

# Lecture 1: Introduction

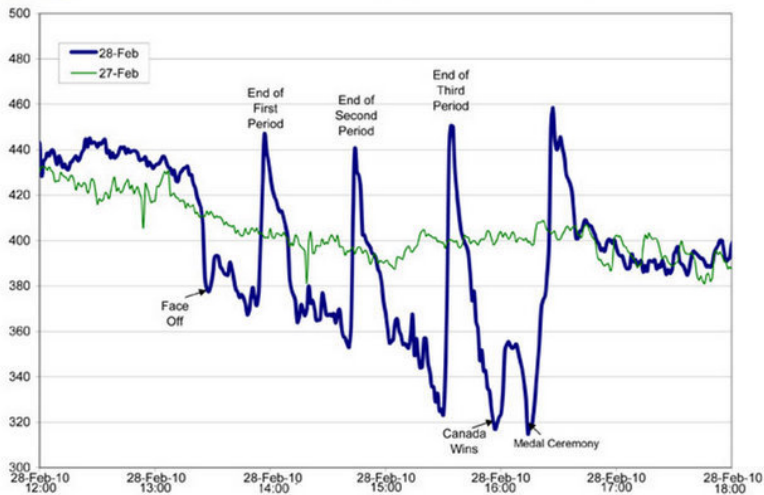
Jacob M. Montgomery

Quantitative Political Methodology



**KEEP  
CALM  
AND  
LEARN  
STATISTICS**

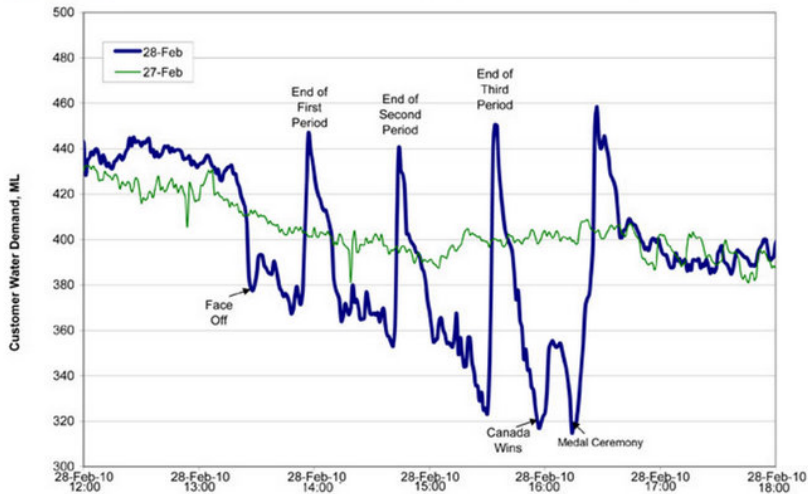
## Data are everywhere



# Data are everywhere



## Water Consumption in Edmonton During Olympic Gold Medal Hockey Game

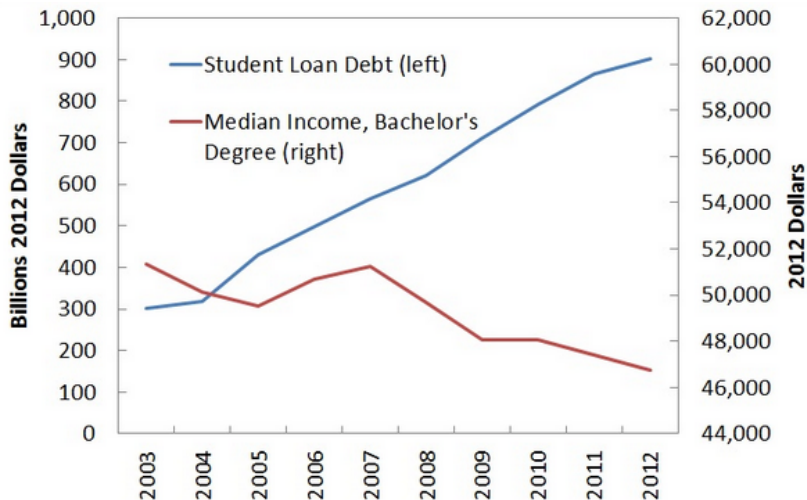


Data are everywhere



(Economist 2010)

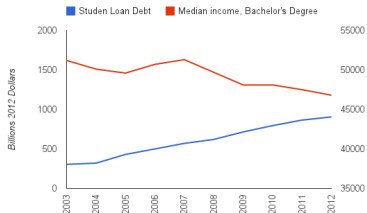
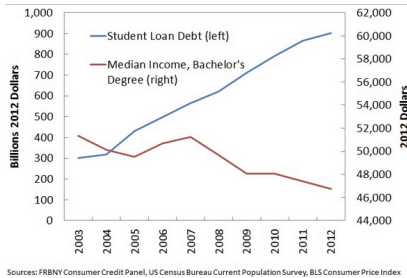
But do you know what to do with it?



Sources: FRBNY Consumer Credit Panel, US Census Bureau Current Population Survey, BLS Consumer Price Index

(Peter Thiel)

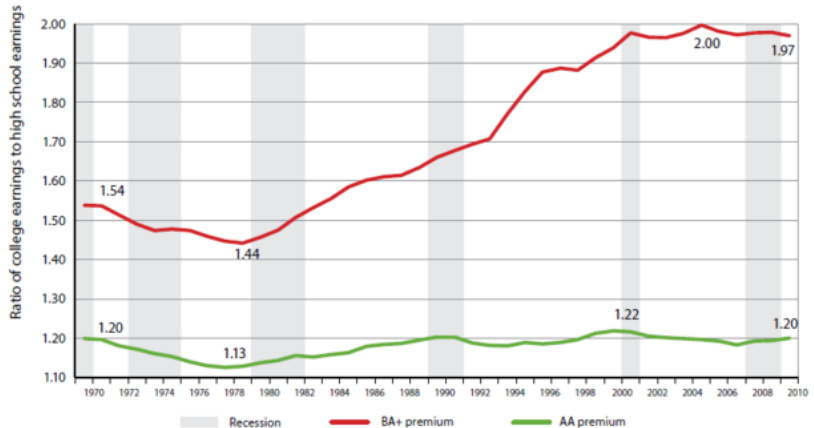
# But do you know what to do with it?



(Peter Thiel; Winston Chang)

But do you know what to do with it?

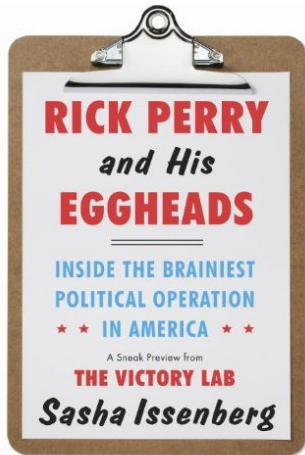
**FIGURE 7: Earnings of four-year college-educated workers remain nearly twice those of high school-educated workers.**



(Georgetown University Center on Education and the Workforce )

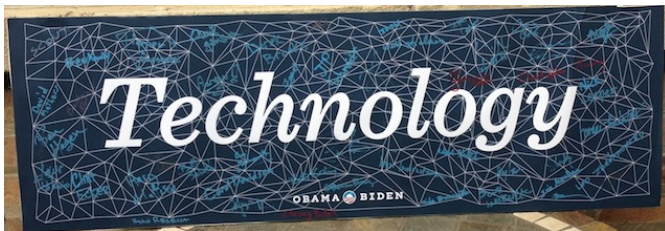


## Why quantitative methods?



(Issenberg 2011/2012)

# Why quantitative methods?



**2012**  
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The Obama for America analytics department analyzes the campaign's data to guide election strategy and develop quantitative, actionable insights that drive our decision-making. Our team's products help direct work on the ground, online and on the air.

We are a multi-disciplinary team of statisticians, mathematicians, software developers, general analysts and organizers—all striving for a single goal: re-electing President Obama.

We are looking for Statistical Modeling Analysts, Analytics Engineers, Battleground States Elections Analysts and Communications Analysts of all levels to join our department through November 2012 at our Chicago headquarters. Select a job position

Email:

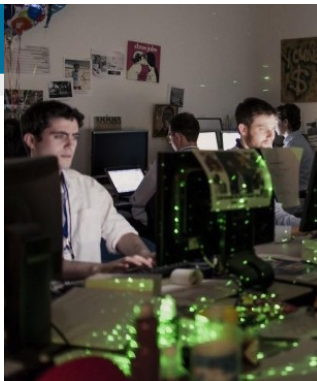
First Name:  Last Name:

Address:

City:  State:  Zip:

Phone:

Motivation  
Briefly explain why you want to work for the campaign (500 words or fewer):



# What is Data Science?

The future belongs to the companies  
and people that turn data into products



Google

NETFLIX

facebook®

# The Age of Big Data

By **STEVE LOHR**

GOOD with numbers? Fascinated by data? The sound you hear is opportunity knocking.

**The New York Times**

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**August 6, 2009**

## For Today's Graduate, Just One Word: Statistics

By **STEVE LOHR**

MOUNTAIN VIEW, Calif. — At Harvard, Carrie Grimes majored in anthropology and archaeology and ventured to places like Honduras, where she studied Mayan settlement patterns by mapping where artifacts were found. But she was drawn to what she calls “all the computer and math stuff” that was part of the job.

“People think of field archaeology as Indiana Jones, but much of what you really do is data analysis,” she said.

Now Ms. Grimes does a different kind of digging. She works at [Google](#), where she uses statistical analysis of mounds of data to come up with ways to improve its search engine.

Ms. Grimes is an Internet-age statistician, one of many who are changing the image of the profession as a place for dronish number nerds. They are finding themselves increasingly in demand — and even cool.

(Lohr 2009, 2012)

# POLITICO

## Are polls really magic?

By: Roger Simon

December 21, 2011 04:33 AM EST

With the glut of [debate stories](#) safely behind us until human beings actually cast votes in Iowa on Jan. 3, the media now shift their full concentration to what really counts: polls.

Polling drives our political process far more than debates do. Debates are just the candidates yakking in real time.

[Polls](#) are predictions of the future. They are crystal balls. They are magic.

Pollsters try to deny this, humbly murmuring about how their magic is a mere "snapshot in time." But we don't believe this.

Pollsters are wizards, shamans, diviners. They toss numbers around the way astragalomancers once tossed bones to foretell events to come. (The name comes from the Greek astragalos, meaning "knucklebone." But you knew that.)

Increasingly, however, pollsters find it difficult to get people to talk to them. This should not be a surprise. Pollsters call us during inconvenient times when they expect us to be home (the dinner hour, for example) and then can ask all sorts of personal questions about our age, sex, religion, party affiliation, income and whom we intend to vote for.

I have never been called by a political pollster and don't know anybody who has, but I know some pollsters, who assure me they don't make the numbers up, and I believe them.

(Simon 2011)

## Two reasons you may have doubts about this class

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- ▶ The short answer is **literacy**
  - ▶ Political science research.



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- ▶ That is an excellent question. Please ask it often.
- ▶ The short answer is **literacy**
  - ▶ Political science research.
  - ▶ Empirical claims about politics, policy, and the world in general.

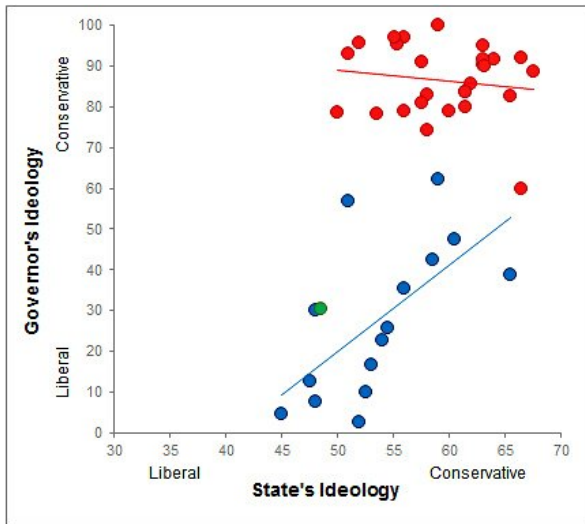
## Political science is a quantitative discipline

### Distribution of Papers Submitted, 2008–2009 (%)

YEAR	APPROACH			
	Formal	Quantitative	Formal and Quantitative	Small N
2008–2009	12	49	13	2
2007–2008	14	49	8	2
2006–2007	11	55	4	2
2005–2006	14	51	5	2
2004–2005	13	52	6	1

(Rogowski 2010)

## What you will learn



(Silver 2011)

## What you will learn

**TABLE 1 The Power to Propose Legislation  
Increases Vote Share for Members of  
the Government**

Variable	Dependent Variable: Vote Share		
	Coef.	R.S.E.	p
Government *	3.70	1.49	.01
Power to Propose			
Government Member	-0.02	0.92	.99
Power to Propose	-0.98	0.74	.18
Year = 2006	0.07	0.63	.90
Previous Vote Share	0.82	0.03	.00
Constant	7.89	1.92	.00
N	404		
R <sup>2</sup>	0.61		
Root MSE	6.30		

*Note:* Ordinary least squares (OLS) regression of vote share on variables shown. All p-values are two-tailed. Standard errors are clustered on Members of Parliament. The linear combination of Power to Propose and Government \* Power to Propose is 2.73 percentage points (95% CI 0.29, 5.17). This shows that members of the government who are randomly granted the right to propose legislation on average earn 2.73 percentage points more vote share than those government members who are not.

(Loewen et al. 2013)

Why did Trump win?



## Media view of campaigns contradicted by data

What they say matters:

- ▶ Independents
- ▶ Undecideds
- ▶ Gaffes/“gamechangers”
- ▶ Debates
- ▶ “Momentum”

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What actually matters most:

- ▶ Partisanship
- ▶ Fundamentals

PostEverything

# Why political science is not an election casualty

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There's a lot of blame being tossed at political science after Trump's surprise victory. Most of it is undeserved.

(Dan Drezner)



## The most important force in political behavior

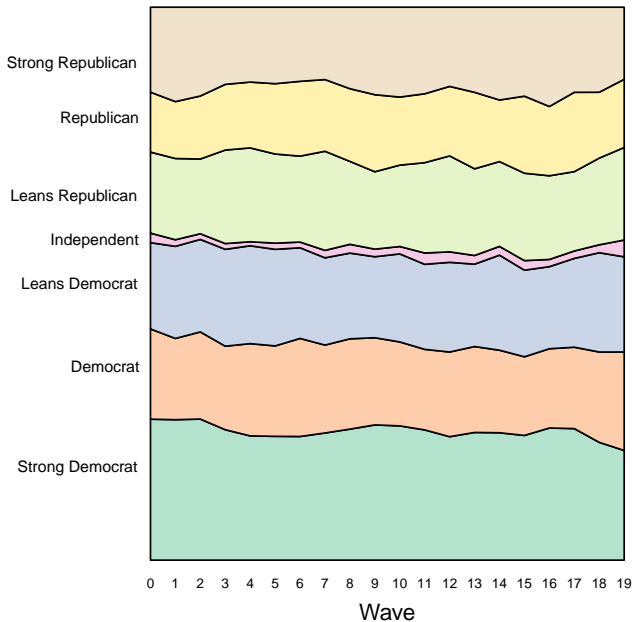


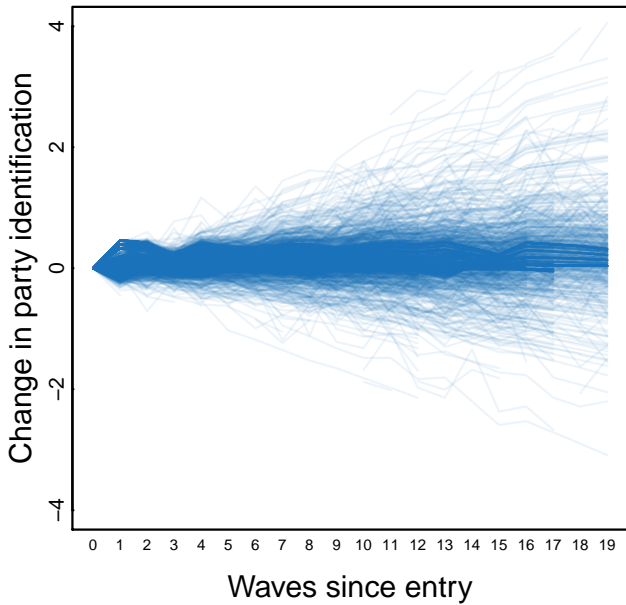
- ▶ Partisanship is (in part) a social identity
- ▶ Serves as a perceptual screen
- ▶ Dominates all other aspects of political behavior
- ▶ It doesn't change





- ▶ Started in 2011
- ▶ About 2,000 Americans have been interviewed on a monthly basis
- ▶ Standard party identification question has been asked 20 times



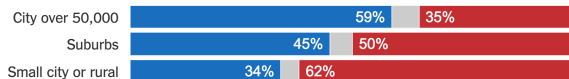


## Individual level change?

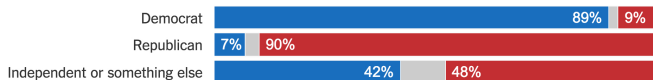
Amount of change	Number	Percentage
0 – 0.25	635	34.5
0.25 – 0.5	572	31.1
0.5 – 1	394	21.4
1 – 1.5	151	8.2
$\geq 1.5$	88	4.8

## Most people voted their party

### Residence



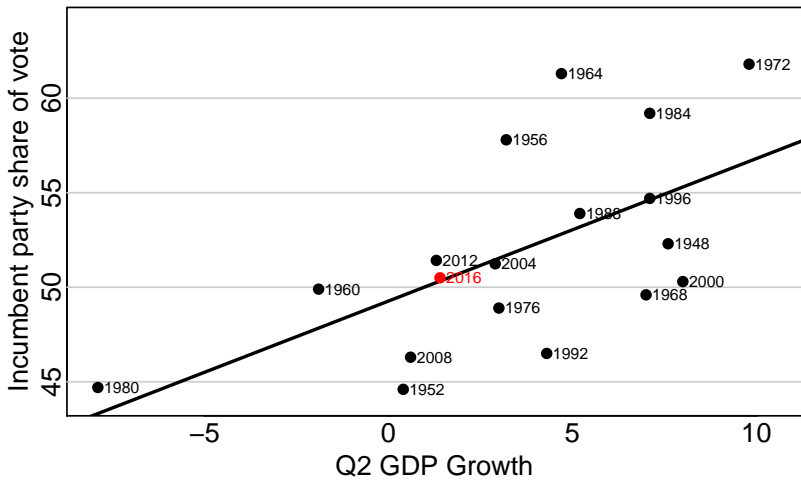
### Party affiliation

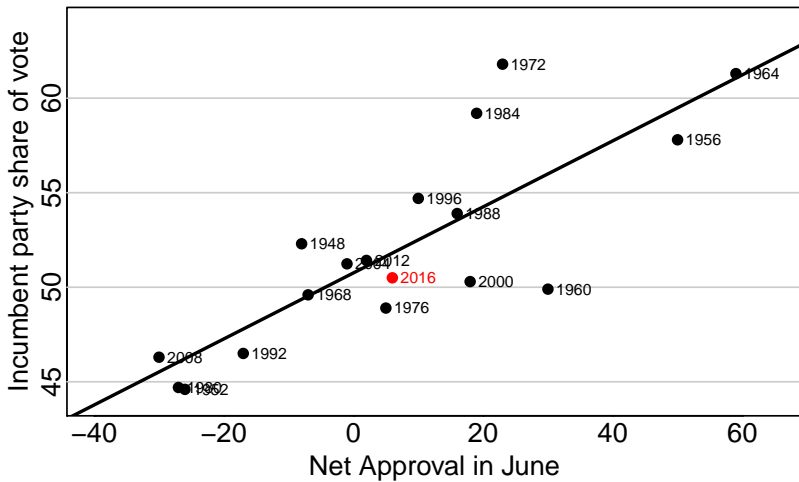


## Context matters





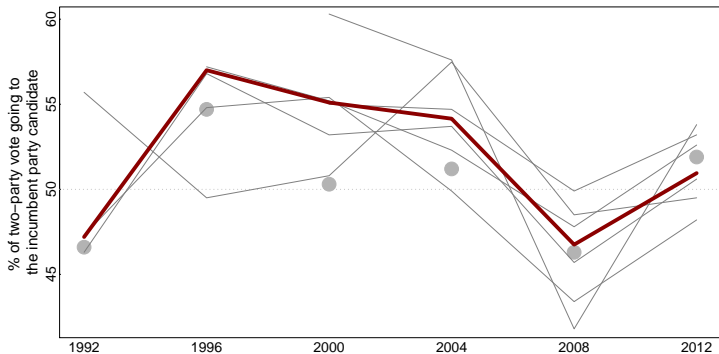




## Success of Incumbent Party Candidate in Presidential Elections by Type of Election, 1948-2016

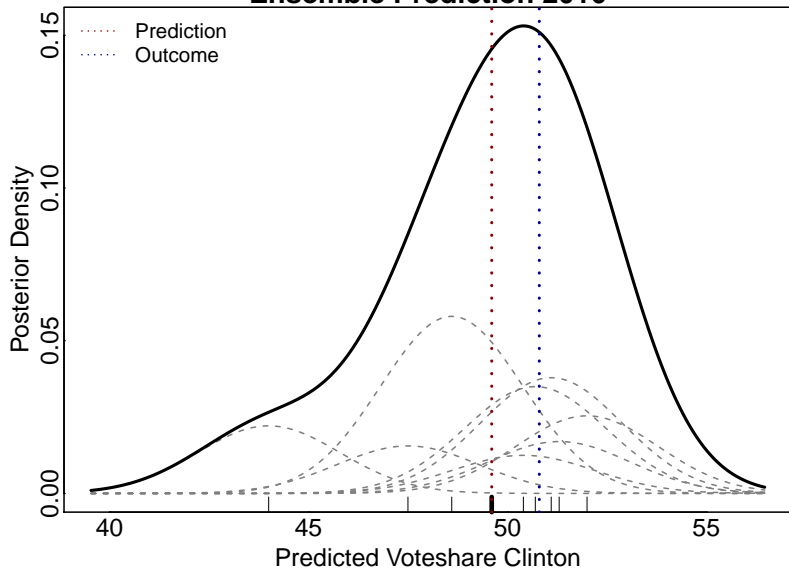
Results	First-Term	Second- or Later
Won	8	2
Lost	1	8
Average vote	55.3	49.3

## Harnessing the wisdom of crowds



- ▶ Give more weight to more accurate models
- ▶ Give more weight to models that are right when everyone else is wrong

## Ensemble Prediction 2016



Trump did worse than expected, but still won



- ▶ Conditions tilted the playing field towards change
- ▶ There are only two choices

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  - ▶ Ask questions

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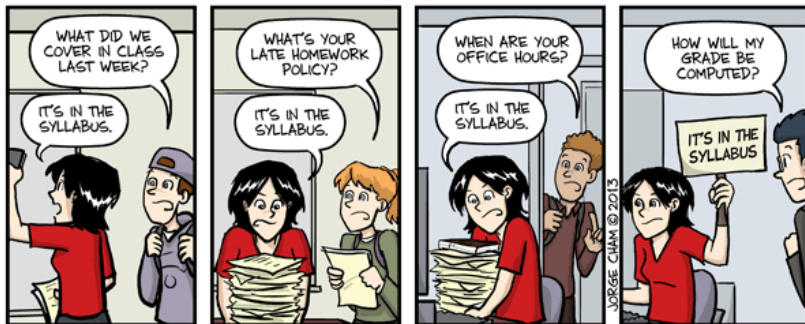
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- ▶ Be patient—like learning a foreign language or a new sport
  - ▶ Ask questions
  - ▶ Practice!
  - ▶ Don’t fall behind

# Dramatic reading of the syllabus

https:

[//jmontgomery.github.io/PS363Syllabus/Syllabus.html](https://jmontgomery.github.io/PS363Syllabus/Syllabus.html)



# IT'S IN THE SYLLABUS

This message brought to you by every instructor that ever lived.

[WWW.PHDCOMICS.COM](http://WWW.PHDCOMICS.COM)



## Approach

Preparation + synthesis + practice = learning

- ▶ Reading and videos before class
- ▶ Individual preparedness assessments
- ▶ Mini-lectures on important concepts
- ▶ Group work on problems
- ▶ Review and correct mistakes
- ▶ Individual homework assignments

## Team based learning

- ▶ Balanced groups
- ▶ Long-term relationships
- ▶ Incentives to invest
- ▶ Different ways to contribute

## What this means for you

- ▶ Preparation so can contribute more
- ▶ Speaking up/participating
  - ▶ Asking questions; don't wait!
  - ▶ Helping to explain clearly
- ▶ Working effectively in teams
  - ▶ Make sure all on same page; don't let scribe do it!
  - ▶ Including everyone; not dominating airtime
  - ▶ Not rushing to next steps
  - ▶ Not getting frustrated when stuck

## The takeaway

- ▶ Data can help us understand politics and political science
- ▶ Statistics skills are valuable



**Kevin Collins**  
@kwcollins



Following

Political science professor friends: please teach your undergrads to use statistical software. It makes them much more employable.

RETWEETS

31

LIKES

27



8:21 PM - 29 Jan 2014

- ▶ Preparation and active learning → success

## For next class

- ▶ Read the text and complete online materials
- ▶ Come to your lab with R installed and be ready to work
- ▶ These slides are available at:

`https://jmontgomery.github.io/PS363Slides/  
01Introduction.pdf`