

STATISTICS COLLOQUIUM

TUESDAY, AUGUST 19, 2014

TALK: 4:00 PM — SCIENCE CENTER RM. 705

RECEPTION: 5:15 PM — SCIENCE CENTER, 7TH FLOOR

“Topics in Experimental and Tournament Design”

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ABSTRACT

We use conditional randomization tests as a simple but flexible form of covariate adjustment by conditioning on the observed covariate balance. We first review the history of the conditional randomization test, which was introduced by Cox (1982) in the context of sequential designs. Then, building upon Rosenbaum (2002) and Zheng and Zelen (2008), we introduce new notation to describe covariate balance and prove that the conditional test has the correct significance level. We consider a variety of sampling approaches to sample alternative treatment assignments and explore connections to rerandomization (Morgan and Rubin, 2012). Through simulation, we evaluate the properties of the conditional test and, finally, apply it to data from a product marketing experiment.