MEDICAL UNIVERSITY OF VIENNA

Wiener Biometrische Sektion
der Internationalen Biometrischen Gesellschaft
Region Österreich – Schweiz

Please join the Biometric Colloquium

BHRAMAR MUKHERJEE

University of Michigan

USING ELECTRONIC HEALTH RECORDS FOR SCIENTIFIC RESEARCH: PROMISES AND PERILS

November 3rd, 2022 at 9:00 am

Jugendstilhörsaal der Medizinischen Universität Wien,

Spitalgasse 23, 1090 Vienna

(http://bit.ly/jugendstilhoersaal)

Alternatively, you can join via the webex link:

https://meduniwien.webex.com/meduniwien/j.php?MTID=m4e41ca7a350eb02d1fc8e76fab6944d9

HOST: Franz König

ABSTRACT

Electronic Health Records (EHR) linked with other auxiliary data sources hold tremendous potential for conducting real time actionable research. However, one has to answer two fundamental questions before conducting inference: "Who is in my study?" and "What is the target population of Inference?". Without accounting for selection bias, one can quickly produce rapid but inaccurate conclusions. In this talk, I will discuss a statistical framework for jointly considering selection bias and phenotype misclassification in analyzing EHR data. Examples will include genome and phenome-wide association studies of Cancer and COVID-19 outcomes using data from the Michigan Genomics initiative and the UK Biobank. This is joint work with Lars Fritsche, Lauren Beesley and Maxwell Salvatore at the University of Michigan School of Public Health.

BIOSKETCH SPEAKER

Bhramar Mukherjee is the John D. Kalbfleisch Collegiate Professor and chair of the Department of Biostatistics at the University of Michigan School of Public Health. She is also a professor in the Department of Epidemiology and a professor of Global Public Health at the School of Public Health.

Mukherjee's research focuses on the development and application of statistical methods in epidemiology, environmental health, cancer research and disease risk assessment. She has authored more than 340 publications in statistics, biostatistics, epidemiology and medical journals and has led several impactful extramural grants as a principal investigator from both the NSF and the NIH.

Mukherjee is known for her pioneering contributions in developing analytical frameworks for integrating data from genes, environment and past disease phenotypes towards improved understanding of disease etiology and future risk, often using observational data sources like electronic health records. Since the beginning of the COVID-19 pandemic, Mukherjee and her team have been modeling the SARS-CoV-2 virus trajectory in India and their work has been covered widely by national and international media.

Mukherjee is a research professor and core faculty member for the Michigan Institute of Data Science (MIDAS). She serves as the associate director for quantitative data sciences at the U-M Rogel Cancer Center and also served as the associate director of Cancer Control and Population Sciences at Rogel from 2015 to 2018. Mukherjee has had a longstanding collaboration with U-M's Precision Health Initiative. In 2018 she was appointed as the first woman chair of Michigan Biostatistics, a department that was founded in 1949.

Dedicated to diversifying the statistical and data science workforce, Mukherjee has been leading a flagship undergraduate summer program in Big Data since 2015. This program has trained nearly 300 undergraduates, more than 60% of whom go on to pursue graduate school in a quantitative field. She is also a fellow of the American Statistical Association and the American Association for the Advancement of Science. She is recipient of many awards, including the Janet Norwood Award and the Sarah Goddard Power award in 2021.

Mukherjee was born and raised in Kolkata, India. She earned a bachelor's degree in statistics from Presidency College in Kolkata and a master's degree in applied statistics and data analysis from the Indian Statistical Institute. She also holds master's and doctoral degrees in statistics from Purdue University. In her own words, she has always been a "data dreamer" and aspired to improve human health by deeper understanding and interrogation of complex data.