Saw Swee Hock Public Lecture

EMPIRICAL LIKELIHOOD BASED INFERENCE FOR FUNCTIONAL MEANS WITH APPLICATION TO WEARABLE DEVICE DATA

by Professor Ian McKeague

Head and Chair Professor
Department of Biostatistics
City University of Hong Kong

June 20, 2022 (Monday)
2:00pm - 3:00pm

T3, G/F, Meng Wah Complex, Main Campus, HKU

About the Talk

This talk discusses a nonparametric inference framework for occupation time curves derived from wearable device data. Such curves provide the total time a subject maintains activity above a given level as a function of that level. Taking advantage of the monotonicity and smoothness properties of these curves, we develop a likelihood ratio approach to construct confidence bands and functional-ANOVA type tests to compare mean occupation time curves between groups of subjects. A simulation study shows that the proposed procedures outperform competing functional data approaches. Applications to wearable device data from an NHANES study and an ongoing phase 3 trial of an experimental drug for a mitochondrial DNA depletion syndrome will be discussed. Based on joint work with Hsin-wen Chang (Academia Sinica).

About the Speaker

Professor Ian McKeague is currently Professor in the Departments of Biostatistics at Columbia University and City University of Hong Kong. He received his B.A., M.A. and M.Math from the University of Cambridge, and a Ph.D. in statistics from the University of North Carolina at Chapel Hill.
Professor McKeague has served as an associate editor of the Annals of Statistics for seven years, the Journal of the American Statistical Association for 11 years, and is currently serving on the editorial boards of the Journal of the American Statistical Association, Statistical Science, Statistical Inference for Stochastic Processes, and the International Journal of Biostatistics. During 2020 – 2023, he is serving as Co-Editor of the Journal of the American Statistical Association.

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All interested are welcome
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