



3rd Seattle Symposium on Health Care Data Analytics

OCTOBER 22-24, 2018 | SEATTLE, WA

Learning from health care data to improve patient outcomes and public health

Meet our speakers, discussants, and instructors



Aastha Bansal, PhD

Dr. Bansal's research focuses on biomarker-guided dynamic decision-making, development and evaluation of prediction models, and comparative effectiveness and outcomes research using large healthcare claims databases and EHR data. She won the American Statistical Association's Young Investigator Award in 2011 for her work on developing statistical methods for biomarker research. She was the PI on a project to study biomarker-guided sequential treatment strategies in CML. She co-teaches a short course titled 'Methods for the Development and Evaluation of Models for Dynamic Decision Making'. Dr. Bansal's recent work has focused on applying methods for evaluating the time-dependent prediction accuracy of decision rules for dynamic decision-making to health economics and health policy research. She received New Investigator Presentation Awards from the International Society of Pharmacoeconomics and Outcomes Research in 2015 and 2016 for her work in applying advanced statistical methods to health economics and outcomes research. She was also recently awarded a Method to Extend Research in Time (MERIT) R37 award from NCI to develop a decision-theoretic framework and apply it to EHR data to identify cost-effective risk-adaptive surveillance strategies among cancer survivors.



Carrie Bennette, PhD

Carrie Bennette is a senior methodologist at Flatiron Health and an affiliate assistant professor at the University of Washington in the Comparative Health Outcomes, Policy, and Economics (CHOICE) Institute. She holds a PhD in health economics and outcomes research from the University of Washington and an MPH from Columbia University. Her earlier research at focused on building risk prediction models to improve the clinical outcomes of cancer patients, developing statistical and decision analytic models to improve the efficiency of limited public investments in cancer research, and evaluating how policies impacted pharmaceutical industry investments in cancer clinical trials. Her current research focuses on developing and applying statistical methods that leverage real-world data to accelerate clinical research in oncology. At Flatiron Health, Carrie leads a team investigating how to build and validate external control arms using real-world data that could support regulatory and coverage decisions. Carrie has over 75 peer-reviewed publications in biostatistics, health economics, and outcomes research and teaches courses on statistical methods for analyzing real-world data and the principles of data visualization.



Jennifer Bobb, PhD

Jennifer Bobb, PhD, aims to apply rigorous statistical methods to address important problems in public health. She is interested in statistical issues that occur when data that were not originally collected for research purposes, such as administrative claims data or electronic health records, are used for addressing scientific questions of relevance to clinical practice and health policy. At KPWHRI, Dr. Bobb collaborates with scientists across a broad range of research areas, including studies of aging and cognitive function, women's health, and behavioral health. As an investigator with the Addictions Research Network, she provides statistical leadership on pragmatic clinical trials at Kaiser Permanente Washington and other health systems. She is the lead statistician on a study to evaluate whether exposure to prescription opioids during early pregnancy increases the risk of neural tube defects, as part of the Medication Exposure in Pregnancy Risk Evaluation Program funded by the Food and Drug Administration (FDA), as well as on the Adult Changes in Thought (ACT) study, a cohort study investigating the factors that contribute to dementia, Alzheimer's disease, and healthy aging.



M. Alan Brookhart, PhD

M. Alan Brookhart is a Professor of Epidemiology at UNC Chapel Hill. His research is focused primarily on the development and application of statistical and epidemiologic methods for studies of prescription medications, vaccines, and other exposures using large clinical and healthcare utilization databases.



Krisda Chaiyachati, MD

Krisda H. Chaiyachati, M.D., M.P.H., M.S.H.P. is an Assistant Professor of Medicine at the University of Pennsylvania Perelman School of Medicine, Associate Fellow at Penn's Leonard Davis Institute of Health Economics, and the Medical Director for Penn Medicine's FirstCall Virtual Care. He studies and designs innovative strategies for improving healthcare accessibility and patient engagement, experimenting with initiatives that reduce the influence of social barriers or leveraging telemedicine-based strategies. Notably, he measures health outcomes for low-income and minority populations who gain access to social services (e.g., legal aid, community linkages) and the impact of geography or transportation availability on the utilization of ambulatory care services. He seeks to find solutions in areas previously seen outside the mandate of healthcare, but may lower overall health care spending or increase the use of high value services. In addition to his medical degree from the University of Michigan Medical School, Dr. Chaiyachati received his M.P.H. from the Harvard School of Public Health as a Zuckerman Fellow at the Center for Public Leadership and Master of Science in Health Policy (M.S.H.P.) from the University of Pennsylvania. He completed his internal medicine training with Yale's Primary Care Program and continued on as a Chief Resident. He clinically practices as a board-certified internal medicine physician within Penn Medicine.



Jessica Chubak, PhD, is an epidemiologist who works to improve cancer diagnosis, treatment, control, and survivorship. She contributes to several national collaborations that are finding practical, efficient, effective ways to screen for cancer, especially colorectal cancer. She also studies how common medications affect cancer risk and recurrence. Based on a personal interest in how pets positively affect health, Dr. Chubak is studying animal-assisted activities in clinics and hospitals where children get treated for cancer. Dr. Chubak's methodological research focuses on the use of administrative and electronic health record data in epidemiologic and health services studies. She is the Kaiser Permanente Washington Health Research Institute (KPWHRI) principal investigator for the National Cancer Institute's Cancer Research Network.

Jessica Chubak, PhD



Yates Coley, PhD, is a biostatistician whose research promotes precision medicine and learning health systems as a way to improve value and quality in health care delivery. Her statistical research focuses on methods for predicting latent health states, understanding variability in risk, and accounting for missing data. She also has particular interest in data visualization and designing decision support tools to support shared clinical decision-making. Before starting as an assistant investigator at KPWHRI in 2016, Dr. Coley was a post-doctoral research fellow at Johns Hopkins Bloomberg School of Public Health where she worked with Dr. Scott Zeger. She is a co-investigator on a Patient-Centered Outcomes Research Institute (PCORI) methodology grant: "Bayesian hierarchical methods for the design and analysis of studies to individualize health care" (PI: Zeger). This research promises to establish a solid statistical framework for more intelligent, individualized health care provision.

Yates Coley, PhD



Scott Counts is a Principal Researcher in the Social Technologies Group at Microsoft Research, working in the area of computational social science. His work focuses on applying insights from analyses of large scale naturalistic data to problems of interest to society. Current application focus areas include health (predicting depression from social media data), policy (predicting policy change based on constituent ideology), and macroeconomics (modeling and predicting unemployment from novel data).

Scott Counts, PhD



Lynn DeBar, PhD

Lynn DeBar, PhD, is a clinical psychologist and behavioral health researcher. Her work focuses on health issues that have emotional and physical causes and manifestations, including pain syndromes, eating disorders, and obesity-related health problems. She is particularly interested in exploring how these health issues can be addressed and treated in primary care settings, and the role of behaviorally oriented interdisciplinary approaches as well as complementary and integrative health practices in this treatment. Dr. DeBar's work builds on research showing that people with emotional disorders, such as anxiety and depression, often seek treatment for related physical symptoms, and that people with a variety of physical ailments can benefit greatly from concomitant attention to their emotional and psychosocial conditions. Accordingly, Dr. DeBar develops and evaluates treatment approaches that simultaneously address these complex physical and emotional needs. Dr. DeBar works closely with physicians at Kaiser Permanente and other health care systems to ensure that her research findings make their way into clinical practice, and to identify real-world clinical practices that have the potential to improve service delivery through large-scale adoption of behavioral and lifestyle interventions.



Ruth Etzioni, PhD

Dr Etzioni and her team develop models for addressing evidence gaps that inevitably arise in medical decision making and health policy development. Her work has reconciled apparently conflicting studies of prostate cancer screening and treatment, integrated results of prostate cancer active surveillance studies, and explained why most overdiagnosis estimates in breast and prostate cancer screening cannot be trusted. She is a member of three national panels on early detection in cancer including the American Cancer Society's Screening Guideline Development Panel. In 2016 she was elected a fellow of the American Statistical Association and is the chair-elect of its Health Policy Statistics Section. Dr Etzioni's recent work is motivated by the need for better cancer data sources, particularly around events relating to disease progression and metastasis. She has brought together data from four North American active surveillance cohorts to derive a consensus estimate of disease progression among newly-diagnosed prostate cancer patients. Her most recently funded project is an NCI UG3-UH3 grant that will develop predictive algorithms for identifying recurrence and second cancer events among breast cancer patients in the SEER registry.



Susan Gruber, PhD, MS, MPH

Susan Gruber, PhD, MS, MPH, is a biostatistician and computer scientist whose expertise is in the development and application of data adaptive methodologies to improve the quality of evidence generated by studies concerning personal and public health. Dr. Gruber has made fundamental contributions to the theory and tools for causal inference using targeted learning. Her work also includes applications of machine learning to predictive modeling. She collaborates with academic and governmental colleagues to advance the FDA's Sentinel System. Dr. Gruber was formerly the Director of the Biostatistics Center in the Department of Population Medicine at Harvard Medical School & Harvard Pilgrim Health Care Institute, and Senior Director of IMEDS- Methods Research for the Reagan-Udall Foundation for the FDA.



Rebecca Hubbard, PhD

Dr. Hubbard is an Associate Professor of Biostatistics in the Department of Biostatistics, Epidemiology and Informatics at the University of Pennsylvania. Her research focuses on development and application of statistical methodology for studies using data from electronic health records (EHR). This work encompasses evaluation of screening and diagnostic tests, methods for comparative-effectiveness studies, and health services research. Dr. Hubbard's methodological research emphasizes development of statistical tools to support valid inference for EHR-based analyses, accounting for complex data availability and data quality issues, and has been applied to studies of cancer epidemiology, aging and dementia, and pharmacoepidemiology. Results of this work have been published in over 100 peer-reviewed papers in the statistical and medical literature. She has taught short courses at ENAR and the Summer Institutes in Statistical Genetics and Statistics for Clinical Research at the University of Washington for the past 10 years.



**Michael Jackson, PhD,
MPH**

Michael L. Jackson, PhD, MPH's research focuses on understanding how infectious diseases spread, and on designing and evaluating interventions such as vaccination programs. Dr. Jackson is the Kaiser Permanente Washington Health Research Institute (KPWHRI) principal investigator for the United States Influenza Vaccine Effectiveness Network. This Network aims to provide ongoing evaluations of the U.S. influenza vaccination program. Dr. Jackson uses data from this Network to study influenza vaccine effectiveness, to estimate the burden of disease caused by influenza, and to advance the methodology of vaccine effectiveness studies. He also uses mathematical models to predict the impact of vaccination programs on the spread of infectious diseases such as *Haemophilus influenzae* type b (Hib) and *Neisseria meningitidis*.



Su-In Lee, PhD

Prof. Su-In Lee is an Associate Professor in the Paul G. Allen School of Computer Science & Engineering and in the Genome Sciences Department, and Adjunct Associate Professor in the Department of Electrical Engineering and in the Department of Biomedical Informatics and Medical Education at the University of Washington. She completed her PhD in 2009 at Stanford University with Prof. Daphne Koller in the Stanford Artificial Intelligence Laboratory. Before joining the UW in 2010, she was a visiting professor in the Computational Biology Department at Carnegie Mellon University. She has received the National Science Foundation CAREER Award and been named an American Cancer Society (ACS) Research Scholar. She has received a number of generous grants from the National Institutes of Health (NIH), National Science Foundation (NSF), and American Cancer Society (ACS).



Vincent Liu, MD MS is a Research Scientist at the KP Division of Research and the Regional Director of Hospital Advanced Analytics in KP Northern California. He is also a practicing critical care physician at KP Santa Clara. His NIH-funded research program focuses on utilizing granular EHR data to improve practice and outcomes for patients with severe acute illness, particularly sepsis and critical illness.

Vincent Liu, MD



Dr. Tamra Meyer currently leads the prescription drug abuse team in the Division of Epidemiology, Office of Surveillance and Epidemiology, Center for Drug Evaluation and Research at the U.S. Food and Drug Administration. Her team is responsible for evaluating the postmarket safety of drugs with respect to risks of misuse, abuse, addiction, and overdose. Dr. Meyer has served at FDA since January of 2013 as both an epidemiology reviewer and team lead across several therapeutic areas. She previously served as an epidemiologist with the Army Pharmacovigilance Center where she conducted drug safety studies using the Military Health System electronic health data. Prior to her work in pharmacoepidemiology, Dr. Meyer studied genetic and cancer epidemiology while earning an MPH and PhD at the University of Texas Health Science Center and later as a postdoctoral fellow at the National Cancer Institute.

Tamra Meyer, PhD, MPH



Daniel B. Neill is an Associate Professor of Computer Science and Public Service at New York University's Courant Institute Department of Computer Science and Wagner School of Public Service, and Associate Professor of Urban Analytics at NYU's Center for Urban Science and Progress. He was previously a tenured faculty member at Carnegie Mellon University's Heinz College, where he was the Dean's Career Development Professor, Associate Professor of Information Systems, and Director of the Event and Pattern Detection Laboratory. He received his M.Phil. from Cambridge University and his M.S. and Ph.D. in Computer Science from Carnegie Mellon University. Prof. Neill's research focuses on developing new methods for machine learning and event detection in massive and complex datasets, with applications ranging from medicine and public health to law enforcement and urban analytics. He works closely with organizations including public health, police departments, hospitals, and city leaders to create and deploy data-driven tools and systems to improve the quality of public health, safety, and security, for example, through the early detection of disease outbreaks and through predicting and preventing hot-spots of violent crime. He was the recipient of an NSF CAREER award and an NSF Graduate Research Fellowship, and was named one of the "top ten artificial intelligence researchers to watch" by IEEE Intelligent Systems. Most recently, his work on pre-syndromic surveillance was named runner-up in the Department of Homeland Security's Hidden Signals Challenge, a nationwide system design competition to detect emerging bio-threats.

Daniel Neill, PhD



Ross Prentice, PhD

Ross Prentice is Member and former Director of the Public Health Sciences Division at the Fred Hutchinson Cancer Research Center, and Professor of Biostatistics at the University of Washington. His research focuses on chronic disease population science and disease prevention, and in related methodology developments. His statistical research areas include failure time data analysis methods; cohort study design and analysis methods; the use of biomarkers to address measurement issues, especially in dietary epidemiology; surrogate outcome methods and limitations; and genomic and proteomic methods. He served as PI of the Clinical Coordinating Center for the Women's Health Initiative from its inception in 1992 to 2011, and continues as co-PI. The WHI involves a multifaceted randomized controlled trial and cohort study among 161,808 postmenopausal US women. Ross has received the COPSS Award and the Fisher Lecture Award from the 'Joint Statistical Societies'; the Research Excellence in Epidemiology and Prevention Award from the AACR and ACS; the Team Science Award from AACR; and he is a member (1990) of the Institute of Medicine/National Academy of Medicine.



Sherri Rose, PhD

Sherri Rose, Ph.D. is an Associate Professor of Health Care Policy (Biostatistics) at Harvard Medical School where her methodological focus is nonparametric machine learning for causal inference and prediction. Within health policy, Dr. Rose works on risk adjustment, comparative effectiveness research, and health program impact evaluation. Dr. Rose coauthored the first book on machine learning for causal inference, and has published work across interdisciplinary outlets, including *Biometrics*, *Journal of Health Economics*, *Health Services Research*, and *Health Affairs*. She was recently honored with the ISPOR Bernie J. O'Brien New Investigator Award for exceptional early career work in health economics and outcomes and an NIH Director's New Innovator Award to develop robust estimators for generalizability.



Lucy Savitz, PhD, MBA

Lucy A. Savitz, Ph.D., MBA has 30 years of experience in healthcare delivery and health services research. She has built her career on participatory research, long before there was a PCORI, involving all key stakeholders from problem identification through dissemination of results. Currently, Lucy is Vice President for Health Research for Kaiser Permanente (KP) Northwest Region and Director for the KP Centers for Health Research in Oregon and Hawaii. She has led numerous implementation and evaluation studies with a focus on quality, safety, and elimination of unwarranted variation (i.e., waste). Lucy has been acknowledged as an Examiner for the 2001 and 2002 Malcolm Baldrige National Quality Program, administered by the National Institute for Standards and Technology in the U.S. Department of Commerce and the American Society for Quality. Her current area of thought leadership internationally as well as within KP focuses on evolving the methods and metrics needed to support accelerated implementation of improvement interventions and realistic program evaluations that support the learning health system (LHS) in partnership with patients, family/caregivers, clinical teams, researchers, and policy makers. Lucy is committed to building the future workforce needed, has served as an individual mentor, provided early training through the Delivery System Science Program at Academy Health, contributed to continuing professional development work with the National Academy of Medicine, and service on various technical expert panels that have led to a set of LHS competencies. She has been appointed by CMS on their Strategic Leadership Initiative and AHRQ on the National Advisory Council. At Academy Health, Lucy chairs the Committee on Advocacy and Public Policy and the Methods and Data Council.



Xu Shi, PhD

Xu Shi is currently a Harvard Data Science Initiative Postdoctoral Fellow in the Department of Biostatistics at the Harvard TH Chan School of Public Health. She is interested in developing statistical methods for secondary research using large-scale electronic health records (EHR). Her research focuses on developing causal inference methods tailored to EHR data, automatic translation and linkage of data across healthcare systems, post-marketing drug safety surveillance, and comparison of healthcare utilization. She received her Ph.D. in Biostatistics from University of Washington, Seattle. Prior to this, she obtained a B.S. in Mathematics and Applied Mathematics and a minor in English language and literature at the Chu Kochen Honors College from Zhejiang University, China.



Hossein Soleimani, PhD

Hossein Soleimani is a Postdoctoral Fellow at the computer science department at Johns Hopkins University. He received the Ph.D. degree from Pennsylvania State University, PA, in 2016. His research interests include machine learning, healthcare, probabilistic graphical models, and statistical modeling. He specializes in developing and deploying intelligent clinical decision support tools and personalized risk prediction systems.



Mark van der Laan, PhD

Mark J. van der Laan is the Hsu/Peace Professor of Biostatistics at the University of California, Berkeley School of Public Health. He is the recipient of the 2005 COPSS Presidents' and Snedecor Awards, as well as the 2004 Spiegelman Award, and is a Founding Editor for the International Journal of Biostatistics and the Journal of Causal Inference.

His methodological research interests include censored data, causal inference, machine learning, multiple testing, semiparametric estimation theory, and targeted learning. He has authored various books, including Springer books Targeted Learning: Causal Inference for Observational and Experimental Data (2011), and the upcoming book Targeted Learning in Data Science: Causal Inference for Complex Longitudinal Studies (2017), van der Laan, Rose.



Scott Zeger, PhD

Scott L. Zeger is Professor of Biostatistics at the Johns Hopkins Bloomberg School of Public Health with a joint appointment in the Department of Medicine. He is the University's co-Director of Hopkins *inHealth*, the Johns Hopkins precision medicine partnership of the University, Health System, and Applied Physics Laboratory. He conducts statistical research on regression analysis for correlated responses and on methods for precision medicine. He has made substantive contributions to our understanding of the effects on health of smoking and air pollution, the global etiology of children's pneumonia and other topics. Professor Zeger has served as expert witness to the U.S. Department of Justice and several states in their civil suits against the tobacco industry and as a member of the Board of Scientific Advisors for the Merck Research Laboratory. He is a member of the Springer-Verlag editorial board for statistics and was the founding co-editor of the Oxford University Press journal *Biostatistics*. Dr. Zeger's work has been recognized with several awards including most recently an honorary doctorate from Lancaster University in England and the 2015 Karl Pearson Prize from the International Statistical Institute with long-time colleague Dr. Kung-Yee Liang for their development of Generalized Estimating Equations (GEE). Dr. Zeger is most proud of his Golden Apple Awards from the Johns Hopkins Bloomberg School Student Assembly for excellence in teaching.



Vadim Zipunnikov, PhD

Dr. Vadim Zipunnikov is an Assistant Professor in the Department of Biostatistics at the Johns Hopkins School of Public Health. Dr. Zipunnikov is a faculty member of Statistical Methodology and Applications in Technology (SMART) group, a co-leader of the Wearable and Implantable Technology (WIT) group, and the biostatistics co-director of the Motor Activity Research Consortium for Health (mMARCH). His group works on methods development for multi-modal data generated by wearables (such as fitness and sleep trackers, heart rate monitors, and electronic diaries) and interfacing these data with larger databases of more traditionally collected information (by large national epidemiological studies, health surveys, and Electronic Medical Records). He also focuses on the understanding the complex interaction of multiple measures of sleep, physical activity, and circadian rhythmicity coupled with the context from electronic diaries to characterize multi-modal behavioral phenotypes via deeper understanding of the dynamic interplay of multiple brain-body systems and engineering of interpretable and predictive biomarkers.

Acknowledgments

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