Duke | MARGOLIS CENTER for Health Policy

Understanding the Use of Negative Controls to Assess the Validity of Non-Interventional Studies of Treatment Using Real-World Evidence

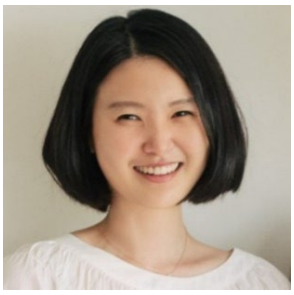
March 8, 2023 | 10:00 a.m. – 3:00 p.m. ET

Speaker Biographies

Fang Tian, PhD, MPH, MHS, is currently an epidemiologist and acting team leader in the Division of Epidemiology-I in the Office of Surveillance and Epidemiology in CDER, FDA. She received her Ph.D in Epidemiology and MHS in Biostatistics from Johns Hopkins University, and MPH from Harvard University. Her areas of expertise include design and analysis of observational studies, especially in methods development and application. She joined FDA in 2017 and has been leading regulatory reviews of RWD/RWE studies, particularly for oncology/hematology therapeutic products.

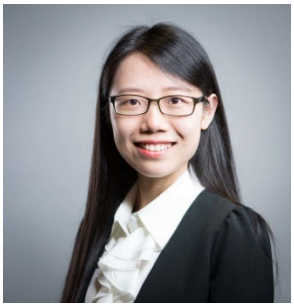
Hector Izurieta, PhD, MPH, MHS, is currently Associate Director for Novel Clinical Investigations at the Office of Vaccine Research and Review (OVRR), CBER/FDA. Born in Uruguay, he has an MD degree from South America, an MPH from Harvard University, a PhD from Spain, a Preventive Medicine fellowship (CDC), and a two-year training in Epidemiology at CDC's Epidemic Intelligence Service (EIS). He has extensive international experience in vaccine safety and effectiveness, and in the use of real-world evidence, having worked at FDA, CDC, PAHO, and WHO. He has also previously worked in South Sudan for 2 years, for Médecins Sans Frontiers France, and in Benin for three years for the Swiss Cooperation. He has published close to 100 manuscripts on COVID-19, Influenza, Herpes Zoster, Measles and other vaccines, and on vaccine research methodology.

Zafar Zafari, PhD, MSc, is a health services researcher and an Assistant Professor at the University of Maryland School of Pharmacy. Prior to joining Univ of Maryland, he was a postdoctoral fellow in health policy at Columbia University Mailman School of Public Health. Zafar's research interests lie in computer simulation models for comparative effectiveness, mathematical models for decision-making, value of information analysis, and use of non-experimental data in informing risk-prediction epidemiological models.



Jeong-eun Park, BPharm, MPH, is a Pharmacist and PhD candidate at the Department of Practice, Sciences, and Health Outcomes Research (P-SHOR) working under the supervision of Dr. Zafari. She is a pharmacist and had worked as a researcher at a HTA agency, working on systematic reviews and knowledge transfer activities for promoting evidence-based health care and policymaking in South Korea. Her research interests include simulation modeling and exploring creative ways to synthesize evidence to help health care decision-making.

Eric J. Tchetgen Tchetgen , PhD, is currently a Luddy Family President's Distinguished Professor at the Wharton School of the University of Pennsylvania with a joint primary appointment with the Perelman School of Medicine, Department of Biostatistics, Epidemiology and Informatics. Dr. Tchetgen Tchetgen's primary area of interest is in semi-parametric efficiency theory with application to causal inference, missing data problems, statistical genetics and mixed model theory. In general, he works on the development of statistical and epidemiologic methods that make efficient use of the information in data collected by scientific investigators, while avoiding unnecessary assumptions about the underlying data generating mechanism.



Xu Shi, PhD, is an Assistant Professor in the Department of Biostatistics at the University of Michigan. She is interested in developing novel statistical methods that provide insights from electronic health records (EHR) and claims data. Her work includes building data-driven pipelines to curate and harmonize EHR data across different systems, as well as developing causal inference methods to generate real-world evidence from EHR data. She co-leads the Causal Inference Core of the FDA's Sentinel Initiative Innovation Center, developing innovative statistical methods to monitor the safety of FDA-regulated medical products and exploring novel ways to utilize information from EHRs.

Erich Kummerfeld Carrell, PhD, is a Research Assistant Professor at the University of Minnesota. Dr. Kummerfeld's primary research interest is in statistical and machine learning methods for discovering causal relationships, with a special focus on discovering causal latent variable models. His work includes (1) developing novel algorithms for discovering causal relationships and latent variables, (2) proving theorems about the properties of causal discovery and latent variable discovery algorithms, (3) performing benchmark simulation studies to evaluate features of the algorithms that are difficult or impossible to evaluate by other means, and (4) applying these novel algorithms to health data in order to inform the development of new treatments.

Patrick Ryan, PhD, is Vice President of Observational Health Data Analytics at Janssen Research and Development, where he is leading efforts to develop and apply analysis methods to better understand the real-world effects of medical products. He is an Assistant Professor, Adjunct at Columbia University and collaborator in Observational Health Data Sciences and Informatics (OHDSI), a multi-stakeholder, interdisciplinary collaborative to create open-source solutions that bring out the value of observational health data through large-scale analytics.

Martijn Schuemie, PhD, is a research fellow and senior director at Janssen R&D, and is a visiting scholar at the Biostatistics department at UCLA. Martijn is one of the founders of Observational Health Data Science and Informatics (OHDSI), and a leader of the OHDSI Population-Level Estimation workgroup. After receiving his Master's degree in Economics, Martijn obtained his PhD in Computer Science on the topic of human-computer interaction in virtual reality systems for phobia treatment. Later, Martijn started research on the application of text-mining the scientific literature in support of molecular biology. He then moved to pharmacoepidemiology, and became one of the lead investigators in the EU-ADR project tasked with building a prototype drug safety signal detection system using population-level observational data. In 2012 he received a one-year fellowship of the FDA and became an active Observational Medical Outcomes Partnership (OMOP) investigator. In 2013 Martijn joined Janssen R&D, where he continued his research in OMOP and later OHDSI. Martijn's primary interest is improving the science of observational research through open science, empirical evaluation and calibration, and large-scale observational studies to improve reproducibility.

Richard Wyss, **PhD,** is an Assistant Professor of Medicine at Harvard Medical School and Associate Epidemiologist in the Division of Pharmacoepidemiology and Pharmacoeconomics at Brigham and Women's Hospital. His research lies at the intersection of health informatics, epidemiology, and applied biostatistics. He is interested in advancing semi-automated tools for generating evidence from secondary healthcare databases on the effectiveness and safety of newly marketed medical products in population subgroups that are underrepresented in randomized clinical trials. Specifically, his work has focused on building semi-automated approaches for high-dimensional variable generation and targeted variable selection within healthcare databases to improve large-scale covariate adjustment when evaluating drug effectiveness and safety during the early periods of post-market approval.

Yun Lu, PhD, MS, is a Mathematical Statistician and real-world evidence reviewer working for the Food and Drug Administration (FDA)/Center for Biologics Evaluation and Research (CBER)/Office of Biostatistics and Pharmacovigilance (OBPV)/Analytics and Benefit-Risk Assessment Team (ABRA). Dr. Lu received her Ph.D. in Biostatistics from Johns Hopkins Bloomberg School of Public Health. Dr. Lu joined FDA/CBER/OBPV in 2010 and she has extensive experiences with vaccine safety and effectiveness studies using real-world data including Medicare Data from the Centers for Medicare and Medicaid Services (CMS).

Rohini Hernandez, PhD, MPH, is a Director of Observational Research in the Center for Observational Research at Amgen, Inc. Rohini leads a Pharmacovigilance Epidemiology team focused on leveraging real-world data to evaluate the safety of medications across therapeutic areas, including post-approval safety studies and post-marketing requirements to support benefit/risk assessments globally. Rohini's experience includes descriptive and comparative effectiveness studies to support new indications, label expansion applications, and post-marketing drug utilization and comparative safety studies. Her research interests include exploring methods for controlling biases in pharmacoepidemiology studies and identifying opportunities for improved assessment of product safety during pregnancy. Over the past few years, Rohini has been examining how negative control outcomes may be leveraged as part of a gating framework when conducting causal inference research. She received her PhD in Epidemiology from Boston University School of Public Health and her MPH in Epidemiology from The George Washington University.

Joshua Gagne, PharmD, ScD, is Vice President and Global Head of Epidemiology within the Office of the Chief Medical Officer, Johnson & Johnson. Prior to joining J&J, Josh was an Associate Professor of Medicine in the Division of Pharmacoepidemiology and Pharmacoeconomics at the Brigham and Women's Hospital and Harvard Medical School (BWH/HMS), and an Associate Professor in the Department of Epidemiology at the Harvard T.H. Chan School of Public Health (Harvard Chan). At BWH/HMS, he was the founding Operations Chief and Lead Epidemiologist of the US Food and Drug Administration's Sentinel Innovation Center. Josh also directed the Program in Pharmacoepidemiology at Harvard Chan, where he maintains an Adjunct Associate Professor position in the Department of Epidemiology. Over the last 15 years, his research has centered on the development, evaluation, and application of methods for generating post-approval comparative safety and effectiveness evidence for medical products. He has more than 250 publications in peer-reviewed journals and is author of multiple textbook chapters. Josh is a Fellow of the International Society for Pharmacoepidemiology and serves on the editorial board of Drug Safety.

Susan Gruber, PhD, MPH, MS, is a co-founder of TL Revolution and founder of Putnam Data Sciences. Her work focuses on the development and application of Targeted Learning-based tools for improving the quality of evidence generated by health care studies incorporating real-world data (RWD). Dr. Gruber is a former Director of the Biostatistics Center in the Department of Population Medicine at Harvard Medical School and Harvard Pilgrim Health Care Institute, and former Senior Director of the IMEDS Methods program at the Reagan Udall Foundation for the FDA.

Daniel Morales, PhD, MBChB, BMSc, is a senior clinical epidemiologist within the Data Analytics Taskforce at the European Medicines Agency (EMA). Prior to this, he was an Independent Scientific Expert to the EMA Pharmacovigilance Risk Assessment Committee (PRAC) and member of the EMA Emergency Pandemic Task force. Dr. Morales' background is in clinical general practice and academia at the University of Dundee. His broad expertise is in pharmacoepidemiology and medicines regulation, with an interest in federated analyses and the complimentary role that RWD may have throughout the product life cycle.

Rima Izem, **PhD,** is the Director of Statistics Methodology at Novartis Health Solutions. She has biostatistics and epidemiological expertise in clinical research, and medical product development studies (premarket (Phase I- IV), and post-market use of real-world evidence). Her research interests include methods for causal inference, statistical design and methods in rare diseases, and analysis of medical data from multiple sources including clinical trials, surveys, electronic healthcare data, and registries. Dr. Layton also is an active member of the International Society of Pharmacoepidemiology (ISPE), and recently served as the chair of the ISPE Vaccine Special Interest Group.

Leah McGrath, PhD, is a Director on the vaccines team in the Real-World Evidence Center of Excellence at Pfizer, where she leads the COVID and mRNA workstreams in executing RWE studies to generate evidence across the development pipeline. She has extensive experience designing pharmacoepidemiologic studies to generate RWE in many vaccine-related areas, including influenza, COVID, and pneumonia, as well as non-infectious therapeutic areas. Dr. McGrath's research experience in vaccines focuses on reduction of residual bias through novel study designs. Before joining Pfizer, she worked at NoviSci/Target RWE, and RTI-Health Solutions conducting comparative effectiveness and safety studies. She is highly experienced with various real-world data sources, including multiple US-based and global insurance claims and EHR data sources.

Maurice Alan Brookhart, PhD, is a Professor in the Department of Population Health Sciences at Duke University. He is also an Adjunct Professor at UNC Chapel Hill and an Honorary Professor of Clinical Epidemiology at Aarhus University, Denmark. Alan did his doctoral training in biostatistics at UC Berkeley and was on faculty at Harvard Medical School and UNC Chapel Hill prior to joining the faculty at Duke. Alan has spent his career developing epidemiologic and statistical methods for improving learning from real-world healthcare data. Substantively, his research has focused on understanding the effects of treatments and policies in complex and vulnerable patient populations, such as those with end-stage renal disease. He has taught courses and workshops in pharmacoepidemiology, causal inference, epidemiologic methods, cluster-randomized trials, data visualization, and machine learning. He is a member of many expert panels for industry, academia, not-for-profit organizations, and government. In addition to his academic work, Alan co-founded two start-up companies: RxAnte, Inc, which uses predictive analytics to target adherence improvement interventions to high-risk patients, and NoviSci, Inc, a healthcare data sciences company that builds tools to facilitate learning and visualization in complex, real-world data.

George Hripcsak, MD, MS, is a Vivian Beaumont Allen Professor at Columbia University's Department of Biomedical Informatics. He is a board-certified internist with degrees in chemistry, medicine, and biostatistics. Dr. Hripcsak's research focus is on the clinical information stored in electronic health records and on the development of next-generation health record systems. Using nonlinear time series analysis, machine learning, knowledge engineering, and natural language processing, he is developing the methods necessary to support clinical research and patient safety. He leads the Observational Health Data Sciences and Informatics (OHDSI) coordinating center; OHDSI is an international network with thousands of collaborators and health records on almost one billion patients. In precision medicine, he serves as a PI on Columbia's eMERGE grant, Columbia's regional recruitment center for the All of Us Research Program, and Columbia's role on the All of Us Data and Research Center. He co-chaired the Meaningful Use Workgroup of U.S. Department of Health and Human Services's Office of the National Coordinator of Health Information Technology. Dr. Hripcsak is a member of the National Academy of Medicine, the American College of Medical Informatics, the International Academy of Health Sciences Informatics, and the New York Academy of Medicine. He was awarded the 2022 Morris F. Collen Award of Excellence by the American College of Medical Informatics. He has over 500 publications.

Moderators

Rachele Hendricks-Sturrup, DHSc, MSc, MA, is the Research Director of Real-World Evidence (RWE) at the Duke-Margolis Center for Health Policy in Washington, DC, strategically leading and managing the Center's RWE Collaborative. As an engagement expert, researcher, bioethicist, and policy practitioner, her work centers on addressing implementation and ethical, legal, and social implications issues at the intersection of health policy and innovation. She also partners with Duke University faculty, scholars, students, and external health experts to advance the Center's biomedical innovation work. She is presently adjunct faculty at rural Ohio University, teaching graduate courses in the Department of Interdisciplinary Health Science's Health Policy Certificate program, and has taught graduate courses within the Masters of Health Care Innovation program at the University of Pennsylvania's Perelman School of Medicine.

Prior to joining Duke-Margolis, Dr. Hendricks-Sturrup was Health Policy Counsel and Lead at the Future of Privacy Forum (FPF), leading the organization's health and genetic data initiatives and workgroup. Prior to FPF, she served in several administrative and scientific roles at various industry, health care, and academic institutions. To date, she has published several commentaries and original research papers in high-quality, peer-reviewed journals. Dr. Hendricks-Sturrup is also an accomplished health and science journalist, having completed a comparative effectiveness research fellowship with the Association of Health Care Journalists in 2017.

Dr. Hendricks-Sturrup received her Bachelor of Science in Biology from Chicago State University, her Master's in Pharmacology and Toxicology from Michigan State University, her Master's in Legal Studies from the University of Illinois, and her Doctor of Health Science from Nova Southeastern University. She completed a predoctoral internship with the National Health Service in London, UK, and postdoctoral research training within the Department of Population Medicine at Harvard Pilgrim Health Care Institute and Harvard Medical School.

Mark McClellan, MD, PhD, is the Robert J. Margolis Professor of Business, Medicine, and Policy, and founding Director of the Duke-Margolis Center for Health Policy at Duke University. With offices in Durham, NC and Washington, DC, the Center is a university-wide Duke initiative that is nationally and internationally-recognized for research, evaluation, implementation, and educational initiatives to improve health policy and health, most recently in its COVID-19 response. Dr. McClellan is a doctor and an economist who has addressed a wide range of strategies and policy reforms to improve health care, including payment reform to promote better outcomes and lower costs, methods for development and use of real-world evidence, and strategies for more effective biomedical innovation. At the center of the nation's efforts to combat the pandemic, Dr. McClellan is the co-author of a roadmap that details

the steps needed for a comprehensive COVID-19 response and safe reopening of our country. Before coming to Duke, he served as a Senior Fellow in Economic Studies at the Brookings Institution, where he was Director of the Health Care Innovation and Value Initiatives and led the Richard Merkin Initiative on Payment Reform and Clinical Leadership. He also has a highly distinguished record in public service and academic research.

Dr. McClellan is a former administrator of the Centers for Medicare & Medicaid Services (CMS) and former commissioner of the U.S. Food and Drug Administration (FDA), where he developed and implemented major reforms in health policy. These include the Medicare prescription drug benefit, Medicare and Medicaid payment reforms, the FDA's Critical Path Initiative, and public-private initiatives to develop better information on the quality and cost of care. He completed a predoctoral internship with the National Health Service in London, UK, and postdoctoral research training within the Department of Population Medicine at Harvard Pilgrim Health Care Institute and Harvard Medical School.