

December 13, 2017
9:30 - 16:30
De Lillo Room
Building U7 - Second Floor

Propensity Score Methods for Observational
Data Analysis

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Purpose

This course introduces concepts of potential outcomes and causal effects, and covers propensity score (PS) based methods for making causal inference for observational data. We will first discuss the assumptions and the theory for PS based methods, using a real data example to illustrate the steps for different PS based approaches to estimate the causal treatment effect. The PS based methods include PS matching, PS stratification, PS regression, inverse probability weighting, and doubly robust estimators. We will also introduce other related topics for causal inference, e.g. the marginal structural models and the g-methods for estimating effect modifications and time-varying treatment effects, causal mediation analysis, and instrumental variable methods for handling unmeasured confounding.

Prerequisites: Participants are expected to be familiar with basic statistical modeling techniques such as linear regressions and logistic regressions