



Institute for Data Sciences and Engineering  
COLUMBIA UNIVERSITY

## SEMINAR EVENT

DATE: THURS, MAR 6

TIME: 10:00 A.M.

LOCATION: 750 COSTA  
ENGINEERING  
COMMONS –  
INTERSCHOOL LAB



**SPEAKER:** Adam Kapelner

*PhD Candidate in Statistics, Wharton School of the University of Pennsylvania*

**TITLE:** Matching on-the-fly: Sequential Allocation with Higher Power & Efficiency

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**Abstract:**

We propose a dynamic allocation procedure that increases power and efficiency when measuring an average treatment effect in fixed sample randomized trials with sequential allocation. Subjects arrive iteratively and are either randomized or paired via a matching criterion to a previously randomized subject and administered the alternate treatment. We develop estimators for the average treatment effect that combine information from both the matched pairs and unmatched subjects as well as an exact test. Simulations illustrate the method's higher efficiency and power over several competing allocation procedures in both simulations and in data from a clinical trial.

**Bio:**

Adam Kapelner is a P.h.D. candidate in Statistics at Wharton School of the University of Pennsylvania. He received a B.S. in Mathematical and Computational Science from Stanford University in 2006 and a A.M. in Statistics from Wharton School of the University of Pennsylvania in 2012. Kapelner received a National Science Foundation Graduate Research Fellowship from May 2012 to April 2013 and a J. Parker Bursk Memorial Award for Excellence in Teaching in December 2013. Adam has a passion for teaching and mentoring on both the undergraduate and graduate levels. His research focuses on statistical methodology in collaboration with Professor Abba Krieger and Bayesian non-parametric machine learning in collaboration with Professor Ed George.

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