DRAFT Syllabus — PS 179: Randomized Trials for Social Change[1]

Spring 2022

Instructor: Prof. Graeme Blair (Web site)

Teaching assistants:
TBD

Zoom, Perusall, and RStudio Cloud details available on Moodle.

Course description

How can we change the world for the better? We may want to reduce poverty, end police shootings, improve healthcare, make communities safer, or enable small businesses to grow. At the center of many decisions that shape these outcomes are *government institutions* responsible for policies like food stamps, police reform, Medicaid, and small business loans. Also important are citizens who *act* to ensure the right policy changes are made through voting, volunteering, and protesting. Political science is the study of both of these: institutions and political behaviors.

In this course, we will learn about a set of important social problems from prejudice to police abuse to fake news. We will learn about ideas from political science on how to address them.

We will not just focus on these ideas, but how we would know if they *work*. We will explore how randomized control trials, also known as A/B tests and randomized experiments, can be used to test these ideas. In medicine, our society requires a high standard of evidence for therapies: randomized-control trials, in which even the doctors don't know which patients are getting the medicine or a sugar pill. Increasingly, this kind of evidence is being demanded for the many other decisions governments make that affect the lives, health, and wellbeing of their citizens. Indeed, the Nobel Prize was awarded to economists last year for introducing randomized trials from medicine into economics. The same revolution is now happening in political science.

You will come away able to read a paper reporting on a randomized trial and evaluate the quality of its evidence — what you learn from it, and what you can't. And you'll learn how to assess what the state of the art is on a topic where randomized trials have been conducted.

The skills you gain in this class will be relevant if you might want to work in government or for a political campaign. But they will also be relevant for working in medicine, data science at a tech company where A/B tests are a key tool, in journalism reporting on science, in nonprofits who want to learn how to do their work more effectively, and many other areas. Although we will only study politics in other countries, you will see that many of the lessons we learn will be directly relevant to understanding social change here in the U.S.

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[1] I'm grateful for ideas and words from syllabi by Jessica Calarco, Erin Hartman, and Andrew Heiss.

Learning objectives

- Learn about how social scientists approach major questions about how to make governments more accountable, resolve conflict, and reduce prejudice
- What a randomized trial is and what we can learn with the tool
- How to read and critically evaluate evidence from randomized trials and from "evidence reviews" or meta-analyses of multiple trials
- How to use R to analyze data from a randomized trial
- How to conduct a small-scale randomized trial

How we will meet these goals

We will read short briefs on ideas for social change and experiments that tested them. To promote active engagement with the readings, we will use the Perusall reading discussion platform. There is growing evidence that *live lectures are not effective learning tools* for many students. Instead, before class, there will be 1-2 short, pre-recorded lectures (avg. = 7 minutes) posted on Perusall where you can play/pause and discuss with classmates and ask questions online. Some weeks, there will be podcasts to listen to. Each class session starts with a live Q&A session (also recorded). After that, the main activity will be a team-based activity to promote active learning in small groups we assign. In section, you will learn about practical tools for experiments and work on the final assignment, a group online experiment.

Assignments

1. *Engagement with videos, readings, and podcasts* (20%). You will watch 1-2 short videos and several readings and podcasts before each class on Perusall and discuss questions about the lectures with your classmates. We will then have Q&A session at the beginning of each class to discuss common questions that come up. Your grade is based on (1) watching, listening, and reading; (2) posting questions; and (3) responding to your classmates' questions.

2. *Participation in quizzes* (10%). To help you track your understanding through the course, we will conduct open-book multiple-choice reading quizzes on Moodle before you come to class each Tuesday. These are short and open book and designed to help you assess your readiness to participate in the team assignments. Your lowest two quiz grades will be automatically dropped.

3. *In-class team assignments* (30%). Students are generally expected to attend each class session and participate in group work during the class. However, given the challenges of working across many time zones and care responsibilities, you may develop an offline working group of 2-3 people who share a similar time zone. If you cannot find an offline group, contact your TA.

Half of the team assignments grade (15%) is based on turning it in and its content (check or check minus); the other half (15%) is determined by peer evaluation (i.e., you will evaluate each other's contributions to the team). The assignments are due immediately after class on Moodle;

no exceptions can be made. However, things come up for all of us so you may miss two assignments without penalty.

4. *Problem sets* (20%). The assignments in class provide you a chance to try out new material with help — your classmates, but also the instructors. The problem sets reinforce this learning by taking away the guardrails of the instructors. You and your group are responsible for a short problem set every other week that builds on what you learned in the team assignments. If you figure out the team assignments, you will be able to complete the problem sets. They are due every other week at 11:59pm on a Friday. They can be turned in late, with a 25% penalty per week. No extensions will be given, but you can drop the lowest problem set grade. You may appeal the grade on your problem set in writing (1 pg. double spaced document with reasons why your grade was wrong submitted to your TA within one week of receiving the grade). Your grade may be adjusted up or down upon reevaluation.

5. *Online experiment* (20%). In your section, you will design, conduct, and analyze an experiment "at UCLA" (online given COVID) as the final project. Further details will be provided in Week 2.

Evaluation and self-evaluation

We will use the above breakdowns to guide our grading decisions, but you will also evaluate yourself and your teammates before we make a decision. You will evaluate your performance halfway through the quarter and again at the end. We will ask you to assign yourself a grade, and we will take this assessment into account when we make our own.

Section

During section, there will be three goals: (1) going over the solutions for the week's team activities; (2) a review of key concepts from readings and videos (bring your questions!); and (3) making progress on the online experiment, which you will work on with members of your section. Participation in section is *optional* due to COVID, but highly encouraged. You can earn extra credit toward your participation grade from regularly attending and contributing in section.

Computation

We will analyze data from experiments and also learn how to use tools for designing and conducting experiments. You will be provided a free RStudio Cloud to use during the quarter (signup instructions will be sent to you by email).

Auditing: auditing will not be permitted.

Getting help

We encourage you to take advantage *early and often* of three resources: your TA's office hours, Prof. Blair's office hours, and the Perusall discussion board. We are here to help, and want everyone to succeed in the course — and we think everyone can!

To this end, please find a time *within the first three weeks* to meet with your TA to check-in about how the course is going and how we can help you succeed.

The Perusall discussion board allows all students to benefit from the discussion and to help each other understand the materials. Both students and instructors are encouraged to participate in discussions and answer any questions that are posted. You should operate on the principle "if I have a question, everyone probably does too."

How to succeed in this course

We have designed this course so everyone can succeed. If you read the assigned readings and watch the videos, participate in Perusall discussions (especially when you are uncertain about some concepts!), complete the reading quiz, complete your team assignments Tues. and Thurs., attempt the problem sets and turn them in on team, and do your part in the online experiments then you are likely do to well in the class. We have designed the grading so that if you participate and make an effort in each assignment, you will do well. Getting the answers right every time is much less important than learning the material over time. **Most importantly, if you get behind, get in touch with us right away.** We can absolutely help and you will be surprised how understanding we are of the difficult circumstances COVID has put us in. We will work with you to get things back on track and accommodating in grading.

Learning during COVID[2]

This class is taking place during extraordinary times, in which learning may understandably not be your only or even top priority. You may be close with people who have been directly impacted by the COVID-19 virus or who have lost their jobs. You may have experienced a change in personal circumstances that directly impacts your ability to focus on your academic work. Many of us have increased work and care responsibilities and less-than-optimal work environments.

The TAs and I are committed to making sure that you learn everything you were hoping to learn from this class! We will make whatever accommodations we can to help you finish your assignments and learn and understand the class material.

[2] Adapted from Andrew Heiss's words.

Given these circumstances, I hope to establish a learning community based on empathy about our varied circumstances during this time. If you tell the TAs or I that you're having trouble, we will not judge you or think less of you. I hope you'll extend us the same courtesy.

To this end: you never owe us personal information about your health (mental or physical). You are always welcome to talk to me or your TA about things that you are going through, though. If we are unable to help you ourselves, we will help you find the resources on or off campus that you need.

We want you to learn lots of things from this class, but we primarily want you to stay healthy, balanced, and grounded during this crisis.

Students with disabilities

Students with disabilities enrolled in this course who may need disability-related accommodations are encouraged to make an appointment to see Professor Blair before the end of the second week of the quarter. All conversations will remain confidential. Please also arrange to have the required documentation sent to Professor Blair for any accommodations *as soon as possible.*

Students needing academic accommodations based on a disability must contact the Center for Accessible Education (CAE) at (310) 825-1501 or present in person at Murphy Hall A255. As the professionals delegated authority from the campus to determine reasonable disability accommodations, CAE will assess all requested accommodations and communicate appropriately with faculty. When possible, students should contact the CAE within the first two weeks of the term as reasonable notice is needed to coordinate accommodations. For more information visit www.cae.ucla.edu.

Your ethical responsibilities

You are subject in this class to UCLA's academic honesty policies. You should not pass off others' work, words, or code as your own (you can avoid this by liberally citing and when relevant including quotation marks or notes indicating what is directly taken from others; our greatest virtue is building off the past work of others).

During team-based activities, you are encouraged to help each other within your group — but you may not help (or seek help from) students in other teams. Your team is responsible for its own assignments. If you have questions, just get in touch with us to talk about it.

Plan for each week

Every Thursday, we will share the plan for the next week. To give you a sense of what the quarter will be like, the weekly plan will usually include these elements:

Tuesday:
- First set of readings/podcasts and Perusall engagement due
- Quiz due by class time
- In-class team activity

Thursday:
- Second set of readings/podcasts and Perusall engagement due
- In-class team activity

Thursday or Friday (section):
- Short additional readings may be due
- Lecture or activity in section.

Friday:
- Problem set due by 11:59 p.m. LA time every other week (see deadlines below)

Schedule

Note: all readings and videos will be posted on Perusall.

Week 0

- Fill out survey on time zones, preparation, and logistics
- Sign up with Perusall

Week 1: Getting started

Learning goals:

- How to open RStudio Cloud, load and view data
- What is a causal question? What are potential outcomes? How can we use randomized trials to learn answers to causal questions?

Class session 1:

- Before:
  - Video: Posing and answering causal questions
  - Video: Potential outcomes and the fundamental problem of causal inference
  - Video: What is an experiment?
  - Read: *R 4 Data Science*. Chapter 4.
- In class:
  - Exercise: set up RStudio Cloud, load and view data

Class session 2:

- Before:
  - Read: *R 4 Data Science*. Chapter 5.
- In class: analyze data from class experiment taken before class

In section:

- Before:
  - Read: *R 4 Data Science*. Chapter 3.
- In class: R bootcamp session 1 (basic R functions; dplyr mutate, filter, select)

Week 2: Reducing prejudice

Learning goals:

- How to read an experimental paper
- What is intergroup prejudice? How can we reduce it?

Class session 1:

- Before:
    - Video: How to read an experimental paper?
    - Video: Reading the Mousa paper
    - Video: The contact hypothesis
    - Video: The switching equation
    - Podcast: Scope Conditions podcast on Mousa paper
    - Read: Salma Mousa. "Building social cohesion between Christians and Muslims through soccer in Post-ISIS Iraq." *Science* 369(6505): 866-870.
- In class:
    - Exercise on potential outcomes and the switching equation

Class session 2:

- Before:
    - Video: difference-in-means estimator
    - Read: Iraqi Christians Face an Impossible Choice (Atlantic)
- In class:
    - Exercise: log into RStudio cloud, load Mousa data, calculate means in each group, and difference-in-means for each outcome

In section:

- Before:
    - Read: *R 4 Data Science*. Chapter 3.
- In class:
    - Exercise: R bootcamp session 2 (goals: crash course in ggplot)

Week 3: Police reform

Learning goals:

- Problems of trust and accountability of police and how we can address them
- Visualizing data from an experiment
- How we can learn “what works for whom”

Class session 1:

- Before:
  - Read: *Stories of Change: Metaketa IV Liberia community policing experiment* (summary report)
  - Read: Strengthening the Rule of Law Through Community Policing: Evidence from Liberia (working paper)
  - Video: Introduction to the community policing experiments (longer)
  - Video: Visualizing data from an experiment
- In class:
  - Exercise: Open Liberia metaketa study data set; View data set; Plot raw outcomes (Y) against treatment status (Z) with labels

Class session 2:

- Before:
  - Video: heterogeneous effects
  - Podcast: Philadelphia foot patrol experiment
  - Read: Vox on 8 can’t wait
  - Read: Use of Force Project (the evidence base for 8 can’t wait)
- In class:
  - Exercise: Plot effects by subgroup and interpret

In section:

- R bootcamp session 3 (goals: group_by, summarize, pivot_longer, pivot_wider)

Week 4: Addressing violent conflict

Learning goals:

- Understand what an insurgency is and what the two key ideas to fight one are
- Understand the criticisms of COIN or hearts and minds approaches and what we don't know about whether they work
- Learn about how to estimate uncertainty in our estimates of the average treatment effect using randomization inference

Class session 1:

- Before:
  - Read: US must win Afghan hearts and minds, commander says (CNN)
  - Listen: The Battle For Afghan Hearts And Minds (NPR)
  - Read: On Winning Hearts and Minds: Key Conditions for Population-Centric COIN (Small Wars Journal)
  - Read: Jason Lyall, Yang-Yang Zhou, and Kosuke Imai. 2020. "Can Economic Assistance Shape Combatant Support in Wartime? Experimental Evidence from Afghanistan." *American Political Science Review* 114(1): 126-143.
  - Read: To win 'hearts and minds' in Afghanistan, some aid programs worked better than others (policy summary of experiment)
  - Video: interview with Yang-Yang Zhou
- In class:
  - Q&A: COIN, hearts and minds, and the role of economic assistance
  - Exercise: Replicate findings in top panel of Figure 3 in Lyall, Zhou, and Imai paper using *estimatr*

Class session 2:

- Before:
  - Video: How sure are we in our estimates of the average treatment effect?
- In class
  - Q&A: sharp null hypothesis
  - Exercise: Create sampling distribution plots under the sharp null effect and two-sided p-values for each effect in Figure 3 using ri2

In section:

- Class experiment planning session: choose research question and intervention

Week 5: Slowing the spread of fake news

Learning goals:

- Understanding how misinformation can affect politics
- Understanding the causes of misinformation and what we can do about them
- How to select outcome measures for experiments

Class session 1:

- Before:
  - Read: How WhatsApp Fuels Fake News and Violence in India (Wired)
  - Read: Indian Misinformation Will Decide World's Largest Election (The Atlantic)
  - Watch: Fighting Misinformation on Social Media | Mohsen Mosleh (TEDx)
  - Video: How to select outcomes for experiments
  - Video: Biases in measuring outcomes
- Exercise: conduct survey of students in class

Class session 2:

- Before:
  - Sumitra Badrinathan. 2020. "Educative Interventions to Combat Misinformation: Evidence From a Field Experiment in India."
  - Video: Video interview with Sumitra
  - In class:
    - Q&A: Analyze outcome data collected in class surveys
    - Team exercise: Analyze simulated Badrinathan data

In section:

- Class experiment planning session: decide on outcome measures and how data will be collected

Week 6: Government censorship

Learning goals: sample size and statistical power

Class session 1:

- Pre-watch videos:
  - Read: Gary King, Jennifer Pan, and Margaret E. Roberts, "Reverse-engineering censorship in China: Randomized experimentation and participant observation." *Science*.
  - Listen: Censored: Molly Roberts on how China uses deterrence, distraction, and dilution to control its internet (Sinica Podcast)
  - Video: What is statistical power
- In class:
  - Conduct an ex-post power analysis using the EGAP power calculator for five studies based on New York Times articles reporting on their findings

Class session 2:

- Before:
  - Read: The Saudi Government's Global Campaign to Silence Its Critics (New Yorker)
  - Video: Planning for an experiment
- In class: Conduct a simulated pilot study for a replication of the King-Pan-Roberts study

In section:

- Class experiment planning session: write randomization code

Week 7: Citizen action to improve governance

Learning goals: understand how to avoid common pitfalls in analyzing experiments and the principles of analyze as you randomize and visualize as you randomize

Readings:

- Read: Nudging: A Very Short Guide
- Listen: Nudge, Nudge, Nobel : Planet Money (Thaler interview)
- Read: Graeme Blair, Rebecca Littman, and Elizabeth Levy Paluck. 2019. "Motivating the adoption of new community-minded behaviors: An empirical test in Nigeria." *Science Advances*.

Class session 1:

- Before:
  - Video: Analyze as you randomize
- In class:
  - Exercise: Analyze Blair, Littman, & Paluck study three ways and judge whether they meet the "analyze as you randomize" dictum.

Class session 2:

- Before:
  - Video: Visualize as you randomize
- In class:
  - Exercise: Create visualization of two research questions in Blair, Littman, & Paluck, and judge whether each "visualizes as they randomized"

In section:

- Class experiment implementation session: deliver treatment

Week 8: Inclusive governance

Learning goals: how attrition and noncompliance affect what we can learn from experiments

Readings:

- Read: Understanding why people contest elections (Live Mint)
- Read: Saad Gulzar and Muhammed Yasir Khan, "Social Motivation, Political Candidacy, and Performance: Experimental Evidence From Pakistan." Working paper.

Class session 1:

- Before:
  - Video: Attrition
- In class:
  - Take mini experiment

Class session 2:

- Before:
  - Video: noncompliance
- In class:
  - Exercise: Analyze data from mini-experiment

In section:

- Class experiment planning session: write preanalysis plan

Week 9: Holding politicians accountable at the ballot box

Learning goals: understanding how the cases you choose to experiment in shape what you can (and cannot) learn from them

Class session 1:

- Before:
  - Video: Learning from one experiment
  - Read: Policy brief on corruption study in Mexico
  - Podcast: Policymaking Is Not a Science (Yet) (Freakonomics)
- In class:
  - Forecasting exercise for Dunning et al. piece

Class session 2:

- Before:
  - Thad Dunning and many others. "Voter information campaigns and political accountability: Cumulative findings from a preregistered meta-analysis of coordinated trials." *Science Advances.*
  - Read: policy brief on Metaketa I
  - Read: policy brief on Uganda study for Metaketa I
- In class:
  - Q&A: barriers to information having an effect
  - Exercise: Replicate Figure 2 in Dunning et al.

In section:

- Class experiment implementation session: send survey for outcome measurement

Week 10: Returning to prejudice reduction

Learning goals: how to read and interpret a meta-analysis or evidence review

Readings:

- Elizabeth Levy Paluck, Seth A. Green, and Donald P. Green. 2017. "The contact hypothesis revisited." *Behavioural public policy.*
- Science Magazine podcast on meta-analysis

Class session 1:

- Before:
  - Video: meta-analysis
- In class:
  - Exercise: replicate Figure 1 and Table 3 in Paluck, Green, & Green. Filter estimates to only experiments and recalculate Table 3. Interpret.

Class session 2:

- Before:
  - Set up final report for section experiment.
- In class:
  - Group work session setting up final report.

In section:

- Class experiment implementation session: analyze mock data using PAP.