, Novartis

Chair(s): Dong Xi, Novartis

- 10:35 a.m. Group-Sequential Strategies for Clinical Trials When Comparing Two Interventions Using Multiple Co-Primary Endpoints—◆Toshimitsu Hamasaki, National Cerebral and Cardiovascular Center; Koko Asakura, National Cerebral and Cardiovascular Center; Scott R. Evans, Harvard University
- 10:55 a.m. Visualizing Multiple Objectives in Flexible and Group Sequential Designs—◆Florian Klinglmueller, Medical University Vienna
- 11:15 a.m. Power and Type-1 Error of Global Versus Local Tests with Special Reference to Closed Testing Procedures for Multiple Endpoints in Clinical Trials—◆Dror Rom, Prosoft Clinical
- 11:35 a.m. Logical Inference on Efficacy in Subgroups and Their Combinations in Personalized Medicine—◆Jason Hsu, The Ohio State University
- 11:55 a.m. Thresholding of a Continuous Biomarker Based on a New Concept That Correctly Infers Efficacy in the

Target Subgroup—◆Yi Liu; Jason Hsu, The Ohio State University; Szu-Yu Tang, Ventana Medical Systems, Inc.

12:15 p.m. Floor Discussion

527 CC-212 ■ ● Modern Nonparametric Methods for Complex Data—Topic-Contributed

Section on Nonparametric Statistics, International Indian Statistical Association

Organizer(s): Li-Shan Huang, National Tsing Hua University

Chair(s): Yu-Jen Cheng, National Tsing Hua University

- 10:35 a.m. Differential Equation-Assisted Local Polynomial Regression—◆Willard Braun, The University of British Columbia
- 10:55 a.m. Partly Parametric Generalized Additive Model—◆Kung-Sik Chan, The University of Iowa; Tianyang Zhang, Travelers
- 11:15 a.m. Semiparametric Estimation Approach for the Sufficient Dimension-Reduction Model—◆Chin-Tsang Chiang, National Taiwan University
- 11:35 a.m. Nonparametric Flow Cytometric Classifiers—◆Ollivier Hyrien, University of Rochester; Andrea Baran, University of Rochester; Michael Becker, University of Rochester
- 11:55 a.m. Nonparametric Analysis of Covariance in Partial Linear Models with Factor-by-Curve Interactions—◆Li-Shan Huang, National Tsing Hua University
- 12:15 p.m. Floor Discussion

528 CC-304 ■ Functional, Missing, and High-Dimensional Covariates in Mixed Models—Topic-Contributed

International Indian Statistical Association

Organizer(s): Akshita Chawla, Michigan State University

Chair(s): Tapabrata Maiti, Michigan State University

- 10:35 a.m. Estimating Effects of Functional Covariates in Functional Mixed Models—◆Fabian Scheipl, Ludwig Maximilians University Munich; Sonja Greven, LMU
- 10:55 a.m. Improved Random Effect Specification for Semiparametric Mixed Models—Philip Reiss, New York University School of Medicine; ◆Pei-Shien Wu, New York University School of Medicine; Jeff Goldsmith, Columbia University
- 11:15 a.m. Kenward-Roger Approximation for Linear Mixed Models with Missing Covariates—◆Akshita Chawla, Michigan State University; Tapabrata Maiti,

Michigan State University; Samiran Sinha, Texas A&M University

11:35 a.m. Estimation and Variable Selection in High-Dimensional Linear Mixed Models—◆Abhishek Kaul, Michigan State University; Akshita Chawla, Michigan State University; Tapabrata Maiti, Michigan State University

11:55 a.m. Generalized Function-on-Function Regression—◆Janet S. Kim, North Carolina State University; Ana-Maria Staicu, North Carolina State University; Arnab Maity, North Carolina State University

12:15 p.m. Floor Discussion

Topic-Contributed Panels

10:30 a.m.—12:20 p.m.

529 CC-204

● The Quest for Good Assessments for Research and Evaluation—Topic-Contributed Section on Statistical Education

Organizer(s): Laura Ziegler, Iowa State University

Chair(s): Joan Garfield, University of Minnesota

- Panelists: ◆Laura Ziegler, Iowa State University
 ◆Elizabeth Fry, University of Minnesota
 ◆Matt Beckman, University of Minnesota
 ◆Anelise Sabbag, University of Minnesota
 ◆Ethan Brown, University of Minnesota

12:15 p.m. Floor Discussion

530 CC-206

■ ● Statistical Competencies for TSHS Learners: Evolution and Evaluation—Topic-Contributed

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

Organizer(s): Felicity Boyd Enders, Mayo Clinic

Chair(s): Steven Grambow, Duke University

- Panelists: ◆Felicity Boyd Enders, Mayo Clinic
 ◆Bob Oster, The University of Alabama at Birmingham
 ◆Leah J. Welty, Northwestern University Feinberg School of Medicine
 ◆Susan Perkins, Indiana University

12:15 p.m. Floor Discussion

531 CC-606

■ ● Issues That Arise During the FDA Review of Applications Containing Patient- and Clinician-Reported Outcomes—Topic-Contributed

Health Policy Statistics Section

Organizer(s): Laura Lee Johnson, FDA

Chair(s): Paul Kluetz, FDA/CDER/OND/OHOP

- Panelists: ◆Laura Lee Johnson, FDA
 ◆Scott Komo, FDA/CDER/OTS/OB/DBIV
 ◆Thomas Birkner, FDA/CDER/OTS/OB/DBI
 ◆LaRee Tracy, FDA/CDER/OTS/OB/DBIV
 ◆Stephen Wilson, FDA/CDER/OTS/OB/DBIII
 ◆Wen-Hung Chen, FDA/CDER/OND/SEALD
 ◆Martin Ho, FDA/CDRH

12:15 p.m. Floor Discussion

Contributed Sessions

10:30 a.m.—12:20 p.m.

532 TCC-204

Bayesian Modeling for Business and Economics—Contributed

Business and Economic Statistics Section, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)

Chair(s): Rongning Wu, Baruch College

10:35 a.m. Modeling with Mixture of the Popular Models—◆Min Deng, University of Maryville of St. Louis

10:50 a.m. Marginal Parametric Data Fusion Without Conditional Independence—◆Takahiro Hoshino, The University of Tokyo

11:05 a.m. Prior Specification for Multivariate Regime-Switching Asset Simulations—◆Brian Hartman, Brigham Young University; David Engler, Brigham Young University; Chris Groendyke, Robert Morris University

11:20 a.m. Establishing the Foundation of Hedge Fund Asset Allocation Decisions Using Bayesian Modeling—◆Weiren Chang, JP Morgan

11:35 a.m. Bayesian Analysis of LOT Liquidity Model—◆Wandi Zhao, Peking University; Mingjin Wang, Peking University

11:50 a.m. Bayesian Estimation Applications in Sales and Use Tax Audit Sampling—◆Roger Pfaffenberger,

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12:05 p.m. The Impact of Piped Water on the Mortality in Inter-War Tokyo: Bayesian Disease Mapping Approach—◆Genya Kobayashi, Chiba University; Kota Ogasawara, Tokyo Institute of Technology; Shinichiro Hirota, Duke University

533 CC-603 Statistical Design for Sophisticated Studies— Contributed

International Chinese Statistical Association

Chair(s): Yuch-Yun Chi, University of Florida

10:35 a.m. Optimal Sample Size and Allocation in Disease Diagnostic Testing with Multi-Level Structures—◆Chong Wang, Iowa State University; Yinan Fang, Iowa State University; Jeffrey Zimmerman, Iowa State University

10:50 a.m. The Minimum Required Number of Clusters with Unequal Cluster Sizes in Cluster-Randomized Trials—◆Zhiying You, Rui Wang, Brigham and Women's Hospital; Qing Li, Medical University of South Carolina

11:05 a.m. Identification of Dispersion and Location Effects from Partially Replicated Factorial Designs—◆Chen-Tuo Liao; Shin-Fu Tsai, Feng Chia University

11:20 a.m. A New Construction of Nested Orthogonal Arrays—◆Shin-Fu Tsai, Feng Chia University

11:35 a.m. One-Way MANOVA of High-Dimension with a Small Sample Size—◆Jiajuan Liang,

11:50 a.m. An Evaluation of Statistical Methods for DNA Methylation Microarray Data Analysis—◆Dongmei Li, University of Rochester; Zidian Xie, University of Rochester; Marc Le Pape, University of Hawaii; Timothy Dye, University of Rochester

12:05 p.m. Clustering Walter Skeat's 45 Parallel Extracts of William Langland's Piers Plowman—◆Roger Bilisoly, Central Connecticut State University

534 CC-213 Bayesian Semiparametric and Nonparametric Methods—Contributed

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

Chair(s): Debdeep Pati, Florida State University

10:35 a.m. Semiparametric Bayesian Method for High-Dimensional Spherical Data—◆Thomas Jiang, National Chengchi University

10:50 a.m. High-Dimensional Nonparametric Regression with Additive Gaussian Process Priors—◆Surya Tokdar, Duke University

11:05 a.m. Bayesian Local Extrema Splines—◆Matthew Wheeler, NIOSH/CDC; David Dunson, Duke University; Amy Herring, The University of North Carolina at Chapel Hill

11:20 a.m. Flexible Functional Clustering Using Dirichlet Processes—◆Christoph Hellmayr, Duke University; Alan Gelfand, Duke University

11:35 a.m. BERRRI: Bayesian Extendable Reduced Rank Regression Using the Indian Buffet Process Prior—◆Ashlee Valente; Geoffrey S. Ginsburg, Duke University; Barbara Engelhardt, Princeton University

11:50 a.m. Cluster Analysis via Random Partition Distributions—◆David B. Dahl, Brigham Young University; Mahlet Tadesse, Georgetown University

12:05 p.m. Floor Discussion

535 CC-214 Bayesian Latent Variable Modeling— Contributed

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

Chair(s): Xiaojing Wang, University of Connecticut

10:35 a.m. Bayesian Model-Based Clustering of Trajectories—◆Meredith Stevenson, Boston University; Paola Sebastiani, Boston University

10:50 a.m. Bayesian Adaptive Lasso for Ordinal Regression with Latent Variables—◆Xiang-Nan Feng, The Chinese University of Hong Kong; Xinyuan Song; Hao-Tian Wu, Sun Yat-Sen University

11:05 a.m. Multivariate Bayesian Lasso Regression for Latent Achievement Scores—◆Trevor Park, University of Illinois at Urbana-Champaign; Steven A. Culpepper, University of Illinois at Urbana-Champaign

11:20 a.m. Bayesian Local Influence of Semiparametric Structural Equation Models—◆Ming Ouyang, The Chinese University of Hong Kong; Xiaodong Yan, Yunnan University; Niansheng Tang, Yunnan University; Xinyuan Song,

11:35 a.m. Bayesian Quantile Structural Equation Models—◆Yifan Wang, The Chinese University of Hong Kong; Xiang-Nan Feng, The Chinese University of Hong Kong; Xinyuan Song,

11:50 a.m. Bayesian Density Regression for Discrete Outcomes—◆Georgios Papageorgiou,

12:05 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

536 CC-611 Sampling Design and Pre-Survey Benefits— Contributed

Government Statistics Section, Survey Research Methods Section

Chair(s): Paul Guerino, Centers for Medicare and Medicaid Services

- 10:35 a.m.** Occupational Requirements Survey Sample Design—
◆Gwyn Ferguson, Bureau of Labor Statistics; Erin McNulty, Bureau of Labor Statistics
- 10:50 a.m.** Occupational Requirements Survey (ORS) Data Review Process—◆Ruth Meharena,
- 11:05 a.m.** Striking the Balance Between Respondent Protection and Ease of Use: Findings from Testing of the Consumer Expenditure Survey's Web Diary Design—
◆Nhien To, Bureau of Labor Statistics; Laura Erhard, Bureau of Labor Statistics; Brandon Kopp, Bureau of Labor Statistics
- 11:20 a.m.** Using Alternative Mailing Strategies to Boost Internet Response in an Establishment Survey—◆Sharon Stang, Bureau of Labor Statistics; William Mockovak, Bureau of Labor Statistics
- 11:35 a.m.** Testing a Formless Initial Mail-Out in the Business R&D and Innovation Survey—◆Richard Hough, U.S. Census Bureau; Brandon Shackelford, Twin Ravens Consulting
- 11:50 a.m.** Sampling Design for the Primary Farm Household Survey of the Taiwanese Agriculture Study—
◆Chien-Min Huang, National Cheng Kung University; Chang-Tai Chao, National Cheng Kung University; Chiu-Yen Lee, Council of Agriculture Executive Yuan; Shioh-Ing Lin, Council of Agriculture Executive Yuan; Yu-wen Liu, Council of Agriculture Executive Yuan
- 12:05 p.m.** Results and Data Analysis for the 2013 Fishing, Hunting, and Wildlife-Associated Recreation Survey's Pre-Screener Test—◆Matthew Herbstritt, U.S. Census Bureau

537 CC-306 Marketing Research Methods—Contributed Section on Statistics in Marketing

Chair(s): Sam Weerahandi, Pfizer Inc.

- 10:35 a.m.** Predictive Model-Building for High-Dimensional Marketing Data—◆Atreyee Majumder, Michigan State University; Tapabrata Maiti, Michigan State University
- 10:50 a.m.** Tying Mystery Shop Surveys to Business Outcomes—
◆Kurt Pflughoeft, MaritzCX; Sharon Alberg, MaritzCX
- 11:05 a.m.** How Did Marketing Discipline Evolve from 2005 to 2014? An Illustrative Application of Statistical

Methods on a Textual Data Set—◆Igor Barahona, Technical University of Catalonia; Daria Micaela Hernandez, Centro de Estudios Económicos y Sociales; Héctor Hugo Pérez, Popular Autonomous University of Puebla State; Norma Estela Pimentel, Popular Autonomous University of Puebla State

- 11:20 a.m.** A Modeling of Category-Level Purchase and Brand-Level Purchase That Allows Simultaneous Brand Purchase—◆Kei Miyazaki, Kansai University; Takahiro Hoshino, The University of Tokyo
- 11:35 a.m.** Trinomial Modeling in One Binary Logit Regression—◆Stan Lipovetsky, GfK North America
- 11:50 a.m.** Application of Principal Component Analysis of Distribution in Sport Analytic—◆Sun Makosso-Kallyth, Degroote-Pain Centre-McMaster University; Brahim Brahim, BigData Visualizations
- 12:05 p.m.** Modern Visualizations for Cluster Partitions—◆Ewa Nowakowska, GfK; Joseph Retzer, Market Probe

538 CC-308 Environmental Exposure and Land Use Modeling—Contributed

Section on Statistics and the Environment

Chair(s): Thomas Fisher, Miami University

- 10:35 a.m.** Modeling and Making Fairer Comparison of PM2.5 in Beijing—◆Xuan Liang, Peking University; Song Xi Chen, Peking University/Iowa State University
- 10:50 a.m.** Modeling U.S. Infant Bronchiolitis Rates in the Presence of Spatial Uncertainty—◆Candace Berrett, Brigham Young University; Matthew Heaton, Brigham Young University; Chantel Sloan, Brigham Young University
- 11:05 a.m.** Exploring Exposure Assessment Using EPA Toxic Release Sites in Georgia—◆Jeffrey Switchenko, Emory University; Catherine Bulka, Emory University; Lance Waller, Emory University; Christopher Flowers, Emory University
- 11:20 a.m.** Analysis of Seasonal Daily Pattern of CO2 Concentration in Antarctica Using Doubly Cyclic Smoothing Splines—◆Mihoko Minami, Keio University; Ryo Kiguchi, Keio University
- 11:35 a.m.** Probabilistic Worldwide CO2 Forecasts—◆Alec Zimmer, University of Washington; Adrian Raftery, University of Washington; Dargan Frierson, University of Washington
- 11:50 a.m.** Pollen-Based Spatial Reconstruction of Past Land Cover: Estimating Latent GMRFs with Dirichlet Observations—◆Behnaz Pirzamanbein, Lund University; Johan Lindström, Lund University; Marie-JosÉ Gaillard-Lem Dahl, Linnaeus University; Anneli Poska, Lund University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

12:05 p.m. A Parcel-Level Model for U.S. Agricultural Land Use—◆Jonathan Lisic,

539 CC-619

■ ● SIE C3: Causal Inference—Contributed Section on Statistics in Epidemiology, Biometrics Section

Chair(s): Yan Wang, UCLA

10:35 a.m. Mitigating the Effects of Artificial Censoring in Structural Nested Failure-Time Models—◆David Vock, University of Minnesota

10:50 a.m. The Causal Inference Paradigm for Network Meta-Analysis with Implications for Feasibility and Practice—◆Mireille E. Schnitzer, Université de Montréal; Russell Steele, McGill University; Michèle Bally, McGill University; Ian Shrier, McGill University

11:05 a.m. Causal Inference Under Graph-Based Interference—◆Shannon Terry, Nationwide; Benjamin Ogorek,

11:20 a.m. Causal Modeling for Disparity in Treatment Response—◆Chen-Pin Wang, Department of Epidemiology and Biostatistics

11:35 a.m. Causal Mediation Analysis with Measurement Error in Both Exposure and Mediator—◆Cheng Zheng, University of Wisconsin - Milwaukee

11:50 a.m. SimcAusal R Package: Conducting Transparent and Reproducible Simulation Studies of Causal Effect Estimation with Complex Longitudinal Data—◆Oleg Sofrygin, Kaiser Permanente Northern California/UC Berkeley; Mark Johannes van der Laan, UC Berkeley; Romain Neugebauer, Kaiser Permanente Northern California

12:05 p.m. Estimation of the Treatment Effect in the Presence of Interference in Cluster-Randomized Trials of Infectious Disease Prevention—◆Nicole Carnegie, University of Wisconsin - Milwaukee; Rui Wang, Harvard School of Public Health; Victor De Gruttola, Harvard School of Public Health

540 CC-620

■ ● SIE CP8: Genetic Epidemiology—Contributed

Section on Statistics in Epidemiology, Biometrics Section

Chair(s): Michael P. Jones, The University of Iowa

10:35 a.m. Detection of Shared Genetic Variants Between Complex Diseases While Preserving LD Structure—◆Julie Kobie, University of Pennsylvania Perelman School of Medicine; Sihai Zhao, University of Illinois at Urbana-Champaign; Yun R. Li, Children's Hospital of Philadelphia; Hakon Hakonarson, Children's Hospital of Philadelphia; Hongzhe Li, University of Pennsylvania

10:50 a.m. Extending Concepts of Gene-Environment Interaction Testing to a DNA Methylation Framework—◆Emily Slade, Harvard School of Public Health; Peter Kraft, Harvard School of Public Health

11:05 a.m. Rare-Variant Kernel Machine Test for Longitudinal Data for Population and Family Samples—◆Qi Yan; Wei Chen, University of Pittsburgh Children's Hospital of Pittsburgh; Nianjun Liu, The University of Alabama at Birmingham

11:20 a.m. Detection of Differentially Methylated Regions Using Kernel Distance and Scan Statistics—◆Fengjiao Hu, Georgia Regents University; Hongyan Xu, Georgia Regents University; Varghese George, Georgia Regents University

11:35 a.m. Testing for Gene-Environment Interactions Under Environment Misspecification—◆Ryan Sun, Harvard University; Xihong Lin, Harvard School of Public Health

11:50 a.m. From GWAS to Possible Therapeutic: The Story of a Prevalent Neurodegenerative Disease—◆David Fardo, University of Kentucky; Pete Nelson, University of Kentucky

12:05 p.m. PCA-Seq: Inferring Population Structure with Rare Variants from Sequencing Data—◆Jennifer Kirk, University of Washington; Timothy Thornton, University of Washington

541 CC-610

Weighting and Design Effects—Contributed Survey Research Methods Section, Government Statistics Section, International Indian Statistical Association

Chair(s): Ashley Clark, Indiana University

10:35 a.m. Survey Weighting Adjustments and the Design Effect: A Case Study—◆Golshid Chatrchi, Statistics Canada; François Brisebois, Statistics Canada

10:50 a.m. Assessing the Utility of Interviewer Observations for Nonresponse Adjustments in the National Health Interview Survey—◆James Dahlhamer, National Center for Health Statistics; Renee Gindi, National Center for Health Statistics; Chris Moriarity, National Center for Health Statistics; Chandra Erdman, U.S. Census Bureau

11:05 a.m. Geo-Sampling Weights and Design Effect—◆Cynthia Bland Augustine, RTI International; Jamie Ridenhour, RTI International; Jennifer Unangst, RTI International; Safaa Amer, RTI International

11:20 a.m. An Alternative Raking Approach to Reduce Design Effects—◆Nadarajasundaram Ganesh, NORC at the University of Chicago; Vicki Pineau, NORC at the University of Chicago; Kennon Copeland, NORC at the University of Chicago; Zhen Zhao,

- CDC; Philip J. Smith, CDC; Meena Khare, National Center for Health Statistics; David Yankey, CDC
- 11:35 a.m. Design, Sampling Weights, Reweighting for Unit Nonresponse, and Monitoring of the Texas Adolescent Tobacco and Marketing Surveillance (TATAMS) Study—◆Adriana Perez, The University of Texas Health Science Center; Christian D. Jackson, The University of Texas Health Science Center; Joanne Delk, The University of Texas Health Science Center; Keryn E. Pasch, The University of Texas at Austin; Pablo Martinez, The University of Texas Health Science Center; Raja I. Malkani, Texas Department of Insurance; Melissa Blythe Harrell, The University of Texas Health Science Center
- 11:50 a.m. Efficiency of Standard Regression Model-Based Ratio-Synthetic Estimators in Sample Surveys Combining Time Series and Cross-Sectional Data—◆Prabhakar Ghangurde,
- 12:05 p.m. **Floor Discussion**

542 CC-605 Society and Networks—Contributed

Social Statistics Section, Government Statistics Section

Chair(s): Ron S. Jarmin, U.S. Census Bureau

- 10:35 a.m. Estimating Personal Network Size for Respondent-Driven Sampling Data—◆Katherine McLaughlin, UCLA; Mark Handcock, UCLA
- 10:50 a.m. Social Interaction in Activity-Based Online Communities—◆Emma Spiro, University of Washington; Zack Almquist, University of Minnesota
- 11:05 a.m. Application of the Local GWESP Statistic in Exponential Random Graph Models for Add Health Social Network Data—◆Junchi Guo; Michael Larsen, The George Washington University
- 11:20 a.m. Network Time Series—◆Cheng You, Penn State; Dennis Lin, Penn State
- 11:35 a.m. Dynamic Social Network Analysis of Smoking Opinion—◆Gregory Lambert, Sandia National Laboratories; Thomas Moore, Sandia National Laboratories; Patrick Finley, Sandia National Laboratories; Nancy Brodsky, Sandia National Laboratories; Stephen Verzi, Sandia National Laboratories; Katherine Cauthen, Sandia National Laboratories
- 11:50 a.m. Selective Formation of Social and Spatial Groups at a Massive Gathering—◆Ian Barnett, Harvard University; Jukka-Pekka Onnela, Harvard University; Tarun Khanna, Harvard University
- 12:05 p.m. Did the Military Interventions in the Mexican Drug War Increase Violence?—◆Valeria Espinosa, Google; Donald B. Rubin, Harvard University

543 CC-613 Model Selection Methods for High-Dimensional Data II—Contributed

Biometrics Section

Chair(s): Patrick Breheny, The University of Iowa

- 10:35 a.m. Sample Size Calculation While Controlling False Discovery Rate for Differential Expression Analysis with RNA-Seq Experiments—◆Ran Bi, Iowa State University; Peng Liu, Iowa State University
- 10:50 a.m. False Discovery Rate Control for Spatial Data—◆Alexandra Chouldechova, Carnegie Mellon University
- 11:05 a.m. Reproducibility Assessment for Feature Selection in High-Dimensional Data—◆Chris Fraley, Insilicos LLC; Qunhua Li, Penn State
- 11:20 a.m. Adaptive Feature Screening via Backward Elimination Distance Correlation—◆Guifang Fu, Utah State University
- 11:35 a.m. Flexible Multivariate Bayesian Variable Selection: Application to DNA Methylation Induced by Air Pollution—◆Kyu Ha Lee, Harvard School of Public Health; Mahlet Tadesse, Georgetown University; Brent Coull, Harvard University
- 11:50 a.m. Sequential Multiple Testing for Variable Selection to Control Error Rate—◆Hailu Chen, UC Riverside; Cui Xiping, UC Riverside
- 12:05 p.m. Joint Modeling of Multiplatform Omics Data with the Application to a Lung Adenocarcinoma Study—◆Xuebei An, MD Anderson Cancer Center; Jianhua Hu, MD Anderson Cancer Center; Kim-Anh Do, MD Anderson Cancer Center

544 CC-614 Mixed Effects Models for Longitudinal Data—Contributed

Biometrics Section, ENAR, Section on Statistics and the Environment, SSC

Chair(s): Juhui James Jiao, J&J PRD

- 10:35 a.m. Covariance Structures for Nested Repeated Measures Designs—◆Jeffrey Burton, Pennington Biomedical Research Center; Robbie A. Beyl, Pennington Biomedical Research Center; William Johnson, Pennington Biomedical Research Center
- 10:50 a.m. Estimators of Regression Coefficients in Models for Time Series of Counts—◆Rachel Altman, Simon Fraser University; Abdollah Safari, Simon Fraser University; Brian Leroux, University of Washington
- 11:05 a.m. Combining Generalized Linear Mixed Modeling and Random Effects Modeling to Provide a Comprehensive Understanding of Individual Level

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- Change in Probability of Outcome Over Time—
◆Christopher Pretz, Craig Hospital
- 11:20 a.m. A Comparison of Bootstrap Methods for Mixed Model Analysis of Longitudinal Data—◆Mark Reiser, Arizona State University; Xiao Wang, Arizona State University
- 11:35 a.m. Conditional Modeling of Longitudinal Data with Terminal Event—◆Shengchun Kong, Purdue University; Bin Nan, University of Michigan; John D. Kalbfleisch, University of Michigan
- 11:50 a.m. Power Analysis for the Test on the Location of Quadratic Growth Curves—◆Wanchunzi Yu, Arizona State University; Mark Reiser, Arizona State University
- 12:05 p.m. **Floor Discussion**

545 CC-211 Technology and Big Data in the Classroom— Contributed

Section on Statistical Education

Chair(s): Zenaida Mateo, University of Manitoba

- 10:35 a.m. Keeping It Real: Using Big Data and Interactive Visualization Tools in the Classroom—◆Mia Stephens, SAS Institute; Rob Carver, Stonehill College
- 10:50 a.m. What's in a Name? The Evolution of Statistical Terms Such as Analytics, Big Data, and Data Science—
◆John McKenzie, Babson College
- 11:05 a.m. Dynamite Plots and Deceit—◆Steven Millard, Probability, Statistics, & Information; Jane Shofer, University of Washington
- 11:20 a.m. Demonstration of Statistical Concepts with Animated Graphics and Simulations in R—◆Andrej Blejec, National Institute of Biology
- 11:35 a.m. IntRo: Software for Introductory Statistics—◆Eric Hare, Iowa State University; Andrea Kaplan, Iowa State University
- 11:50 a.m. Teaching Introductory Regression with R Using Package Regclass—◆Adam Petrie,
- 12:05 p.m. Teaching Statistical Computing Leveraging the Github Ecosystem—◆Colin Rundel,

546 CC-616 Adaptive Design III—Contributed Biopharmaceutical Section

Chair(s): LingLing Han,

- 10:35 a.m. Interim Equivalence Test with Application in Drug Development—◆Yansong Cheng,

- 10:50 a.m. Issues in Planning and Conduct of Sample Size Re-Assessment in Medical Device Trials—◆Laura Lu, FDA/CDRH
- 11:05 a.m. An ROC-Based Approach to Interim Go/No-Go Decision-Making and Design Optimization in Late Phase Clinical Trials—◆Deli Wang, AbbVie; Cui Lu, AbbVie; Lanju Zhang, AbbVie; Bo Yang, AbbVie Pharmaceutical Research & Development
- 11:20 a.m. Recurrent Event Analyses Illustrated in the Pivotal Exacerbation Study SPARK in the Respiratory Area—◆Hua Li, Novartis; Paul Gallo, Novartis Pharmaceuticals; Richard Cook, University of Waterloo
- 11:35 a.m. Robust Optimal Interval Design with an Application to Dose-Finding in Drug-Combination Trials—
◆Ruitao Lin, The University of Hong Kong; Guosheng Yin, The University of Hong Kong
- 11:50 a.m. Multiple Comparisons with Two Controls for Ordered Categorical Responses—◆Ping Yang, The Chinese University of Hong Kong; Siu Hung Cheung, The Chinese University of Hong Kong; Wai Yin Poon, The Chinese University of Hong Kong
- 12:05 p.m. **Floor Discussion**

547 CC-401 New Developments in Machine Learning— Contributed

Section on Statistical Learning and Data Mining

Chair(s): Wesley Tansey, The University of Texas at Austin

- 10:35 a.m. A Variational EM Approach for Fitting Mixed Membership Models with Rank Data—◆Y. Samuel Wang, University of Washington; Elena Erosheva, University of Washington
- 10:50 a.m. Use of Flow Field Forecasting for Bivariate Responses—◆Kyle Caudle, South Dakota School of Mines and Technology; Michael Frey, Bucknell University; Patrick Fleming, South Dakota School of Mines and Technology
- 11:05 a.m. Learning Statistical Manifolds for Subsequent Inference—◆Michael Trosset, Indiana University; Carey E. Priebe, The Johns Hopkins University
- 11:20 a.m. Kernel Partial Correlation with an Application to Single Cell Sequencing Data Analysis—◆Ji Hwan Oh, Purdue University; Hyonho Chun; Faye Zheng, Purdue University; Rebecca Doerge, Purdue University
- 11:35 a.m. Regression Estimation Diagnostics Measures for High-Dimensional Regression—◆Yanjia Yu, University of Minnesota, Twin Cities; Yuhong Yang, University of Minnesota, Twin Cities

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

11:50 a.m. Measuring the Convergence Rate of Random Forests via the Bootstrap—◆ Miles Lopes, UC Berkeley

12:05 p.m. Statistics on Data Streams with Applications on Mining High-Impact Computer Network Events—◆ Shrijita Bhattacharya, University of Michigan; Stilian Stoev, University of Michigan; George Michailidis, University of Florida; Michael Kallitsis, Merit Network, Inc.

548 CC-4C1 Network Analysis—Contributed

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

Chair(s): Ashley Petersen, University of Washington

10:35 a.m. Two Sample Mean Test in High-Dimensional Compositional Data—◆ Yuanpei Cao, University of Pennsylvania; Wei Lin, Peking University; Hongzhe Li, University of Pennsylvania

10:50 a.m. Using Data Depth vs. Depth Classifier for Detecting Communities in Networks—◆ Yahui Tian, The University of Texas at Dallas

11:05 a.m. Analysis of the Formation of the Structure of Social Networks Using Latent Space Models for Ranked Dynamic Networks—◆ Daniel Sewell, University of Illinois at Urbana-Champaign; Yuguo Chen, University of Illinois at Urbana-Champaign

11:20 a.m. Nonparametric Network Denoising—◆ Yuan Zhang, University of Michigan; Elizaveta Levina, University of Michigan; Ji Zhu, University of Michigan

11:35 a.m. On Additive Partial Correlation Operator and Nonparametric Estimation of Graphical Models—◆ Kuang-Yao Lee, Yale University; Bing Li, Penn State; Hongyu Zhao, Yale School of Public Health

11:50 a.m. Network Reconstruction for Ordinary Differential Equations—◆ Shizhe Chen, University of Washington; Daniela Witten, University of Washington; Ali Shojaie, University of Washington

12:05 p.m. Directed Network Modeling Problems for High-Dimensional Data—◆ Sung Won Han, New York University

549 CC-617 Power and Sample Size II—Contributed Biopharmaceutical Section

Chair(s): Grace Liu, Johnson & Johnson, Janssen R&D

10:35 a.m. Using Mixture Model for the Time-to-Event Data in Oncology Studies—◆ Weichao Bao, Novartis Oncology; Jason Liao, Novartis Pharmaceuticals

10:50 a.m. Testing the Difference in the Cumulative Risk

Distributions of Two Events—◆ Sujata Patil, Memorial Sloan Kettering Cancer Center; Deborah Kuk, Memorial Sloan Kettering Cancer Center

11:05 a.m. A Population-Enrichment Adaptive Design Strategy for Vaccine Efficacy Trial—◆ Shu-Chih Su, Merck Research Laboratories; Ivan S.F. Chan, Merck Research Laboratories

11:20 a.m. Joint Analysis of Two Distinct but Interrelated Disease Processes in Multiple Sclerosis—◆ Tristan Massie, FDA

11:35 a.m. Metrics for Comparison of Phase I Dose-Finding Designs—◆ Hong Wang, University of Pittsburgh Cancer Institute

11:50 a.m. Statistical Approaches to Outliers Test in Bioassay Analytical Testing Data—◆ Lingmin Zeng, MedImmune; Binbing Yu, MedImmune; Harry Yang, MedImmune

12:05 p.m. Multiplicity Adjustment for Noninferiority Design—◆ Jing Zhao, Merck Research Laboratories

550 CC-618 ● Multiplicity II—Contributed Biopharmaceutical Section

Chair(s): Wei Zhang, FDA

10:35 a.m. Conditional Type I Error and Conditional Power of Historical Control Studies—◆ Bingzhi Zhang, Sanofi; Hui Quan, Sanofi

10:50 a.m. Estimation of Biomarker Responses in Presence of Missing Biomarker Status—◆ Shengyan Hong,

11:05 a.m. Simultaneous Tolerance Intervals and Prediction Intervals for Some Multivariate Normal Populations—◆ Malick Mbodj, FDA

11:20 a.m. A Bayesian Analysis of Disease Modification Using Doubly Randomized Delayed-Start and Matched-Control Design Paradigms—◆ Ibrahim Turkoz, Janssen R&D; Marc Sobel, Temple University

11:35 a.m. Measurement of Average Bioequivalence or Noninferiority—◆ Wanjie Sun, FDA; Stella Grosser, FDA; Yi Tsong, FDA

11:50 a.m. Composite Score-Based Decision Rule as a Predictive Signature for Patient Subgroup Identification—◆ Xin Huang; Yan Sun, AbbVie; Lu Tian, Stanford University; Viswanath Devanarayan, AbbVie

12:05 p.m. Floor Discussion

Contributed Poster Presentations**10:30 a.m.—12:20 p.m.****551 CC-4B****Contributed Oral Poster Presentations: Section on Statistical Graphics—Contributed Section on Statistical Graphics**

Chair(s): Lan Xue, Oregon State University

Section on Statistical Graphics

- 1 Multi-Layered Networks Estimation with Penalized Maximum Likelihood—◆Jiahe Lin; Sumanta Basu, University of Michigan; George Michailidis, University of Florida; Moulinath Banerjee, University of Michigan
- 2 Introduction and Application of a New Type of Jittered Scatter Plot: The Line-Up Jittered Scatter Plot—◆Charlie C. Liu, Kythera Biopharmaceuticals, Inc.; Todd M. Gross, Kythera Biopharmaceuticals, Inc.

552 CC-4B**Contributed Oral Poster Presentations: Section on Statistical Learning and Data Mining—Contributed****Section on Statistical Learning and Data Mining**

Chair(s): Lan Xue, Oregon State University

Section on Statistical Learning and Data Mining

- 3 A B-Spline Hidden Markov Clustering Model with an Application to Wikipedia Elite Editor Activities Modeling—◆Wutao Wei,
- 4 Gaussian Processes for Advanced Warning of Patient Deterioration—◆Glen Colopy, University of Oxford; Stephen J. Roberts, University of Oxford; David A. Clifton, IBME - University of Oxford
- 5 Projection Pursuit Classification Random Forest—◆Natalia A. Da Silva, Iowa State University; Eun-Kyung Lee, Ewha Womans University; Dianne Cook, Iowa State University
- 6 Inference on Mean Treatment Effects After Model Selection—◆Jingshen Wang, University of Michigan
- 7 Data Mining to Explore Trends in Undergraduate Retention and Graduation Rates at NKU—◆Mark Lancaster, Northern Kentucky University; Kacie Kotnik, Northern Kentucky University; Nathaniel Hudson, Northern Kentucky University; Amy Becknell, Northern Kentucky University; Madhura Kulkarni, Northern Kentucky University; Maureen Doyle, Northern Kentucky University; Kristi Haik, Northern Kentucky University; Joseph Nolan, Northern Kentucky University
- 8 Climate Changes and Agricultural Production: A Big Data Analysis Approach—◆Hsi-Guang Sung, Microsoft; Elva Chen, Santa Clara Univeristy
- 9 Fungi Identify the Geographic Origin of Dust Samples—◆Neal Grantham, North Carolina State University;

Brian J. Reich, North Carolina State University; Krishna Pacifici, North Carolina State University; Eric Laber, North Carolina State University; Holly L. Menninger, North Carolina State University; Jessica B. Henley, University of Colorado; Albert Barberan, University of Colorado; Jonathan W. Leff, University of Colorado; Noah Fierer, University of Colorado; Robert Dunn, North Carolina State University

- 10 Effect of Variable Selection Bias in Logistic Regression: Simulation Study—◆Tristan Grogan; David Elashoff, UCLA
- 11 An Approach for Constructing Regression Tree on Interval-Valued Variables—◆Asanao Shimokawa, Tokyo University of Science; Yohei Kawasaki, University of Shizuoka; Etsuo Miyaoka, Tokyo University of Science
- 12 Batch Sampling for Computer Experiments: Methods and Simulation—◆Aaron Quan, The Ohio State University
- 13 Comparing Clustering Algorithms and Transformation Methods for Categorical Data—◆Tingting Zhang, Press Ganey Associates; Jenhao Cheng, Press Ganey Associates
- 14 Online Statistical Learning Algorithms—◆Joshua Day, North Carolina State University
- 15 Choosing the Number of Clusters in Monothetic Clustering—◆Tan V. Tran, Montana State University; Mark C. Greenwood, Montana State University
- 16 Reduced-Rank Signal Extraction Approach for Sparse Multivariate Response Regression—◆Xin Qi, Georgia State University; Ruiyan Luo, Georgia State University
- 17 Maximum Likelihood Estimation of the Mixture of Log-Concave Densities with Application to Mixture Regression—◆Hao Hu, North Carolina State University
- 18 Discovering and Predicting Influential Users During Urgent Diffusion Events on Social Media—◆Hechao Sun, University of Maryland Robert H. Smith School of Business; Shawn Mankad, University of Maryland; William Rand, University of Maryland

553 CC-4B**Contributed Oral Poster Presentations: Section on Statistical Computing—Contributed Section on Statistical Computing**

Chair(s): Lan Xue, Oregon State University

Section on Statistical Computing

- 19 Functional Modeling of Longitudinal Data with the SSM Procedure—◆Rajesh Selukar, SAS Institute
- 20 Advances in the Development of a High-Level Matrix Language—◆Luis Frank, University of Buenos Aires; Guillermo Frank, University of Buenos Aires
- 21 A Study of the Effects of Correlation and Prevalent Rate Distribution in the Item List of Non-Random Response Models: ICT, DICT, SSC—◆Jay Schaffer, University of Northern Colorado; Caroline Emsermann, University of Northern Colorado
- 22 Statistical Characteristics of Coverage Optimization

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- Based on a Sample Mean Approach—◆Martin Levy, University of Cincinnati; James J. Cochran, The University of Alabama; Zhiyuan Dong, Integral Analytics
- 23 Sample Size and Unusual Data Points—◆Morteza Marzjarani,
- 24 Time-Varying Dynamic Orthogonal Component Analysis—◆Xiao Wang; Mohsen Pourahmadi, Texas A&M University
- 25 Nonparametric Modeling and Break-Point Detection for Time Series of Counts—◆Qi Gao, UC Davis; Thomas C.M. Lee, UC Davis; Chun Yip Yau, Chinese University of Hong Kong
- Section on Statistical Learning and Data Mining**
- 26 Trend-Filtered Projections for PCA—◆Liubo Li, The Ohio State University; Vincent Vu, The Ohio State University
- Section on Statistical Computing**
- 27 Extended Transformed-Transformer (ET^T) Method for Generating Families of Continuous Distributions—◆Eno Akarawak, University of Lagos; Ismail Adedeji Adeleke, University of Lagos; Raymond Okonkwo Okafor, University of Lagos
- 28 Sample Size Determination for Complex Longitudinal Trials via Monte Carlo Simulation—◆Simcha Pollack, St. Francis Hospital; Robert Fireworker, St. John's University Tobin College of Business; Leonard Presby, William Paterson University
- 29 Variable Selection for Adaptive MAVE—◆Hossein Moradi Rekabdarkolae, Virginia Commonwealth University; Qin Wang, Virginia Commonwealth University; Edward Boone, Virginia Commonwealth University
- 30 The Multivariate Extended Skew Normal Distribution and Its Quadratic Forms—◆Weizhong Tian, New Mexico State University; Tonghui Wang, New Mexico State University; Cong Wang, New Mexico State University
- 31 A Sensitivity Analysis of Different Regression Models for Competing Risks Data Through a Simulation Study—◆Yuliang Liu, The University of Alabama at Birmingham; Charity J. Morgan, The University of Alabama at Birmingham; Gary R. Cutter, The University of Alabama at Birmingham
- 34 Female Genital Circumcision and the Risk of HIV Infection Among the Kikuyu People of Kenya: A Propensity Scores Analysis—◆Alula Hadgu, CDC; Maya R. Sternberg, CDC
- 35 A Novel Empirical Bayes Mixture Model for Pharmacovigilance Research Using the FDA Adverse Event Reporting System—◆Pengyue Zhang, Indiana University
- 36 Assessing Bias Due to Competing Risk of Death in Traditional Survival Analysis of the Longitudinal Health and Retirement Study of the Elderly U.S. Population—◆Jia Li, NIOSH; Sharon Silver, NIOSH; Toni Alterman, NIOSH; Marie Sweeney, NIOSH; Walter Alarcon, NIOSH
- 37 Estimating Polio Campaign Coverage and Immunity Status from Dose Histories—◆Arend Voorman, Bill and Melinda Gates Foundation; Alexander Upfill-Brown, Institute for Disease Modeling; Hil Lyons, Institute for Disease Modeling; Guillaume Chabot-Couture, Institute for Disease Modeling
- 38 Measuring Sexual Orientation and Discordant Sexual Identity Among U.S. Adults—◆Christopher Johnson, CDC; Tricia Martin, CDC; Emeka Oraka, CDC; Muazzam Nasrullah, CDC; Elizabeth DiNenno, CDC
- 39 A Bayesian Model for Identifying and Predicting the Spatio-Temporal Dynamics of Urban Insect Infestations—◆Erica Billig, University of Pennsylvania; Michael Levy, University of Pennsylvania; Jason Roy, University of Pennsylvania
- 40 Some Hybrid Approaches to Prediction of a Binary Outcome—◆Ho-Lan Peng, The University of Texas Health Science Center; Chih-Hsien Wu; Wenyaw Chan, The University of Texas School of Public Health
- 41 Multi-State Model with Missing Continuous Covariate—◆Wenjie Lou, University of Kentucky; Richard J. Kryscio, University of Kentucky
- 42 Goodness-of-Fit Test for Multinomial Regression Model in NUN Study—◆Zhiheng Xie; Richard J. Kryscio, University of Kentucky
- 43 Efficiency and Model Selection Compared Between Nested Case Control and Full Cohort Incidence Studies—◆Reid Landes, Radiation Effects Research Foundation; Daisuke Haruta, Radiation Effects Research Foundation
- 44 Comparison of Methods for Adjustment of Confounding by Indication in Assessing Respiratory Syncytial Virus (RSV) Immunoprophylaxis Impact on Childhood Asthma—◆Tebeb Gebretsadik, Vanderbilt University School of Medicine; Kecia Carroll, Vanderbilt University; Gabriel Escobar, Kaiser Permanente; Pingsheng Wu, Vanderbilt University; Sherian Xu Li, Kaiser Permanente Division of Research; Eileen M. Walsh, Kaiser Permanente Division of Research; Edward F. Mitchel; Chantel Sloan, Brigham Young University; William D. Dupont, Vanderbilt University; Tina V. Hartert, Vanderbilt University

554 CC-4B

Contributed Oral Poster Presentations: Section on Statistics in Epidemiology—Contributed Section on Statistics in Epidemiology

Chair(s): Lan Xue, Oregon State University

Section on Statistics in Epidemiology

- 32 Likelihood-Based Inference on Weakly Interacting State-Space Processes—◆Joon Ha Park,
- 33 Clustering Technique Applied to a Case-Control Study of the Association of Emergency Department Respiratory Admissions and School Outdoors and Indoors Exposures, New York State—◆JeanPierre Munsie, CEH/New York

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 45 Network Dynamics of Physician Care Networks—◆Figaro Loresto, The University of Texas Medical Branch; Daniel Jupiter, The University of Texas Medical Branch; Deepak Adhikari, The University of Texas Medical Branch; Taylor Sohn Riall, The University of Texas Medical Branch; Yong-Fang Kuo, The University of Texas Medical Branch
- 46 Bootstrap Estimates of Synthetic Cohort Incidence Estimates—◆Bryan Sayer, Social & Scientific Systems
- 47 A Piecewise Exponential Change Point Model to Estimate the Duration of the Effect of World Trade Center Exposure on Incident Diagnoses of Chronic Rhinosinusitis—Charles B. Hall, Albert Einstein College of Medicine; ◆Jessica Weakley, Montefiore Medical Center; Xiaoxue Liu, Montefiore Medical Center; Rachel Zeig-Owens, Montefiore Medical Center; Mayris Webber, Montefiore Medical Center; David Prezant, Fire Department of the City of New York
- 48 Considerations in Poisson and Negative Binomial Model Selection for Identification of Risk Factors for Caries Development in Potentially Heterogeneous High-Risk Populations—◆Keyla Pagan-Rivera; Deborah Dawson, The University of Iowa; Karin Weber-Gasparoni, The University of Iowa; John J. Warren, The University of Iowa; Katherine W.O. Kramer, Health Integrity LLC; Teresa A. Marshall, The University of Iowa; David C. Johnsen, The University of Iowa
- 49 Using the Parental Phenotypes in Case-Parent Studies—◆David M. Umbach, NIEHS/NIH; Min Shi, National Institute of Environmental Health Sciences; Clarice R. Weinberg, NIH/NIEHS
- 50 A Comparison of Methods to Address Unmeasured Confounding When Internal or External Validation Data Are Available—◆Dane R. Van Domelen, Emory University; Robert H. Lyles, Emory University; Sunni L. Mumford, Eunice Kennedy Shriver National Institute of Child Health and Human Development; Emily Mitchell, NICHD; Enrique F. Schisterman, NIH
- 51 Meta-Analysis Comparing National Children's Study Values to Comparable Literature Values—◆John Rogers, Westat
- 52 Survival Disparities Among Asian-American and White Women with Cervical Cancer—◆Van T. Nghiem, The University of Texas School of Public Health; Kalatu R. Davies, MD Anderson Cancer Center; Wenyaw Chan, The University of Texas School of Public Health; Zuber D. Mulla, Texas Tech University Health Sciences Center; Scott B. Cantor, MD Anderson Cancer Center
- 53 Comparison of Confounder Adjustment Methods for the Safety of Emerging Treatment with Group Sequential Monitoring—◆Xuesheng Xu, Kaiser Permanente Colorado; Susan Shetterly, Kaiser Permanente Colorado; Andrea Cook, Group Health Research Institute; Marsha Raebel, Kaiser Permanente Colorado; Sunali Goonesekera, Harvard Medical School/Harvard Pilgrim Health Care Institute; Azadeh Shoaibi, FDA; Jason Roy, University of Pennsylvania; Bruce Fireman, Kaiser Permanente Northern California
- 54 Prevalence of Blood Lead Level (BLL) Among School Children in Evansville, Indiana, and Its Impact on School Performance—◆Shailendra N. Banerjee, National Center for Environmental Health; Mary Jean Brown, National Center for Environmental Health; Randal Young, Agency for Toxic Substances and Disease Registry
- 55 Association Between Ozone and Mortality Among Asthma Patients—◆Mayada Ali Aljehani, Loma Linda University; Mark Ghamsary, Loma Linda University; Keiji Oda, Loma Linda University

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CC-4B

Contributed Oral Poster Presentations: Section on Statistics in Genomics and Genetics—Contributed

Section on Statistics in Genomics and Genetics

Chair(s): Lan Xue, Oregon State University

Section on Statistics in Genomics and Genetics

- 56 Pre-Processing Steps for Agilent MicroRNA Arrays: Does the Order Matter?—◆Qin Zhou, Memorial Sloan Kettering Cancer Center; Rebecca Huang, Columbia University; Li-Xuan Qin, Memorial Sloan Kettering Cancer Center
- 57 Rooting Phylogenetic Trees Through Bayesian Models of DNA Sequence Evolution—◆Sarah Heaps,
- 58 Permutation-Based Genomewide Association Test for Case-Dependent Quantitative Trait—◆Wei Xue, The University of North Carolina at Chapel Hill
- 59 Selecting the Dimension of Population Structure Models Using Hardy-Weinberg Equilibrium as a Measure of Goodness-of-Fit—◆Wei Hao, Princeton University
- 60 Application of Iterated Curve Registration to Single Molecule Genomics—◆Subhrangshu Nandi, University of Wisconsin - Madison; Michael Newton, University of Wisconsin; David C. Schwartz, University of Wisconsin - Madison
- 61 Latent Class Quantitative Trait Loci Mapping—◆Shuyun Ye, University of Wisconsin - Madison; Christina Kendzioriski, University of Wisconsin
- 62 Issues in the Statistical Analysis in Metabolomics Data with Application to Pressure-Overloaded and Infarcted Mouse Hearts—◆Jasmit Shah; Guy N. Brock, University of Louisville; Shesh N. Rai, University of Louisville
- 63 Epistasis Analysis for Temporal Quantitative Trait with Both GWAS and Next-Generation Sequencing Data—◆Dung-Yang Lee, The University of Texas Health Science Center; Craig Hanis, The University of Texas Health Science Center; Momiao Xiong, The University of Texas Health Science Center
- 64 Recalibration of Genomic Risk Prediction Models in Prostate Cancer to Improve Individual-Level Predictions—◆Voleak Choeurng, GenomeDx Biosciences; Bin Luo, University of Western Ontario; Kasra Yousefi, GenomeDx Biosciences; Zaid Haddad, GenomeDx Biosciences; Heesun Shin, GenomeDx Biosciences; Ashley Ross, Johns Hopkins Medical Institution; Edward

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Schaeffer, Johns Hopkins Medical Institution; Robert Den, Thomas Jefferson University; Adam Dicker, Thomas Jefferson University; Jeffrey Karnes, Mayo Clinic; Elai Davicioni, GenomeDx Biosciences; Darby Thompson, EMMES Canada

- 65 Pattern Identification of SNP-SNP Interactions—◆ Hui-Yi Lin, Moffitt Cancer Center; Dung-Tsa Chen, Moffitt Cancer Center
- 66 Blocking and Randomization Improve Prediction Accuracy in MicroRNA Array—◆ Huei-Chung Huang, Memorial Sloan Kettering Cancer Center; Qin Zhou, Memorial Sloan Kettering Cancer Center; Li-Xuan Qin, Memorial Sloan Kettering Cancer Center
- 67 Fast Spatial Ancestry Using Microsatellites: An Update to OriGen—◆ John Michael Ranola,
- 68 Consensus and Differential GO Pathway Analysis and Visualization When Multiple Transcriptomic Studies or Conditions Are Jointly Analyzed—◆ Chien-Wei Lin, University of Pittsburgh; George C. Tseng, University of Pittsburgh
- 69 A Genetic Association Study of Osteopontin and Metabolic Syndrome Using Structural Equations Modeling—◆ Julie Tackett, Research Consultant
- 70 Identification of Core Subset of Gene-Sets Associated with a Continuous Phenotype—◆ Shabnam Vatanpour, University of Alberta
- 71 Haplotype Phasing and Identifying Allele-Specific Expression Using MCMC—◆ Benjamin Deonovic, The University of Iowa; Jason Weirather, The University of Iowa; Kin Fai Au, The University of Iowa

556 **CC-4B**
Contributed Oral Poster Presentations: SSC—Contributed

SSC

Chair(s): Lan Xue, Oregon State University

SSC

- 72 Assessing the Interpretability of Different Pooling Methods Within a Meta-Analysis—◆ Victoria Borg Debono, McMaster University; Jason Busse, McMaster University; Li Wang, McMaster University; Lehana Thabane, McMaster University; Rachel Couban, McMaster University

557 **CC-4B**
Contributed Oral Poster Presentations: Host Chapter-Puget Sound—Contributed

Host Chapter-Puget Sound

Chair(s): Lan Xue, Oregon State University

Host Chapter-Puget Sound

- 73 Evaluation of Methods for Calling, Phasing, and Imputing Genotypes in Dairy Cows—◆ David Whitney, University of Washington; Michael Keehan, Livestock Improvement Incorporation; Brian Browning, University of

Washington

558 **CC-4B**

Contributed Oral Poster Presentations: International Chinese Statistical Association—Contributed

International Chinese Statistical Association

Chair(s): Lan Xue, Oregon State University

International Chinese Statistical Association

- 74 Using Dissimilarity Information to Cluster SNP Sets and Test for Disease Association—◆ Chuhsing Kate Hsiao, National Taiwan University; Charlotte Wang, National Taiwan University; Jung-Ying Tzeng, North Carolina State University; Wen-Hsin Kao, National Taiwan University
- 75 Empirical Likelihood Inference for Partially Linear Models—◆ Haiyan Su, Montclair State University

559 **CC-4B**

Contributed Oral Poster Presentations: Korean International Statistical Society—Contributed

Korean International Statistical Society

Chair(s): Lan Xue, Oregon State University

Korean International Statistical Society

- 76 Discriminative Ability of Classification Methods with High-Dimensional Data—◆ Miriam Elman, Oregon Health & Science University; Dongseok Choi, Oregon Health & Science University

560 **CC-4B**

Contributed Oral Poster Presentations: Section on Statistical Education—Contributed

Section on Statistical Education

Chair(s): Lan Xue, Oregon State University

Section on Statistical Education

- 77 Development and Initial Testing of the Online Undergraduate Statistics Inventory—◆ Raymond Mooring, Analysis Made Easy

561 **CC-4B**

Contributed Oral Poster Presentations: WNAR—Contributed

WNAR

Chair(s): Lan Xue, Oregon State University

WNAR

- 78 A Mixed Linear Model Method for Association Testing on the X Chromosome in Samples with Unknown Structure—◆ Caitlin McHugh, University of Washington; Timothy Thornton, University of Washington

Section on Statistics in Genomics and Genetics

- 79 Incorporating Nonpedigree Estimates of Relatedness in Modeling the Approximate Likelihood of Pedigree Data for Linkage Analysis—◆Fiona Grimson,

WNAR

- 80 Illustrating, Quantifying, and Correcting for Bias in Post-Hoc Analysis of Gene-Based Rare Variant Tests of Association—◆Kelsey Grinde, University of Washington

562**CC-4B****SPEED: Topics in Statistics in Sports and Education, Part 2—Contributed****Section on Statistical Education, Section on Statistics in Sports**

Chair(s): Catherine Crespi, UCLA

Section on Statistics in Sports

- 1 Major League Baseball Free Agent Fits: Examining Production Output Distributions Through Simulation—◆Pamela Badian-Pessot, Smith College; Daniel Aucoin, University of Massachusetts Amherst; Austin Champagne, University of Massachusetts Amherst
- 2 The Winner of the 2014 Heisman Memorial Trophy Is .—◆Jessica Sanders; Tracy Morris, University of Central Oklahoma
- 3 Survive and Adviance—◆Caitlin Phelps, North Carolina State University; Nicholas Kapur, North Carolina State University; Marschall Furman, North Carolina State University
- 4 Punt, Pass, or Kick? What the Numbers Say You Should Do—◆Mary Bayles; Ariel Webb, University of Central Oklahoma; Yuting Wang Manley, University of Central Oklahoma; Tracy Morris, University of Central Oklahoma
- 5 Ranking NCAA Football Teams Through Expected Points—◆Zachary Knowlton; Gilbert Fellingham, Brigham Young University
- 6 NFL Play Predictions—◆William Burton, North Carolina State University; Michael Dickey, North Carolina State University
- 7 The Quality of Pitches in Major League Baseball—◆Philippa Swartz, Simon Fraser University; Michael Grosskopf, Simon Fraser University; Derek Bingham, Simon Fraser University; Tim Swartz, Simon Fraser University

Section on Statistical Education

- 8 Regression Hoochie Koo: Using Music to Reinforce Regression Concepts—◆Steven Patch, The University of North Carolina at Asheville
- 9 The Relationship Between Verbal Reasoning Skills and Statistical Literacy in Undergraduate Students—◆Elizabeth Johnson, George Mason University; Diana Keosayian, Wilkes University
- 10 A Randomized Trial in a Massive Online Open Course Shows People Don't Know What a Statistically Significant Relationship Looks Like, but They Can Learn—◆Aaron Fisher, The Johns Hopkins University; G. Brooke

Anderson, Colorado State University; Roger Peng, The Johns Hopkins University; Jeff Leek, The Johns Hopkins University

- 11 Reinforcing Experimental Design with Activities—◆Paul Stephenson, Grand Valley State University; Phyllis Curtiss, Grand Valley State University; Mary Richardson, Grand Valley State University; Diann Reischman, Grand Valley State University

Social Statistics Section

- 12 Course Enrollment Optimization System in the Insufficient Teaching Resources—◆Guanyu Hu,

Section on Statistical Education

- 13 Changing How Students Think About Statistics—◆Paul Plummer, University of Central Missouri
- 14 Methods for Improving Student Success in Introductory Statistics Courses at Oregon State University—◆Katie Jager, Oregon State University; Juliann Moore, Oregon State University
- 15 Using the Raspberry Pi and Arduino for Teaching Data Analysis—◆Benjamin Ogorek,
- 16 Are Pie Charts Really So Bad? An Experiment on Data Visualization—◆Michael Posner, Villanova University; Joseph Reiter, Villanova University
- 17 Integrating Statistics Across Disciplines: A Secondary School Case Study—◆Kyle Barriger, Castilleja School
- 18 Statistics Bootcamp: Enhancing Student Performance During the First Year of Graduate Training in Biostatistics—◆Jo Wick, University of Kansas Medical Center; Devin C. Koestler, University of Kansas Medical Center

Contributed Poster Presentations**11:35 a.m.—12:20 p.m.****563****CC-4B****SPEED: Issues in Sample Survey and Government Statistics, Part 2—Contributed****Government Statistics Section**

Chair(s): Xiaochun Li,

Government Statistics Section

- 1 Who Are the Nonvoters?—◆Bingchen Liu; Lynne Stokes, Southern Methodist University
- 2 Census Tract-Level Disparities: Examining Food Swamps and Food Deserts—◆Lucy D'Agostino McGowan, Vanderbilt University; Alice Toll, Vanderbilt University
- 3 Exploring the Modifiable Areal Unit Problem—◆Talha Ali, Yale School of Public Health; Owais Gilani, University of Michigan School of Public Health
- 4 Determinants of Poverty in U.S.—◆Guillermo Basulto-Elias, Iowa State University; Natalia A. Da Silva, Iowa State University

Section on Statistics in Marketing

- 5 An Assessment of Developmental Trajectory of Baby Boomers in the United States: A Latent Growth Curve Modeling Application—◆Kranti Dugar, University of Denver

Government Statistics Section

- 6 Optimal and Coherent Data Visualization in R for the Empirical Study of CPI-U Standard Errors—◆Harold Gomes, Bureau of Labor Statistics

Survey Research Methods Section

- 7 Results from a CATI Follow-Up of Respondents from a Face-to-Face 2013 National Survey of Egypt—◆David Peng, D3 Systems; Samuel Solomon, D3 Systems
- 8 Sensitivity Analysis of Bias of Estimates from Web Surveys with Nonrandomized Panel Selection—◆Vladislav Beresovsky, National Center for Health Statistics

Government Statistics Section

- 9 Travel Price Indexes: Joy and Headaches of Online Collection—◆Catherine Deshaies-Moreault, Statistics Canada; Martin Beaulieu, Statistics Canada
- 10 The Effect of CE Sample Sizes on CPI Standard Errors—◆Jenny FitzGerald, Bureau of Labor Statistics

Survey Research Methods Section

- 11 Challenges and Rewards of Editing Complex Survey Data from the National Ambulatory Medical Care Survey—◆Kelly Myrick, National Center for Health Statistics

Government Statistics Section

- 12 Gravimetric Anomaly Detection Using Compressed Sensing—◆Ryan Kappedal, Air Force Institute of Technology; Marina Meila, University of Washington; Hoyt Koepke, University of Washington
- 13 Application of Industry-Specific Sample Strata in PPI Variance Estimation—◆Teresa E. Hesley, Bureau of Labor Statistics
- 14 On the Range of Self-Normalized Cramer-Type Moderate Deviations—◆Lin Ge, MSU Meridian
- 15 Field-Testing the Collection of New Data Elements in the Occupational Employment Statistics Survey—◆Carrie Jones, Bureau of Labor Statistics; Cori Martinelli, Bureau of Labor Statistics
- 16 Decomposing Wage Inequality Using OES Data—◆Elizabeth Cross, Bureau of Labor Statistics
- 17 Trend Estimation of Multivariate Time Series with Controlled Smoothness—◆Lilia L. Ramirez Ramirez, Instituto Tecnológico Autónomo de México; Victor Guerrero, Instituto Tecnológico Autónomo de México; Alejandro Islas-Camargo, Instituto Tecnológico Autónomo de México

Social Statistics Section

- 18 Insurgency Prediction Using Multiple High-Volume Social Media Data Sources—◆Gizem Korkmaz, Virginia Tech; Shane Reese, Brigham Young University; Dave Higdon, Virginia Tech; Sallie Keller, Virginia Tech; Naren Ramakrishnan, Virginia Tech

Survey Research Methods Section

- 19 Accessing and Exploring NCES Data Through Online Training Modules and Data Tools—◆Andrew White, National Center for Education Statistics; Jennifer L. Nielsen, Manhattan Strategy Group

Government Statistics Section

- 20 Interactive X-13ARIMA-SEATS Seasonal Adjustment Using R—◆James Livsey, U.S. Census Bureau

Speaker with Lunch

12:30 p.m.—1:50 p.m.

564

CC-303

Health Policy Statistics Section Speaker with Lunch (Added fee)—Speaker with Lunch Health Policy Statistics Section

Organizer(s): Frank Yoon, Mathematica Policy Research

WL08

The Role of Health Care Data Analytics in Health Policy Decision-Making—◆Andrea Cook, Group Health Research Institute; Jennifer Clark Nelson, Group Health Research Institute; Patrick Heagerty, University of Washington

Roundtables with Lunch

12:30 p.m.—1:50 p.m.

565

CC- Ballroom 6E

Biopharmaceutical Section P.M. Roundtable Discussion (Added fee)

Biopharmaceutical Section

Organizer(s): Olga Marchenko, Quintiles

WL09

Social Media and Drug Trials—◆Darcy Hille, Merck; T. Ceesay, Merck

WL10

Practical Bayesian Approaches, Applications, and Software/Packages for Different Types of Clinical Trial Projects—◆Aijun Gao, inVentiv Health Clinical

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566 **CC- Ballroom 6E**
CANCELLED- Government Statistics Section
P.M. Roundtable Discussion (Added fee)
 Government Statistics Section
 Organizer(s): Morgan Earp, Bureau of Labor Statistics

567 **CC- Ballroom 6E**
Mental Health Statistics Section P.M.
Roundtable Discussion (Added fee)
 Mental Health Statistics Section
 Organizer(s): Zhehui Luo, Michigan State University
WL13 **Statistical and Study Design Issues in Clinical and**
Translational Research—◆ Mohammad Rahbar, The
University of Texas Health Science Center

568 **CC- Ballroom 6E**
Quality and Productivity Section P.M.
Roundtable Discussion (Added fee)
 Quality and Productivity Section
 Organizer(s): John Louis Szarka,
WL14 **Quality Excellence in Design and Manufacturing: A**
Roadmap to Customer Delight—◆ Daksha Chokshi,
Aerojet Rocketdyne
WL15 **Statistical Engineering: Talking the Language of**
Impact—◆ Christine Anderson-Cook, Los Alamos
National Laboratory; Brian P. Weaver, Los Alamos
National Laboratory

569 **CC- Ballroom 6E**
Section on Bayesian Statistical Science P.M.
Roundtable Discussion (Added fee)
 Section on Bayesian Statistical Science
 Organizer(s): David B. Dahl, Brigham Young University
WL16 **Bayesian Drug/Device Development—◆ Scott M.**
Berry, Berry Consultants

570 **CC- Ballroom 6E**
Section on Statistical Computing P.M.
Roundtable Discussion (Added fee)
 Section on Statistical Computing
 Organizer(s): Wendy Martinez, Bureau of Labor Statistics
WL17 **What Are the Statistical Challenges of Big Data**
Science?—◆ Kaiser Fung, New York University

571 **CC- Ballroom 6E**
Section on Statistical Consulting P.M.
Roundtable Discussion (Added fee)
 Section on Statistical Consulting
 Organizer(s): Isabella R. Ghement, Ghement Statistical Consulting
 Company Ltd.
WL18 **Creating Research Infrastructure in Developing**
Countries—◆ Eric A. Vance, LISA, Virginia Tech

572 **CC- Ballroom 6E**
Section on Statistical Education P.M.
Roundtable Discussion (Added fee)
 Section on Statistical Education
 Organizer(s): Patricia Humphrey, Georgia Southern University
WL19 **Designing Undergraduate Programs in Business**
Analytics and Data Science—◆ Amy L. Phelps,
Duquesne University; Diane Fisher, University of
Louisiana at Lafayette

Invited Sessions 2:00 p.m.—3:50 p.m.

573 **CC- Ballroom 6E**
Medallion Lecture IV: Spectral Clustering, with
Applications in Gene Microarrays and Social
Networks—Invited
 IMS, International Chinese Statistical Association, International
 Indian Statistical Association
 Organizer(s): Igor Pruenster, University of Torino
 Chair(s): Peter Hall, The University of Melbourne

2:05 p.m. **New Approaches to Spectral Clustering, with**
Applications to Gene Microarrays and Social Network
Community Detection—◆ Jiashun Jin, Carnegie
Mellon University; Zheng Tracy Ke, The University
of Chicago; Pengsheng Ji, University of Georgia;
Wanjie Wang, The Wharton School

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

574 **CC-608**
■ ● Statistics in Diagnostic Medicine:
Prediction and Improvement—Invited
 Section on Statistics in Epidemiology, Biometrics Section
 Organizer(s): Jialiang Li, National University of Singapore
 Chair(s): Jialiang Li, National University of Singapore

2:05 p.m. **Semiparametric Canonical Correlation Analysis for**
Prediction of Multiple Outcomes—◆ Denis Agniel,
Harvard Medical School; Tianxi Cai, Harvard

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- University
- 2:25 p.m. The Challenge in Making Inference About a Biomarker's Predictive Capacity—◆Holly Janes, Fred Hutchinson Cancer Research Center
2:45 p.m. Evaluation of Prediction Models and New Markers—◆Ewout Steyerberg, Erasmus Medical Center
- 3:05 p.m. Disc: Jason Fine, The University of North Carolina
- 3:25 p.m. Disc: Michael Pencina, Duke University
- 3:45 p.m. Floor Discussion

575 CC-4C4

■ ● Expanding the Statistics Curriculum: Exciting Electives for Modern Undergraduates—Invited

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

Organizer(s): Jessica L. Chapman, St. Lawrence University
Chair(s): Jessica L. Chapman, St. Lawrence University

- 2:05 p.m. Introduction to Data Science: An Interdisciplinary Course for Undergraduates—◆Alyson Wilson, North Carolina State University
- 2:30 p.m. Broaden Your Statistical Horizons: GLMs and Multilevel Models for Undergraduates—◆Paul Roback, St. Olaf College; Julie Legler, St. Olaf College
- 2:55 p.m. Environmental Statistics Practicum—◆Brian Eder, North Carolina State University
- 3:20 p.m. Kaggle as a Course—◆Michael Schuckers, St. Lawrence University
- 3:45 p.m. Floor Discussion

576 TCC-202

■ ● Recent Advances in Bayesian Time Series and Econometrics—Invited

Business and Economic Statistics Section, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)

Organizer(s): David S. Matteson, Cornell University
Chair(s): William B. Nicholson, Cornell University

- 2:05 p.m. Stochastic Volatility Filtering and Estimation with Intractable Likelihoods—Emilian Vankov, Rice University; ◆Katherine Bennett Ensor, Rice University
- 2:30 p.m. A Bayesian Multivariate Functional Dynamic Linear Model—◆David S. Matteson, Cornell University; Daniel Kowal, Cornell University; David Ruppert, Cornell University

- 2:55 p.m. Bayesian Lattice Filters for Time-Varying Autoregression and Time-Frequency Analysis—◆Scott H. Holan, University of Missouri; Wen-Hsi Yang, CSIRO; Christopher K. Wikle, University of Missouri
- 3:20 p.m. Switching Dynamic Factor Models for High-Dimensional Time Series—◆Rong Chen, Rutgers University
- 3:45 p.m. Floor Discussion

577 CC-609

■ ● Recent Advances in Mental Health Clinical Trial Design: Statistical Challenges and Opportunities—Invited

ENAR, WNAR, Mental Health Statistics Section, Biometrics Section

Organizer(s): Pilar Lim, Janssen R&D
Chair(s): Pilar Lim, Janssen R&D

- 2:05 p.m. Novel Outcome Measures for Clinical Trials Targeting the Earliest Stages of Alzheimer's Disease—◆Steven D. Edland, UC San Diego; M. Colin Ard, UC San Diego
- 2:25 p.m. Secondary Prevention Trials for Dementia: Lessons Learned from a Primary Prevention Trial—◆Richard J. Kryscio, University of Kentucky
- 2:45 p.m. A New Approach for the Analysis of a Sequential Parallel Comparison/Doubly Randomized Delayed Start (SPCD/DRDS) Design—◆George Y.H. Chi, Janssen R&D; Yihan Li, AbbVie; Yanning Liu, Janssen R&D; David Lewin, Janssen R&D; Pilar Lim, Janssen R&D
- 3:05 p.m. Design Consideration for High Dropout Problem in Psychiatric Trials—◆Jinglin Zhong, FDA; Peiling Yang, FDA; Ni A. Khin, FDA; H.M. James Hung, FDA
- 3:25 p.m. Disc: Ralph D'Agostino Sr., Boston University
- 3:45 p.m. Floor Discussion

578 CC-310

Heavy Tails with Applications to Networks—Invited

IMS

Organizer(s): Richard A. Davis, Columbia University
Chair(s): Richard A. Davis, Columbia University

- 2:05 p.m. Nonstandard Regular Variation of In-Degree and Out-Degree in the Preferential Attachment Model—◆Gennady Samorodnitsky, Cornell University; Sidney Resnick, Cornell University; Don Towsley, University of Massachusetts Amherst; Richard A.

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- Davis, Columbia University; Amy Willis, Cornell University; Phyllis Wan, Columbia University
- 2:35 p.m. Tauberian Theory for Multivariate Regularly Varying Distributions with Application to Preferential Attachment Networks—◆Sidney Resnick, Cornell University; Gennady Samorodnitsky, Cornell University
- 3:05 p.m. Change Point Detection in Evolving Network Models—◆Shankar Bhamidi, The University of North Carolina
- 3:35 p.m. Floor Discussion

579 CC-4C1

■ ● Statistical Approaches for Risk-Benefit Tradeoffs in Health Settings—Invited Health Policy Statistics Section, Section on Medical Devices and Diagnostics, Biometrics Section

Organizer(s): Sherri Rose, Harvard Medical School

Chair(s): Sherri Rose, Harvard Medical School

- 2:05 p.m. Learning Optimal Personalized Treatment Rules Under Risk Constraint—◆Yuanjia Wang, Columbia University; Haoda Fu, Eli Lilly and Company; Donglin Zeng, The University of North Carolina
- 2:30 p.m. Limitations of Screening Trials in Developing Cancer Screening Policies—◆Ruth Etzioni, Fred Hutchinson Cancer Research Center
- 2:55 p.m. Modeling Multiple Outcomes to Inform Patient Treatment Decisions—◆Laura Hatfield, Harvard Medical School
- 3:20 p.m. Disc: Telba Irony, FDA
- 3:45 p.m. Floor Discussion

580 CC-307

■ ● Imputation Methods: Challenges with Complex Designs and Complex Data—Invited Survey Research Methods Section, Government Statistics Section

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

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

- 2:05 p.m. Fractional Imputation with Missing Data Analysis—Shu Yang, Harvard School of Public Health; ◆Jaekwang Kim, Iowa State University
- 2:30 p.m. SRMI Multiple Imputation in the CPS ASEC—Charles Hokayem, Centre College; Trivellore Raghunathan, University of Michigan; ◆Jonathan Rothbaum, U.S. Census Bureau
- 2:55 p.m. Exact Balanced Random Imputation—◆Guillaume Chauvet, ENSAI (CREST); Wilfried Do Paco, INSEE

3:20 p.m. Disc: Nicholas Horton, Amherst College

3:45 p.m. Floor Discussion

581 CC-4C2

■ ● Big Data Issues in Biosciences—Invited International Chinese Statistical Association

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

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

- 2:05 p.m. Constructing Predictive Models of Human Diseases via the Integration of Panomic, Imaging, and Clinical Data to Better Diagnose and Treat Patients—◆Eric Schadt, Icahn School of Medicine at Mount Sinai
- 2:30 p.m. Toward a Complete Genome: Statistical Problems in the Analysis of Large DNA Molecules—◆Michael Newton, University of Wisconsin
- 2:55 p.m. Distributed Random Forests—◆Adam Bloniarz, UC Berkeley; Bin Yu, UC Berkeley; Ameet Talwalkar, UCLA
- 3:20 p.m. Discovery Research with Electronic Medical Records Data—◆Tianxi Cai, Harvard University
- 3:45 p.m. Floor Discussion

582 TCC-101

■ ● Statistics: The Secret Weapon of Successful Web Giants—Invited

Section on Statistics in Marketing, Committee on Applied Statisticians

Organizer(s): Marianna Dizik, Google

Chair(s): Tim Hesterberg, Google

- 2:05 p.m. Challenges of A/B Testing at Scale—◆Ya Xu, LinkedIn
- 2:30 p.m. Performance of Marketing Attribution Models—◆Stephanie Sapp, Google; James Koehler, Google; Jon Vaver, Google; Neil Bathia; Minghui Shi, Google
- 2:55 p.m. Using Prediction Statistics to Plan Effective Marketing Campaigns—◆Yuri Smirnov, Yahoo!
- 3:20 p.m. Recommendation Engines and Science of Sales—◆Marianna Dizik, Google
- 3:45 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

583 **CC-2B**
JASA (Applications and Case Studies) Invited Session—Invited

JASA, Applications and Case Studies, Korean International Statistical Society, SSC

Organizer(s): Joseph Ibrahim, The University of North Carolina

Chair(s): Joseph Ibrahim, The University of North Carolina

2:05 p.m. Wanna' Get Away? Regression Discontinuity Estimation of Exam School Effects Away from the Cutoff—◆Miikka Rokkanen, Columbia University; Joshua Angrist, MIT

2:55 p.m. Semiparametric Bayesian Density Estimation with Disparate Data Sources: A Meta-Analysis of Global Childhood Undernutrition—◆Mariel M. Finucane, Mathematica Policy Research; Christopher J. Paciorek, UC Berkeley; Gretchen A. Stevens, World Health Organization; Majid Ezzati, Imperial College London

2:40 p.m. Disc: James Hodges, University of Minnesota

3:30 p.m. Disc: Thomas Lemieux, The University of British Columbia

3:45 p.m. Floor Discussion

Invited Panels 2:00 p.m.—3:50 p.m.

584 **CC-606**
Marvin Zelen: Statistical Scientist, Leader, Mentor, and Advocate—Invited

Memorial, IMS, International Indian Statistical Association

Organizer(s): Xihong Lin, Harvard School of Public Health

Chair(s): David Harrington, Dana-Farber Cancer Institute

Panelists: ◆ Mitchell Gail, National Cancer Institute

◆ Thomas A. Louis, Johns Hopkins Bloomberg School of Public Health/U.S. Census Bureau

◆ Sandra Lee, Dana-Farber Cancer Institute

◆ Louise Ryan, University of Technology, Sydney

3:45 p.m. Floor Discussion

585 **CC-3B**
Leadership Opportunities Within ASA: A Guide for the Young in Body or Spirit—Invited

Committee on Career Development, International Chinese Statistical Association, International Indian Statistical Association, Statistics Without Borders, Section on Statistical Consulting, Committee on Applied Statisticians

Organizer(s): Ofer Harel, University of Connecticut

Chair(s): Ofer Harel, University of Connecticut

Panelists: ◆ Bonnie Ghosh-Dastidar, RAND Corporation

◆ Shane Reese, Brigham Young University

◆ Sally Morton, University of Pittsburgh

◆ Jeffrey Morris, MD Anderson Cancer Center

3:35 p.m. Floor Discussion

586 **CC-206**
Worldwide Statistics Without Borders Projects: SWB Helping Organizations Make Better Decisions—Invited

Statistics Without Borders

Organizer(s): Cathy Furlong, SWB

Chair(s): Cathy Furlong, SWB

Panelists: ◆ Michiko Wolcott, Statistics without Borders

◆ Michelle Vanchu-Orosco, Statistics without Borders

◆ Monica Dashen, Statistics without Borders

3:35 p.m. Floor Discussion

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

587 **CC-201**
Mining Big Data in Computational Neuroscience: Top-Down Methods—Topic-Contributed

Section on Statistical Learning and Data Mining, International Chinese Statistical Association, Government Statistics Section

Organizer(s): Hongtu Zhu, The University of North Carolina at Chapel Hill

Chair(s): Haipeng Shen, The University of North Carolina at Chapel Hill

2:05 p.m. MWPCR: Multiscale Weighted Principal Component Regression for High-Dimensional Prediction—
 ◆ Hongtu Zhu, The University of North Carolina at Chapel Hill; Dan Shen, University of South Florida

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CSP 

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

2:25 p.m. Functional Bilinear Regression with Matrix Covariates via Reproducing Kernel Hilbert Space with Applications in Neuroimaging Data Analysis—◆Dan Yang, Rutgers University; Dong Wang, The University of North Carolina at Chapel Hill; Hongtu Zhu, The University of North Carolina at Chapel Hill; Haipeng Shen, The University of North Carolina at Chapel Hill

2:45 p.m. Noise Quantification in MR Experiments—◆Joerg Polzehl, Weierstrass Institute for Applied Analysis and Stochastics; Karsten Tabelow, Weierstrass Institute for Applied Analysis and Stochastics

3:05 p.m. Flexible State-Space Models with Application to Brain Signals—◆Hernando Ombao, UC Irvine; Zhe Yu, UC Irvine ; Raquel Prado, UC Santa Cruz

3:25 p.m. Floor Discussion

588 **CC-620**
● Recent Developments in Methodology for Time-to-Event Analysis—Topic-Contributed Biometrics Section

Organizer(s): Tony Sit, The Chinese University of Hong Kong
 Chair(s): Yunxiao Chen, Columbia University

2:05 p.m. Quantile Regression with Survival Data Under General Biased Sampling Schemes—◆Gongjun Xu, University of Minnesota; Tony Sit, The Chinese University of Hong Kong; Lan Wang, University of Minnesota; Chiung-Yu Huang, The Johns Hopkins University

2:25 p.m. On the Dependence Structure of Bivariate Recurrent Event Processes—◆Jing Ning, MD Anderson Cancer Center; Yong Chen, The University of Texas School of Public Health; Chunyan Cai, The University of Texas Health Science Center; Xuelin Huang, MD Anderson Cancer Center; Mei-Cheng Wang, The Johns Hopkins University

2:45 p.m. Testing Goodness-of-Fit for the Proportional Hazards Model Based on Nested Case-Control Data—◆Wenbin Lu, North Carolina State University; Mengling Liu, New York University School of Medicine; Yi-Hau Chen, Academia Sinica

3:05 p.m. Accelerated Failure Time Model Under General Biased Sampling Scheme—◆Tony Sit, The Chinese University of Hong Kong

3:25 p.m. Estimation of Transformation Model for Mortgage Prepayment Data—◆Junyi Zhang,

3:45 p.m. Floor Discussion

589 **CC-211**
■ ● Recent Advances in Bayesian Latent Variable Modeling—Topic-Contributed

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

Organizer(s): Xiaojing Wang, University of Connecticut

Chair(s): Dipak K. Dey, University of Connecticut

2:05 p.m. Bayesian Analysis of Transformation Latent Variable Models with Multivariate Censored Data—◆Xinyuan Song; Deng Pan, Huazhong University of Science and Technology; Pengfei Liu, Jiangsu Normal University; Jingheng Cai, Sun Yat-Sen University

2:25 p.m. Bayesian Regularized Regression for Treatment Effect Estimation: A Latent Error Modeling Approach—◆Richard Hahn, The University of Chicago Booth School of Business; Carlos M. Carvalho, The University of Texas at Austin

2:45 p.m. A Bayesian Statistical Model for Online Crowdfunding—◆Jason Duan, The University of Texas at Austin; Zhouxin Li, The University of Texas at Austin

3:05 p.m. Real-Time Bayesian Inference for Latent Ability Models—◆Ruby Chiu-Hsing Weng, National Chengchi University

3:25 p.m. Bayesian Analysis of Joint Modeling Response Times with Dynamic Latent Ability in Educational Testing—◆Xiaojing Wang, University of Connecticut; Abhisek Saha, University of Connecticut; Dipak K. Dey, University of Connecticut

3:45 p.m. Floor Discussion

590 **CC-401**
■ ● The World of Statistical Analysis Professionals—Topic-Contributed

Section for Statistical Programmers and Analysts, Section on Statistics in Defense and National Security, International Chinese Statistical Association, Government Statistics Section, Section on Statistical Consulting

Organizer(s): Nancy Wang, Celerion

Chair(s): Nancy Wang, Celerion

2:05 p.m. Becoming a Successful Young Collaborator: 20 Strategies for the MS-Level Statistician—◆Seth Lirette,

2:25 p.m. Among the Mathematicians: A Statistician at the National Security Agency—◆Adam Cardinal-Stakenas, National Security Agency

2:45 p.m. Product Support to Product Innovation: The Role of Analysts at Data-Driven Companies—◆McCall McIntyre, Simulmedia

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

3:05 p.m. My Food and Beverage Industry Experience as a Statistician—◆Chun-Yen Cochrane, Hill's Pet Nutrition

3:25 p.m. Disc: Michael Carniello, Astellas

3:45 p.m. Floor Discussion

591

CC-213

■ ● **Large-Scale Spatial Processes: Fundamentals, New Developments, Applications—Topic-Contributed**

Section on Statistics and the Environment

Organizer(s): Sucharita Ghosh, Swiss Federal Research Institute WSL

Chair(s): Sucharita Ghosh, Swiss Federal Research Institute WSL

2:05 p.m. A Quasi-Likelihood Approach to Zero-Inflated Spatial Count Data—◆Anthea Monod,

2:25 p.m. Application of Karhunen-Loeve Expansion for Multivariate Spatial Processes —◆Hao Zhang, Purdue University

2:45 p.m. Spatially Varying SAR Models and Bayesian Inference for High-Resolution Lattice Data—◆Chiranjit Mukherjee, Google; Prasad S. Kasibhatla, Duke University; Mike West, Duke University

3:05 p.m. On Parametric and Nonparametric Estimation of the Dependence Function in Multivariate Extremes—◆Sabrina Vettori, KAUST; Raphael Huser, KAUST; Marc Genton, KAUST

3:25 p.m. Disc: Jan Beran, University of Konstanz

3:45 p.m. Floor Discussion

592

CC-615

● **Response-Adaptive Randomization: Recent Developments and Controversies—Topic-Contributed**

Biopharmaceutical Section, International Chinese Statistical Association, International Indian Statistical Association

Organizer(s): Brian Hobbs, MD Anderson Cancer Center

Chair(s): Peter F. Thall, MD Anderson Cancer Center

2:05 p.m. Response-Adaptive Randomization: Recent Developments and Controversies—◆J. Jack Lee, MD Anderson Cancer Center; Nan Chen, MD Anderson Cancer Center

2:25 p.m. Group Response-Adaptive Randomization in Clinical Trials—◆Feifang Hu, The George Washington University; Yang Li, Renmin University of China; Lixin Zhang, Zhejiang University

2:45 p.m. Novel Response-Adaptive Randomization Designs for Clinical Trials with Time-to-Event Outcomes—◆Oleksandr Sverdlov, EMD Serono

3:05 p.m. Some Caveats for Outcome Adaptive Randomization in Clinical Trials—◆Patricia Fox, McKesson Specialty Health

3:25 p.m. SMART with Adaptive Randomization for Quality Improvement in Depression Treatment Program—◆Ken Cheung, Columbia University; Bibhas Chakraborty, Duke University; Karina Davidson, Columbia University

3:45 p.m. Floor Discussion

593

CC-4C3

■ ● **GSS Data Challenge 2015—Topic-Contributed**

Government Statistics Section, Survey Research Methods Section

Organizer(s): Wendy Martinez, Bureau of Labor Statistics

Chair(s): Wendy Martinez, Bureau of Labor Statistics

2:05 p.m. Tailoring Outreach to Boost Mail Self-Response in Geographic Areas with Similar Low Response Scores—◆Darryl Creel,

2:25 p.m. Exploring the Census Bureau's 2014 Planning Database Using Topological Data Analysis—◆Robert Baskin,

2:45 p.m. Informing Natural Disaster Response with Census Data—◆Jonathan Auerbach; Christopher Eshleman, New York City Council

3:05 p.m. Optimizing Survey Cost-Error Tradeoffs: A Multiple Imputation Strategy Using the Census Planning Database—◆Shin-Jung Lee, University of Michigan

3:25 p.m. Disc: Jill Montaquila, Westat

3:45 p.m. Floor Discussion

594

CC-619

■ **Statistical Phylogenetics—Topic-Contributed**

Biometrics Section, WNAR, Section on Bayesian Statistical Science, International Indian Statistical Association

Organizer(s): Arindam RoyChoudhury, Columbia University

Chair(s): Vladimir Minin, University of Washington

2:05 p.m. A Probabilistic Model for Gene Family Evolution—◆Liang Liu, University of Georgia; Jing Zhao, University of Georgia; David Liberles, Temple University; Ashley Teufel, Temple University; Lili Yu, Georgia Southern university

2:25 p.m. Anomalous Unrooted Gene Trees—◆James Degnan,

2:45 p.m. Statistically Consistent K-Mer Methods for Phylogenetic Tree Reconstruction—◆Seth Sullivant, North Carolina State University; Elizabeth Allman,

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- University of Alaska - Fairbanks; John Rhodes, University of Alaska - Fairbanks
- 3:05 p.m. Likelihood Estimation of Large Species Trees Using the Coalescent Process—◆Arindam RoyChoudhury, Columbia University
- 3:25 p.m. Split Scores on Phylogenetic Trees and Applications—◆Elizabeth Allman, University of Alaska - Fairbanks; Laura Kubatko, The Ohio State University; John Rhodes, University of Alaska - Fairbanks
- 3:45 p.m. Floor Discussion

595 **CC-614**

■ ● Statistical Discrimination and Classification Tools in the Health Care Setting: Challenges and Opportunities for Statisticians, Patients, and Providers—Topic-Contributed Biopharmaceutical Section, Biometrics Section

Organizer(s): Rakhi Kilaru, PPD

Chair(s): Rakhi Kilaru, PPD

- 2:05 p.m. Algorithms for Prediction and Subgroup Formation in Personalized Medical Decision-Making—◆Kelci Miclaus, SAS Institute; Richard Zink, SAS Institute; Russ C. Wolfinger, SAS Institute
- 2:25 p.m. Correcting for Over-Optimism in Metrics of Prognostic Model Improvement—◆Megan Neely, Duke University; Michael Pencina, Duke University
- 2:45 p.m. Methods for Reclassification Calibration in the Survival Setting—◆Olga Demler, Brigham and Women’s Hospital; Nina Paynter, Brigham and Women’s Hospital; Nancy Cook, Brigham and Women’s Hospital
- 3:05 p.m. Estimation and Inference for Optimal Treatment Regimes Under Constraints—◆Shuping Ruan, North Carolina State University; Eric Laber, North Carolina State University
- 3:25 p.m. Disc: Mary Poole, PPD
- 3:45 p.m. Floor Discussion

596 **CC-610**

■ Statistical Challenges and Novel Methodologies for Evaluating the Clinical Performance of Diagnostic Devices—Topic-Contributed

Section on Medical Devices and Diagnostics

Organizer(s): Arkendra De, FDA/CDRH

Chair(s): Janel Huang, Abbott Laboratories

- 2:05 p.m. Study Design and Analysis Issues for Diagnostic Monitoring Devices—◆Bipasa Biswas, CDRH/FDA
- 2:25 p.m. Measuring Agreement in Method Comparison Studies with Repeated Measurements—◆Zhiheng Xu, FDA; Meijuan Li, FDA
- 2:45 p.m. A Statistical Method for Method Comparison Studies When Outcomes Can Only Assume Monotone—◆Yuqing Tang, FDA; Meijuan Li, FDA; Jincao Wu, FDA
- 3:05 p.m. Dynamic Placement Values: A Basis for Evaluating Prognostic Potential—◆Aasthaa Bansal, University of Washington; Patrick Heagerty, University of Washington ; Paramita Saha-Chaudhuri, McGill University; Jason Liang, University of Washington
- 3:25 p.m. Reference Interval of the Posterior Distribution—◆Jeng Mah, Beckman Coulter; Mark D. Holland, Beckman Coulter
- 3:45 p.m. Floor Discussion

597 **CC-607**

■ ● Recent Issues in Applying Causal Inference Methods to Health Disparities: Making Informed Decisions on Interventions—Topic-Contributed

Social Statistics Section, Health Policy Statistics Section, Biometrics Section

Organizer(s): Kenneth Wilkins, NIH; Xinzhi Zhang, National Institute of Minority Health and Health Disparities

Chair(s): Yoshio Hall, University of Washington

- 2:05 p.m. Comparing Methods of Racial and Ethnic Health Care Disparities Measurement—◆Benjamin Cook, Harvard Medical School
- 2:25 p.m. Improving the Understanding of Racial/Ethnic Disparity in Health Care Through a Within-Geographic-Unit Analysis—◆Guofen Yan, University of Virginia School of Medicine
- 2:45 p.m. Methods of Estimating or Accounting for Neighborhood Associations with Health Using Complex Survey Data—◆Babette Brumback, University of Florida; Amy Dailey, Gettysburg College; Zhuangyu Cai, University of Florida
- 3:05 p.m. On Causal Interpretations of Race in Regressions Adjusting for Confounding and Mediating Variables—◆Whitney Robinson, The University of North Carolina Gillings School of Global Public Health
- 3:25 p.m. Disc: Jing Cheng, UC San Francisco
- 3:45 p.m. Floor Discussion

QDET2

International Conference on Questionnaire
Design, Development, Evaluation, and Testing



The 2016 International Conference on Questionnaire Design, Development, Evaluation, and Testing (QDET2) will take place November 9–13 at the Hyatt Regency in Miami, Florida.

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Google UK

Gordon Willis,
National Cancer Institute,
National Institutes of Health

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Details at www.amstat.org/meetings/qdet2.

Topic-Contributed Panels

2:00 p.m.—3:50 p.m.

598 **CC-204**

Strategies for the Recruitment, Retention, and Successful Career Development of the Collaborative Biostatistician in an Academic Health Center—Topic-Contributed

Section on Statistical Consulting, Korean International Statistical Society, Section on Teaching of Statistics in the Health Sciences, Section for Statistical Programmers and Analysts, Committee on Applied Statisticians

Organizer(s): Manisha Desai, Stanford University

Chair(s): Erinn Hade, The Ohio State University

Panelists: ◆ J. Richard Landis, University of Pennsylvania Perelman School of Medicine

◆ Manisha Desai, Stanford University

◆ Mimi Kim, Albert Einstein College of Medicine

◆ Soledad Fernandez, The Ohio State University

◆ Christopher Lindsell, University of Cincinnati College of Medicine

3:45 p.m. Floor Discussion

Contributed Sessions

2:00 p.m.—3:50 p.m.

599 **CC-203**

Business and Economic Analytics—Contributed Business and Economic Statistics Section

Chair(s): Amy L. Phelps, Duquesne University

2:05 p.m. What Value Do Prospective Students Place on Employment Statistics by Major?—◆ David Aleong, University of Washington

2:20 p.m. Casual Inference for Marketing Program Evaluation—◆ Fei Wang,

2:35 p.m. More Than Just Words: On Discovering Themes in Online Reviews to Explain Restaurant Closures—◆ Shawn Mankad, University of Maryland; Anand Gopal, University of Maryland; Jorge Mejia, University of Maryland

2:50 p.m. Rating Websites' Promoting Approaches: A Study of Yelp.com Reviews and Related Business Revenue, 2010–2013—◆ Yao Wang, Loyola University Chicago

3:05 p.m. Assessing the Use of Google Trends Search Query Data to Forecast Number of Nonresident Hotel Registrations in Puerto Rico—◆ Roberto Rivera, University of Puerto Rico at Mayaguez

3:20 p.m. Online Versus Offline Experimentation—◆ Roger Longbotham, Process Performance Management

3:35 p.m. A Unified Model for Measuring Customer-Based Brand Equity—◆ Tung Phan, The Wharton School

600 **CC-304**

Model Selection and Sparsity—Contributed IMS

Chair(s): Maryclare Griffin, University of Washington

2:05 p.m. Statistical Inference When Fitting Simple Models to High-Dimensional Data—◆ Lukas Steinberger, University of Vienna; Hannes Leeb, University of Vienna

2:20 p.m. False Discovery Rate Control for Sequential Hypothesis Testing—◆ Ang Li, The University of Chicago; Rina Foygel Barber, The University of Chicago

2:35 p.m. Limits of False Discovery Rate Control with Lasso—◆ Weijie Su, Stanford University; Malgorzata Bogdan, Wroclaw University of Technology; Emmanuel Candès, Stanford University

2:50 p.m. Optimality of the Estimates of the Means After Selection—◆ Alexandra Bolotskikh, Cornell University; Claudio Fuentes, Oregon State University; Martin Wells, Cornell University

3:05 p.m. Valid Confidence Intervals for Post-Model-Selection Predictors—◆ Francois Bachoc, University of Vienna; Hannes Leeb, University of Vienna; Benedikt M. P. tscher, University of Vienna

3:20 p.m. Confidence Sets Based on the Lasso Estimator—◆ Karl Ewald, Vienna University of Technology; Ulrike Schneider, Vienna University of Technology

3:35 p.m. Classically Motivated Inference on Increasingly Many Parameters in Certain Statistical Models—◆ Abhimanyu Gupta, University of Essex

601 **CC-212**

Bayesian Semiparametric and Nonparametric Modeling and Applications—Contributed

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

Chair(s): Steven MacEachern, The Ohio State University

2:05 p.m. Bayesian Semiparametric Approach for Stochastic Volatility Model—◆ Peng Sun, Virginia Tech; Inyoung Kim, Virginia Tech; Kiahm Lee, Seoul National University

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 2:20 p.m. Bayesian Regression Trees for Modeling the Health Effects of Environmental Stressors—◆Gregory Watson, UCLA; Donatello Telesca, UCLA
- 2:35 p.m. Bayesian Nonparametric Causal Models for Point Treatments and Continuous Outcomes—◆Kirsten Lum, University of Pennsylvania; Michael J. Daniels, The University of Texas at Austin; Jason Roy, University of Pennsylvania
- 2:50 p.m. Nonparametric Bayesian Model for Spatial Point Processes—◆Gavino Puggioni, University of Rhode Island; Lance Waller, Emory University; Luca Gerardo-Giorda, Basque Center for Applied Mathematics; Leslie Real, Emory University
- 3:05 p.m. A Poisson Mixture Model for Clustering and Feature Selection of High-Dimensional Count Data—◆Qiwei Li, Rice University; Michele Guindani, MD Anderson Cancer Center; Brian J. Reich, North Carolina State University; Howard Bondell, North Carolina State University; Marina Vannucci, Rice University
- 3:20 p.m. A General Semiparametric Bayesian Model and Software Package for Multistate Data—◆Adam King, California Polytechnic State University; Robert E. Weiss, UCLA
- 3:35 a.m. Floor Discussion

602 CC-214 Environmental Detection and Clustering— Contributed

Section on Statistics and the Environment

Chair(s): Jeffrey Switchenko, Emory University

- 2:05 p.m. An Alternative Cluster Detection Test in Spatial Scan Statistics—◆Suja Aboukhamseen, Kuwait University; Ahmed Reza Soltani, Kuwait University
- 2:20 p.m. Covariate-Adaptive Clustering of Exposures for Air Pollution Epidemiology Cohorts—◆Joshua Keller, University of Washington; Adam Szpiro, University of Washington; Mathias Drton, University of Washington
- 2:35 p.m. Quantifying the Impact of Volcanic Aerosol Forcing Uncertainties on Lower Troposphere Temperature—◆Francisco Beltrán, Lawrence Livermore National Laboratory; Benjamin D. Santer, Lawrence Livermore National Laboratory; Gardar Johannesson, Lawrence Livermore National Laboratory
- 2:50 p.m. Evaluating Model Independent Stochastic De-Clustering Using Synthetic Earthquake Catalogs—◆Kevin Nichols, California State University at Fullerton
- 3:05 p.m. Optimal Detection of Abrupt Changes in Gaussian Processes: Fixed and Increasing Domain Analysis—◆Hossein Keshavarz Shenastaghi, University of Michigan

- 3:20 p.m. Detecting Changes in the Quality and Ecology of a Freshwater Lake—◆Thomas Fisher, Miami University
- 3:35 p.m. On a Temporal Investigation of Hurricane Strength and Frequency—◆Moinak Bhaduri, The University of Nevada, Las Vegas; Chih-Hsiang Ho, The University of Nevada, Las Vegas

603 CC-613 SIE CP7: Environmental Epidemiology— Contributed

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

Chair(s): Julia (Jungwha) Lee, Northwestern University

- 2:05 p.m. Detection of Space-Time Clusters via Adaptive Likelihood Ratio Statistics—◆Luiz Duczmal, Universidade Federal de Minas Gerais; Max Sousa de Lima, Universidade Federal do Amazonas
- 2:20 p.m. On the Shape of an Exposure-Disease Relationship, the Average Effect of Exposure, and the Impact of Exposure Measurement Error—◆Li Xing, Indiana University; Paul Gustafson, The University of British Columbia; Igor Burstyn, Drexel University
- 2:35 p.m. Evaluation of Source-Specific Health Effects on Low Daily Mortality Accounting for Uncertainty in Source Apportionment—◆Eun Sug Park, Texas A&M Transportation Institute; Man-Suk Oh, Ewha Womans University
- 2:50 p.m. Assessment of Residential History Generation in the Spatial Analysis of Disease Risk—◆David Wheeler, Virginia Commonwealth University
- 3:05 p.m. Estimating Associations Between Source-Apportioned Particulate Matter and Emergency Department Visits in Multicity Studies—◆Jenna Krall; James A. Mulholland, Georgia Institute of Technology; Armistead G. Russell, Georgia Institute of Technology; Sivaraman Balachandran, University of Cincinnati; Andrea Winquist, Emory University; Paige E. Tolbert, Emory University; Lance Waller, Emory University; Stefanie Ebel Sarnat, Emory University
- 3:20 p.m. Generalization of Health Effects from Subgroups to Study Populations of Interest—◆Amber J. Hackstadt, Social & Scientific Systems; Matthew D. Curry, Social & Scientific Systems; Lawrence S. Engel, The University of North Carolina at Chapel Hill; Richard K. Kwok, National Institute of Environmental Health Sciences; Dale P. Sandler, National Institute of Environmental Health Sciences
- 3:35 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

604 **CC-306**
Statistical Methods for Neuroimaging Data Analysis III—Contributed
 Section on Statistics in Imaging

Chair(s): Dong Wang, The University of North Carolina at Chapel Hill

- 2:05 p.m. Fixed Versus Random Effects Models for fMRI Meta-Analysis—◆ Han Bossier, Beatrijs Moerkerke, Ghent University; Ruth Seurinck, Ghent University
- 2:20 p.m. Introducing Alternative-Based Hypothesis Testing for Defining Functional Regions of Interest in fMRI—◆ Jasper Degryse, Ghent University; Ruth Seurinck, Ghent University; Joke Durnez, Ghent University; Beatrijs Moerkerke, Ghent University
- 2:35 p.m. Projected Principal Component Analysis in Factor Models for Populations of Images—◆ Maximillian Chen, Sandia National Laboratories; Hongtu Zhu, The University of North Carolina at Chapel Hill
- 2:50 p.m. A Bayesian High-Dimensional Poisson Graphical Model for Identifying Functional Coactivation Patterns—◆ Caprichia Jeffers, Emory University Rollins School of Public Health; Jian Kang, Emory University
- 3:05 p.m. Statistical Approaches for Exploring Brain Connectivity with Multi-Modal Neuroimaging Data—◆ Phebe Kemmer, Emory University; Ying Guo, Emory University; DuBois Bowman, Columbia University
- 3:20 p.m. Multilevel Functional Principal Components Analysis of Surfaces with Application to CT Image Data of Pediatric Thoracic Shape—◆ Lucy Robinson, Drexel University; Jonathan Harris, Drexel University; Sriram Balasubramanian, Drexel University
- 3:35 p.m. Improving Signal-to-Noise Ratio in Large-Scale Multiple Testing with High-Dimensional Covariates—◆ Chintan Mehta; Heping Zhang, Yale University

605 **CC-2A**
Imputation of Missing Data—Contributed
 Survey Research Methods Section, Government Statistics Section, Committee on Applied Statisticians

Chair(s): Donsig Jang, Mathematica Policy Research

- 2:05 p.m. Multiple Imputation for Data That Are Missing Not at Random: Extending the Fully Conditional Specification Procedure—◆ Finbarr P. Leacy, MRC Biostatistics Unit/University of Cambridge; Ian R. White, MRC Biostatistics Unit
- 2:20 p.m. Addressing Item Nonresponse in a Complex Survey Using Full Information Maximum Likelihood Methods—◆ Susan Edwards, RTI International; Marcus Berzofsky, RTI International; Paul Biemer,

RTI International/UNC Chapel Hill

- 2:35 p.m. Bayesian Multiple Imputation for Count Data with Zero Inflation—◆ Chin-Fang Weng, U.S. Census Bureau
- 2:50 p.m. Methods to Impute Household Income in the National Crime Victimization Survey—◆ Andrew Moore, RTI International; Marcus Berzofsky, RTI International; Darryl Creel; Tommy Holder, RTI International
- 3:05 p.m. A Fresh Imputing Survey Methodology Using Sensible Constraints on Study and Auxiliary Variables—◆ Sarjinder Singh, Texas A&M University; Choukri Mohamed, Texas A&M University; Stephen A. Sedory, Texas A&M University
- 3:20 p.m. Latent Class Analysis with Planned Missingness: Best Approach?—◆ Nadra Lisha; Kevin Delucchi, UC San Francisco; Pamela Ling, UC San Francisco
- 3:35 p.m. Restricted Latent Class Multiple Imputation Method of Categorical Missing Data—◆ Qiao Ma, NORC at the University of Chicago; Allan McCutcheon, University of Nebraska - Lincoln

606 **CC-3A**
Sample Allocation—Contributed
 Survey Research Methods Section, Government Statistics Section

Chair(s): Christine Wells, UCLA

- 2:05 p.m. Size-Based Probability Sampling with Constraints on Costs—◆ Randall Powers, Bureau of Labor Statistics; John L. Eltinge, Bureau of Labor Statistics
- 2:20 p.m. Optimal Sampling Fractions for Two-Phase Sampling for Nonresponse in the Real World—◆ Barbara Carlson, Mathematica Policy Research
- 2:35 p.m. A Simple and General Algorithm for Exact Optimal Sample Allocation That Is More Efficient Than Neyman Allocation—◆ Tommy Wright, U.S. Census Bureau/Center for Statistical Research & Methodology
- 2:50 p.m. A Re-Evaluation of the Statistical Learning Approach to Optimal Sample Allocation—◆ Ismael Flores Cervantes, Westat
- 3:05 p.m. Constructing Strata of PSUs for the Residential Energy Consumption Survey—◆ Rachel Harter, RTI International; Patrick Chen, RTI International; Joseph McMichael, RTI International; Edgardo Cureg, Energy Information Administration; Samson Adeshiyan, Department of Energy; Katherine Morton, RTI International
- 3:20 p.m. Empirical and Constrained Empirical Bayes Variance Estimation Under a One-Unit-Per-Stratum Sample

Wednesday

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Design—◆Sepideh Mosaferi, University of Maryland

3:35 p.m. Floor Discussion

607 **CC-210**
Nonparametric Methods for Big Data, Empirical Likelihood, and Additive Model—Contributed

Section on Nonparametric Statistics

Chair(s): Li-Shan Huang, National Tsing Hua University

2:05 p.m. Additive Partially Linear Quantile Regression in Ultra-High Dimension—◆Ben Sherwood, The Johns Hopkins University; Lan Wang, University of Minnesota

2:20 p.m. Confidence Regions for Level Differences in Growth Curve Models: Low- and High-Dimensional Under Non-Normality—◆Solomon Harrar, University of Kentucky; Jin Xu, East China Normal University

2:35 p.m. Scalable Bayesian Nonparametric Learning for High-Dimensional Lung Cancer Genomics Data—◆Subharup Guha, University of Missouri; Veera Baladandayuthapani, MD Anderson Cancer Center; Chiyu Gu, University of Missouri

2:50 p.m. Improving Efficiency in Structural Equation Modeling by an Easy Empirical Likelihood Approach—◆Hanxiang Peng, Indiana University Purdue University Indianapolis; Shan Wang, Indiana University Purdue University Indianapolis

3:05 p.m. Oracally Efficient Estimation of Vector Nonlinear Additive Autoregressive Models—◆Joshua Patrick; Jiaming Xie, UC Davis

3:20 p.m. Permutation-Based Maximum Covariance Analysis (PMCA)—◆Robyn L. Ball, The Jackson Laboratory; Yasuhiro Fujiwara, The Jackson Laboratory; Fengyun Sun, The Jackson Laboratory; Jianjun Hu, The Jackson Laboratory; Mary Ann Handel, The Jackson Laboratory; Gregory W. Carter, The Jackson Laboratory

3:35 p.m. Floor Discussion

608 **CC-618**
Bayesian Analysis with Health Applications—Contributed

Biometrics Section, ENAR, International Chinese Statistical Association

Chair(s): Jodi Lapidus, Oregon Health & Science University

2:05 p.m. A Semiparametric Bayesian Approach for Instrumental Variable Analysis with Arbitrarily Censored Time-to-Event Outcome—◆Xuyang Lu, UCLA; Gang Li, UCLA Fielding School of Public

Health; Hulin Wu, University of Rochester

2:20 p.m. Quantile Regression for Mixed Models with Application to Recent Blood Pressure Trends in China—◆Luke Smith, Westat; Montserrat Fuentes, North Carolina State University; Penny Gordon-Larsen, The University of North Carolina at Chapel Hill; Brian J. Reich, North Carolina State University

2:35 p.m. A Flexible Cure Rate Model for Spatially Correlated Survival Data Based on Generalized Extreme Value Distribution and Gaussian Process Priors—◆Dan Li, University of Cincinnati; Xia Wang, University of Cincinnati; Dipak K. Dey, University of Connecticut

2:50 p.m. A Semiparametric Bayesian Hierarchical Frailty Model for Evaluating Pathway Effects on Survival Time—◆Lin Zhang, Virginia Tech; Inyoung Kim, Virginia Tech

3:05 p.m. Empirical Bayesian Approach to High-Sensitivity Variant Calling in Circulating Tumor DNA Samples—◆Oleg Mayba; Thomas Sandmann, Genentech, Inc.; Yinghui Guan, Genentech, Inc.; Rachel Tam, Genentech, Inc.; Yulei Wang, Genentech, Inc.; Rajesh Patel, Genentech, Inc.; Rajiv Raja, Genentech, Inc.; Eric Peters, Genentech, Inc.; Richard Bourgon, Genentech, Inc.

3:20 p.m. Dynamic Predictions from Joint Models for Multivariate Longitudinal Measurements and Survival Data—◆Sheng Luo, The University of Texas Health Science Center; Jue Wang, The University of Texas at Houston

3:35 p.m. Density Estimation from Ranked Set Samples in the Presence of Ranking Error—◆Kaushik Ghosh, The University of Nevada, Las Vegas; Manoj Chacko, University of Kerala

609 **CC-617**
Methodological Advances in Model Selection—Contributed

Biometrics Section, International Chinese Statistical Association

Chair(s): Catherine Crespi, UCLA

2:05 p.m. Quantitative Bayesian Lasso for Detecting Effects of Rare Haplotype Variants and Environmental Factors on Complex Diseases—◆Han Zhang, The Ohio State University; Shili Lin, The Ohio State University

2:20 p.m. Fitting L1-Penalized Models by Weighted Maximum Frequency—◆Hongmei Liu, University of Miami; J. Sunil Rao, University of Miami

2:35 p.m. Variable Selection for Discriminant Analysis with Quadratic Multinomial Regression—◆Yang Li, Harvard University; Jun S. Liu, Harvard University

Wednesday

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

2:50 p.m. Post-Selection Estimation—◆Amit Meir, University of Washington; Yoav Benjamini, Tel Aviv University

3:05 p.m. A Connection Between Discrepancy Function Estimation and the P-Value—◆Andrew Neath, Southern Illinois University Edwardsville; Joseph Cavanaugh, The University of Iowa; Benjamin Riedle, The University of Iowa

3:20 p.m. Sparse Semiparametric Nonlinear Mixed Effects Models—◆Michael Wierzbicki, The EMMES Corporation; Li-Bing Guo, Guangdong College of Pharmacy; Qing-Tao Du, Guangdong College of Pharmacy; Wensheng Guo, University of Pennsylvania

3:35 p.m. Study Design and Data Analysis for Pharmacokinetics in Patients with Impaired Renal/Hepatic Function—◆Xiaoli Hou,

610 CC-616 ■ Innovations in Design and Analysis of Clinical Trials—Contributed

Biometrics Section, ENAR

Chair(s): Martha Cao, BioMarin Pharmaceuticals

2:05 p.m. Single-Arm Phase II Trial Design Under Parametric Cure Models—◆Jian Rong Wu, St. Jude Children's Research Hospital

2:20 p.m. Predicting the Timing of Final Events in Blinded Clinical Trials—◆Marc Sobel, Temple University; Ibrahim Turkoz, Janssen R&D

2:35 p.m. A Useful Design via the Information Fraction in a Group Sequential Clinical Trial with Censored Survival Data—◆Chen-Hsin Chen, Academia Sinica; Chih-Yuan Hsu, Academia Sinica; Ken-Ning Hsu, Academia Sinica; Ya-Hung Lu, Academia Sinica

2:50 p.m. A Sequential Test for Treatment Effects Using Censored Data in Multi-Center Clinical Trials—◆Dong-Yun Kim, NHLBI/NIH

3:05 p.m. Evaluating Treatment Effect in Multicenter Trials with Small Centers Using Survival Modeling—◆Usha Govindarajulu, SUNY Downstate; Elizabeth J. Malloy, American University

3:20 p.m. Randomization Inference for Stepped Wedge Cluster Randomized Trials—◆Xinyao Ji, The Wharton School; Dylan Small, University of Pennsylvania

3:35 p.m. A Maximum Likelihood Approach to Power Calculations for the Risk Difference in a Stepped Wedge Design—◆Lauren Kunz, NIH/NHLBI; Sharon-Lise Normand, Harvard Medical School; Donna Spiegelman, Harvard School of Public Health

611 CC-612 Medical Device Benefit-Risk, Cost-Benefit, and Health Management—Contributed

Section on Medical Devices and Diagnostics, ENAR, International Chinese Statistical Association

Chair(s): Zengri Wang, Covidien

2:05 p.m. A Longitudinal Bayesian Hierarchical Model to Compare Health Care Costs Between Spinal Cord Stimulation and Conventional Therapy—◆Sherry Lin, Boston Scientific; Dat Huynh, Boston Scientific; Nitzan Mekel-Bobrov, Boston Scientific

2:20 p.m. Joint Semiparametric Mixed Effect Model of Hospital Admission and Readmission—◆Yuqi Chen, UC Santa Barbara; Yuedong Wang, UC Santa Barbara

2:35 p.m. Joint Evaluation of Benefit and Risk in Ophthalmic Clinical Studies—◆Chul H. Ahn, FDA; Mourad Atlas, FDA/CDRH/OSB/DBS

2:50 p.m. Wired for Health: A Randomized Controlled Trial of Individuals with Hypertension Utilizing Self-Monitoring via Wireless Medical Devices—◆Nathan E. Wineinger, Scripps Translational Science Institute; Lauren Ariniello, Scripps Translational Science Institute; Melissa Peters, Scripps Translational Science Institute; Cinnamon Bloss, UC San Diego; Eric Topol, Scripps Translational Science Institute

3:05 p.m. Predictors of Trial Success with Spinal Cord Stimulation (SCS) from National Claims Database—◆Dat Huynh, Boston Scientific; Sherry Lin, Boston Scientific; Nitzan Mekel-Bobrov, Boston Scientific

3:20 p.m. A Comparison of Sample-Size Calculations for Cluster-Randomized Crossover Trials with a Binary Outcome—◆Rui Zhuang, University of Washington; Erin Case, University of Washington; Siobhan Brown, University of Washington; Susanne May, University of Washington

3:35 p.m. Floor Discussion

612 TCC-204 ■● Product Reliability and Life Testing—Contributed

Quality and Productivity Section, International Chinese Statistical Association, Section on Physical and Engineering Sciences

Chair(s): William Meeker, Iowa State University

2:05 p.m. A Study of Degradation Data with Measurement Errors—◆Chien-Yu Peng, Institute of Statistical Science, Academia Sinica

2:20 p.m. Optimal Design for Accelerated-Stress Acceptance Test Based on Wiener Process—◆Chih-Chun Tsai; Chien-Tai Lin, Tamkang University;

Narayanaswamy Balakrishnan, McMaster University

- 2:35 p.m. Lower Tolerance Bounds in Accelerated Life Testing for the Weibull Distribution—◆Ananda Jayawardhana, Pittsburg State University; V.A. Samaranyake, Missouri University of Science and Technology
- 2:50 p.m. Mixture of Failure Rates in Quadratic Form—◆Yi-Kuan Jong, St. John's University
- 3:05 p.m. Estimating Latent Ability from the Nondestructive Test Results When the Test Items Difficulties Are Unknown Beforehand—◆Emil Bashkansky, ORT Braude College; Vladimir Turetsky, ORT Braude College
- 3:20 p.m. Cluster Analysis for Facies Grouping—◆Mingqi Wu, Shell Global Solutions (U.S.) Inc.
- 3:35 p.m. A Two-Threshold Replacement Policy for a Two-Unit System with Failure Interaction—◆Shey-Huei Sheu, Providence University; Tzu-Hsin Liu, Providence University; Zhe-George Zhang, Western Washington University; Hsin-Nan Tsai, Providence University

613 **CC-308**
Statistical Testing—Contributed
 Section on Statistical Computing, Government Statistics Section

Chair(s): Jason Brinkley, East Carolina University

- 2:05 p.m. Sampling for Conditional Inference on Contingency Tables—◆Robert Eisinger,
- 2:20 p.m. On Test of Association Using Attributable Risk for a 2x2 Contingency Table—◆Tanweer Shapla, Eastern Michigan University; Khairul Islam, Eastern Michigan University
- 2:35 p.m. A New Transformed T-Test with a Univariate Normal Goodness of Fit—◆Khairul Islam, Eastern Michigan University; Tanweer Shapla, Eastern Michigan University
- 2:50 p.m. Parametric Bootstrap Approach for Comparing the Means of Two Independent Lognormal Distributions—◆Ahmet Sezer, Anadolu University; Berna Yazici, Anadolu University; Evren zkip, Ankara Police Collage
- 3:05 p.m. Testing for Hidden Additivity in Factorial Experiments Using the Hiddenf Package in R—◆Christopher Franck, Virginia Tech; Jason Osborne, North Carolina State University
- 3:20 p.m. Comparing High-Dimensional Bernoulli Vectors—◆Reza Modarres, The George Washington University
- 3:35 p.m. Likelihood Ratio Tests for Comparing Several Gamma Distributions—◆Meesook Lee, South

Louisiana Community College; Kalimuthu Krishnamoorthy, University of Louisiana; Wang Xiao, University of Louisiana

614 **CC-205**
Advances in Clustering—Contributed
 Section on Statistical Learning and Data Mining, Government Statistics Section, SSC

Chair(s): Xiwei Tang, University of Illinois

- 2:05 p.m. A Pseudo-Supervised Clustering Approach—◆Xinying Mu, Boston University; Mark Kon, Boston University
- 2:20 p.m. Noisy Data Clusters Are Hollow—◆Francois Leonard, Hydro-Quebec
- 2:35 p.m. Model-Based Clustering for Large-Scale Dynamic Networks—◆Kevin Lee, Penn State; Lingzhou Xue, Penn State; David R. Hunter, Penn State
- 2:50 p.m. Clustering of High-Dimensional Categorical Data—◆Saeid Amiri, University of Nebraska - Lincoln; Bertrand Clarke, University of Nebraska - Lincoln; Jennifer Clarke, University of Nebraska - Lincoln
- 3:05 p.m. Optimality of Training/Test Size and Resampling Effectiveness of Cross-Validation Estimators of the Generalization Error—◆Georgios Afendras, SUNY Buffalo; Marianthi Markatou, SUNY Buffalo
- 3:20 p.m. Robust Sparse Hierarchical Clustering—◆Hongyang Zhang, The University of British Columbia; Andrew Leung, The University of British Columbia; Ruben Zamar, The University of British Columbia
- 3:35 p.m. Statistical Significance for Hierarchical Clustering—◆Patrick Kimes, The University of North Carolina at Chapel Hill; Yufeng Liu, The University of North Carolina; James Stephen Marron, The University of North Carolina; D. Neil Hayes, The University of North Carolina at Chapel Hill

615 **CC-611**
Statistical Issues Specific to Therapeutic Areas IV—Contributed
 Biopharmaceutical Section

Chair(s): Eric Pulkstenis, MedImmune

- 2:05 p.m. POS Calculation for Binary Endpoint Based on Small Samples—◆Gang Jia, Merck; Yang Song, Merck
- 2:20 p.m. Basket Trial Using Bayesian Hierarchical Models—◆Zijiang Yang,
- 2:35 p.m. Bayesian Adaptive Randomization: A Mixture of Response-Based and Covariate-Balanced Approach—◆Shanhong Guan,

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 2:50 p.m.** Use of Utility Functions That Combine Safety and Efficacy Endpoints for Early-Phase Trials for Oral Mucositis—◆Kevin Lawson, PPD; Tingting Song, PPD
- 3:05 p.m.** Using Continual Reassessment Method to Design an Intracerebral Hemorrhage Trial to Estimate Maximum Tolerated Dose—Harry Shi, Pfizer Inc.; ◆Inna Perevozskaya, Pfizer Inc.; Gerry Li, Pfizer Inc.
- 3:20 p.m.** A New Approach to Multiple Testing of Grouped Hypotheses with Some Applications—◆Yanping Liu, Temple University; Sanat Sarkar, Temple University; Zhigen Zhao, Temple University
- 3:35 p.m.** Floor Discussion

616 CC-605

Trial Monitoring—Contributed

Biopharmaceutical Section

Chair(s): Kaushik Patra, MedImmune

- 2:05 p.m.** A Case Study for Handling the Treatment Crossover in Oncology Clinical Trial—◆Grace Liu, Johnson & Johnson, Janssen R&D; Lixia Pei, Johnson & Johnson, Janssen R&D; Steven Sun, Johnson & Johnson; Sudhakar Rao, Janssen R&D
- 2:20 p.m.** Operational Benchmarks for Clinical Trials—◆Steven Schwager, Medidata Solutions; Joshua Hartman, Medidata Solutions; John Savage, Medidata Solutions; David Lee, Medidata Solutions
- 2:35 p.m.** Estimation and Prediction of Longitudinal Biomarker Distributions Using Bayesian Nonparametric Beta Regression—◆Shouhao Zhou, MD Anderson Cancer Center; Xuelin Huang, MD Anderson Cancer Center
- 2:50 p.m.** Combining Individual Patient Data and Aggregated Data in Network Meta-Analysis with Correlated Outcomes—◆Chengxing Lu,
- 3:05 p.m.** Efficiency of Adaptive and Individualized Designs Relative to Fixed Treatment—◆Russell Reeve, Quintiles
- 3:20 p.m.** Current Sample Size Re-Estimation Methods for Censored Survival Data in Light of Noninferiority Studies—◆Hwasoon Kim; Jeff Szychowski, The University of Alabama at Birmingham
- 3:35 p.m.** Bayesian Analysis on Multiple Comparison and Optimal Decision-Making in Clinical Development—◆Guohui Liu, Takeda Pharmaceutical International Co.; Jianchang Lin, Takeda Pharmaceutical International Co.; Yi Liu, Takeda Pharmaceutical International Co.; Zhaoyang Teng, Takeda Pharmaceutical International Co.

617 CC-603

Methods in Clinical Trials 1—Contributed

Biopharmaceutical Section

Chair(s): Matthew Gribbin, MedImmune

- 2:05 p.m.** Practical Issues in Calculating Sample Size for Ordinal Data with Repeated Measures—◆Alfred Balch, University of Utah; Tom Greene, University of Utah; Colby Hansen; C.M.T. Sherwin,
- 2:20 p.m.** Statistical Issues in Analytical Method Validation—◆Pin Ren, MedImmune; Lingmin Zeng, MedImmune; Binbing Yu, MedImmune
- 2:35 p.m.** Considerations for Pediatric Trial Designs and Analyses—◆Meehyung Cho, Sanofi; Zhiying Qiu, Sanofi-Aventis; Jenny Ye, Sanofi; Hui Quan, Sanofi; Peng-Liang Zhao, Sanofi
- 2:50 p.m.** Multiple Imputations for Missing Responder Endpoint—◆Anjela Tzontcheva, Merck; Susan Huyck, Merck
- 3:05 p.m.** Joint Evaluation of Oncology Endpoints with Multi-State Counting Process—◆Xiaofei Hu; Guang Chen, Celgene; Xiaolong Luo, Celgene
- 3:20 p.m.** Data Monitoring Committees Operations—◆Tingting Li, Axio Research; Yao Yao, Axio Research; David Kerr, Axio Research; Kent Koproewicz, Axio Research
- 3:35 p.m.** Robust Platform Adjustment for Calling Breast Cancer Subtypes—◆Minya Pu, UC San Diego Moores Cancer Center; Karen Messer, UC San Diego Moores Cancer Center; Loki Natarajan, UC San Diego Moores Cancer Center

Invited Sessions 4:00 p.m.—5:50 p.m.

618 CC-Ballroom 6ABC

COPSS Awards and Fisher Lecture—Invited

ASA, ENAR, IMS, International Chinese Statistical Association, International Indian Statistical Association, International Society for Bayesian Analysis (ISBA), Korean International Statistical Society, SSC, WNAR, Committee of Presidents of Statistical Societies, Royal Statistical Society

Organizer(s): Jane Pendergast, The University of Iowa

- 4:05 p.m.** R.A. Fisher and the Statistical ABCs—◆Steven Fienberg, Carnegie Mellon University

THURSDAY AUGUST 13

Session Tag Descriptions

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

● THEME

JSM theme sessions are directly relevant to the JSM 2015 theme, "Statistics: Making Better Decisions." 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.

JSM hours

7:00 a.m.—10:30 a.m. Speaker Management Room	CC-604
7:30 a.m.—10:30 a.m. Cyber Center	CC-Atrium Lobby
7:30 a.m.—10:30 a.m. ASA Membership/Help Desk/Press Desk	CC-Atrium Lobby
7:30 a.m.—10:30 a.m. JSM Main Registration	CC-Atrium Lobby
8:00 a.m.—1:00 p.m. JSM Luggage Storage	CC-454

Committee/Business Meetings & Other Activities

8:00 a.m.—10:30 a.m. Council of Sections Response Meeting (Closed)	TCC-102
Chair(s): Stephen Gulyas, Optum Inc.	
10:30 a.m.—1:00 p.m. Council of Sections Governing Board Closing Business Meeting (Closed)	TCC-102
Chair(s): Stephen Gulyas, Optum Inc.	

Invited Sessions 8:30 a.m.—10:20 a.m.

619	CC-4C4
■ Bayesian Approaches for Complex Health Data—Invited	
IMS, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), Biometrics Section	
Organizer(s): Amy Herring, The University of North Carolina at Chapel Hill	
Chair(s): Amy Herring, The University of North Carolina at Chapel Hill	
8:35 a.m.	Bayesian Evidence Synthesis for Estimating Infectious Disease Burden—◆Anne Presanis, MRC Biostatistics Unit
9:00 a.m.	Nonparametric Bayes Models for Mixed-Scale Longitudinal Surveys—◆Tsuyoshi Kuniyama, Duke University; Amy Herring, The University of North Carolina at Chapel Hill; Carolyn Halpern, The University of North Carolina; David Dunson, Duke University
9:25 a.m.	Bayesian Inference on Group Differences in Brain Networks—◆Daniele Durante, University of Padova; David Dunson, Duke University
9:50 a.m.	Bayesian Nonparametric Approaches for the Analysis of Compositional Data Based on Bernstein Polynomials—Alejandro Jara, Pontificia Universidad Católica de Chile; ◆Andrés F. Barrientos, Duke University
10:15 a.m.	Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

620 CC-608

■ ● Benefit-Risk Assessment for Medical Products and Diagnostics—Invited

ENAR, Section on Medical Devices and Diagnostics, Health Policy Statistics Section

Organizer(s): Martin Ho, FDA/CDRH

Chair(s): Terri Johnson, FDA/CDRH

- 8:35 a.m.** Incorporating Patient Preferences in Medical Treatment Development and Review: The MDIC Patient-Centered Benefit-Risk Assessment Project—◆ Bennett Levitan, Johnson & Johnson
- 9:00 a.m.** Benefit-Risk Determinations at the FDA-Center for Devices and Radiological Health—◆ Telba Irony, FDA
- 9:25 a.m.** Evaluating Benefit Risk for Diagnostic Devices—◆ Norberto Pantoja-Galicia, FDA/CDRH; Gene Anthony Pennello, FDA
- 9:50 a.m.** Disc: Donald Berry, MD Anderson Cancer Center
- 10:10 a.m.** Floor Discussion

621 TCC-204

■ ● New Tools for Transportation Statistics—Invited

Transportation Statistics Interest Group, Government Statistics Section

Organizer(s): David Banks, Duke University

Chair(s): Li Leung, Bureau of Transportation Statistics

- 8:35 a.m.** Unstructured Social Media Data for Transportation Applications: Benefits and Challenges—◆ Piyushimita (Vonu) Thakuria, University of Glasgow
- 8:55 a.m.** Design of a Micro-Simulation for Mobility: A Case Study from Nebraska—Clifford Spiegelman, Texas A&M University; Laurence Rilett, University of Nebraska - Lincoln; Bhaven Naik, Ohio University
- 9:15 a.m.** A New Generalized Heterogeneous Data Model (GHDM) to Jointly Model Mixed Types of Dependent Variables—◆ Chandra R. Bhat, The University of Texas at Austin
- 9:35 a.m.** Disc: Feng Guo, Virginia Tech
- 9:55 a.m.** Disc: Pradeep Mohan, SAS Institute
- 10:15 a.m.** Floor Discussion

622 CC-310

● Tradeoffs in Resource-Constrained Statistical Learning—Invited

IMS

Organizer(s): Aarti Singh, Carnegie Mellon University

Chair(s): John Lafferty, The University of Chicago

- 8:35 a.m.** Batched Bandits—◆ Philippe Rigollet, MIT; Vianney Perchet, University Paris 7; Sylvain Chassang, Princeton University; Erik Snowberg, California Institute of Technology
- 9:00 a.m.** Local Privacy, Data Processing Inequalities, and Minimax Rates—◆ John Duchi, Stanford University; Martin Wainwright, UC Berkeley; Michael Jordan, UC Berkeley
- 9:25 a.m.** Error, Measurement, and Computational Tradeoffs via Adaptive Sampling—◆ Aarti Singh, Carnegie Mellon University
- 9:50 a.m.** Disc: Alekh Agarwal, Microsoft Research
- 10:15 a.m.** Floor Discussion

623 CC-206

■ ● Statistical and Graphical Challenges in Analyzing Big and Complex Neuroimaging Data—Invited

Section on Statistical Graphics, International Chinese Statistical Association, SSC

Organizer(s): Linglong Kong, University of Alberta

Chair(s): Linglong Kong, University of Alberta

- 8:35 a.m.** Estimate Information Flow in Brain Networks—◆ Xi Luo, Brown University; Yi Zhao, Brown University
- 9:00 a.m.** Brain Imaging and Personalized Medicine in Psychiatry—◆ R. Todd Ogden, Columbia University; Adam Ciarleglio, New York University; Bei Jiang, Columbia University/New York University; Eva Petkova, New York University School of Medicine; Thaddeus Tarpey, Wright State University
- 9:25 a.m.** A High-Dimensional State-Space Model for the Joint Analysis of EEG and MEG Data—◆ Farouk Salim Nathoo, University of Victoria
- 9:50 a.m.** Independent Component Analysis for Spatial Stochastic Processes on a Lattice—◆ Haipeng Shen, The University of North Carolina at Chapel Hill
- 10:15 a.m.** Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

624 CC-4C1 ■ ● Big Data Techniques for Survey Data Integration—Invited

Survey Research Methods Section, Government Statistics Section, Section on Statistics and the Environment

Organizer(s): Shu Yang, Harvard School of Public Health

Chair(s): Shu Yang, Harvard School of Public Health

- 8:35 a.m. Survey Data, Big Data, State Space Models, and Official Statistics—◆Siu-Ming Tam, Australian Bureau of Statistics
- 9:00 a.m. Crop Acreage Prediction Combining Several Sources of Information—Jae-kwang Kim, Iowa State University; ◆Zhonglei Wang, Iowa State University
- 9:25 a.m. Integrating Survey Data with Auxiliary Sources of Information to Estimate Crop Yields—◆Nathan Cruze, USDA/NASS
- 9:50 a.m. Disc: Bob Fay, Westat
- 10:15 a.m. Floor Discussion

625 TCC-202 ● Non- and Semiparametric Models for Complex High-Dimensional Data—Invited International Chinese Statistical Association, SSC

Organizer(s): Ming-Yen Cheng, National Taiwan University

Chair(s): Roger Longbotham, Process Performance Management

- 8:35 a.m. Bandwidth Selection for High-Dimensional Covariance Matrix Estimation—◆Song Xi Chen, Peking University/Iowa State University; Yumou Qiu, University of Nebraska - Lincoln
- 9:00 a.m. Segmenting Multiple Time Series by Contemporaneous Linear Transformation—◆Jinyuan Chang, The University of Melbourne; Bin Guo, Peking University; Qiwei Yao, London School of Economics
- 9:25 a.m. Minimax Matrix Regression Function Estimation for Symmetric Positive Definite Matrices—◆Peter T. Kim, University of Guelph
- 9:50 a.m. Forward Variable Selection for Sparse Ultra-High-Dimensional Varying Coefficient Models—◆Ming-Yen Cheng, National Taiwan University; Toshio Honda, Hitotsubashi University; Jin-Ting Zhang, National University of Singapore
- 10:15 a.m. Floor Discussion

626 TCC-101 ● New Methodology for Learning Low-Dimensional Structure in High-Dimensional Data—Invited

Statistical and Applied Mathematical Sciences Institute, SSC

Organizer(s): Richard L. Smith, SAMSI

Chair(s): David Dunson, Duke University

- 8:35 a.m. Correlation-Fusion for Variable Clustering in High-Dimensional G-Models: Theory and Algorithms—◆Florentina Bunea, Cornell University
- 9:00 a.m. Modeling Surfaces and Shapes—Katharine Turner, The University of Chicago; ◆Sayan Mukherjee, Duke University; Doug Boyer, Duke University
- 9:25 a.m. A Local Approach to Estimation in Discrete Loglinear Models—◆Helene M. Massam, York University; Nanwei Wang, York University
- 9:50 a.m. Disc: Richard L. Smith, SAMSI
- 10:10 a.m. Floor Discussion

627 CC-2B ■ ● Network Science: Moving from Complex Data to Practical Insights—Invited Section on Statistical Learning and Data Mining

Organizer(s): Bailey K. Fosdick, Colorado State University

Chair(s): Thiago Costa, University of Washington

- 8:35 a.m. Multiple Questions on Multiple Scales: Multiresolution Social Network Models—◆Bailey K. Fosdick, Colorado State University; Ted Westling, University of Washington; Tyler McCormick, University of Washington
- 9:00 a.m. Continuous Latent Factor Models for Cognitive Social Structure Data—◆Abel Rodriguez, UC Santa Cruz
- 9:25 a.m. An Inferential Framework for Mechanistic Network Models—◆Jukka-Pekka Onnela, Harvard University
- 9:50 a.m. Networks on the Right-Hand Side: Relating Networks to Outcomes—◆Tyler McCormick, University of Washington
- 10:15 a.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

628

CC-619

■ ● Tools for Policy: Bayesian Assessments to Support Decision-Makers—Invited

Health Policy Statistics Section, Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA)

Organizer(s): Mariel M. Finucane, Mathematica Policy Research

Chair(s): Randall Brown, Mathematica Policy Research

- 8:35 a.m.** Evolving Needs of Policymakers for Drawing Inferences from Evaluation Results—◆ Timothy James Day, Centers for Medicare and Medicaid Services; Renee Mentnech, CMS Innovation Center; David M. Bott, CMS Innovation Center
- 9:00 a.m.** Causal Methods for Evaluating Air Quality Control Policies—◆ Corwin Zigler, Harvard School of Public Health
- 9:25 a.m.** Hierarchical Bayesian Evaluation of Health System Change Using Administrative Data—◆ Frank Yoon, Mathematica Policy Research; Mariel M. Finucane, Mathematica Policy Research; Lauren N. Vollmer, Mathematica Policy Research; Randall Brown, Mathematica Policy Research
- 9:50 a.m.** Disc: Sharon-Lise Normand, Harvard Medical School
- 10:15 a.m.** Floor Discussion

629

CC-4C3

■ ● Default Bayesian Versus Empirical Bayesian Methods and Their Large- and Small-Sample Properties—Invited

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

Organizer(s): Yisheng Li, MD Anderson Cancer Center

Chair(s): Francesco Stingo, MD Anderson Cancer Center

- 8:35 a.m.** Bayes and Empirical Bayes: Will They Agree?—◆ Sonia Petrone, Bocconi University; Catia Scricciolo, Bocconi University; Judith Rousseau, Université Paris-Dauphine/CREST
- 9:05 a.m.** False Discovery Rate Smoothing—◆ James Scott, The University of Texas at Austin; Wesley Tansey, The University of Texas at Austin
- 9:35 a.m.** Catalytic Priors—◆ Nathan Stein, University of Pennsylvania; Samuel Kou, Harvard University; Donald B. Rubin, Harvard University
- 10:05 a.m.** Floor Discussion

630

CC-4C2

Journal of Survey Statistics and Methodology Invited Session—Invited

Journal of Survey Statistics and Methodology

Organizer(s): Joseph Sedransk, Case Western Reserve University

Chair(s): Joseph Sedransk, Case Western Reserve University

- 8:35 a.m.** Accuracy in Estimation with Nonresponse: A Function of Degree of Imbalance and Degree of Explanation—◆ Carl-Erik Sarndal, Statistics Sweden
- 9:05 a.m.** Representative Surveys in Insecure Environments: A Case Study of Mogadishu, Somalia—◆ Jesse Driscoll, UC San Diego; Nicholai Lidow, Independent
- 9:35 a.m.** Disc: Michael Elliott, University of Michigan
- 10:05 a.m.** Floor Discussion

Topic-Contributed Sessions

8:30 a.m.—10:20 a.m.

631

CC-612

■ ● Statistical Methods for Electronic Medical Records: A New Frontier in Health Care Research—Topic-Contributed

Section on Statistics in Epidemiology, Biometrics Section

Organizer(s): Ani Eloyan, The Johns Hopkins University

Chair(s): Russell Shinohara, University of Pennsylvania

- 8:35 a.m.** Machine Learning Techniques for Plan Payment Risk Adjustment—◆ Sherri Rose, Harvard Medical School
- 8:55 a.m.** Linking Electronic Health Records from Distinct Data Sources for Patient Care and Research—◆ Xiaochun Li, Indiana University School of Medicine; Huiping Xu, Indiana University Richard M. Fairbanks School of Public Health; Changyu Shen, Indiana University; Shaun Grannis, Regenstrief Institute
- 9:15 a.m.** Causal Inference for Electronic Medical Records Data: Application to Prostate Cancer—◆ Rebecca Yates Coley, The Johns Hopkins University; Scott L. Zeger, The Johns Hopkins University
- 9:35 a.m.** Statistical Methods for Electronic Medical Records: A New Frontier in Health Care Research—◆ Jennifer Clark Nelson, Group Health Research Institute
- 9:55 a.m.** Imputing Missing Demographic Information Using Aggregate Data—◆ Elizabeth Ogburn, Johns Hopkins Bloomberg School of Public Health
- 10:15 a.m.** Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

632 CC-620

■ ● Advanced Topics in Propensity Score Methods—Topic-Contributed

Health Policy Statistics Section

Organizer(s): Wei Pan, Duke University

Chair(s): Tianle Chen, Biogen

8:35 a.m. Propensity Score Estimation with Boosted Regression—◆ Claude Setodji, RAND Corporation; Daniel F. McCaffrey, Educational Testing Service; Lane Burgette, RAND Corporation; Beth Ann Griffin, RAND Corporation; Daniel Almirall, University of Michigan

8:55 a.m. Critical Issues in Propensity Score Matching—◆ Haiyan Bai, University of Central Florida; Wei Pan, Duke University

9:15 a.m. Quantile Prognostic Scores—◆ Ben Kelcey, University of Cincinnati; Chris Swoboda, University of Cincinnati; Jiaqi Zhang, University of Cincinnati; Zuchao Shen, University of Cincinnati

9:35 a.m. Implementing Propensity Score Methods: A Review of the Statistical Software—◆ Megan S. Schuler, Penn State

9:55 a.m. Disc: Wei Pan, Duke University

10:15 a.m. Floor Discussion

633 CC-307

■ Innovative Bayesian Designs for Exploratory Clinical Trials—Topic-Contributed

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

Organizer(s): Wei Zhong, Takeda Pharmaceuticals

Chair(s): Yuanjun Shi, Takeda Pharmaceuticals

8:35 a.m. Challenges and Opportunities Posed by ‘small Data’: Bayesian Methods for Early-Phase Clinical Trials in Rare Diseases—◆ Qiuling Ally He, Novartis Institutes for BioMedical Research

8:55 a.m. Dose-Finding Using Hierarchical Modeling for Multiple Subgroups—◆ Kristen Cunanan, University of Minnesota; Joe Koopmeiners, University of Minnesota

9:15 a.m. A New Bayesian Sample Size in Exploratory Clinical Trials with Two Coprimary Endpoints—◆ Wei Zhong, Takeda Pharmaceuticals; Xin Wang, AbbVie; Yifan Huang, AstraZeneca

9:35 a.m. Multistage, Bayesian Adaptive Design for Non-Small Cell Lung Cancer: A Step Toward Choosing Right Subpopulation—◆ Serap Sankoh, Takeda Pharmaceuticals; Zhaowei Hua, Takeda Pharmaceuticals; Hongliang Shi, Takeda

Pharmaceuticals; Mingxiu Hu, Takeda Pharmaceuticals

9:55 a.m. Bayesian Adaptive Trial Design with Multiple Efficacy Endpoints for Heterogeneous Subpopulations—◆ Lindsay Renfro, Mayo Clinic; Bradley P. Carlin, University of Minnesota; Daniel Sargent, Mayo Clinic

10:15 a.m. Floor Discussion

634 CC-203

■ ● Improved Estimation of Small-Area Characteristics—Topic-Contributed

Survey Research Methods Section

Organizer(s): Gauri S. Datta, University of Georgia/U.S. Census Bureau

Chair(s): Akhil Vaish, RTI International

8:35 a.m. Robust Small-Area Estimation Under Semiparametric Mixed Models—◆ Sanjoy Sinha, Carleton College

8:55 a.m. Improving Small-Area Estimates of Disability: A Model-Based Approach to Combining the American Community Survey with the Survey of Income and Program Participation—◆ Jerry Maples, U.S. Census Bureau; Amy Steinweg, U.S. Census Bureau

9:15 a.m. Prediction Intervals of Small-Area Means Under Semiparametric Measurement Error Models—◆ Gauri S. Datta, University of Georgia/U.S. Census Bureau; Aurore Delaigle, The University of Melbourne; Peter Hall, The University of Melbourne; Lily Wang, Iowa State University

9:35 a.m. Robust Bayesian Small-Area Estimation for Area-Level Data—◆ Adrijo Chakraborty, NORC at the University of Chicago; Gauri S. Datta, University of Georgia/U.S. Census Bureau; Abhyuday Mandal, University of Georgia

9:55 a.m. Mixture Model and EM Algorithm in Small-Area Estimation—◆ Jiashen You, U.S. Census Bureau; Gauri S. Datta, University of Georgia/U.S. Census Bureau

10:15 a.m. Floor Discussion

635 CC-606

■ ● Advanced Randomization Techniques in Clinical Trials—Topic-Contributed

Biopharmaceutical Section

Organizer(s): Olga M. Kuznetsova, Merck

Chair(s): Yue Shentu, Merck

8:35 a.m. Minimization as a Preferred Method of Treatment Allocation in Randomized Trials—◆ Marc Buyse, Hasselt University

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- 8:55 a.m. Restricted Randomization in Studies with Unequal Allocation—◆Olga M. Kuznetsova, Merck
- 9:15 a.m. Considerations for a Practical Use of Brick Tunnel Randomization Procedure—◆Yevgen Tymofyeyev, J&J PRD
- 9:35 a.m. A Unified Family of Covariate-Adjusted Response-Adaptive Designs Based on Efficiency and Ethics—Jianhua Hu, MD Anderson Cancer Center; ◆Hongjian Zhu, The University of Texas School of Public Health; Feifang Hu, The George Washington University
- 9:55 a.m. Disc: William F. Rosenberger, George Mason University
- 10:15 a.m. Floor Discussion

636 CC-607

■ Concepts and Methods of Interim Adaptation with Conditional Power—Topic-Contributed Biopharmaceutical Section

Organizer(s): Alison Pedley, Merck
Chair(s): Alison Pedley, Merck

- 8:35 a.m. Futility Monitoring with Conditional Power: A Rationale for the Choice of Theta Assumption Based on Type II Error Probability—◆Thomas Dobbins, Merck
- 8:55 a.m. Sample Size Adjustment Based on Promising Interim Results and Its Application in Confirmatory Clinical Trials—◆Joshua Chen, Sanofi Pasteur
- 9:15 a.m. Changing Course Midstream or Giving Up Entirely: Making Decisions on the Basis of Ongoing Data from Clinical Trials—◆Janet Wittes, Statistics Collaborative
- 9:35 a.m. Cautions in Interpretation of Conditional Power-Based Interim Action Thresholds—◆Paul Gallo, Novartis Pharmaceuticals
- 9:55 a.m. Disc: Keaven Anderson, Merck
- 10:15 a.m. Floor Discussion

637 CC-609

■ ● Statistical Methods for Observational Health Studies—Topic-Contributed Biometrics Section, Health Policy Statistics Section

Organizer(s): Tian Zheng, Columbia University
Chair(s): Shirin Golchi, Columbia University

- 8:35 a.m. Predicting Health Outcomes from High-Dimensional Longitudinal Health Histories Using Relational Random Forests—◆Zach Shahn, Columbia University; David Madigan, Columbia University; Patrick Ryan, Observational Health Data Sciences

and Informatics

- 8:55 a.m. The Use of Area-Based Poverty Measures in Observational Studies of Health Disparities: Some Practical Considerations—◆Kevin Konty, ; Donald Olson, NYC DOHMH; Stuart Sweeney, UC Santa Barbara
- 9:15 a.m. Using Bayesian Evidence Synthesis to Estimate Hepatitis C Prevalence Among Adults in New York City—◆Hui Fen Tan, Cornell University; Susanna M. Makela, Columbia University; Daliah Heller, City University of New York School of Public Health; Kevin Konty, ; Sharon Balter, New York City Department of Health and Mental Hygiene; Tian Zheng, Columbia University; James H. Stark, Pfizer Inc.
- 9:35 a.m. Interpretable Feature Creation and Model Uncertainty in Observational Medical Data—◆Rebecca Ferrell, University of Washington; Tyler McCormick, University of Washington
- Disc: Tian Zheng, Columbia University
- 10:15 a.m. Floor Discussion

638 CC-205

■ Advances in Finite Mixture Modeling with Applications—Topic-Contributed Section on Statistical Computing, International Indian Statistical Association

Organizer(s): Volodymyr Melnykov, The University of Alabama
Chair(s): Semhar Michael, The University of Alabama

- 8:35 a.m. Probabilistic Assessment of Model-Based Clustering—◆Xuwen Zhu, The University of Alabama; Volodymyr Melnykov, The University of Alabama
- 8:55 a.m. Simulating Mixtures of Multivariate and Regression Data in FSDA with MIXSIM—◆Domenico Perrotta, EC Joint Research Centre; Marco Riani, University of Parma; Andrea Cerioli, University of Parma; Francesca Torti, EC Joint Research Centre
- 9:15 a.m. Fast Multinomial Clustering with Applications to Genetic Population Structure—◆Karin Dorman, Iowa State University; Arun Sethuraman, Temple University; Wei-Chen Chen, FDA
- 9:35 a.m. On Finite Mixtures of Some Skew Distributions—◆Geoffrey McLachlan, The University of Queensland
- 9:55 a.m. Non-Central Generalized Gamma Mixtures for the Classification of High-Dimensional Data—◆Alejandro Murua, University of Montreal; Bertrand Saulnier, Université de Montréal
- 10:15 a.m. Floor Discussion

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639 **CC-611**

■ ● Challenges in Optimizing Cut-Off Point for Dichotomizing Continuous Variables—Topic-Contributed

Biopharmaceutical Section

Organizer(s): Yanzhi Hsu, Eli Lilly and Company

Chair(s): Yanzhi Hsu, Eli Lilly and Company

- 8:35 a.m.** Dichotomizing Continuous Biomarkers for Different Drug Development Objectives—◆Yafeng Zhang, Gilead Sciences; Liang Fang, Gilead Sciences
- 8:55 a.m.** Modeling Prognostic Factors in Gastric Cancer with Binary and Continuous Variables—◆Peipei Shi, Eli Lilly and Company; Yanzhi Hsu, Eli Lilly and Company
- 9:15 a.m.** Identify Subset of Patients Benefiting from Treatment for Patients with Liver Cancer—◆Yihuan Xu, Eli Lilly and Company; Yanzhi Hsu, Eli Lilly and Company; Ling Yang, Eli Lilly and Company
- 9:35 a.m.** Permutation Test in Biomarker Design—◆Qi Gong,
- 9:55 a.m.** Disc: Jonathan Denne, Eli Lilly and Company
- 10:15 a.m.** Floor Discussion

640 **CC-204**

■ ● Privacy Preservation and the Use of Synthetic Data for Public Use Statistics—Topic-Contributed

Business and Economic Statistics Section, Survey Research Methods Section

Organizer(s): Lars Vilhuber, Cornell University

Chair(s): Jerry Reiter, Duke University

- 8:35 a.m.** Synthetic Data Generation for Firm Links—◆Satkartar Kinney, NISS; Jerry Reiter, Duke University
- 8:55 a.m.** Assessing the Data Quality of Public Use Tabulations Produced from Synthetic Data: Synthetic Business Dynamics Statistics—◆Lars Vilhuber, Cornell University; Javier Miranda, U.S. Census Bureau
- 9:15 a.m.** Editing, Imputation, and Synthesis: A Public Use File for the Census of Manufactures—◆Hang Kim, NISS/Duke University; Jerry Reiter, Duke University
- 9:35 a.m.** Differential Privacy and Verification of Results—◆David McClure, ; Jerry Reiter, Duke University; Ashwin Machanavajjhala, Duke University
- 9:55 a.m.** Disc: John Abowd, Cornell University
- 10:15 a.m.** Floor Discussion

641 **CC-615**

■ ● Challenges in Large Epidemiological Studies: Applications of Survival Analytical Methods—Topic-Contributed

ENAR, Biometrics Section, International Indian Statistical Association

Organizer(s): Rajeshwari Sundaram, NIH

Chair(s): Kirsten Lum, University of Pennsylvania

- 8:35 a.m.** Accounting for Complex Sampling in Survival Analyses of Screening Data—◆Noorie Hyun, National Cancer Institute; Li Cheung, The George Washington University; Qing Pan, The George Washington University; Hormuzd Katki, National Cancer Institute
- 8:55 a.m.** Survival Analyses of Screening Data: Interval-Censored Outcomes and Undiagnosed Baseline Disease—◆Li Cheung, The George Washington University; Hormuzd Katki, National Cancer Institute; Noorie Hyun, National Cancer Institute; Qing Pan, The George Washington University
- 9:15 a.m.** Joint Scale-Change Models for Recurrent Events and Failure Time—◆Sy Han Chiou, University of Minnesota, Duluth; Gongjun Xu, University of Minnesota; Chiung-Yu Huang, The Johns Hopkins University; Mei-Cheng Wang, The Johns Hopkins University; Jun Yan, University of Connecticut
- 9:35 a.m.** Competing Risks Model for Cross-Sectional Sampled Length Biased Data—◆Alexander McLain, University of South Carolina
- 9:55 a.m.** Analysis of Inter-Arrival Times in Presence of Panel Count Data with Intermittent Examination Times: An Application to Spontaneous Labor in Women—◆Rajeshwari Sundaram, NIH; Ling Ma, Eunice Kennedy Shriver National Institute of Child Health and Human Development
- 10:15 a.m.** Floor Discussion

Topic-Contributed Panels

8:30 a.m.—10:20 a.m.

642 **CC-3B**

■ ● Quality Assurance of Agile Survey Methodology in Informing Better Decisions in Humanitarian Emergencies—Topic-Contributed

Social Statistics Section, Quality and Productivity Section, Section on Physical and Engineering Sciences, Government Statistics Section, Statistics Without Borders, Committee on Applied Statisticians

Organizer(s): Asaph Young Chun, U.S. Census Bureau
 Chair(s): Justin Fisher, Government Accountability Office
 Panelists: ◆Chris Barker, Statistical Planning and Analysis Services, Inc.
 ◆Asaph Young Chun, U.S. Census Bureau
 ◆James J. Cochran, The University of Alabama
 ◆Edward Gracely, Drexel University
 ◆Yu-chieh Lin, University of Michigan
 10:15 a.m. Floor Discussion

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

643 **CC-211**
Time Series Forecasting and Regression Analysis—Contributed

Business and Economic Statistics Section, Section on Statistics and the Environment

Chair(s): Haileab Hilafu, University of Tennessee

- 8:35 a.m. Unbiased Forecast of Autoregressive Process Under LINEX Loss Function—◆Jin-Rong Yang,
- 8:50 a.m. Imposing Frequency-Domain Restrictions on Time-Domain Forecasts—◆Marek Chudy, University of Vienna; Erhard Reschenhofer, University of Vienna
- 9:05 a.m. Testing for Predictability in Financial Returns Using Statistical Learning Procedures—◆Ignacio Lobato, Instituto Tecnológico Autónomo de México; Imanol Arrieta, Stanford University
- 9:20 a.m. Enterprise Business Metric Forecasting—◆Beatriz Etchegaray Garcia, IBM Research; Yasuo Amemiya, IBM Research
- 9:35 a.m. Basel III and the Prediction of Financial Crises—◆Simon Van Norden, HEC Montreal; Marc Wildi, ZHAW
- 9:50 a.m. Modeling and Prediction of Pharmaceutical Utilization via Bayesian Structural Time Series—◆Grant Weller, Savvysherpa, Inc.
- 10:05 a.m. An Alternative Approach of Fitting a Regression Line Not Based on Least Square Estimates—◆Silvey Shamsi, Jahangirnagar University; Mian Adnan, Ball State University; Rahmatullah Shams Imon, Ball State University

644 **CC-304**
Bayesian Disease Mapping and Modeling of Infectious Disease—Contributed

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

Chair(s): Matthew Heaton, Brigham Young University

- 8:35 a.m. A Bayesian Hierarchical Model with Novel Prior Specifications for Estimating HIV Testing Rate—◆Qian An, CDC; Jian Kang, Emory University; Ruiguang Song, CDC; Irene Hall, CDC
- 8:50 a.m. Bayesian Ranking of Health Care-Associated Infection Metrics Using Triple-Goal Estimates—◆Jonathan R. Edwards, CDC
- 9:05 a.m. A Nonseparable Multivariate Space-Time Model for Analyzing County-Level Heart Disease Death Rates—◆Harrison Quick, CDC; Lance Waller, Emory University
- 9:20 a.m. Spatially Explicit Survival Modeling for Small-Area Cancer Data—◆Georgiana Onicescu, Medical University of South Carolina; Andrew B. Lawson, Medical University of South Carolina; Jiajia Zhang, University of South Carolina; Mulugeta Gebregziabher, Medical University of South Carolina; Kristin Wallace, Medical University of South Carolina; Jan Eberth, University of South Carolina
- 9:35 a.m. Semiparametric Bayesian Beta Binomial Model for a Cohort of HIV High-Risk Men—◆Victor Sal Y Rosas, Pontificia Universidad Católica del Perú; Luis Mauricio Castro, Universidad de Concepción; James P. Hughes, University of Washington
- 9:50 a.m. A Bayesian Hierarchical Spatial Model for Dental Caries Assessment Using Non-Gaussian Markov Random Fields—◆Ick Hoon Jin, The Ohio State University; Ying Yuan, MD Anderson Cancer Center; Dipankar Bandyopadhyay, University of Minnesota
- 10:05 a.m. Floor Discussion

645 **CC-212**
Clinical Trials and Survey Design—Contributed

Government Statistics Section, Committee on Applied Statisticians

Chair(s): Iris Shimizu, National Center for Health Statistics

- 8:35 a.m. Statute of Limitations Effect on Forensic DNA Testing Outcomes for Biological Evidence from Sexual Assault Kits: Results from the Detroit Sexual Assault Kit Action Research Project—◆Dhruv Sharma, Michigan State University; Steven Pierce, Michigan State University; Rebecca Campbell, Michigan State University

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- 8:50 a.m.** Comparing the Performance of Drug Court with an Alternative—◆David Schwager, Multnomah County Department of Community Justice; Jessica Wyse, Multnomah County Department of Community Justice
- 9:05 a.m.** Pediatric Clinical Trials: Designing the Right Trial for the Right Population—◆Jennifer Clark, FDA
- 9:20 a.m.** A Comparison of Disability Prevalence Estimates Across Three Federal Population-Based Surveys—◆Courtney-Long Elizabeth A., CDC; Dianna D. Carroll, CDC; Stevens Alissa, CDC; Qing (Cathy) Zhang, CDC; Vincent Campbell, CDC
- 9:35 a.m.** Testing the Addition of the Social Insurance Number to the Canadian Census of Population—◆Cilanne Boulet, Statistics Canada; Patrice Mathieu, Statistics Canada
- 9:50 a.m.** Patient-Provider Relationships and Disparities in End-of-Life Care Among Medicare Beneficiaries: Methodological Approaches Using the Medicare Current Beneficiary Survey—◆Jennifer Hasche, NORC at the University of Chicago; Kirk Wolter, NORC at the University of Chicago; Sai Loganathan, NORC at the University of Chicago; Kevin Koenig, NORC at the University of Chicago; Debra Reed-Gillette, Centers for Medicare and Medicaid Services; Paul Guerino, Centers for Medicare and Medicaid Services; Chris Haffer, Centers for Medicare and Medicaid Services
- 10:05 a.m.** On the Relationship Between Missing Information and Missing Data in the 2012 NAMCS Physician Workflow Mail Survey—◆Qiyuan Pan, CDC/NCHS/DHCS; Rong Wei, CDC/NCHS/ORM

646 **Wildlife Modeling—Contributed**
Section on Statistics and the Environment

CC-213

Chair(s): Sergii Babkin, Rice University

- 8:35 a.m.** Scale and Analysis of Spatially Confounded Ecological Data—◆Trevor Hefley, Colorado State University; Mevin Hooten, Colorado State University; Ephraim Hanks, Penn State; Daniel Walsh, U.S. Geological Survey; Robin Russell, U.S. Geological Survey
- 8:50 a.m.** Partial Stratification in Two-Sample Capture-Recapture Experiments—◆Lasantha Premarathna, Simon Fraser University; Carl J. Schwarz, Simon Fraser University
- 9:05 a.m.** A Comparison of Models for Analyzing Occupancy Data Collect with Multiple Detectors—◆Derek Sonderegger, Northern Arizona University
- 9:20 a.m.** Sparse Priors in Bayesian Hierarchical Models of Predator Prey Preferences—◆Christopher Wolf, ; Alix I. Gitelman, Oregon State University; Mark

Novak, Oregon State University

- 9:35 a.m.** Mapping the Distribution of Marine Birds in the Northeast and Mid-Atlantic: Making Better Decisions in Ocean Planning—◆Earvin Balderama, ; Beth Gardner, North Carolina State University; Brian J. Reich, North Carolina State University
- 9:50 a.m.** Dynamic Linear Models for Phenophase Identification in Remotely Sensed MTCI Data—◆Maggie Johnson, Iowa State University; Petrutza Caragea, Iowa State University
- 10:05 a.m.** A Flexible Class of Spatio-Temporal Model for Mountain Pine Beetle Damage—◆Kimberly Kaufeld, SAMSI/North Carolina State University; Sujit Ghosh, SAMSI/North Carolina State University

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CC-610

■ ● **Statistical Issues in Environmental Epidemiology—Contributed**

Section on Statistics in Epidemiology, Section on Statistics and the Environment, Committee on Applied Statisticians

Chair(s): Xiaohong Zhu, HRSA

- 8:35 a.m.** Recent Advancements in Kernel Estimation of Spatial Relative Risk—◆Tilman Davies, University of Otago; Martin L. Hazelton, Massey University; Khair Jones, Massey University
- 8:50 a.m.** Gene-Environment Independence in Case-Control Studies: Issues of Parameterization and Bayesian Inference—◆Hao Luo, ; Igor Burstyn, Drexel University; Paul Gustafson, The University of British Columbia
- 9:05 a.m.** Bayesian Multi-Level Quantile Regression for Longitudinal Data—◆Chih-Chieh Chang, University of Southern California; Kiros Berhane, University of Southern California
- 9:20 a.m.** Time Series Modeling of Pathogen-Specific Disease Probabilities with Incomplete Data—◆Leigh Fisher, ; Jon Wakefield, University of Washington
- 9:35 a.m.** Using Bayesian Hierarchical Models to Simultaneously Evaluate Multiple Pollutants Associated with Spina Bifida—◆Michael Swartz, The University of Texas Health Science Center; Yi Cai, The University of Texas at Houston; Wenyaw Chan, The University of Texas School of Public Health; Elaine Symanski, The University of Texas Health Science Center; Laura Mitchell, The University of Texas Health Science Center; Heather Danysh, Baylor College of Medicine; Peter Langlois, Texas Department of State Health Services; Philip Lupo, Baylor College of Medicine
- 9:50 a.m.** A Two-State Markov Mixture Model for Renal Colic Emergency Room Admission Counts During the Summer Months in Houston, Texas—◆Thomas

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Greene, The University of Texas Health Science Center; Kai Zhang, The University of Texas Health Science Center

- 10:05 a.m. Statistical Models to Investigate the Declining Seasonal Malaria Patterns 1990–2014 in an Area of Expanding Vector Control Along the Kenyan Coast—◆Stella Karuri, KEMRI-Wellcome Trust Research Programme; Abdisalan Noor, KEMRI-Wellcome Trust Research Programme; Philip Bejon, University of Oxford; Robert Snow, KEMRI-Wellcome Trust Research Programme

648 CC-614 ■ ● SIE CP11: Genetic Epidemiology— Contributed

Section on Statistics in Epidemiology

Chair(s): Allen Heller, Independent

- 8:35 a.m. An Alternative Method to Find Origin of Replication of Human Cytomegalovirus—◆Arnab Chakrabarti, Indian Statistical Institute
- 8:50 a.m. Proportion of False Discoveries Within a Subset of the Smallest P-Values in Genetic Association Studies with Large Number of Tests—◆Dmitri Zaykin, National Institute of Environmental Health Sciences; Olga Vsevolozhskaya, Michigan State University; Chia-Ling Kuo, University of Connecticut
- 9:05 a.m. Unbiased Penetrance Estimates with Unknown Ascertainment Strategies—◆Kristen Gore, Hewlett-Packard
- 9:20 a.m. Ordinary Linear Mixed Model Approaches May Lead to Invalid Inference in Genetic Association Studies for Binary Traits—◆Han Chen, ; Chaolong Wang, Genome Institute of Singapore; Matthew Conomos, University of Washington; Adrienne Stulp, University of Washington; Zilin Li, ; Tamar Sofer, University of Washington; Adam Szpiro, University of Washington; Timothy Thornton, University of Washington; Cathy Laurie, University of Washington; Kenneth Rice, University of Washington; Xihong Lin, Harvard School of Public Health
- 9:35 a.m. Identification of Causal Pathways in Studies with a Large Number of Mediators—◆Andriy Derkach, National Cancer Institute; Joshua Sampson, National Cancer Institute
- 9:50 a.m. A Multivariate Phenotype Quasi-Likelihood Score Test for Genetic Association in Samples with Known or Cryptic Structure—◆Timothy Thornton, University of Washington; Mingdong Liu, University of Washington
- 10:05 a.m. Latent Class and Genetic Stochastic Process Models: Implications for Analyses of Longitudinal Data on Aging, Health, and Longevity—◆Konstantin

Arbeev, Duke University; Liubov Arbeeva, Duke University; Igor Akushevich, Duke University; Alexander Kulminski, Duke University; Svetlana Ukraintseva, Duke University; Anatoliy Yashin, Duke University

649 CC-201 Longitudinal and Panel Data—Contributed Survey Research Methods Section

Chair(s): Jacob Bournazian, Energy Information Administration

- 8:35 a.m. Forecasting Survey Panel Turnover Using Discrete Time Survival Analysis—◆Jun Ruan, Nielsen Audio; Frank Fasinski, Nielsen Audio
- 8:50 a.m. Adjust for Bounding and Time in Sample Effects in NCVS Property Crime Rate Estimation—◆Hui Yang, ; Asuman Turkmen, The Ohio State University; Elizabeth Stasny, The Ohio State University
- 9:05 a.m. Hierarchical Models for State-Level AK Estimators in the Current Population Survey—◆Yuan Li, The George Washington University; Michael Larsen, The George Washington University
- 9:20 a.m. The Implications of Questionnaire Redesign on Trend Estimates in the 2011 Police Public Contact Survey—◆Glynis Ewing, RTI International; Marcus Berzofsky, RTI International; Lynn Langton, Bureau of Justice Statistics; Michael Planty, Bureau of Justice Statistics
- 9:35 a.m. Outlier Mitigation for Panels Using Indirect Estimation—◆William Waldron, Nielsen; Ekaterina Sotiris, ; Daniel Bonnery, Nielsen/JPSM
- 9:50 a.m. Survival Modeling of Cumulative MLB Season Audience—◆Ekaterina Sotiris,
- 10:05 a.m. Modeling Incomplete Longitudinal Bounded Outcomes: An Application Study—◆Nai-Wei Chen, The University of Texas Medical Branch; Yongfang Kuo, The University of Texas Medical Branch; Kyriakos S. Markides, University of Texas Medical Branch

650 CC-308 Advances in High-Dimensional Data Nonparametrics: Part 1—Contributed Section on Nonparametric Statistics

Chair(s): Xin Qi, Georgia State University

- 8:35 a.m. Ranking-Based Subset Selection for High-Dimensional Data—◆Rafal Baranowski, ; Piotr Fryzlewicz, London School of Economics
- 8:50 a.m. NOVELIST Estimator of Large Correlation and Covariance Matrices and Their Inverses—◆Na

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Huang, London School of Economics; Piotr Fryzlewicz, London School of Economics

- 9:05 a.m. An Iterative Hard Thresholding Estimator for Low-Rank Matrix Recovery with Explicit Limiting Distribution—◆Arlene Kyoung Hee Kim, University of Cambridge; Alexandra Carpentier, University of Cambridge
- 9:20 a.m. Video-Based Action Recognition Using Rate-Invariant Analysis of Covariance Trajectories—◆Zhengwu Zhang, ; Anuj Srivastava, Florida State University; Huiling Le, University of Nottingham; Jingyong Su, Texas Tech University; Eric Klassen, Florida State University
- 9:35 a.m. Inference for Nonparametric Function-on-Function Regression—◆Andrada Ivanescu, Montclair State University
- 9:50 a.m. A Dimension-Reduction Approach for Conditional Kaplan-Meier Estimators—◆Valentin Patilea, ENSAI - Campus de Ker-Lann; Weiyu Li, CREST-Ensaï
- 10:05 a.m. Single Index Quantile Regression for Heteroscedastic Data—◆Eliana Christou, Penn State

651 CC-616 Large-Scale Hypothesis Testing and Biomarker Evaluation—Contributed

Biometrics Section, International Chinese Statistical Association

Chair(s): Dongjun Chung, Medical University of South Carolina

- 8:35 a.m. A Fast Multiple-Kernel Method with Applications to Detect Gene-Environment Interaction—◆Rachel Marceau, North Carolina State University; Wenbin Lu, North Carolina State University; Fang-Chi Hsu, Wake Forest School of Medicine; Jung-Ying Tzeng, North Carolina State University
- 8:50 a.m. A Novel Kernel-Based Statistical Approach to Testing Association with Body Mass Index in a Longitudinal Genetic Study—◆Zuoheng Wang, Yale University; Zhong Wang, Cornell University; Xinyu Zhang, Yale University; Ke Xu, Yale University
- 9:05 a.m. Kernel Machine-Based Testing with Paired Genetic Samples—◆Yatong Li, University of Washington; Michael C. Wu, Fred Hutchinson Cancer Research Center
- 9:20 a.m. A GWAS Model on the Interaction of Functional-Valued Traits—◆Han Hao, ; Rongling Wu, Penn State
- 9:35 a.m. Optimal Detection of Weak Positive Dependence Between Two Mixture Distributions—◆Sihai Zhao, University of Illinois at Urbana-Champaign; Tony Cai, University of Pennsylvania; Hongzhe Li, University of Pennsylvania

- 9:50 a.m. Rare Variant Association Analysis of Quantitative Traits in Pedigrees of Arbitrary Size and Structure—◆Yunxuan Jiang, Emory University Rollins School of Public Health; Michael Epstein, Emory University; Karen Conneely, Emory University
- 10:05 a.m. A Matrix-Variate Approach to Efficient Mean Estimation with Dependent Observations—◆Michael Hornstein, University of Michigan; Kerby Shedden, University of Michigan; Shuheng Zhou, University of Michigan

652 CC-617 Novel Methods for Analysis of Categorical Data—Contributed

Biometrics Section

Chair(s): Paul Plummer, University of Central Missouri

- 8:35 a.m. Exact Tests of Umbrella Ordered Dose-Response for Binary Outcomes—◆William Brady, Roswell Park Cancer Institute; Gregory Wilding, Roswell Park Cancer Institute
- 8:50 a.m. A Power Study of the GFFit Statistic as a Lack-of-Fit Diagnostic—◆Junfei Zhu, ; Mark Reiser, Arizona State University; Silvia Cagnone, University of Bologna
- 9:05 a.m. Exact Methods of Testing the Homogeneity of Prevalence for Binary Correlated Data—◆Xiaobin Liu, SUNY Buffalo; Changxing Ma, SUNY Buffalo; Song Liu, Roswell Park Cancer Institute; Zhengyu Yang, SUNY Buffalo
- 9:20 a.m. Array-Based Group Testing Algorithms for Multiple Infections—◆Peijie Hou, University of South Carolina; Dewei Wang, University of South Carolina; Joshua M. Tebbs, University of South Carolina
- 9:35 a.m. Group Testing Regression with Dilution Submodels—◆Md Shamim Sarker Warasi, University of South Carolina; Joshua M. Tebbs, University of South Carolina; McMahan S. Christopher, Clemson University
- 9:50 a.m. Diversity and the Polylog—◆Michael Anderson, The University of Texas at San Antonio
- 10:05 a.m. Novel Approach in Analyzing Difference in Binomial Proportions in Stratified Clinical Trials—◆Vivek Pradhan, Pfizer Inc.; Anindita Banerjee, Pfizer Inc.

653 CC-618 Finite Mixture and Random Effects Models— Contributed

Biometrics Section

Chair(s): Ronald Gangnon, University of Wisconsin

- 8:35 a.m.** Group Association Test Using Hidden Markov Model—◆Yichen Cheng, Fred Hutchinson Cancer Research Center; James Y. Dai, Fred Hutchinson Cancer Research Center; Charles Kooperberg, Fred Hutchinson Cancer Research Center
- 8:50 a.m.** Classification by Longitudinal Data with Latent Class Models—◆Huijing Wang, Simon Fraser University; X. Joan Hu, Simon Fraser University
- 9:05 a.m.** Using Latent Variables with Longitudinal Data to Identify Traits with Common Underlying Disease Processes—◆Jesse Raffa,
- 9:20 a.m.** A Finite Mixture Logistic-Gaussian Model for Zero-Inflated Clustered Binary Data—◆John Kwagyan, Howard University; Victor Apprey, Howard University; Nana Osafo, Howard University
- 9:35 a.m.** A Comparison of Model-Based Clustering Approaches for Skewed Data—◆Meredith Wallace, University of Pittsburgh; Daniel Buysse, University of Pittsburgh; Martica H. Hall, University of Pittsburgh; David Kupfer, University of Pittsburgh; Satish Iyengar, University of Pittsburgh
- 9:50 a.m.** Testing Homogeneity in a Contaminated Normal Model with Correlated Data—◆Meng Qi, University of Kentucky; Richard Charnigo, University of Kentucky
- 10:05 a.m.** Confidence Interval Methods of Fixed Effects in Mixed Models: A Comparison Study—◆Hatice Tul Kubra Akdur, Gazi University; Deniz Ozonur, Gazi University; Hulya Bayrak, Gazi University

654 CC-401 New Ideas in Introductory Statistics— Contributed

Section on Statistical Education

Chair(s): Ping-Hung Hsieh, Oregon State University

- 8:35 a.m.** Using Active Learning to Teach Data Analysis to Undergraduate Students—◆Therri Usher, The Johns Hopkins University
- 8:50 a.m.** Illustrating the Effect of Leading Questions in an Introductory Statistics Course—◆Ulrike Genschel, Iowa State University
- 9:05 a.m.** Peer Assessment in the Statistics Classroom—◆Dennis Sun, Stanford University/Google
- 9:20 a.m.** Talking Social Justice in Intro Stats—◆Silas Bergen, Winona State University

9:35 a.m. Innovative Changes to Stat Ed Curriculum I: Motivating Students to Read the Text Using Daily Quizzes—◆George Recck, Babson College

9:50 a.m. Innovative Changes to Stat Ed Curriculum II: Teaching Introductory Statistics Using In-Class Activities—◆William Rybolt, Babson College; George Recck, Babson College

10:05 a.m. How Normal Is Normal? How Symmetric Is Symmetric? How Local Is the Location for a Symmetric Distribution?—◆Silvia Sharna, Jahangirnagar University; Mian Adnan, Ball State University; Rahmatullah Shams Imon, Ball State University

655 CC-2A Advances in Classification—Contributed Section on Statistical Learning and Data Mining

Chair(s): Jill Young, Southeast Missouri State University

- 8:35 a.m.** Improving Discrete Adaboost for Classification by Randomization Methods—◆Fengjiao Dong,
- 8:50 a.m.** Binormal Precision-Recall Curves for Optimizing Classification of Imbalanced Data—◆Zhongkai Liu, North Carolina State University; Howard Bondell, North Carolina State University
- 9:05 a.m.** Random Projection Ensemble Classification—◆Tim Cannings, University of Cambridge; Richard J. Samworth, University of Cambridge
- 9:20 a.m.** Robust Classification for Functional Data—◆Abhirup Mallik, University of Minnesota; Snigdhanu Chatterjee, University of Minnesota
- 9:35 a.m.** A Regularized Approach to Sparse Linear Discrimination Analysis for Two-Class Classification—◆Angang Zhang, ; Xinwei Deng, Virginia Tech
- 9:50 a.m.** Structured Sparse Linear Discriminant Analysis—◆Sandra Safo, Emory University; Qi Long, Emory University
- 10:05 a.m.** Low-Rank Effects Models for Link Prediction—◆Yun-Jhong Wu, University of Michigan; Elizaveta Levina, University of Michigan; Ji Zhu, University of Michigan

656 CC-3A Advances in Variable Selection—Contributed Section on Statistical Learning and Data Mining

Chair(s): Georgiy Bobashev, RTI International

- 8:35 a.m.** Feature Selection Using Regularized Trees in Online Fraud Detection—◆Nitin Sharma, PayPal, Inc.
- 8:50 a.m.** Logistic-Normal Mixture Models with High-

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Dimensional Covariates—◆Yingchuan Wang, University of Michigan; Xuming He, University of Michigan

- 9:05 a.m. Provable Sparse Tensor Decomposition—◆Wei Sun, Purdue University; Junwei Lu, Princeton University; Han Liu, Princeton University; Guang Cheng, Purdue University
- 9:20 a.m. Model Selection in Mixed Effects Models Based on the Relative Quadratic Risk—◆Rositsa Dimova, SUNY Buffalo; Marianthi Markatou, SUNY Buffalo
- 9:35 a.m. Robust Variable Selection with a Multiple Step Bootstrap Procedure—◆Marie-Helene Roy, HEC Montreal; Denis Larocque, HEC Montreal; Debbie Dupuis, HEC Montreal
- 9:50 a.m. Indirect Multiple Response Regression—◆Aaron Molstad, University of Minnesota; Adam Rothman, University of Minnesota
- 10:05 a.m. Maximum Tangent Likelihood Estimation and Robust Variable Selection—◆Shaobo Li, University of Cincinnati; Yichen Qin, University of Cincinnati Lindner College of Business; Yan Yu, University of Cincinnati

657 CC-603

● Clinical Trial Design V—Contributed Biopharmaceutical Section

Chair(s): Diqiong Xie, FDA

- 8:35 a.m. Nonparametric Method for Analyzing Reoccurrence of Adverse Events in Randomized Clinical Trials—Masanori Ito, Astellas Pharma Global Development; ◆Misun Lee, Astellas Pharma Global Development
- 8:50 a.m. Conservativeness of T-Test Following Stratified Randomization—◆Yanqing Hu, West Virginia University
- 9:05 a.m. Phase I Dose-Finding in Clinical Trials—◆Yunfei Wang, Children's National
- 9:20 a.m. A Flexible Cure Rate Model in Population-Based Cancer Survival Analysis—◆Myron Chang, University of Florida; Yang Li, University of Florida
- 9:35 a.m. Exchangeability and Nonexchangeability in Subgroup Analysis—◆Margaret Gamalo-Siebers, FDA/CDER; Ram Tiwari, FDA/CDER/OT/OB
- 9:50 a.m. Merging Enrollment with Trial Design in Phase 1 Dose-Escalation Trials—◆Bradley Ferguson, Quintiles; Valerii Fedorov, Quintiles
- 10:05 a.m. Sample Size Calculations for Equivalence Trials with Poisson Data—◆Lori Davis, ProNAi Therapeutics

658 CC-605

● Statistical Issues Specific to Therapeutic Areas II—Contributed Biopharmaceutical Section

Chair(s): Yanli Zhao, MedImmune

- 8:35 a.m. A Novel Approach in Subgroup Identification Using a Quantitative Benefit-Risk Index—◆Ramin Arani, AstraZeneca; Ian Hirsch, AstraZeneca; Jonathan Norton, MedImmune; Christy Chuang-Stein, Pfizer Inc.; Weili He, Merck; Shihua Wen, AbbVie; Qi Jiang, Amgen
- 8:50 a.m. Tolerance Intervals for Assessing Biosimilarity—◆Ginto Pottackal, University of Maryland, Baltimore County; Thomas Mathew, University of Maryland, Baltimore County
- 9:05 a.m. Combining Survival Trials Using Aggregate Data Based on Misspecified Models: Method and Application—◆Yabing Mai, Merck; Tinghui Yu, FDA/CDRH; Sherry Liu, FDA/CDRH; Xiaofei Hu,
- 9:20 a.m. Sample Size Considerations for Dose-Finding with MCP-Mod—◆Sergei Leonov, ICON Clinical Research; Tobias Mielke, ICON PLC
- 9:35 a.m. Power Analysis and Sample Size Calculation of Statistical Interaction Model for Evaluation of Biomarker Predictive Effect—◆Dung-Tsa Chen, Moffitt Cancer Center; Hui-Yi Lin, Moffitt Cancer Center; Po-Yu Huang, National Chung Hsing University
- 9:50 a.m. Equivalence Test and Margin Determination for Biosimilar Analytical Assessment—◆Yi Tsong, FDA; Xiaoyu Dong, FDA; Meiyu Shen, FDA/CDER/OB
- 10:05 a.m. Dose-Finding in Early Phase I/II Cancer Clinical Trial Using Drug Combinations of Cytotoxic Agents—◆Mourad Tighiouart, Cedars Sinai Medical Center; Quanlin Li, ; Andre Rogatko, Cedars Sinai Medical Center

659 CC-613

Methods in Clinical Trials 2—Contributed Biopharmaceutical Section

Chair(s): Maureen Reiner, Amgen

- 8:35 a.m. Validity and Power Considerations on Hypothesis Testing Under Minimization—◆Zhenzhen Xu, FDA; Michael Proschan, NIH/NIAID; Shiojwen Lee, FDA
- 8:50 a.m. Establishing Equivalence Margins for a Ph3 Biosimilar Trial in Rheumatoid Arthritis: From Choice of Endpoints to Regulatory Experience—◆Steven Y. Hua, Pfizer Research and Development; Kerry Barker, Pfizer Inc.
- 9:05 a.m. Treatment Response Subgroup Identification Using

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Penalized Regression Spline and Mixture Models—
◆Hongjie Zhu, Sanofi; Lin Wang, Sanofi; Lynn Wei, Sanofi; Hui Quan, Sanofi

- 9:20 a.m. Using Tree-Based Methods for Identifying Predictive Biomarker in Clinical Trials—◆Michael Man, ; Wei-Yin Loh, University of Wisconsin
- 9:35 a.m. Statistical Considerations in Detecting Circulating Tumor DNA Using Digital PCR—◆Shibing Deng, Pfizer Inc.; Maruja Lira, Pfizer Inc.
- 9:50 a.m. Assurance Calculations in Clinical Trials: Monte-Carlo Simulation-Based Approach—◆Din Chen, University of Rochester; Shuyun Ho, GSK
- 10:05 a.m. Using a Predictive Probability Design for Faster Decision-Making in an Early-Phase Oncology Trial—◆Sharon Murray, PAREXEL International; Grace Zhang, Merck; Allison Florance, GlaxoSmithKline

660 CC-210 Topics in Computational Methods— Contributed

Section on Statistical Computing, Korean International Statistical Society

Chair(s): Wen Zhou, Colorado State University

- 8:35 a.m. K-Means Clustering with Missing Data—◆Juwon Song, Korea University
- 8:50 a.m. Deleting and Annexing Data from and to the Least-Squares Linear Regression Matrix Inverse—◆Timothy Hall, PQI Consulting
- 9:05 a.m. Maximum Likelihood Estimate for a Generalized Gamma Distribution Under Progressive First Failure Censoring—◆Yuhlong Lio, University of South Dakota; Yu-Jau Lin, Chung Yuan Christian University; Nan Jiang, University of South Dakota; Tzong-Ru Tsai, Tamkang University
- 9:20 a.m. Simple Closed-Form Confidence Intervals for a Two-Parameter Exponential Distribution: One- and Two-Sample Problems—◆Yanping Xia, Southeast Missouri State University; Kalimuthu Krishnamoorthy, University of Louisiana
- 9:35 a.m. Avoiding Extrapolation in High-Dimensional Prediction Space with Application to Glacier Melt Rate Prediction—◆William Christensen, Brigham Young University; Angela Teuscher, Brigham Young University; Natalie Blades, Brigham Young University; Aaron Havens, Brigham Young University; Summer Rupper, Brigham Young University
- 9:50 a.m. Aster Models and Envelope Models—◆Daniel Eck,
- 10:05 a.m. **Floor Discussion**

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

661 CC-609 ■ ● Shedding Light on the Biology of Complex Diseases Using Cutting-Edge Statistical Methods for Family Data—Invited

Biometrics Section, International Indian Statistical Association

Organizer(s): Roula Tsonaka, Leiden University Medical Center

Chair(s): Roula Tsonaka, Leiden University Medical Center

- 10:35 a.m. Calibrated Risk Predictions for Multivariate Competing Risks Models Using Family History—◆Malka Gorfine, Tel Aviv University; Li Hsu, Fred Hutchinson Cancer Research Center/UW; David Zucker, Hebrew University; Giovanni Parmigiani, Harvard University
- 11:00 a.m. A Weighted Method for Genetic Association of Survival Data in Selected Families—◆Jeanine Houwing-Duistermaat, Leiden University Medical Center; Mar Rodriguez Gironde, Leiden University Medical Center
- 11:25 a.m. Strategies on Genome-Wide Interaction Analysis Using Case-Parents Data—◆Zhaoxia Yu, UC Irvine
- 11:50 a.m. **Disc:** Li Hsu, Fred Hutchinson Cancer Research Center/UW
- 12:15 p.m. **Floor Discussion**
- ### 662 CC-4C3 ■ ● New Techniques for Confident Model Selection—Invited
- Section on Statistical Computing
- Organizer(s): Samuel Mueller, University of Sydney
- Chair(s): Mehdi Maadooliat, Marquette University
- 10:35 a.m. The Fence Methods: An Overview—◆Jiming Jiang, UC Davis; Thuan Nguyen, Oregon Health & Science University; J. Sunil Rao, University of Miami
- 10:55 a.m. The E-MS Algorithm: Model Selection with Incomplete Data—◆J. Sunil Rao, University of Miami; Jiming Jiang, UC Davis; Thuan Nguyen, Oregon Health & Science University
- 11:15 a.m. Variable Selection with Exclusion Frequency-Based Weights: Application to a Neuroimaging Study of Huntington's Disease—◆Tanya P. Garcia, Texas A&M University; Samuel Mueller, University of Sydney; Karen Marder, Columbia University
- 11:35 a.m. Model Selection with Mplot—◆Samuel Mueller, University of Sydney; Garth Tarr, Australian National University; Alan H. Welsh, Australian National University

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11:55 a.m. Disc: Alan H. Welsh, Australian National University

12:15 p.m. Floor Discussion

663 **CC-4C2**

■ ● Wald Lecture III—Invited
IMS, International Indian Statistical Association

Organizer(s): Antonio Lijoi, University of Pavia
 Chair(s): Aad van der Vaart, Leiden University

10:35 a.m. Continual, Online Learning in Sequential Decision-Making—◆Susan A. Murphy, University of Michigan

12:10 p.m. Floor Discussion

664 **CC-608**

■ ● Making Better Decisions in Cancer Research: Accelerating Statistical Innovation—Invited

Biopharmaceutical Section, International Chinese Statistical Association, Biometrics Section

Organizer(s): Satrajit Roychoudhury, Novartis Pharmaceuticals
 Chair(s): Satrajit Roychoudhury, Novartis Pharmaceuticals

10:35 a.m. New Developments in Biomarker-Based Oncology Trial Design—◆Daniel Sargent, Mayo Clinic

10:55 a.m. An Audit Strategy for Blinded Independent Central Review of Progression in Cancer Clinical Trials Using Bayesian Predictive Model—◆Soumi Lahiri, Novartis Pharmaceuticals; Satrajit Roychoudhury, Novartis Pharmaceuticals

11:15 a.m. Statistical Challenges in Oncology Clinical Trials in the Era of Targeted Therapy—◆Rajeshwari Sridhara, FDA

11:35 a.m. Incorporating the SMART Design into Oncology: Overcoming Challenges to Reap the Benefits—◆Kelley McLain Kidwell, University of Michigan

11:55 a.m. Disc: Pandurang M. Kulkarni, Eli Lilly and Company

12:15 p.m. Floor Discussion

665 **TCC-202**

● Professionalism, Professional Identity, and Training for Ethical Statistical Practice—Invited
Committee on Professional Ethics, Section on Teaching of Statistics in the Health Sciences, Section on Statistical Education, Statistics Without Borders, Conference on Statistical Practice Steering Committee, Section on Statistical Consulting, Committee on Applied Statisticians, Scientific and Public Affairs Advisory Committee

Organizer(s): Thomas R. Belin, UCLA
 Chair(s): Howard R. Hogan, U.S. Census Bureau

10:35 a.m. A Historical Perspective on the Development of Ethical Guidelines Within the American Statistical Association—◆Duane Steffey, Exponent, Inc.

10:55 a.m. Ethics and Cultural Dynamics Surrounding Statisticians in the Workplace—◆Steven Bailey, Pfizer Inc.

11:15 a.m. Principles Recognizing Trust and Understanding as Twin Pillars of Statistical Ethics—◆Thomas R. Belin, UCLA

11:35 a.m. Ethics and Cross-Cultural Perspectives in Statistics Education—◆Alan Elliott, Southern Methodist University

11:55 a.m. Disc: Rochelle Tractenberg, Georgetown University

12:15 p.m. Floor Discussion

666 **CC-607**

■ ● Statistical Methods and Learning from Electronic Health Records—Invited

WNAR, Section on Teaching of Statistics in the Health Sciences, Government Statistics Section, Biometrics Section

Organizer(s): Ying Wei, Columbia University
 Chair(s): Ying Wei, Columbia University

10:35 a.m. Perils and Solutions for Comparative Effectiveness Research in Massive Observational Databases—◆Marc A. Suchard, UCLA

11:05 a.m. Post-Selection Inference for Generalized Linear Models with Many Controls—◆Alexandre Belloni, Duke University; Victor Chernozhukov, MIT; Ying Wei, Columbia University

11:35 a.m. Determining Risk Profiles for Parkinson's Disease Using Electronic Medical Records—◆DuBois Bowman, Columbia University; Ying Wei, Columbia University; Daniel Drake, Emory University; Ying Li, Columbia University

12:05 p.m. Floor Discussion

667 **CC-204**

■ ● Structural Equation Modeling and Analysis in Testing and Estimating Causal Relationships for Social Science Data—Invited

Social Statistics Section, Conference on Statistical Practice Steering Committee, Committee on Applied Statisticians

Organizer(s): Marie Kraska, Auburn University
 Chair(s): Juanita Tamayo Lott, Retired

10:35 a.m. Structural Equation Modeling Applied in Service

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- Industries—◆Marie Kraska, Auburn University
- 10:55 a.m. Structural Equation Modeling (SEM) in the Business/Policy Context—◆Sam Woolford, Bentley University
- 11:15 a.m. Structural Equation Modeling as a Global Modeling Framework with Examples from the Health Sciences—◆Sharon L. Christ, Purdue University
- 11:35 a.m. Structural Equation Modeling and Barriers to Employment for Individuals Living with HIV and AIDS—◆K.B. Boomer, Bucknell University; Liza Conyers, Penn State
- 11:55 a.m. Learning with Social Networks: A Data Mining Perspective—◆Umashanger Thayasivam, Rowan University
- 12:15 p.m. Floor Discussion

668

CC-310

■ Bayesian Nonparametric Models for Bioinformatics and Beyond—Invited

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

Organizer(s): Wesley O. Johnson, UC Irvine

Chair(s): Wesley O. Johnson, UC Irvine

- 10:35 a.m. Feature Allocation Models for Tumor Heterogeneity—Juhhee Lee, UC Santa Cruz; ◆Peter Mueller, The University of Texas at Austin; Subhajit Sengupta, Northshore University HealthSystem; Kamalakar Gulukota, Northshore University HealthSystem; Yuan Ji, NorthShore University Health System
- 11:00 a.m. A Bayesian Modeling Approach of Multiple-Subject fMRI Data—◆Marina Vannucci, Rice University; Michele Guindani, MD Anderson Cancer Center; Linlin Zhang, Rice University
- 11:25 a.m. A Dynamic Bayesian Model for Detecting Neuronal Communities—◆Babak Shahbaba, UC Irvine; Bo Zhou, UC Irvine; Hernando Ombao, UC Irvine; Sam Behseta, California State University at Fullerton; David Moorman, University of Massachusetts Amherst
- 11:50 a.m. Disc: Steven MacEachern, The Ohio State University
- 12:10 p.m. Floor Discussion

669

TCC-101

Memorial Session: M.J. (Susie) Bayarri—Invited Memorial, International Society for Bayesian Analysis (ISBA), Section on Bayesian Statistical Science, IMS

Organizer(s): James Berger, Duke University

Chair(s): Sonia Petrone, Bocconi University

- 10:35 a.m. Desiderata for Prior Distributions in Bayesian Model Selection—◆Merlise Clyde, Duke University
- 11:00 a.m. P-Values for Composite Null Models—◆James M. Robins, Harvard University
- 11:25 a.m. The Bayesian Approach to Analysis of Selection Models and Weighted Distributions—◆James Berger, Duke University
- 11:50 a.m. Computer Models and Uncertainty Quantification—◆Jerome Sacks, NISS
- 12:15 p.m. Floor Discussion

670

CC-201

■ Beyond Block Models: New Directions in Network Analysis—Invited Section on Nonparametric Statistics

Organizer(s): Peter J. Bickel, UC Berkeley

Chair(s): Purnamrita Sarkar, The University of Texas at Austin

- 10:35 a.m. Optimal Design of Experiments in the Presence of Network Interference—◆Edo Airoldi, Harvard University
- 11:00 a.m. Inference in Nonparametric Latent Variable Network Models—◆Sharmodeep Bhattacharyya, Oregon State University; Peter J. Bickel, UC Berkeley; Patrick J. Wolfe, University College London
- 11:25 a.m. Overlapping Community Detection—Yuan Zhang, University of Michigan; ◆Elizaveta Levina, University of Michigan; Ji Zhu, University of Michigan
- 11:50 a.m. Disc: Peter J. Bickel, UC Berkeley
- 12:05 p.m. Disc: Patrick J. Wolfe, University College London

671

CC-606

● Statistics, the Microbiome, and Human Health—Invited

Section on Statistics in Epidemiology, Biometrics Section

Organizer(s): Glen Alan Satten, CDC

Chair(s): Hongzhe Li, University of Pennsylvania

- 10:35 a.m. An Introduction to the Statistical Issues in Analyzing Microbiome Data—◆Glen Alan Satten, CDC
- 10:55 a.m. Denoising and Modeling the Dynamics of Microbiome Data—◆Susan Holmes, Stanford University; Ben Callahan, Stanford University
- 11:15 a.m. Differential Abundance Analysis of Metagenomic Whole-Genome Sequencing—◆Joseph N. Paulson, University of Maryland; Hector Bravo, University of Maryland; Mihai Pop, University of Maryland;

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Chris Hill, University of Maryland

- 11:35 a.m. Estimating Taxonomic and Functional Diversity in Shotgun Metagenomes—◆Katherine Snowden Pollard, Gladstone Institutes, UCSF
- 11:55 a.m. Misuse of Diversity Indices in the Analysis of Microbial Community Composition Data—◆Amy Willis, Cornell University; John Bunge, Cornell University
- 12:15 p.m. Floor Discussion

672 **CC-603**
■ ● Analytical Challenges and New Modeling Frameworks for Recurrent Event Data—Invited ENAR

Organizer(s): Chiung-Yu Huang, The Johns Hopkins University
 Chair(s): Chiung-Yu Huang, The Johns Hopkins University

- 10:35 a.m. Insights into the Analysis of Recurrent Events with Dependent Censoring and Future Directions—◆Jennifer Rogers, London School of Hygiene and Tropical Medicine
- 11:00 a.m. Recurrent Event Processes with Shape and Size Parameters—◆Mei-Cheng Wang, The Johns Hopkins University; Chiung-Yu Huang, The Johns Hopkins University
- 11:25 a.m. Recurrent Events Data with Missing Event Category—◆Jianwen Cai, The University of North Carolina at Chapel Hill; Feng-Chang Lin, The University of North Carolina at Chapel Hill; Jason Fine, The University of North Carolina at Chapel Hill; Huichuan J. Lai, University of Wisconsin - Madison
- 11:50 a.m. Estimating the Effect of a Time-Dependent State Transition on the Recurrent Event Rate—◆Douglas Earl Schaubel, University of Michigan; Abigail Smith, University of Michigan; Nathan Goodrich, Arbor Research Collaborative for Health
- 12:15 p.m. Floor Discussion

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

673 **CC-3A**
Parameter Estimation and Statistical Inference with High-Dimensional Data—Topic-Contributed
 Section on Statistical Learning and Data Mining
 Organizer(s): Yongli Zhang, University of Oregon

Chair(s): Yongli Zhang, University of Oregon

- 10:35 a.m. Bootstrap Model Averaging in High-Dimensional Regression—◆Craig Rolling, University of Oregon; Yongli Zhang, University of Oregon
- 10:55 a.m. High-Dimensional Inference of Graphical Models Using Regularized Score Matching—◆Lina Lin, University of Washington; Mathias Drton, University of Washington; Ali Shojaie, University of Washington
- 11:15 a.m. Integrative Analysis of Incompatible High-Dimensional Data Sets with Different Resolutions—◆Yuan Jiang, Oregon State University
- 11:35 a.m. Scaled Predictor Envelopes and Partial Least Squares Regression—◆Zhihua Su, University of Florida; Dennis Cook, University of Minnesota
- 11:55 a.m. Disc: Lin Huang, Microsoft
- 12:15 p.m. Floor Discussion

674 **CC-213**
■ ● Data Depth for Robust Multivariate and High-Dimensional Analysis—Topic-Contributed

Section on Nonparametric Statistics

Organizer(s): Ying Sun, King Abdullah University of Science and Technology
 Chair(s): Ying Sun, King Abdullah University of Science and Technology

- 10:35 a.m. Multivariate Rank Functions and Related Depth and Quantile Functions—◆Robert Serfling, The University of Texas at Dallas; Yunfei Wang, The University of Texas at Dallas
- 10:55 a.m. Influence Ranking for Multivariate Functional Data Based on Tilting—◆Yuan Yan, King Abdullah University of Science and Technology; Marc Georges Genton, King Abdullah University of Science and Technology
- 11:15 a.m. A Multivariate Volume Depth for Image Data Analysis—◆Sara Lopez-Pintado, Columbia University
- 11:35 a.m. High-Dimensional Outliers and Depth: The Outliergram—◆Juan Romo, Universidad Carlos III de Madrid; Ana Arribas-Gil, Universidad Carlos III de Madrid
- 11:55 a.m. Robust Bivariate Error Detection in Skewed Data with Application to Historical Radiosonde Winds—◆Amanda Hering, Colorado School of Mines; Ying Sun, King Abdullah University of Science and Technology ; Joshua Browning, Colorado School of Mines
- 12:15 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

675 CC-615

■ ● Accounting for Errors in Location and Identification in Individual-Based Ecological Models—Topic-Contributed

Section on Statistics and the Environment

Organizer(s): Simon J. Bonner, University of Kentucky

Chair(s): Carl J. Schwarz, Simon Fraser University

- 10:35 a.m. Linking Long-Distance Animal Movement Behavior and Landscapes Using Multiscale Functional Models—◆Mevin Hooten, Colorado State University
- 10:55 a.m. Modeling Animal Movement Using the Argos Satellite Telemetry Location Error Ellipse—◆Brett McClintock,
- 11:15 a.m. Multivariate-State Hidden Markov Models for Mark-Recapture Data—◆Devin Johnson, NOAA National Marine Mammal Lab; Jeff Laake, NOAA National Marine Mammal Lab; Rod Towell, NOAA National Marine Mammal Lab
- 11:35 a.m. Accounting for Behavioral Response to Capture When Estimating Population Size from Hair Snare Studies with Missing Data—◆Ben Augustine, Virginia Tech; Simon J. Bonner, University of Kentucky; Catherine Tredick, The Richard Stockton College of New Jersey
- 11:55 a.m. Disc: Bill Link, U.S. Geological Survey
- 12:15 p.m. Floor Discussion

676 CC-2B

■ Innovations in the Medicare Current Beneficiary Survey: Improving Data Quality and Dissemination to Advance Scientific Knowledge and Inform Health Policy—Topic-Contributed

Survey Research Methods Section, Committee on Applied Statisticians

Organizer(s): Kimberly Lochner, Centers for Medicare and Medicaid Services

Chair(s): Kimberly Lochner, Centers for Medicare and Medicaid Services

- 10:35 a.m. Improvements in the Medicare Current Beneficiary Survey Sample Design—◆Kirk Wolter, NORC at the University of Chicago; Whitney Murphy, NORC at the University of Chicago; Nicholas Davis Davis, NORC at the University of Chicago; Cheryl Sharpless, CMS; Debra Reed-Gillette, Centers for Medicare and Medicaid Services
- 10:55 a.m. Using Extant Lists to Improve CAPI Instruments and Expedite Record Linkage—◆Felicia LeClere, NORC at the University of Chicago; Jennifer Vanicek, NORC at the University of Chicago; Joe

Matise, NORC at the University of Chicago; Sandra Tilmon, NORC at the University of Chicago; John Christopher McCormick, Centers for Medicare and Medicaid Services

- 11:15 a.m. Enhancements to the Collection of Data on Race, Ethnicity, Primary Language, and Other Characteristics to Improve Research on Health Disparities—◆Paul Guerino, Centers for Medicare and Medicaid Services
- 11:35 a.m. Development of a MCBS Public Use File: Ensuring Ease of Use and Access for Researchers—◆Jessie Parker, Centers for Medicare and Medicaid Services
- 11:55 a.m. Disc: Debra Reed-Gillette, Centers for Medicare and Medicaid Services
- 12:15 p.m. Floor Discussion

677 CC-4C1

■ ● Use of Simulations in Drug Development and Decision-Making—Topic-Contributed

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

Organizer(s): Fei Wang, Chiltern International

Chair(s): Peter Muller, The University of Texas

- 10:35 a.m. Use of Modeling and Simulations to Facilitate Potential Switch from Noninferiority to Superiority—◆Guoliang 'Charlie' Cao, Takeda Pharmaceuticals; Wenwen Zhang, Takeda Pharmaceuticals
- 10:55 a.m. Bayesian Dose-Finding Designs for Combination of Molecularly Targeted Agents Assuming Partial Stochastic Ordering—Beibei Guo, Louisiana State University; ◆Yisheng Li, MD Anderson Cancer Center
- 11:15 a.m. Bayesian Evidence Synthesis and Simulations for Design and Decision-Making—◆Forrest Williamson, Eli Lilly and Company
- 11:35 a.m. Simulation in Enrichment Designs—◆Todd Graves, Berry Consultants
- 11:55 a.m. Disc: Amy H. Xia, Amgen
- 12:15 p.m. Floor Discussion

678 CC-610

■ ● Modeling the Human Growth Lifecycle to Guide Development of Targeted Interventions—Topic-Contributed

Biometrics Section

Organizer(s): Jayson D. Wilbur, Metrum Research Group

Chair(s): Jonathan L. French, Metrum Research Group

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

- 10:35 a.m.** Modeling the Human Growth Lifecycle to Guide Development of Targeted Interventions—◆**Shasha Jumbe**, Bill and Melinda Gates Foundation
- 10:55 a.m.** Modeling Growth Patterns for the First Two Years of Age in a Cohort of Bangladesh Children—◆**Jennie Z. Ma**, University of Virginia; **Yin Zhang**, University of Virginia; **Jianhui Zhou**, University of Virginia; **William A. Petri Jr.**, University of Virginia
- 11:15 a.m.** Modeling Growth in Children Above Two Years—◆**Samer Mouksassi**, Pharsight Consulting Services
- 11:35 a.m.** Methodological Developments in Growth Modeling—◆**Stef van Buuren**, TNO
- 11:55 a.m.** Disc: **Jayson D. Wilbur**, Metrum Research Group
- 12:15 p.m.** Floor Discussion

679 CC-205 Cross-Cultural Survey Design and Implementation—Topic-Contributed

Social Statistics Section, Government Statistics Section, Statistics Without Borders, Survey Research Methods Section

Organizer(s): **Beth-Ellen Pennell**, University of Michigan
Chair(s): **Bruce Webster**, U.S. Census Bureau

- 10:35 a.m.** Improving Cross-National/Cultural Comparability Using the Total Survey Error Paradigm—◆**Tom Smith**, NORC at the University of Chicago
- 10:55 a.m.** New Ideas in Sampling for Surveys in the Developing World—◆**Stephanie Eckman**, Institute for Employment Research; **Jill Dever**, RTI International; **Kristen Himelein**, The World Bank
- 11:15 a.m.** Innovations in Data Collection in Resource-Poor Settings—◆**Beth-Ellen Pennell**, University of Michigan; **Sarah Hughes**, NORC at the University of Chicago; **Kristen Cibelli-Hibben**, University of Michigan; **Jennifer Kelley**, University of Michigan; **Yu-chieh Lin**, University of Michigan
- 11:35 a.m.** Case Studies on Monitoring Interviewer Behavior in Cross-National and International Surveys—◆**Sharan Sharma**, University of Michigan; **Lars Lyberg**, Stockholm University; **Zeina Mneimneh**, University of Michigan
- 11:55 a.m.** Disc: **Brad Edwards**, Westat
- 12:15 p.m.** Floor Discussion

680 CC-611 Benefit-Risk Assessment to Support Decision-Making in Drug Development and Regulatory Assessment—Topic-Contributed

Biopharmaceutical Section, Committee on Applied Statisticians

Organizer(s): **Bo Fu**, AbbVie

Chair(s): **Ziliang Li**, Merck Research Laboratories

- 10:35 a.m.** Two Statistical Approaches to Incorporate Data Uncertainty into Multiple Criteria Decision Analysis (MCDA) for Benefit-Risk Assessment of Medical Products—◆**Shihua Wen**, AbbVie
- 10:55 a.m.** The Influence of Clinically and Statistically Meaningful Differences in Risk Benefit: A Case Study of the First Approved Allergenic Sublingual Immunotherapy (SLIT) Products—◆**Tammy Massie**,
- 11:15 a.m.** Developing a Benefit-Risk Process That Becomes Fully Integrated into Developmental Processes and Decision-Making Within a Biopharmaceutical Organization—◆**Mondira Bhattacharya**, AbbVie; **Rebecca B. Reindel**, AbbVie
- 11:35 a.m.** Benefit-Risk Assessment in the Absence of Established Definition of Responders—◆**Amarjot Kaur**, Merck Research Laboratories; **Ziliang Li**, Merck Research Laboratories
- 11:55 a.m.** Disc: **Jerald Schindler**, Merck Research Laboratories
- 12:15 p.m.** Floor Discussion

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

681 CC-3B Recipe to Becoming a Successful Biostatistician in a Collaborative Environment—Topic-Contributed

Section for Statistical Programmers and Analysts, Committee on Applied Statisticians, Section on Statistical Consulting

Organizer(s): **Sumithra J. Mandrekar**, Mayo Clinic

Chair(s): **Cheng Zheng**, University of Wisconsin - Milwaukee

- Panelists: ◆**Terry Hyslop**, Duke University
◆**Sumithra J. Mandrekar**, Mayo Clinic
◆**Emily Van Meter**, University of Kentucky
◆**John Crowley**, Cancer Research and Biostatistics

12:15 p.m. Floor Discussion

682 CC-206 Data Presentation Standards Within the Federal Statistical System—Topic-Contributed

Government Statistics Section, International Chinese Statistical Association, Scientific and Public Affairs Advisory Committee

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

Organizer(s): Jennifer D. Parker, National Center for Health Statistics

Chair(s): Jennifer D. Parker, National Center for Health Statistics

Panelists: ◆ Jennifer Madans, National Center for Health Statistics

◆ Ron S. Jarmin, U.S. Census Bureau

◆ Art Hughes, Substance Abuse and Mental Health Services Administration

◆ Virginia Lesser, Oregon State Univeristy

12:15 p.m. Floor Discussion

Contributed Sessions

10:30 a.m.—12:20 p.m.

683 CC-211 Financial Econometrics—Contributed

Business and Economic Statistics Section

Chair(s): Beatriz Etchegaray Garcia, IBM Research

10:35 a.m. Recent Updates to the USDA NASS Prices Received and Prices Paid Index Series—◆ Christopher Taylor, USDA/NASS; Daryl Brinkman, USDA/NASS; Kuan Chen, USDA/NASS; Mark Gorsak, USDA/NASS

10:50 a.m. Information Content of Credit Rating Changes: Evidence from Trading Volume Using a New Nonparametric Test—◆ Andrew Siegel, University of Washington; Jonathan Brogaard, University of Washington; Jennifer L. Koski, University of Washington

11:05 a.m. Empirical Issues with Level III Limit Order Book Data—◆ Raja Velu, Syracuse University; Krzysztof Herman, Syracuse University

11:20 a.m. Bridging Joint and Grouped Sufficient Dimension Reduction: Application in Forecasting the Equity Risk Premium—◆ Haileab Hilafu, University of Tennessee

11:35 a.m. Evaluating Interest Rate Derivatives with Discretely Observed Non-Gaussian Hull-White Models—◆ Takayuki Shiohama, Tokyo University of Science

11:50 a.m. Determining the Number of Factors in Affine Term Structure Models—◆ Tao Zou, Peking University; Song Xi Chen, Peking University/Iowa State Univeristy

12:05 p.m. Floor Discussion

684 CC-304 Stochastic Processes in Computation and Inference—Contributed

IMS

Chair(s): Marek Chudy, University of Vienna

10:35 a.m. On Convergence Diagnostics for Adaptive MCMC—◆ Winfried Barta,

10:50 a.m. Inference for Bellman-Harris Branching Process—◆ Xin Cao, George Mason University; Anand Vidyashankar, George Mason University

11:05 a.m. On the Use of Running Trends as Summary Statistics for Time Series Analysis—◆ Mario Trottini, University of Alicante; M. Isabel Vigo, University of Alicante; Santiago Belda Palaz n, University of Alicante

11:20 a.m. Exploring Online Learning Response Data Using Stochastic Processes with Dependence—◆ Hongwen Guo,

11:35 a.m. Estimation of Change-Point and Post-Change Means by an Adaptive CUSUM Procedure—◆ Yanhong Wu, California State University at Stanislaus

11:50 a.m. Asymptotic Properties of Bootstrap Parameter Estimator for the AR(2) Model—◆ Bambang Suprihatin, Sriwijaya University; Suryo Guritno, Gadjah Mada University; Sri Haryatmi, Gadjah Mada University

12:05 p.m. Stationary Gaussian Markov Processes That Evolve as Functions of Their Local Derivatives—◆ Philip Ernst, Rice University; Lawrence D. Brown, University of Pennsylvania; Robert Wolpert, Duke University

685 CC-307 Bayesian Methodology for Spatial, Temporal, and Functional Data—Contributed

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

Chair(s): Jianghua He, University of Kansas Medical Center

10:35 a.m. Comparative Study and Sensitivity Analysis of Skewed Spatial Processes—◆ Jiangyan Wang, Soochow University; Miao Yang, Soochow University; Anandamayee Majumdar, Soochow University

10:50 a.m. False Discovery Control in Gaussian Models with Misspecified Covariance—◆ Ye Liang, Oklahoma State University; Joshua Habiger, Oklahoma State University; Xiaoyi Min, Yale School of Public Health

11:05 a.m. Sequential Analysis and Bayesian Model Emulation for Dynamic Latent Threshold Models—◆ Kaoru

Irie, Duke University; Mike West, Duke University

- 11:20 a.m. Approximate Bayesian Inference with Pseudo-Likelihood—◆Mike K.P. So, The Hong Kong University of Science and Technology; Ray S.W. Chung, The Hong Kong University of Science and Technology
- 11:35 a.m. Bayesian Functional Data Fitting with a Transformed B-Spline Basis—◆Songqiao Huang, University of South Carolina; David Hitchcock, University of South Carolina
- 11:50 a.m. A Probabilistic Model for Simultaneous Changepoints in Multiple Data Sequences—◆Zhou Fan, Stanford University; Lester Mackey, Stanford University
- 12:05 p.m. **Floor Discussion**

686 **CC-308**
■ Bayesian Modeling in the Social Sciences and Education—Contributed

Section on Bayesian Statistical Science, International Society for Bayesian Analysis (ISBA), Section on Statistical Education
 Chair(s): Leanna House, Virginia Tech

- 10:35 a.m. Spatiotemporal Model Fusion: Multiscale Modeling of Civil Unrest—◆Andrew Hoegh, Virginia Tech; Marco A.R. Ferreira, Virginia Tech; Scotland Leman, Virginia Tech
- 10:50 a.m. Bayesian Hierarchical Models for Student Outcomes in Cyber-Enabled Science Classrooms—◆Yuanzhi Li, ; Daniel Coster, Utah State University
- 11:05 a.m. Inference on Self-Exciting Jumps in Prices and Volatility Using High-Frequency Measures—◆Worapree Maneesoonthorn, The University of Melbourne
- 11:20 a.m. A Hierarchical Bayesian Approach to Modeling Multivariate Nonlinear Longitudinal Data: Visual World Paradigm—◆Melissa Pugh, The University of Iowa; Jacob Oleson, The University of Iowa
- 11:35 a.m. Bayesian Object-Orientated Data Model for Sequence Analysis in Social Sciences—◆Maria Tackett, University of Virginia; Dan Spitzner, University of Virginia
- 11:50 a.m. A Bayesian Test of Independence of Two Categorical Variables with Covariates—◆Dilli Bhatta, Truman State University
- 12:05 p.m. An Integrated Latent Traits Modeling Approach for Measuring Influence and Susceptibility Among Multilaterally Interacted Individuals with Application to Fashion Contagion—◆Jiali Ding, NCEPU/PKU

687 **CC-616**
Large and Multiscale Data Modeling—Contributed

Section on Statistics and the Environment
 Chair(s): Derek Sonderegger, Northern Arizona University

- 10:35 a.m. Approximating Likelihoods Through Precision Matrix for Large Spatial Data Sets—◆Huang Huang, KAUST; Ying Sun, King Abdullah University of Science and Technology
- 10:50 a.m. Multi-Resolution Kriging for Anisotropic Gaussian Spatial Process—◆Siddhartha Nandy, Michigan State University; Doug Nychka, National Center for Atmospheric Research
- 11:05 a.m. Analysis of Multiscale Ecological Data—◆Kelly-Ann Dixon Hamil, ; Whitney Huang, Purdue University; Hao Zhang, Purdue University; Songlin Fei, Purdue University; Basil Iannone, Purdue University
- 11:20 a.m. High-Dimensional Vector Autoregressive Processes with Local Dependence—Michael Schweinberger, Rice University; ◆Sergii Babkin, Rice University; Katherine Bennett Ensor, Rice University
- 11:35 a.m. A Semiparametric Multivariate Spatial Modeling Approach Based on Karhunen-Loeve Transformation—◆Yong Wang, ; Juan Hu, DePaul University
- 11:50 a.m. Rare Binary Spatial Regression—◆Samuel Morris, North Carolina State University; Brian J. Reich, North Carolina State University
- 12:05 p.m. Conditional Simulation for Downscaling Large Spatial Data—◆Pulong Ma, University of Cincinnati; Emily L. Kang, University of Cincinnati; Amy Braverman, Jet Propulsion Laboratory; Hai Nguyen, Jet Propulsion Laboratory; Noel Cressie, University of Wollongong

688 **CC-605**
■ ● Epidemiologic Methods for Survey Data—Contributed

Section on Statistics in Epidemiology, Biometrics Section, Statistics Without Borders
 Chair(s): Jimmy Efrid, Stanford Alumni

- 10:35 a.m. Estimating the Number of Cases of a Health Outcome Attributable to Risk Factors Using Complex Survey Data—◆Lin Tian, CDC
- 10:50 a.m. Statistical Analysis of Partner Concurrency Using Retrospective Sexual History Survey Data—◆Hilary Aralis, UCLA; Pamina Gorbach, UCLA; Ron Brookmeyer, UCLA

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

11:05 a.m. Logistic Analysis of Epidemiologic Studies with Augmentation Sampling Involving Re-Stratification and Population Expansion—◆**Barry I. Graubard**, National Cancer Institute; **Yan Li**, University of Maryland; **Mahboobeh Safaeian**, National Cancer Institute; **Hilary Robbins**, National Cancer Institute

11:20 a.m. Consideration of Challenges to Longitudinal Sample Weights in a Community-Based Epidemiological Study—◆**Melissa Danielson**, CDC; **Susanna Visser**, CDC; **Joseph Holbrook**, CDC; **Robert McKeown**, University of South Carolina; **Marc Elliott**, RAND Corporation

11:35 a.m. Comparison of Stratification Method and Its Application Using National Population Health Survey Data—◆**Sunita Ghosh**, Alberta Health Services Cancer Care; **Qiaohao Zhu**, Government of Alberta

11:50 a.m. Analysis of Longitudinal Data Gathered Using Outcome-Related Sampling Designs—◆**John Neuhaus**, UC San Francisco; **Charles McCulloch**, UC San Francisco

12:05 p.m. Floor Discussion

689 CC-2A Privacy, Confidentiality, and Sensitive Data— Contributed

Survey Research Methods Section, Government Statistics Section, Committee on Applied Statisticians

Chair(s): Daniel Yang, Bureau of Labor Statistics

10:35 a.m. AL-PUF: A Natural Generalization of K-Anonymization and Micro-Aggregation to Improve Analytic Utility—◆**Joshua Borton**, NORC at the University of Chicago; **Avinash Singh**, NORC at the University of Chicago

10:50 a.m. A Forced Odds Ratio (To Be Equal to One) Leads to a New Estimator for Randomized Response Sampling—◆**Augustus Jayaraj**, ; **Stephen A. Sedory**, Texas A&M University; **Sarjinder Singh**, Texas A&M University; **Oluseun Odumade**, Deloitte & Touche LLP

11:05 a.m. On Estimating at Least Seven Measures Using Randomized Response Sampling: Cramer-Rao Lower Bounds of Variances—◆**Cheonsig Lee**, ; **Sarjinder Singh**, Texas A&M University; **Stephen A. Sedory**, Texas A&M University; **Cheon-Sig Lee**, Coastal Bend College

11:20 a.m. On Security Properties of Random Matrix Masking—◆**Samuel Wu**, University of Florida; **Kshitij Khare**, University of Florida; **Long Zhang**, University of Florida; **Shigang Chen**, University of Florida

11:35 a.m. The Christofides' Randomized Response Technique for Multiple Sensitive Attributes—◆**Shu-Hui Hsieh**, ; **Shen-Ming Lee**, Feng Chia University; **Su-Hao Tu**, Academia Sinica

11:50 a.m. A Two-Stage Sampling Model for the Estimation of Population Proportion and Cheating with Randomized Response and Direct Questioning—◆**Evrin Oral**, LSUHSC School of Public Health; **Husam I. Ardah**, LSUHSC School of Public Health; **Edward J. Trapido**, LSUHSC School of Public Health

12:05 p.m. Encouraging Participation in a Lengthy Survey That Collects Sensitive Personal Data: Do Large Monetary Incentives Make a Difference?—◆**Catherine Haggerty**, The University of Chicago; **Shannon Nelson**, NORC at the University of Chicago; **Steven Pedlow**, NORC at the University of Chicago; **Becki Curtis**, NORC at the University of Chicago; **Anna Joyce**, NORC at the University of Chicago; **Joanne Hsu**, Federal Reserve Board; **Maximilian Schmeiser**, Federal Reserve Board

690 CC-210 Analyzing the American Community Survey— Contributed

Survey Research Methods Section, Government Statistics Section

Chair(s): Krista Heim, U.S. Census Bureau

10:35 a.m. Using Local Knowledge During Data Collection: Does It Make a Difference Who Applies It and When?—◆**Rachael Walsh**, U.S. Census Bureau; **James Christy**, U.S. Census Bureau; **John Marshall**, U.S. Census Bureau

10:50 a.m. The Reliability of American Community Survey Five-Year Estimates of Race Groups and American Indian and Alaska Native Populations—◆**Michael Beaghen**, ; **Karen King**, U.S. Census Bureau; **Michael Starsinic**, U.S. Census Bureau; **Adriana Hernandez Viver**, U.S. Census Bureau

11:05 a.m. Response Model-Based Stratification Using Auxiliary Frame Data for the Tailored Assignment of the Internet and Mail Self-Response Modes—◆**John Chesnut**, U.S. Census Bureau

11:20 a.m. Investigating Methods to Support Subannual Estimates in the American Community Survey—◆**Keith Albright**, U.S. Census Bureau; **Mark E. Asiala**, U.S. Census Bureau

11:35 a.m. Preliminary Investigation of Variance Issues Related to Generalized Regression Estimation Used for American Community Survey Five-Year Estimates—◆**Richard Griffin**, U.S. Census Bureau

11:50 a.m. Multilevel Regression and Post-Stratification for Small-Area Estimation of Population Health Outcomes Using BRFSS: An Evaluation of Cross-Level Inference—◆**Xingyou Zhang**, CDC; **James B. Holt**, CDC; **Hua Lu**, CDC; **Paul I. Eke**, CDC; **Kurt J. Greenlund**, CDC; **Janet B. Croft**, CDC

12:05 p.m. Floor Discussion

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

691 **CC-203**
Methodology: Evaluation Approaches—
Contributed

Social Statistics Section

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

- 10:35 a.m. Bias Amplification: The Case of Fixed-Effects—
◆ Joel Middleton, UC Berkeley; Marc Scott, New York University; Jennifer Hill, New York University; Ronli A. Diakow, New York University
- 10:50 a.m. Propensity Score Analysis with Missing Data: The Comparison of Multiple Imputation Approaches—
◆ Eun Sook Kim, ; Jeffrey Kromrey, University of South Florida; Seang-Hwane Joo, University of South Florida; Yan Wang, University of South Florida; Jessica Montgomery, University of South Florida; Reginald Lee, University of South Florida; Patricia Rodriguez de Gil, University of South Florida; Shetay Ashford, University of South Florida; Rheta Lanehart, University of South Florida; Chunhua Cao, University of South Florida
- 11:05 a.m. The Estimation of Inter-Rater Reliability as a Missing Data Problem—◆ Peter J. Pashley, Law School Admission Council; Charlotte R. Pashley, Yardstick
- 11:20 a.m. Validating a Social Network Model of Tobacco Use—
◆ Patrick Finley, Sandia National Laboratories; Theresa Brown, Sandia National Laboratories; Nancy Brodsky, Sandia National Laboratories; Gregory Lambert, Sandia National Laboratories; Emily Silver, Sandia National Laboratories; Katherine Cauthen, Sandia National Laboratories; Stephen Verzi, Sandia National Laboratories
- 11:35 a.m. Causal Inference Without Control Units—
◆ Konstantin Kashin, Harvard University; Adam Glynn, Emory University
- 11:50 a.m. Sensitivity Analysis for Grouped Data: A New Approach to Bias-Amplification Bounds—◆ Marc Scott, New York University; Ronli A. Diakow, New York University; Joel Middleton, UC Berkeley; Jennifer Hill, New York University
- 12:05 p.m. **Floor Discussion**

692 **CC-212**
Advances in High-Dimensional Data
Nonparametrics: Part 2—Contributed

Section on Nonparametric Statistics

Chair(s): Meggie Wen, Missouri University of Science and Technology

- 10:35 a.m. Sequential Rank Agreement Methods for Comparison of Ranked Lists—◆ Claus Ekström, University of Copenhagen; Thomas Gerds, University of Copenhagen

- 10:50 a.m. Influence Functions of Halfspace Depth-Based Trimmed Mean and Covariance Matrix—◆ Jin Wang, Northern Arizona University
- 11:05 a.m. Convergence Rate of a Class of Multivariate Density Estimators Based on Adaptive Partitioning—◆ Linxi Liu, ; Wing Hung Wong, Stanford University
- 11:20 a.m. Rank-Based Multiple Testing for Detecting Differentially Expressed Genes—Hossein Mansouri, Texas Tech University; ◆ Bo Li, Texas Tech University
- 11:35 a.m. Handling the Curse of Dimensionality in Multivariate Kernel Density Estimation—◆ Jordan Crabbe,
- 11:50 a.m. Higher Dimensional Multichannel Wavelet Deconvolution with Fractional Gaussian Fields—
◆ Justin Wishart,
- 12:05 p.m. A Nonparametric Divergence Approach to Detect Item Parameter Drift in Multidimensional Computerized Adaptive Testing—◆ Hyeon-Ah Kang, University of Illinois at Urbana-Champaign; Hua-Hua Chang, University of Illinois

693 **CC-612**
■ ● Evaluation of In Vitro Diagnostics
—Contributed

Section on Medical Devices and Diagnostics

Chair(s): Li Zhou, Abbot

- 10:35 a.m. Statistical Considerations in Clinical Specificity Study for In-Vitro Diagnostic Device—◆ Zhen Jiang, FDA
- 10:50 a.m. Use of Gray Zone in IVD Tests—◆ Tie-Hua Ng, FDA/CBER; Paul Hshieh, CBER/FDA
- 11:05 a.m. Statistical Issues in Evaluating Prostate-Specific Antigen Test for Aid in Prostate Cancer Detection—
◆ Kyungsook Kim, FDA
- 11:20 a.m. Is HemoGenix Assay HALO 96 PCAEQ Really CFU-Equivalent Progenitor Cell Assay?—◆ Pingfu Fu, Case Western Reserve University; Jane Reese, Case Western Reserve University; Brittney Hooper, Case Western Reserve University
- 11:35 a.m. Error Grid Analysis (EGA) of Glycated Hemoglobin A1c: A Proposed Method—Jesse Canchola, Roche Molecular Systems, Inc.; ◆ Shivani Aggarwal, University of Southern California
- 11:50 a.m. Statistical Evaluation of the Analytic Performance of a Clinical Sequencing Assay—◆ Eric Polley, National Cancer Institute; Lun-Ching Chang, National Cancer Institute

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

12:05 p.m. Classifying Usual Interstitial Pneumonia in Patients with Interstitial Lung Disease Using Machine Learning on High-Dimensional Transcriptional Data—◆Su Yeon Kim, ; James Diggans, Veracyte, Inc.; Dan Pankratz, Veracyte, Inc.; Jing Huang, Veracyte, Inc.; Moraima Pagan, Veracyte, Inc.; Nicole Sindy, Veracyte, Inc.; Yoonha Choi, Veracyte, Inc.; Giulia C. Kennedy, Veracyte, Inc.

694 **TCC-204**
Reliability and Related Methods—Contributed
Section on Physical and Engineering Sciences, Quality and
Productivity Section

Chair(s): Sabyasachi Basu, The Boeing Company

10:35 a.m. Mean Residual Life Function for Additive and Multiplicative Hazard Rate Models—◆Ramesh Gupta, University of Maine

10:50 a.m. Nonhomogeneous Poisson Process Inference When There Are Missing Counts—◆Peng Liu, SAS Institute; Rajneesh Rajneesh, SAS Institute

11:05 a.m. Properties of Reliability Functions of Discrete Distributions—◆Pushpa Gupta, University of Maine

11:20 a.m. High-Efficiency and High-Breakdown Methods for Interlaboratory Comparisons—◆Hung-Kung Liu, NIST

11:35 a.m. Discordancy Tests for Isotropically Distributed Random Rotations—◆Bryan Stanfill, CSIRO; Ulrike Genschel, Iowa State University

11:50 a.m. Testing in the One-Way Layout with Limited Available Data—◆Yvonne Zubovic, Indiana University Purdue University Fort Wayne; Chand Chauhan, Indiana University Purdue University Fort Wayne

12:05 p.m. Higher-Order Accurate Procedures to Compare Two Normal Populations: Objective Bayes Approach—◆Andrew Rukhin,

695 **CC-613**
Model Selection Methods for
High-Dimensional Data I—Contributed
Biometrics Section

Chair(s): Karlene Meyer, University of South Alabama

10:35 a.m. Estimating False Inclusion Rates in Penalized Regression Models—◆Patrick Breheny, The University of Iowa

10:50 a.m. An Integrated Approach to Exploit SNP Correlations for Ultra-High-Dimensional Genome-Wide Data—◆Michelle Carlsen, Utah State University; Guifang Fu, Utah State University

11:05 a.m. Logic Regression with Correlated Data—◆Wensong

Wu, Florida International University; Tan Li, Florida International University

11:20 a.m. Reciprocal Regularization for High-Dimensional Regression—◆Qifan Song, Purdue University; Faming Liang, University of Florida

11:35 a.m. Model Selection in Genome-Wide Association Studies—◆Kevin Keys, UCLA; Gary Chen, University of Southern California; Kenneth Lange, UCLA

11:50 a.m. Penalized Exponential Tilt Model for Analysis of High-Dimensional DNA Methylation Data—◆Hokeun Sun, Pusan National University; Yong Chen, The University of Texas School of Public Health; Shuang Wang, Columbia University Mailman School of Public Health

12:05 p.m. Annotation Regression of Genome-Wide Association Studies (ARoG) with an Application to Psychiatric Genomics Consortium Data—◆Sunyoung Shin, University of Wisconsin; Sunduz Keles, University of Wisconsin

696 **CC-401**
Sparse Classification and Estimation—
Contributed
Section on Statistical Computing, Section on Statistical Learning and Data Mining

Chair(s): Stephen Kaluzny, TIBCO Software Inc.

10:35 a.m. Sparse Distance Weighted Discrimination—◆Boxiang Wang, University of Minnesota; Hui Zou, University of Minnesota

10:50 a.m. Solving Fused Group Lasso Problems via Block-Splitting Algorithms—◆Tso-Jung Yen, Institute of Statistical Science, Academia Sinica

11:05 a.m. A Novel Two-Stage Approach to Identify Prognostic Biomarkers for Cancer Genetic Data with Survival Endpoints—◆Zheng Li, Penn State; Ming Wang, Penn State

11:20 a.m. A GLARE Algorithm for Selecting Gaussian Graphical Models—◆George Terrell, Virginia Tech

11:35 a.m. Tweedie's Compound Poisson Model with Grouped Elastic Net—◆Wei Qian, Rochester Institute of Technology; Yi Yang, University of Minnesota; Hui Zou, University of Minnesota

11:50 a.m. Regularization Paths for Huber Loss Regression and Quantile Regression via Semismooth Newton Coordinate Descent—◆Congrui Yi, The University of Iowa; Jian Huang, The University of Iowa

12:05 p.m. A Generalized Linear Mixed Model with Normal Mixture Random Effects—◆Lanfeng Pan, Iowa State University; Yehua Li, Iowa State University; Kevin He, University of Michigan; Yi Li, University of Michigan

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

697 CC-614 New Methods for Survival Analysis— Contributed

Biometrics Section

Chair(s): Jarcy Zee, Arbor Research Collaborative for Health

- 10:35 a.m. Construct a Simultaneous Confidence Interval for Linear Time-Varying Coefficients in Cox Proportional Hazard Model—◆Shizue Izumi, Oita University; Tetsuji Tonda, Prefectural University of Hiroshima; Kenichi Satoh, Hiroshima University
- 10:50 a.m. Metric Learning for Right-Censored Outcomes—◆Daniel Conn, UCLA; Zhenqiu Liu, Cedars Sinai Medical Center; Christina M. Ramirez, UCLA Fielding School of Public Health; Gang Li, UCLA Fielding School of Public Health
- 11:05 a.m. Stacked Survival Models for Censored Quantile Regression—◆Kyle Rudser, University of Minnesota; Andrew Wey, University of Hawaii; John Connett, University of Minnesota
- 11:20 a.m. Proportional Hazards Model with a Change Point for Clustered Event Data—◆Yu Deng, The University of North Carolina at Chapel Hill; Donglin Zeng, The University of North Carolina; Jianwen Cai, The University of North Carolina at Chapel Hill
- 11:35 a.m. Marginal Screening for High-Dimensional Predictors Under Right Censoring—◆Tzu-Jung Huang, Columbia University; Ian McKeague, Columbia University; Min Qian, Columbia University
- 11:50 a.m. The Historical Cox Model—◆Jonathan Gellar, Mathematica Policy Research; Fabian Scheipl, Ludwig Maximilians University Munich; Mei-Cheng Wang, The Johns Hopkins University; Dale Needham, Johns Hopkins Bloomberg School of Public Health; Ciprian Crainiceanu, The Johns Hopkins University
- 12:05 p.m. Finite Sample Pointwise Confidence Intervals for a Survival Distribution with Right-Censored Data—◆Michael Fay, National Institute of Allergy and Infectious Diseases; Erica Brittain, National Institute of Allergy and Infectious Diseases

98 CC-4C4 Methods for Dimension Reduction— Contributed

Section on Statistical Learning and Data Mining, SSC

Chair(s): Carla Inclan, Charles River Associates

- 10:35 a.m. Influence Function in Dimension Reduction—◆Jiaxi Liang, ; Shoja'eddin Chenouri, University of Waterloo; Christopher Small, University of Waterloo

- 10:50 a.m. Generalized Principal Component Analysis—◆Andrew Landgraf, The Ohio State University; Yoonkyung Lee, The Ohio State University
- 11:05 a.m. Task-Driven Dimension Reduction in the Presence of Nuisance Variables—◆David Shaw, ; Aswin Sankaranarayanan, Carnegie Mellon University; Rama Chellappa, University of Maryland
- 11:20 a.m. Selecting the Number of Principal Components: Estimation of the True Rank of a Noisy Matrix—◆Yunjin Choi, Stanford University; Rob Tibshirani, Stanford University; Jonathan Taylor, Stanford University
- 11:35 a.m. Independent Component Analysis in the Presence of Correlated Gaussian Noise—◆Rajesh Nandy, University of North Texas Health Science Center
- 11:50 a.m. Matrix-Variate Regressions and Envelope Models—◆Shanshan Ding, University of Delaware; Dennis Cook, University of Minnesota
- 12:05 p.m. **Floor Discussion**

699 CC-617 Missing Data I—Contributed Biopharmaceutical Section

Chair(s): Xiaoyu Dong,

- 10:35 a.m. Data Rescaling for Evaluation Anti-Tumor Effect of Drug Combination from In Vitro Experiments—◆Qin Liu, The Wistar Institute; Xiangfan Yin, The Wistar Institute; Dario Altieri, The Wistar Institute
- 10:50 a.m. Accurate Inference from Chemical Measurement Data Under the Rocke-Lorenzato Model—◆Jian Zhao, The EMMES Corporation
- 11:05 a.m. Simultaneous Assessment of Biosimilarity Between Two Biological Products—◆Hsiao-Hui Tsou, National Health Research Institutes; Chin-Fu Hsiao, National Health Research Institutes; Jung-Tzu Liu, National Health Research Institutes; Chi-Tian Chen, National Health Research Institutes; Yi-Hsuan Lai, Delta Electronics, Inc.; Wan-Jung Chang, National Health Research Institutes; Chyng-Shyan Tzeng, National Tsing Hua University
- 11:20 a.m. Continuous Tumor Size Change as an Endpoint for Phase II Cancer Clinical Trials—◆Masha Kocherginsky, The University of Chicago; Theodore Karrison, The University of Chicago
- 11:35 a.m. Re-Think 'Stop for Success' in the Interim Analysis of a Regional Clinical Trial—◆Bingming Yi, GSK Shanghai; Linda Luo, GSK Shanghai; Jack Peng, GSK Shanghai

● Themed Session ■ Applied Session ◆ Presenter CC-Washington State Convention Center S-Sheraton Seattle GH-Grand Hyatt TCC-The Conference Center

11:50 a.m. Choice of Estimand and Analysis Methods in Diabetes Trials with Rescue Medication—◆Mouna Akacha, Novartis; Bjoern Holzhauer, Novartis Pharma AG; Georgina Bermann, Novartis Pharma AG

12:05 p.m. Simulations and Asymptotic Theory Illustrate Improvement on a Response-Adaptive Biased Coin Design—◆Aleksandra Stein,

700 **CC-619**
Topics in Clinical Trials 3—Contributed
Biopharmaceutical Section

Chair(s): Grace Hyun Kim, UCLA

10:35 a.m. Adjust for Subsequent Therapies in Overall Survival Analyses—◆Lixia Pei, Johnson & Johnson, Janssen R&D; Grace Liu, Johnson & Johnson, Janssen R&D; Youn Park, Janssen

10:50 a.m. Bioequivalence Study Design with Unknown Variance on PK Parameters—◆Jialin Xu, Merck

11:05 a.m. Adaptive Monitoring of HIV Prevention Trials in the Presence of Extreme Treatment Effect—◆William Koh, ; Scott Emerson, University of Washington

11:20 a.m. Improved Efficiency in Relative Risk Estimation and Hypothesis Testing with Small Samples—◆Rengyi Xu, University of Pennsylvania; Pamela Shaw, University of Pennsylvania; Devan Mehrotra, Merck

11:35 a.m. Software for Meta-Analysis in Clinical Studies—◆Qiaolin Chen, Novartis Pharmaceuticals; Siyu Li, Novartis Pharmaceuticals

11:50 a.m. Patient-Specific Meta-Analysis with Application to a Genomic Prostate Cancer Diagnostic—◆Michael Crager, Genomic Health, Inc.; Nan Zhang, Genomic Health, Inc.; Tara Maddala, Genomic Health, Inc.

12:05 p.m. Using Co-Data in Clinical Trials with Time-to-Event Endpoint—◆Satrajit Roychoudhury, Novartis Pharmaceuticals; Beat Neuenschwander, Novartis Pharma AG

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701 **CC-618**

Dose Finding, Dose Response in Clinical Trials—Contributed

Biopharmaceutical Section

Chair(s): Bojena Bitman, Amgen

- 10:35 a.m.** Dose-Response Modeling Methods to Identify the Minimum Effective Dose (MED)—◆Danielle Sullivan, ; Yihan Li, AbbVie; Wangang Xie, AbbVie; Su Chen, AbbVie; Yuanyuan Tang, AbbVie; Ying Zhang, AbbVie; Yijie Zhou, AbbVie
- 10:50 a.m.** A Bayesian Repeated Measures Design with Temporal Trend for Delayed Toxicity Outcomes—◆Rui Qin, Mayo Clinic; Jun Yin, Mayo Clinic; Sumithra J. Mandrekar, Mayo Clinic; Daniel Sargent, Mayo Clinic
- 11:05 a.m.** Centered Isotonic Regression: Point and Interval Estimation for Dose-Response Studies—◆Assaf Oron, Seattle Children’s Research Institute; Nancy Flournoy, University of Missouri - Columbia
- 11:20 a.m.** A Response-Adaptive Covariate-Balanced Randomization for Multi-Arm Clinical Trials—◆Cassandra Ballou, OHSU; Yiyi Chen, Oregon Health & Science University
- 11:35 a.m.** Bayesian Dose-Finding Designs for Drug Combination Using the Times to Response-Toxicity Trade-Offs Assuming Partial Ordering—◆Xiao Su, The University of Texas Health Science Center; Yisheng Li, MD Anderson Cancer Center
- 11:50 a.m.** A New Bayesian Dose-Finding Design for Drug Combination Trials—◆Jin Xu, East China Normal University; Rongji Mu, East China Normal University
- 12:05 p.m.** Selection of Multiplicity Adjustment Strategy in Confirmatory Trials with a Targeted Subgroup—◆Cheng Zheng, Novartis Pharmaceuticals; Zhichao Sun, University of Michigan; Kalyanee Appanna, Novartis Pharmaceuticals; Kaushal Mishra, Novartis Pharmaceuticals; Yong Zhang, Novartis Pharmaceuticals; Feng Tai, Novartis Pharmaceuticals

702 **CC-620**

General Methodology and Applications in Biostatistics—Contributed

Biometrics Section, ENAR, Section on Statistics and the Environment

Chair(s): Jiaqi Li, University of Pennsylvania

- 10:35 a.m.** Choosing a Working Correlation Structure for GEE: Making Use of Selection Penalties—◆Philip Westgate, University of Kentucky; Woodrow Burchett, University of Kentucky
- 10:50 a.m.** Versatile Tests for Comparing Survival Curves Based on Weighted Logrank Statistics—◆Theodore

Karrison, The University of Chicago

- 11:05 a.m.** A Probability Model for Comparing Estimates of Influenza Vaccine Effectiveness from Case-Control Studies—◆Michael Haber, Emory University; Qian An, Emory University; Meng Shi, Emory University
- 11:20 a.m.** A Comparison Study on Distributional Assumption Tests for Poisson Regression Model—◆Deniz Ozonur, Gazi University; Hatice Tul Kubra Akdur, Gazi University; Hulya Bayrak, Gazi University
- 11:35 a.m.** Disease Risk Estimation by Combining Case-Control Data with Aggregated Information on the Population at Risk—◆Xiaohui Chang, Oregon State University; Rasmus Waagepetersen, Aalborg University; Xiaomei Ma, Yale University; Theodore Holford, Yale University; Rong Wang, Yale University; Yongtao Guan, University of Miami
- 11:50 a.m.** Interpretable Treatment Regimes—◆Yichi Zhang, North Carolina State University; Eric Laber, North Carolina State University; Anastasios Tsiatis, North Carolina State University ; Marie Davidian, North Carolina State University
- 12:05 p.m.** Explicit Integrated Population Modeling: Escaping the Conventional Assumption of Independence—◆Audrey Beliveau, Simon Fraser University; Roger Pradel, Centre d’Écologie fonctionnelle et Évolutive; Michael Schaub, Swiss Ornithological Institute; Richard Lockhart, Simon Fraser University; Carl J. Schwarz, Simon Fraser University

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