

COURSE INTRODUCTION

January 25, 2022
Prof. Wolf
POLS 095
Drake University

WHAT'S SO IMPORTANT ABOUT RESEARCH DESIGN AND STATISTICS?



Science!



Applied skillsets



Will there be math?

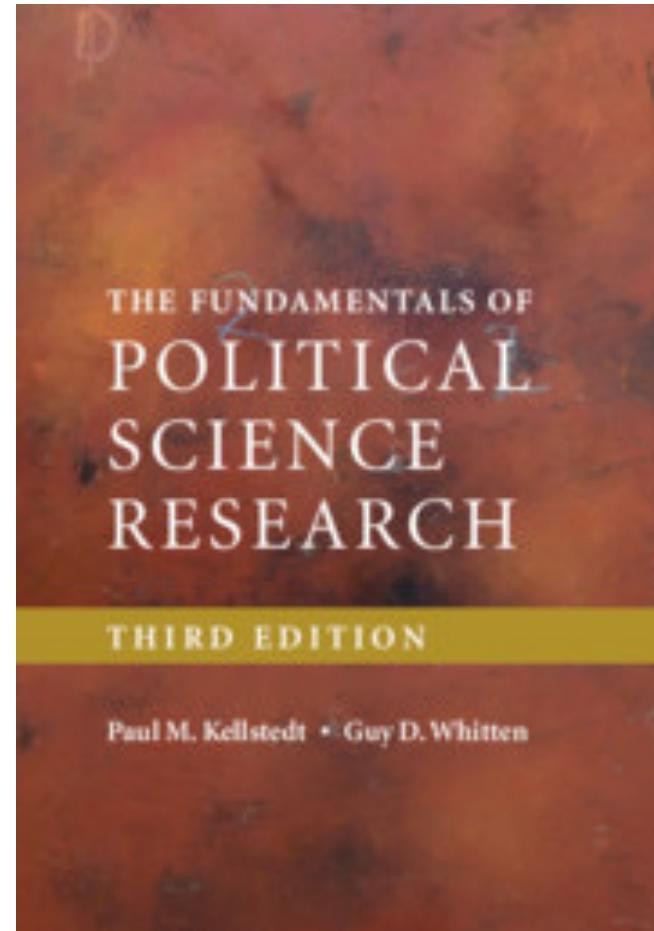
Title	Median salary
Market research analyst	\$51,691
Survey researcher	\$51,747
Data analyst	\$58,249
Analytics analyst	\$64,772
Research scientist	\$77,275
Data scientist	\$90,912
Analytics manager	\$92,442

Data from PayScale.com, so grain of salt etc.

REQUIRED TEXTBOOK & WORKBOOK

The Fundamentals of Political Science Research (3e) by Paul M. Kellstedt and Guy D. Whitten

An R Companion for the Fundamentals of Political Science Research by Paul M. Kellstedt and Guy D. Whitten



SOFTWARE

R and RStudio

It's free, but there is a learning curve

Helpful website:

<https://stats.idre.ucla.edu/r/>

The screenshot shows the RStudio IDE interface. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The title bar says "RCompanion - RStudio". The main window has several panes: the left pane shows a code editor with R script content; the right pane shows the "Environment" tab with a list of global variables like `ft_dem.me...`, `ft_dem.va...`, etc.; the bottom-left pane shows the "Console" tab with a history of command inputs and outputs; and the bottom-right pane shows the "Files" browser with a list of files and folders related to the project "RCompanion".

```
1 # An R Companion to Political Analysis
2 # Pollock and Edwards
3 # Introduction
4 # January 4, 2020
5 # Author: Greg wolf
6
7 ## Reserved
8
9 ## OBJECTS ##
10 phoneNumber <- 5152712645 # Assigns number to "phoneNumber"
11 name = "Brake Poli Sci Dept" # Assigns text in quotes to "name"
12 directory <- data.frame(name, phoneNumber) # object from object
13
14 directory[1, ] # returns first row
15 directory[, 1] # returns first column
16 directory[, 2] # returns second column
17 directory[1, 1] # returns value of first row, first column
18 directory[1, 2] # returns value of first row, second column
19 directory$name # returns value of "name" variable
20 directory$phoneNumber # returns value of "phoneNumber" variab
21
22
23
24
25
```

COURSE GRADES

Assignment	Details	Due Date	Percentage
Worksheet 1	Theory and causality	Feb. 18	7.5%
Worksheet 2	Design, measurement, descriptive stats	Mar. 11	7.5%
Worksheet 3	Inference	Apr. 1	10%
Worksheet 4	Bivariate hypothesis testing	Apr. 15	10%
Worksheet 5	Regression	Apr. 29	10%
Research Project 1	Theory	Feb. 25	10%
Research Project 2	Literature review and data	Mar. 25	15%
Research Project 3	Descriptive statistics	Apr. 8	5%
Research Project 4	Bivariate tests	Apr. 22	5%
Research Project 5	Regression	May 6	5%
Research Project 6	Conclusion plus final draft	May 12	15%



RULES

Class rules

- Be punctual
- Be attentive
- Be considerate
- Ask questions!



EXPECTATIONS

“Do I have to do the reading?”

Focus on discussion

- As a class

- In small groups

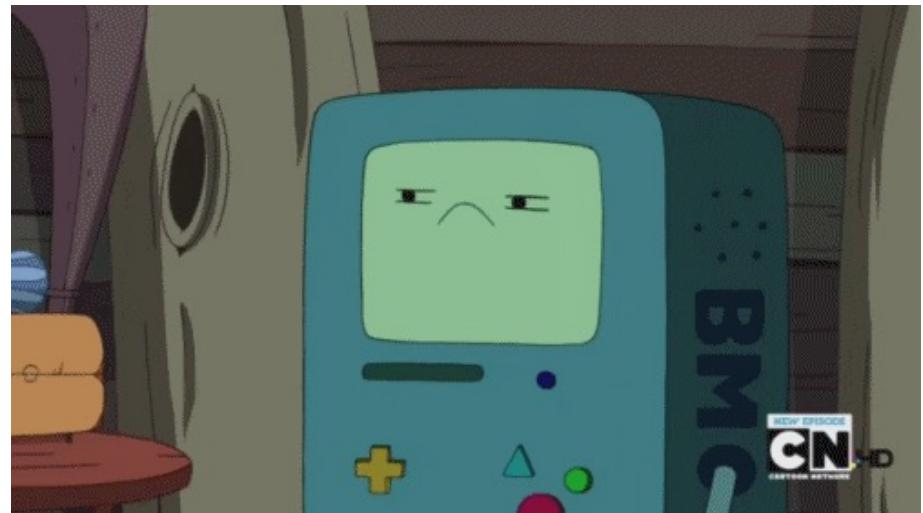
- Some activities

Office hours

- Use them

- Mine: MW 2:30 – 4:00 PM

- Or by appointment!



EXPECTATIONS

Readings

Complete **before** class

Read to understand or explain

Take notes, don't highlight

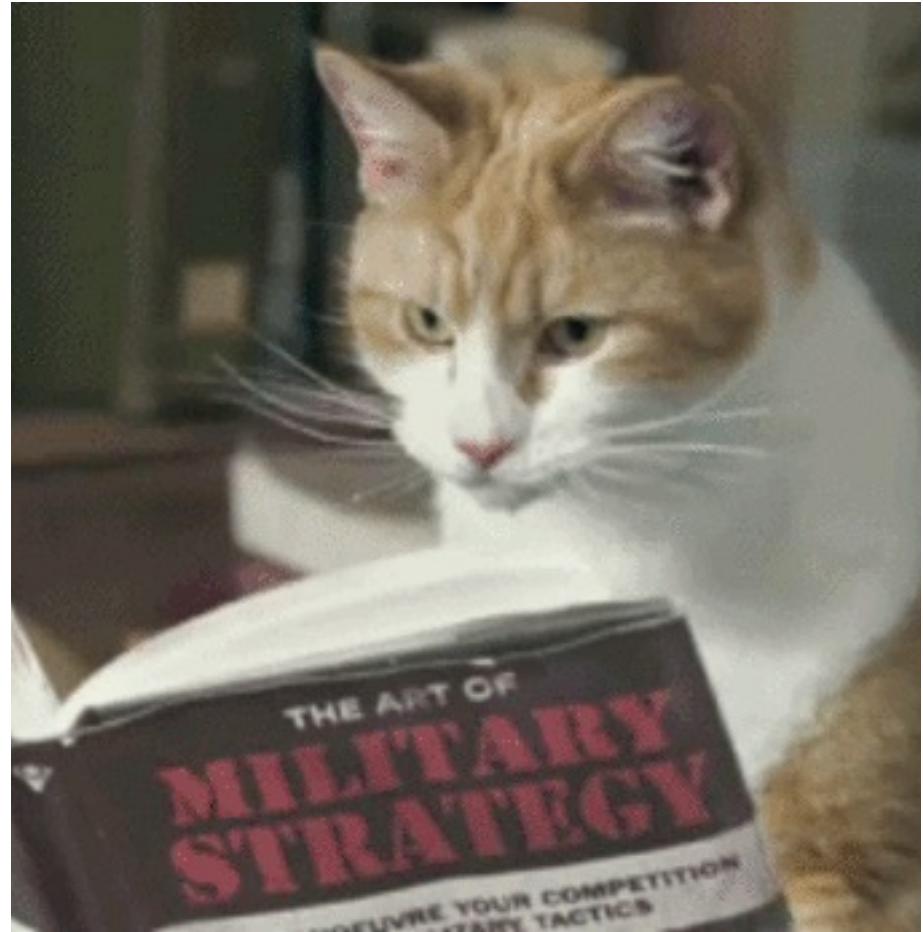
In class

Attend!

Pay attention

Take notes **by hand**

If you have a question, **ask**



GETTING STARTED

Why are you here?

What is “science?”

What does it mean to
“know” something?

What does it mean to
“cause” something?

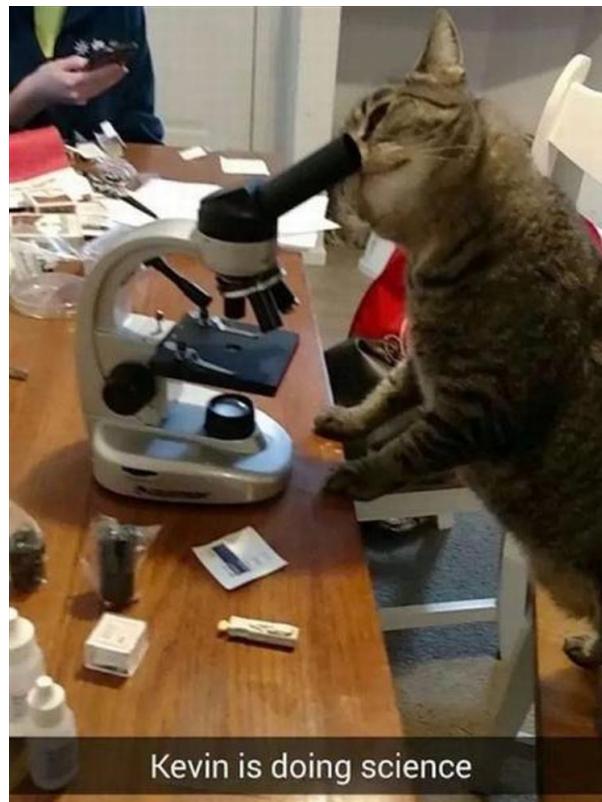
Why you *should* be
here



WHAT MAKES FOR A GOOD SCIENTIST?

Principles

- I am open to the possibility that I am wrong about the way the world works.
- I require evidence in order to update my beliefs about how the world works.
- I am open to evidence and arguments from all sources – so long as the evidence or argument is not intentionally deceitful.
- I will be critical of all new evidence presented to me.
- I am committed to intellectual honesty.



THURSDAY:



What is social science
research?



Textbook: Read Chapter 1
of FPSR and the R
Companion

“THE REAL WORLD”

January 27, 2022
POLS 095
Drake University



TODAY'S AGENDA



TYPES OF RESEARCH
QUESTIONS



DATA AND HOW WE
USE IT



THEORY

TYPES OF RESEARCH QUESTIONS

Descriptive

Normative

Theoretical or evaluative



DESCRIPTIVE QUESTIONS

What percentage of Americans support same-sex marriage?

- 62% (2017)

What percentage of Americans think divorce is morally wrong?

- 22% (2013)

What percentage of Americans support legalized marijuana?

- 61% (2017)

What percentage of Americans support the death penalty?

- 49% (2016)

NORMATIVE QUESTIONS

- Should same-sex marriage be legal?
- Should it be more difficult to get a divorce?
- Should marijuana be legal?
- Should the death penalty be legal?

THEORETICAL OR EVALUATIVE QUESTIONS

Why do people support/oppose same-sex marriage?

Why do people support/oppose divorce?

How does partisanship affect people's views of marijuana legalization?

How does the race of the defendant affect the likelihood of receiving a death penalty sentence?

APPLICATION: CLIMATE CHANGE

Descriptive question

- Is the Earth getting warmer?

Normative question

- Should anything be done about climate change?

Theoretical or evaluative question

- Why is the Earth getting warmer?



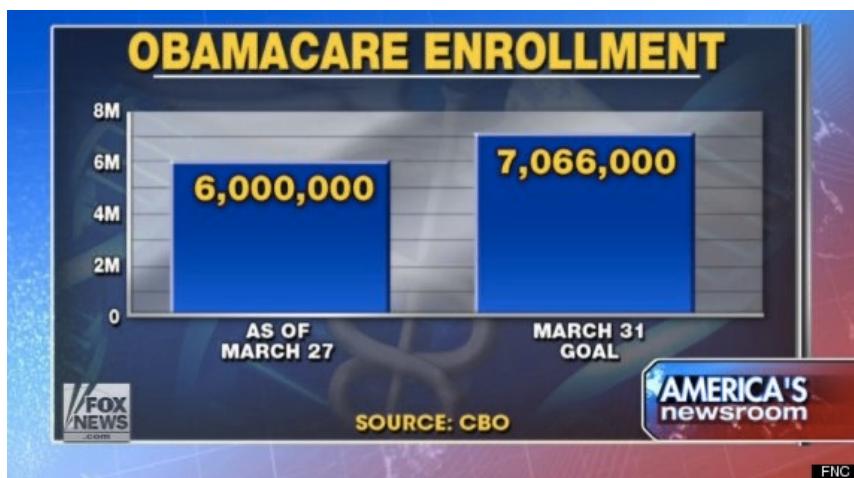
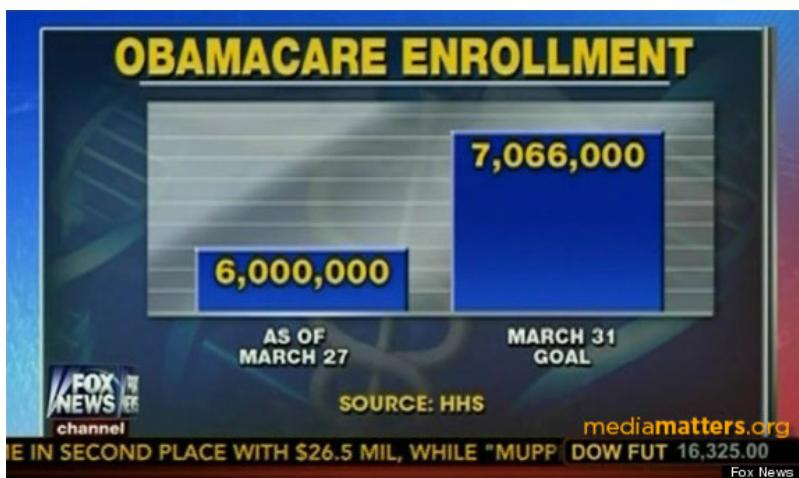
SOCIAL SCIENCE AND DATA

Science!

- Data is key to the scientific enterprise!



DATA PRESENTATION



CLASSIC APPLICATION: VOTE CHOICE

How do people decide who to vote for?

NATIONAL

Despite Partisan Rancor, Democrats And Republicans Can Agree On Dogs

December 18, 2016 - 8:21 AM ET
Heard on Weekend Edition Sunday



Callie is the nine-year-old miniature dachshund of Republican Rep. Ken Calvert of California. Love of dogs is a rare source of bipartisan agreement.

Ailsa Chang/NPR

ACTUAL RESULTS COMPARED TO SURVEY RESULTS (2016 CCES)

Official Results

	Clinton (D)	Trump (R)
Votes	65,853,514	62,984,828
Raw %	48.2	46.1
Share of two-party vote	51.1	48.9
Electoral College votes	232	306

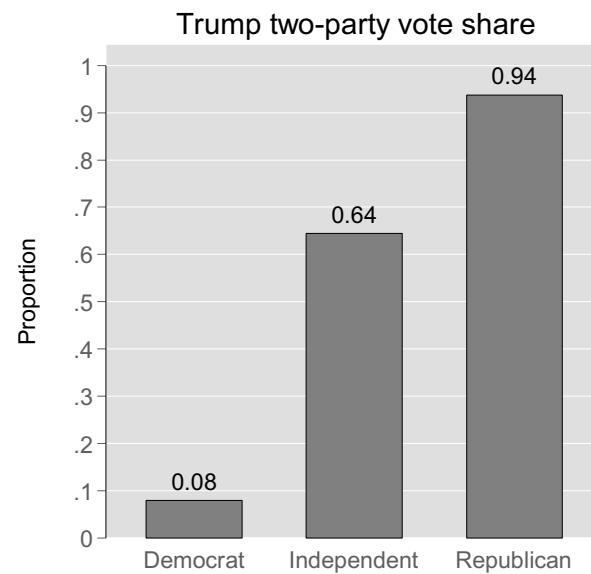
CCES data (weighted)

	Clinton (D)	Trump (R)
Votes	21,018	19,872
Raw %	49.3	46.7
Share of two-party vote	51.4	48.6

HOW DID PARTISANS VOTE?

What should we expect?

Does it matter that both candidates were very unpopular?



A PREVIEW OF THINGS TO COME

Almost nothing is moncausal

Alternative explanations?

Control variables

Most advanced topic we're likely to cover: regression

