Balance in the covariate distributions is crucial for an unconfounded descriptive or causal comparison between different groups. However, lack of overlap in the covariates is common in observational studies. This article focuses on weighting strategies for balancing covariates. We propose a general class of weights---the balancing weights---that balance the expectation of the covariates in the treatment and the control groups. The framework is closely related to propensity score and includes several existing weights, such as the inverse-probability weight, as special cases. In particular, we advocate a new type of weight---the overlap weight---that leads to a comparison for the target population with the most overlap in the covariates between two groups. We show that the overlap weight minimizes the asymptotic variances of the weighted average treatment effect among the class of balancing weights and also possesses desirable small-sample property. Simulated and real examples are presented to illustrate the method and compare with the existing approaches.

Wednesday, March 26, 2014
Time: 3:30-4:30 PM
Place: 1301 McGavran-Greenberg