Summer Program: Designing, Conducting, and Analyzing Field Experiments
July 30 – August 3, 2012

Professor Donald Green
Columbia University

Email: dpg2110[at]columbia.edu
Web site: https://sites.google.com/site/donaldpgreen/

Course overview: In this workshop, we will discuss the logic of experimentation, its strengths and weaknesses compared to other methodologies, and the ways in which experimentation has been -- and could be -- used to investigate political, social, and economic phenomena. Emphasis will be placed on field experiments, randomized trials conducted in real-world settings. Examples will be drawn from a broad array of disciplines.

After describing the attractive statistical properties of experiments, we consider a variety of potential threats to core assumptions. In particular, we consider the complications that arise when (1) treatment and control conditions differ in systematic ways other than the intended treatment, (2) treatments are not administered according to the randomly assigned plan, (3) subjects are affected by the treatments assigned or administered to others, and (4) outcome measures are not obtained for all subjects. In each case, we discuss possible statistical and design solutions. We conclude by discussing the practical issues that arise when conducting experiments in field settings.

To help participants with their own experimental research ideas, I am happy to meet before (breakfast), during (lunch), and after (drinks, dinner) class to discuss design, analysis, interpretation, or abstract strategy games.

The primary text for the course is


This textbook (FEDAI for short) is too extensive to be covered in full in just one week, but we will make our way through the first half, which covers core topics. We will do a bit of computer work in R in order to make use of the RI package (randomization inference) that was written for the book.

Supplementary readings are designed to illustrate the wide range of experimental applications.

The planned schedule of the course is as follows. Each day is divided into two sessions, morning and afternoon.
Day 1, Session 1. What are experiments? Why conduct experimental research?

FEDAI: Chapter 1.

My prejudices are presented here:


Day 1, Session 2. Experiments and Models of Potential Outcomes

FEDAI: Chapter 2. In addition, read these brief research articles that highlight certain core assumptions that underlie experiment-based inference.


Day 2, Session 1. Sampling distributions and Randomization Inference

FEDAI: Chapter 3.

Day 2, Session 2: Blocking, Clustering, and Covariate Adjustment

FEDAI: Chapter 4. In addition, read the following article, which illustrates the use of blocking.


Day 3, Session 1. Field Experiments with One-sided Noncompliance (Failure-to-Treat)

FEDAI: Chapter 5. In addition, read the following article, which we will use in class to illustrate the analysis of experiments with one-sided noncompliance.

Gerber, Alan S., and Donald P. Green. 2000. The Effects of Canvassing, Direct Mail, and

Day 3, Session 2. Field Experiments with Two-sided Noncompliance (Encouragement Designs)

FEDAI: Chapter 6. In addition, read the following article, which we will use in class to illustrate the analysis of experiments with two-sided noncompliance.


Another relevant example may be found in: Albertson, Bethany, and Adria Lawrence. 2009. After the Credits Roll: The Long-Term Effects of Educational Television on Public Knowledge and Attitudes. *American Politics Research* 37: 275-300.

Day 4, Session 1. Sample Attrition

FEDAI: Chapter 7. In addition, read the following article, which illustrates the uncertainty that attrition introduces and some potential modeling and bounding approaches.


Day 4, Session 2. Interference between Experimental Units

FEDAI: Chapter 8. In addition, read the Sinclair et al. article, which illustrates a design and modeling approach to household and neighborhood spillover, and the Ichino and Schudeln article on election monitoring.


Day 5, Session 1. Implementing a Field Experiment and Reporting the Results

FEDAI: Chapter 13, Appendix A, and Appendix B

Optional: FEDAI: Chapters 9, 10, 11