

PSC 202

SYRACUSE UNIVERSITY

# INTRODUCTION TO POLITICAL ANALYSIS

EXPERIMENTS, PART 1

# REST OF THE SEMESTER

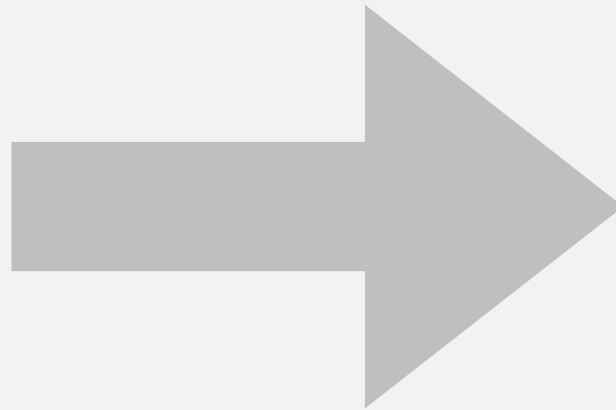
- **Today and Monday: Experiments**
- **Next Wednesday: Review**
- **Monday after that (5/1): Exam 3**
- **No exam during finals period**

# REST OF THE SEMESTER

- **Friday: Problem set 9 due**
- **Problem set 10 due May 5**
  - **Counts double**

# LINEAR REGRESSION RECAP

Canvassing



Turnout

- Does canvassing people in campaigns increase turnout?
  - How could we study that?



# LINEAR REGRESSION RECAP

- Does canvassing people in campaigns increase turnout?
- Survey people:
  - Did you vote in the last election?
  - Were you contacted by a campaign?





# LINEAR REGRESSION RECAP

- Does canvassing people in campaigns increase turnout?
- Collect data precinct-level data:
  - How high is turnout in different precincts? (%)
  - How much did the campaigns canvass in precincts? (total hours)



# PROBLEM

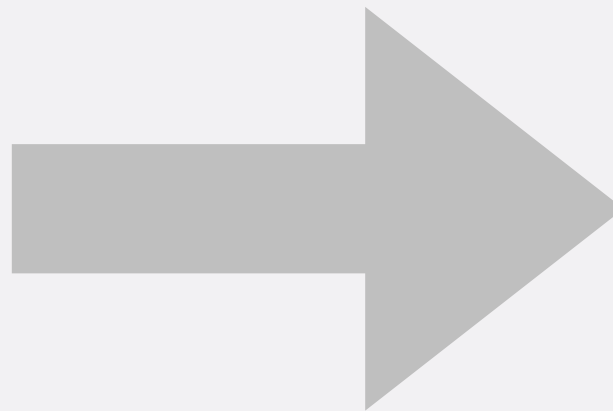
- We do a linear regression
  - $\text{Turnout} = a + b_1 * \text{Canvassing Hours}$
- Suppose we find: Precincts in which campaigns canvassed more hours have higher turnout
- Is this evidence that canvassing *causes* higher turnout?

# ELIMINATION OF ALTERNATIVE CAUSES

**Precinct Wealth**



**Canvassing**



**Turnout**

- Maybe campaigns canvass more in rich precincts, and wealthier people are more likely to turn out



# ELIMINATION OF ALTERNATIVE CAUSES

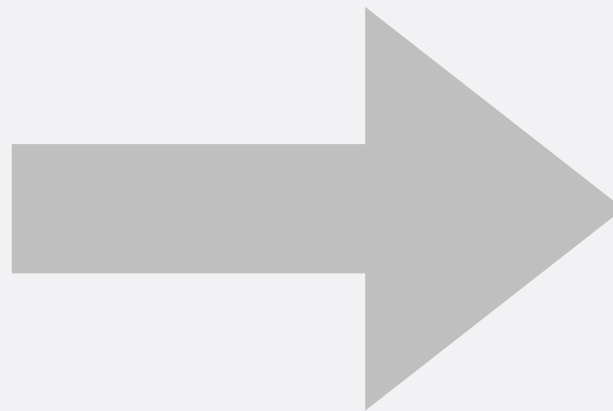
- $\text{Turnout} = a + b_1 * \text{Canvassing Hours} + b_2 * \text{Precinct Wealth}$
- If  $b_1$  is still positive and significant, is this evidence that canvassing *causes* higher turnout?

# ELIMINATION OF ALTERNATIVE CAUSES

**Close election expected**



**Canvassing**



**Turnout**

- Maybe campaigns canvass more when election expected to be close, and people turn out more when they expect nail-biter

# ELIMINATION OF ALTERNATIVE CAUSES

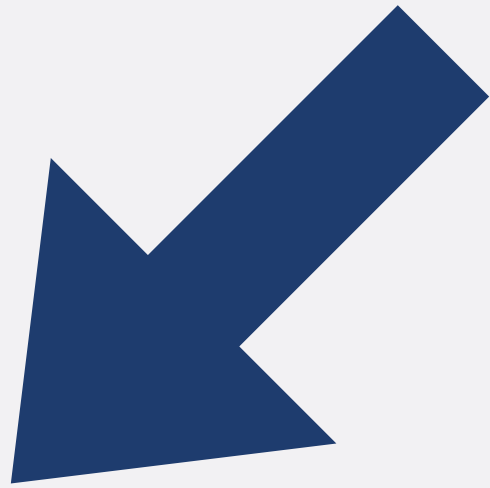
- $\text{Turnout} = a + b_1 * \text{Canvassing Hours} + b_2 * \text{Precinct Wealth} + b_3 * \text{Expected Closeness}$
- If  $b_1$  is still positive and significant, is this evidence that canvassing *causes* higher turnout?

# HURDLES TO CAUSALITY

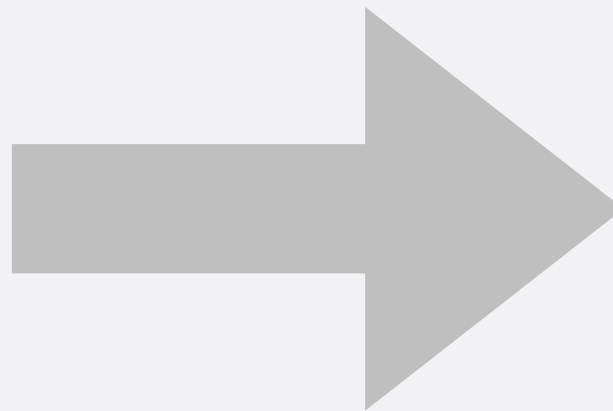
- Is there a credible causal mechanism that connects  $X$  to  $Y$ ?
- Can we rule out the possibility that  $Y$  could cause  $X$ ?
- Is there covariation between  $X$  and  $Y$ ?
- Have we controlled for **all** confounding variables ( $Z$ ) that might make the association between  $X$  and  $Y$  spurious?

# ELIMINATION OF ALTERNATIVE CAUSES

**Some other variable**



**Canvassing**



**Turnout**

- We can *never* be sure that we have controlled for all alternative causes

# LINEAR REGRESSION RECAP

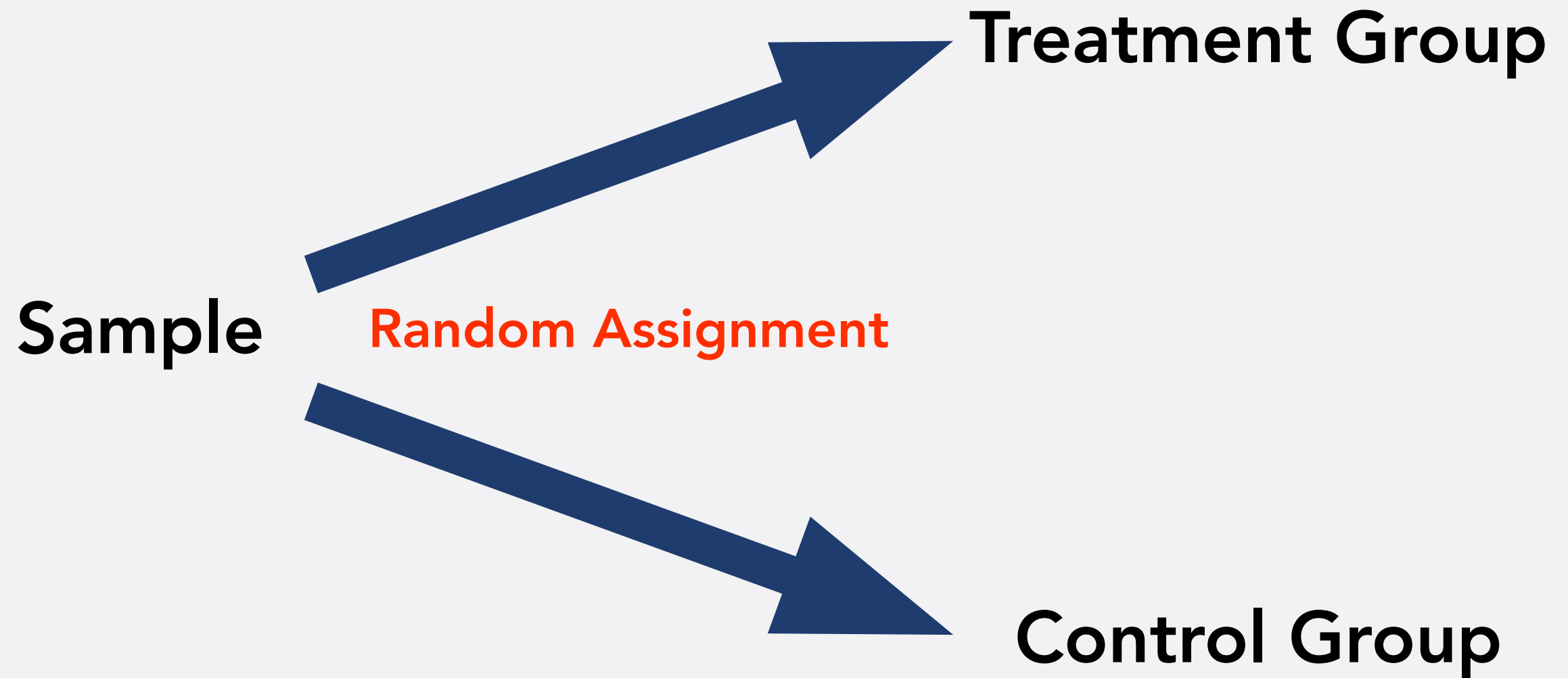
- ***Observational* analysis**
  - Takes data as we find it in the world
  - Regression tries to find the “data-generating process”
  - Does “our”  $X$  cause  $Y$ , controlling for potential alternative explanations?
  - Problem: We never know if we have controlled for *all* potential alternative explanations

# A DIFFERENT APPROACH

- **Observational approach:** Researchers *observe* turnout and canvassing efforts, try to control for potential alternative explanations
- **Experimental approach:** Researchers *decide* how much canvassing happens in different precincts, see whether those with more canvassing have higher turnout



# EXPERIMENTS



# EXPERIMENTS

- A sample of precincts
- For each precinct, flip a coin
  - Heads: Canvassing happens
  - Tails: Canvassing does not happen
- Compare turnout between two groups

# WHY DOES THIS WORK?

- Researcher *controls* canvassing, assigns precincts *randomly*
  - Average wealth about the same for treatment and control precincts
  - Expected closeness of election too
  - *All* characteristics should be about the same in the two groups, even those we can't think of
    - If sample is big enough and assignment is truly random

# EXAMPLE

*Getting Out the Vote in Local Elections: Results from  
Six Door-to-Door Canvassing Experiments*

Donald P. Green

Alan S. Gerber

David W. Nickerson

Yale University

- Local elections in 2001
- 6 cities: Bridgeport, Columbus, Detroit, Minneapolis, Raleigh, St. Paul
- Collaboration with non-partisan GOTV organization

# EXAMPLE

- Official voter lists
- Randomly assigned citizens to treatment and control group
  - Treatment: In-house visit by volunteers
  - Control: No visit
  - Random assignment at individual level
- Total: ~19,000 subjects

# EXAMPLE

- **Get data on whether people in sample voted or not (public information)**
- **Turnout in treatment group (canvassed) about 7 percentage points higher**

# ANOTHER EXAMPLE

## **The Effects of Canvassing, Telephone Calls, and Direct Mail on Voter Turnout: A Field Experiment**

ALAN S. GERBER and DONALD P. GREEN *Yale University*

- **Midterm elections in 1998**
- **New Haven, CT**
- **What is most effective: canvassing, phone calls, direct mail?**



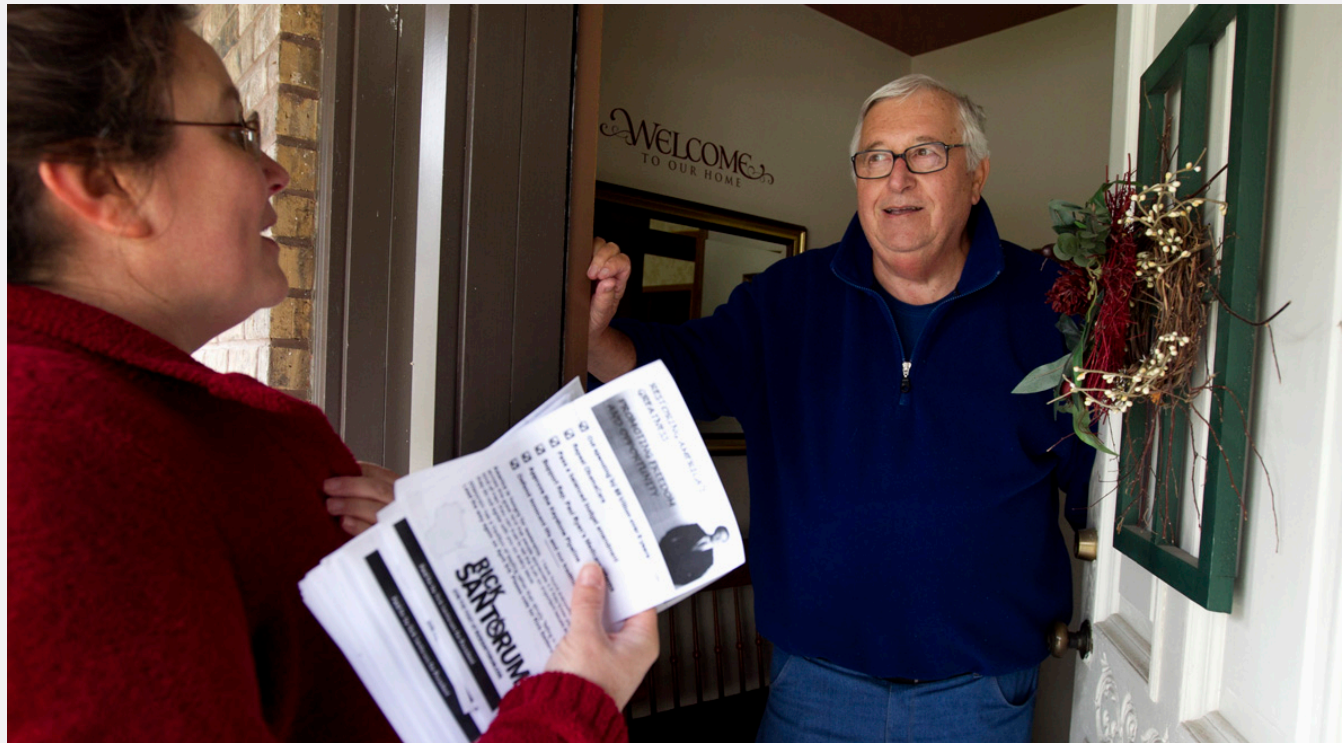
# EXAMPLE

- Official voter lists
- Randomly assigned citizens to several treatment groups (and a control group)
  - Treatment 1: In-person visit by volunteers
  - Treatment 2: Phone call made
  - Treatment 3: Direct mail sent
  - Control: No mail/call/visit
  - Random assignment at individual level
- Total: ~30,000 subjects

# EXAMPLE

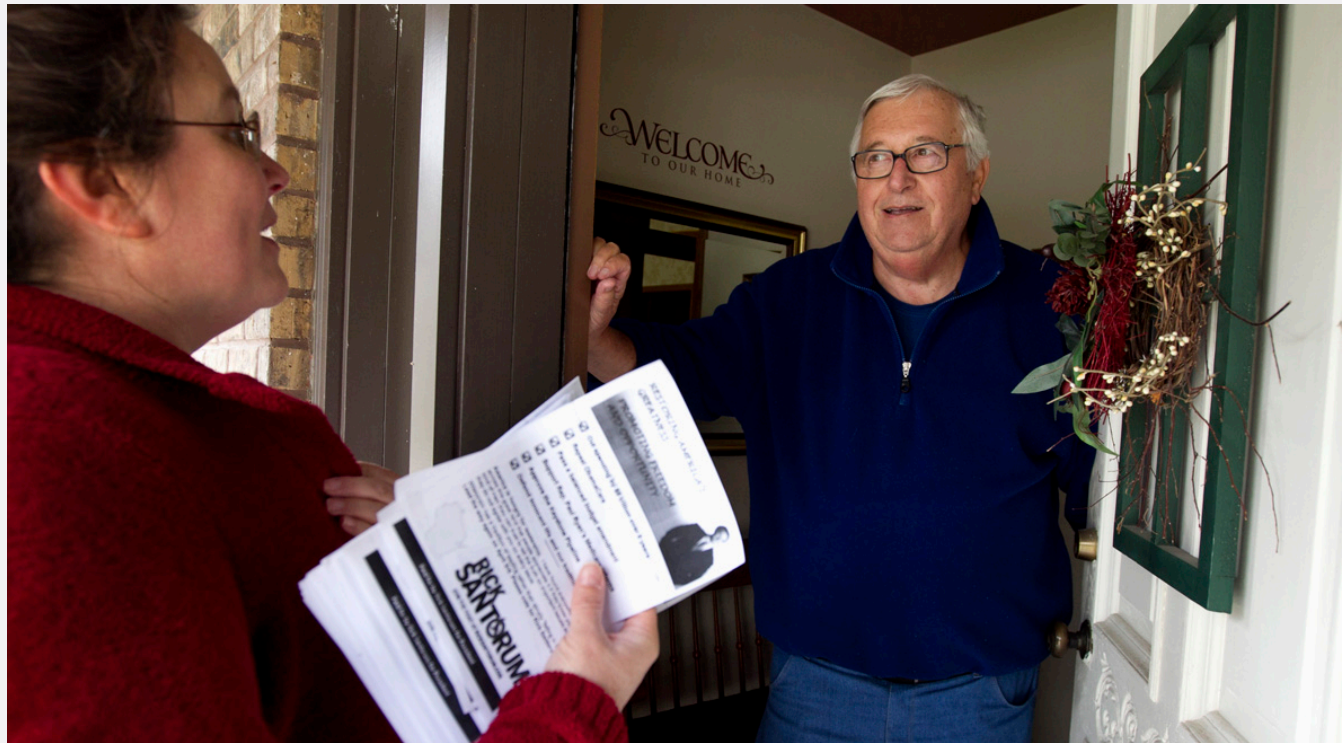
- Again get data on whether people in sample voted or not (public information)
- Effect of different contact methods on turnout:
  - in-person canvassing: 9.8%
  - each piece of mail: 0.6%
  - phone call: no effect

# DOOR-TO-DOOR CANVASSING



- Many canvassing experiments have been done
  - Canvassing increases turnout
  - Effectiveness depends on election and voters
  - Canvassing works better close to election day
  - Who delivers the message matters
  - Canvassing has spillover effects

# DOOR-TO-DOOR CANVASSING



- **How effective is it?**
  - **Best estimate: 1 additional vote for each 14 contacts**
  - **Cost: \$29 for each additional vote**

# BASIC STEPS

1. *Randomly* assign participants
2. *Manipulate* independent variable
  - Control group, treatment group
3. *Measure* dependent variable
4. *Analyze differences* in dependent variable between treatment and control groups
  - Because of random assignment, only independent variable can explain differences
  - All other variables are “balanced” between treatment and control group
  - Not necessary to control for potential confounding variables

# INTERNAL VALIDITY

- Does the study isolate the effect of the independent variable on the dependent variable?
  - If yes: high validity
  - If no: low validity
- Experiments usually have *high* internal validity
  - Because of random assignment, other variables (Z) cannot explain differences between treatment and control groups



# EXTERNAL VALIDITY

- Can we generalize the finding of the study to other settings?
  - If yes: high external validity
- Experiments often have *low* external validity
  - e.g. not clear if results would be similar if done in other cities or countries
  - If partisan canvassing, candidates may only agree to experiment in uncompetitive elections, not clear if results would be same for competitive elections



# TYPES OF EXPERIMENTS

- **What kinds of experiments are there?**

# FIELD EXPERIMENTS



AMERICAN JOURNAL  
of POLITICAL SCIENCE

## Campaign Contributions Facilitate Access to Congressional Officials: A Randomized Field Experiment

**Joshua L. Kalla** University of California, Berkeley  
**David E. Broockman** University of California, Berkeley

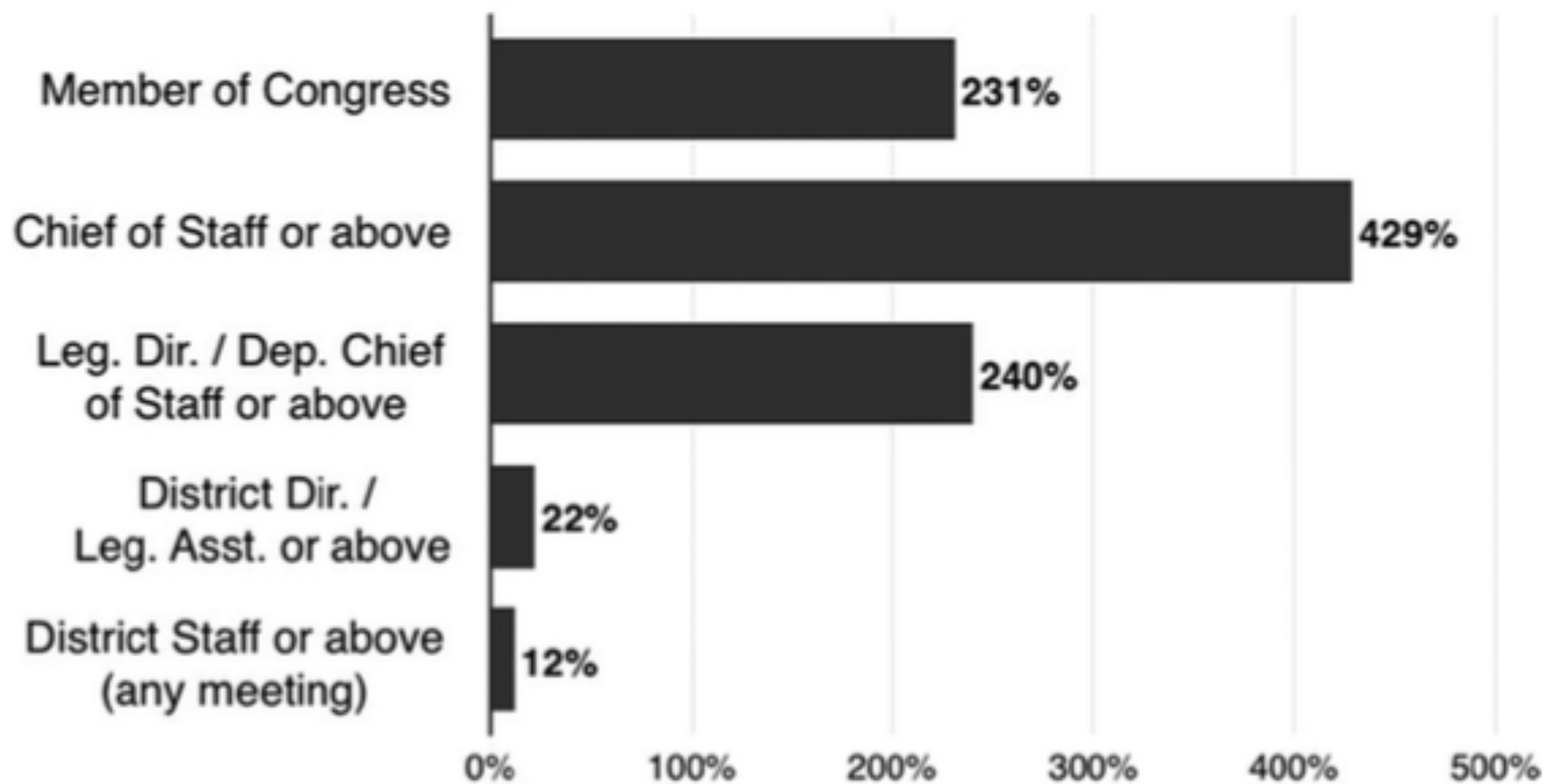
- What is the effect of campaign contributions on access to politicians?

# FIELD EXPERIMENTS

- **Organization tries to arrange meeting between its members and congressional officials**
  - **Per e-mail**
- **Experimental manipulation**
  - **Control group: “local constituents”**
  - **Treatment group: “local campaign donors”**
- **Outcome: Is a meeting granted, and who will it be with?**

# FIELD EXPERIMENTS

**FIGURE 2 Percentage Increase in Access Revealed Donors Gained, at or above Each Level.**



# TYPES OF EXPERIMENTS

- **Field Experiment**
- **Lab Experiment**
- **Survey Experiment**

# FIELD EXPERIMENTS

- **Experiment in the real world**
  - **Some aspect of people's real-world experience is experimentally manipulated**
  - **Participants often not aware that they are subjects**
- **Canvassing and turnout is a field experiment**

# FIELD EXPERIMENTS

**Today is Election Day**

What's this? • close



Find your polling place on the U.S. Politics Page and click the "I Voted" button to tell your friends you voted.

**I Voted**

**01155376**

People on Facebook Voted



Jaime Settle, Jason Jones, and 18 other friends have voted.

- Do messages like this increase turnout?



# FIELD EXPERIMENTS

## **A 61-million-person experiment in social influence and political mobilization**

Robert M. Bond<sup>1</sup>, Christopher J. Fariss<sup>1</sup>, Jason J. Jones<sup>2</sup>, Adam D. I. Kramer<sup>3</sup>, Cameron Marlow<sup>3</sup>, Jaime E. Settle<sup>1</sup> & James H. Fowler<sup>1,4</sup>

37.8% in 2010. Our results suggest that the Facebook social message increased turnout directly by about 60,000 voters and indirectly through social contagion by another 280,000 voters, for a total of 340,000 additional votes. That represents about 0.14% of the voting population of about 236 million in 2010. However, this estimate

# FIELD EXPERIMENTS

Article

<https://doi.org/10.1038/s41562-022-01487-4>

## A 2 million-person, campaign-wide field experiment shows how digital advertising affects voter turnout

We present the results of a large, US\$8.9 million campaign-wide field experiment, conducted among 2 million moderate- and low-information persuadable voters in five battleground states during the 2020 US presidential election. Treatment group participants were exposed to an 8-month-long advertising programme delivered via social media, designed to persuade people to vote against Donald Trump and for Joe Biden. We found no evidence that the programme increased or decreased turnout on average. We found evidence of differential turnout effects by modelled level of Trump support: the campaign increased voting among Biden leaners by 0.4 percentage points (s.e. = 0.2 pp) and decreased voting among Trump leaners by 0.3 percentage points (s.e. = 0.3 pp) for a difference in conditional average treatment effects of 0.7 points ( $t_{1,035,571} = -2.09$ ;  $P = 0.036$ ;  $\widehat{DIC} = 0.7$  points; 95% confidence interval =  $-0.014$  to  $0$ ). An important but exploratory

# FIELD EXPERIMENTS

- All kinds of field experiments
  - Candidates randomize TV ad buys to see if they have an effect on voter preferences
  - Candidates randomize what they talk about on the campaign trail to see if it affects vote share
  - Aid organizations randomize who gets aid (and in what way) to see if it helps people
  - Military randomizes whether soldiers are in team with women or not to see how it affects performance and attitudes
- Among experiments, field experiments tend to have highest external validity

# TYPES OF EXPERIMENTS

- **Field Experiment**
- **Lab Experiment**
- **Survey Experiment**

# LAB EXPERIMENTS

- Experiment conducted in a laboratory
- Iyengar and Kinder (1987): Effect of media coverage on issue priorities
- Participants come into lab and watch news broadcast
  - Control: Actual newscast
  - Treatment: Doctored version, highlighting other topics

# LAB EXPERIMENTS

- **Post-test questionnaire: Participants rank issue importance of topics**
  - **Which newscast they see has an effect on which issues people consider important**

# LAB EXPERIMENTS

- **Internal and external validity?**

# LAB EXPERIMENTS

- **High in internal validity**
- **Low in external validity**
  - **Participants came to campus, knew that a professor would be watching them so probably paid more attention, etc.**