

## **Field Experiments**

Instructor: Mark Buntaine

ESM 595MB

Mondays 12:30-2:30 (meets 5 times), Bren 3526 (Pine Room)

2-credit Ph.D. seminar

This seminar is an introduction to field experimental methods used in the social sciences to understand how individuals and organizations respond to stimuli in natural settings, including policies, programs, persuasion, monitoring, and information. Field experiments have two core components: (1) random assignment of an intervention; and (2) behavioral responses to the intervention are measured in the subjects' actual environment. In this seminar, we will explore design principles for field experiments and common challenges encountered when implementing and analyzing data from field experiments. Each participant will be asked to design a field experiment that serves their research goals, participate actively in discussions, and complete weekly problem sets.

### **Required texts:**

Gerber, A. S. and Green, D. P. 2012. *Field Experiments: Design, Analysis, and Interpretation*. New York: Norton, W. W. & Company.

Banerjee, A. V. and Duflo, E. Eds. 2017. *Handbook of Economic Field Experiments*, Vol. 1. Available at: <http://www.sciencedirect.com/science/handbooks/2214658X/1> (on-campus or VPN required)

**General format:** Each session will be divided between a lecture on design principles and a workshop for the experimental designs that each participation will develop over the whole quarter. During three of the weeks, we will meet in a seminar with the Psychology, Environment, and Public Policy (PEPP) seminar group to read and workshop field experimental research. While these sessions are optional and will include a broader set of participants, everyone is encouraged to attend.

### **Assignments and Grading**

- Weekly problem set (10% each)
- Experimental design (50%)

### **Session 1** (January 22)

**(A)** The experimental logic: potential outcomes, confounds, and inference

Gerber and Green, Chs. 1-3  
*Handbook*, Ch. 3, Sections 1-4 (Athey & Imbens)

**(B)** Running field experiments: practical, theoretical, and ethical considerations

*Handbook*, Ch. 5 (Glennerster)

Teele, D. L. (2014). Reflections on the ethics of field experiments. *Field experiments and their critics: Essays on the uses and abuses of experimentation in the social sciences*, 115-140.

Humphreys, M. (2015). Reflections on the ethics of social experimentation. *Journal of Globalization and Development*, 6(1), 87-112.

## Workshop 1 (January 29)

### Session 2 (February 5) – Treatment and Measurement

*Handbook*, Ch. 6 (Paluck & Shafir, *construal and design of experiments*)

Findley, M. G., Laney, B., Nielson, D. L., & Sharman, J. C. (2017). External Validity in Parallel Global Field and Survey Experiments on Anonymous Incorporation. *The Journal of Politics*, 79(3), 856-872.

Ashraf, N., Bandiera, O., & Lee, S. S. (2014). Awards unbundled: Evidence from a natural field experiment. *Journal of Economic Behavior & Organization*, 100, 44-63.

*Handbook*, Ch. 10 (Gneezy & Imas, *lab-in-field methods*)

Glynn, A. N. (2013). What can we learn with statistical truth serum? Design and analysis of the list experiment. *Public Opinion Quarterly*, 77(S1), 159-172.

### Session 3 (TBD) – Design principles: randomization, blocking, clustering, power

Gerber & Green, Ch. 4

Bruhn, M., & McKenzie, D. (2009). In pursuit of balance: Randomization in practice in development field experiments. *American Economic Journal: Applied Economics*, 1(4), 200-232.

Miratrix, L. W., Sekhon, J. S., & Yu, B. (2013). Adjusting treatment effect estimates by post-stratification in randomized experiments. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 75(2), 369-396.

McKenzie, D. (2012). Beyond baseline and follow-up: The case for more T in experiments. *Journal of Development Economics*, 99(2), 210-221.

Blaire, G., Cooper, J., Coppedge, A., & Humphreys, M. (2017). A general framework for learning about research designs. Working Paper.

**Session 4 (TBD) – Design challenges: non-compliance, interference, and attrition**

Gerber & Green, Chs. 5-8  
*Handbook*, Ch. 3, Section 9 (Athey & Imbens)

Angrist, J. D., Imbens, G. W., & Rubin, D. B. (1996). Identification of causal effects using instrumental variables. *Journal of the American Statistical Association*, 91(434), 444-455.

Sinclair, B., McConnell, M., & Green, D. P. (2012). Detecting spillover effects: Design and analysis of multilevel experiments. *American Journal of Political Science*, 56(4), 1055-1069.

Coppock, A., Gerber, A. S., Green, D. P., & Kern, H. L. (2017). Combining Double Sampling and Bounds to Address Nonignorable Missing Outcomes in Randomized Experiments. *Political Analysis*, 25(2), 188-206.

**Session 5 (TBD) – Analysis: heterogeneous treatment effects, mediation, multiple hypothesis testing, external validity**

Gerber & Green, Chs. 9-10

Fink, G., McConnell, M., & Vollmer, S. (2014). Testing for heterogeneous treatment effects in experimental data: false discovery risks and correction procedures. *Journal of Development Effectiveness*, 6(1), 44-57.

Imai, K., Keele, L., Tingley, D., & Yamamoto, T. (2011). Unpacking the black box of causality: Learning about causal mechanisms from experimental and observational studies. *American Political Science Review*, 105(4), 765-789.

Bullock, J. G., Green, D. P., & Ha, S. E. (2010). Yes, but what's the mechanism? (don't expect an easy answer). *Journal of Personality and Social Psychology*, 98(4), 550.

Olken, B. A. (2015). Promises and perils of pre-analysis plans. *The Journal of Economic Perspectives*, 29(3), 61-80.