

2020 Seminars

02/05/2020

"Carriers-only Tests of Association of Rare Genetic Variants with a Binary Outcome"

Tamar Sofer, PhD

1:00 PM – 2:00 PM

MTF (Medical Teaching Facility) 168

BIO: Dr. Tamar Sofer graduated in 2012 with a PhD, followed by a postdoc at the Department of Biostatistics at Harvard University. In 2014, she became a research scientist at the Department of Biostatistics at the University of Washington. At the end of 2017, she moved back to Boston, where she is now an Assistant Professor in the Department of Medicine at Harvard Medical School and at the Department of Biostatistics at the Harvard T.H. Chan School of Public Health. She is also the Director of the Biostatistics Core and Program of Sleep Medicine Epidemiology at the Brigham and Women's Hospital. Dr. Sofer is interested in statistical methods for association analysis of genetic and omics data, and is especially interested in genetically-diverse populations.

01/07/2020

"Time-Varying Causal Excursion Effects in Mobile Health with Binary Outcomes"

Susan Murphy, PhD

1:00 PM – 2:00 PM

MTF (Medical Teaching Facility) 168

BACKGROUND: Advances in wearables and digital technology now make it possible to deliver behavioral mobile health interventions to individuals in their everyday life. The micro-randomized trial (MRT) is increasingly used to provide data to inform the construction of these interventions. This work is motivated by multiple MRTs that have been conducted or are currently in the field in which the primary outcome is a longitudinal binary outcome. The primary analysis in these trials is a marginal analysis that seeks to test if a particular intervention component has an effect on the longitudinal binary outcome. In this talk, we start with a very restrictive, albeit locally efficient, estimator and generalize the estimator for use as the basis of a primary analysis under more plausible assumptions. We illustrate the developed methods using data from the MRT, BariFit. In BariFit, the goal is to support weight maintenance for individuals who received bariatric surgery.

BIO: Dr. Susan Murphy is a Professor of Statistics, Computer Science and Radcliffe Alumnae Professor at Harvard University. Dr. Murphy's lab develops data analysis methods and experimental designs to improve real time sequential decision-making in mobile health. In particular, her lab develops algorithms, deployed on wearable devices, to deliver and continually optimize individually tailored treatments. She developed the micro-randomized trial for use in constructing mobile health interventions; this trial design is in use across a broad range of health related areas. In these trials, each participant can be randomized or re-randomized 100's of times. Examples of micro-randomized trials that are completed or are in the field can be found [here](#). Dr. Murphy is also a member of the National Academy of Sciences and of the National Academy of Medicine, both of the US National Academies. In 2013, she was awarded a MacArthur Fellowship for her work on experimental designs to inform sequential decision making. She is currently President of the Institute of Mathematical Statistics.