

# Data Literacy and Voting

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University of Michigan

Friday, July 15, 2016,  
1:15 p.m. – 2:15 p.m. EST



Image: "Voting United States.jpg" by Tom Arthur, on [Wikimedia Commons](#). CC BY-SA 2.0.



July 14 - 15, 2016

Free registration - Free SCECHs - Register at <http://dataliteracy.si.umich.edu/conference>  
A project of the University of Michigan School of Information, the U-M Library, and U-M School of Education. This project was made possible in part by the Institute of Museum and Library Services RE-00-15-0113-15.

## Sponsors



## SCECHs

Log in with your **full name**

Attend at least 3 live sessions and  
up to 12

Submit your form by July 22!

More information:

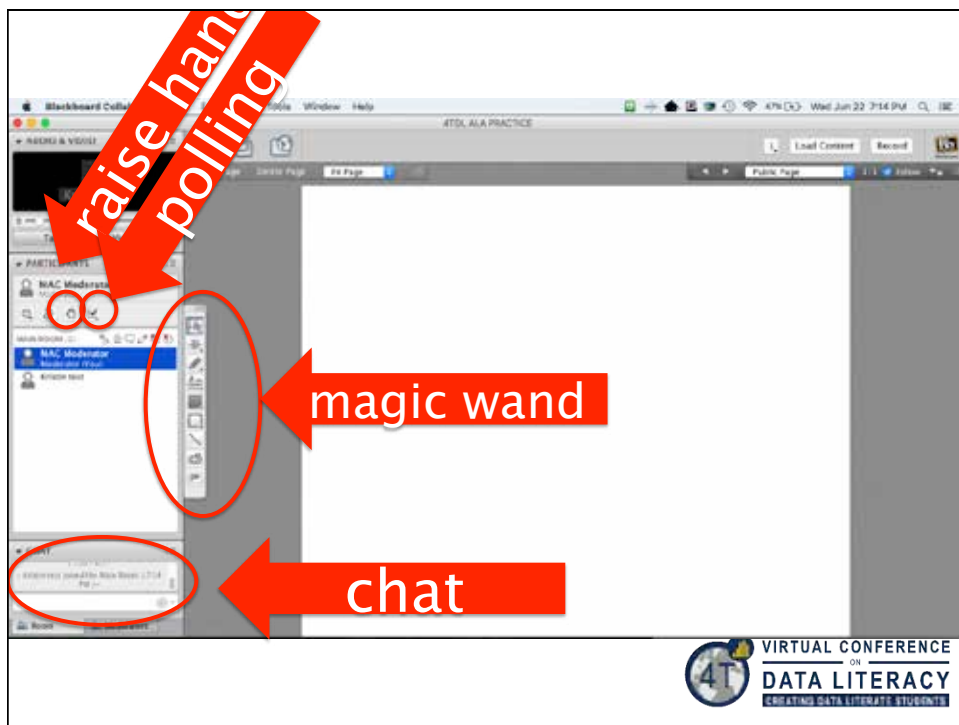
[http://dataliteracy.si.umich.edu/  
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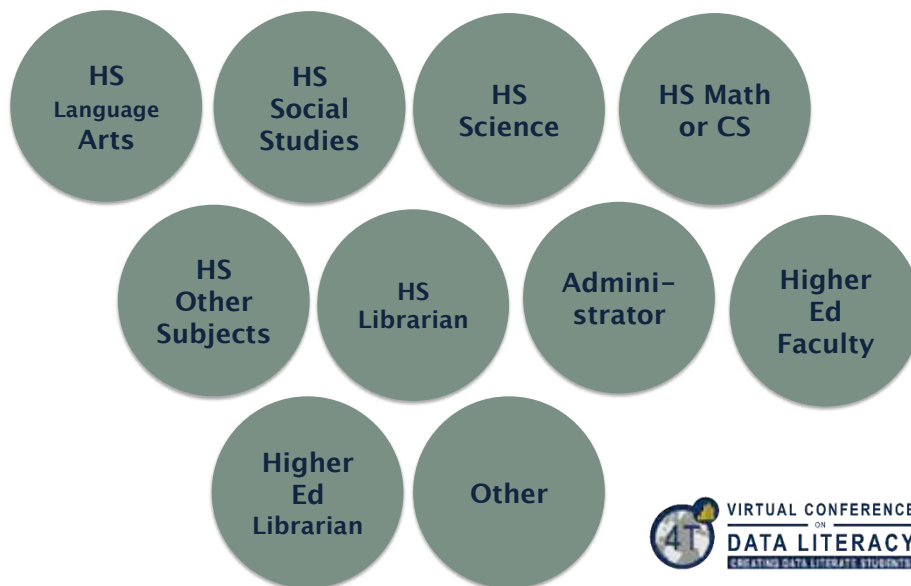
**#4tvirtualcon**







## What Do You Teach?



## Agenda

1. News media
2. 2016 Presidential election overview
3. Rules of thumb for data literacy and voting
4. Sources of election information
5. Questions/discussion



# News Media



## Americans overwhelmingly think that news media are one-sided

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% of U.S. adults who think that *news organizations* ... when covering political and social issues



### But more are divided in whether they think this about news they get online from friends and family

% of online news consumers who think that the news *their friends and family* post or send online about political and social issues ...



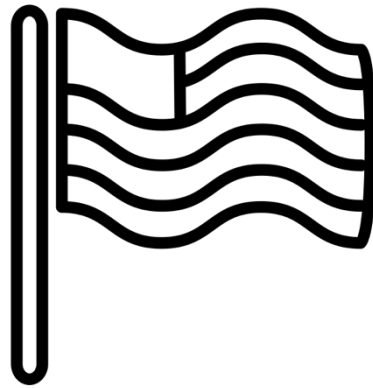
Source: Survey conducted Jan. 12-Feb. 8, 2018. "The Modern News Consumer"

PEW RESEARCH CENTER

*\*We will share a Google Doc with the resources from this webinar.*



# 2016 Presidential Election



## 2016 Presidential Election

- **February 1 to June 14:** Primaries
- **May 3:** Donald Trump became the presumptive Republican nominee.
- **June 6:** Hillary Clinton became the presumptive Democratic nominee.
- **July 13:** Bernie Sanders endorsed Hillary Clinton.
- National conventions to determine the parties' nominees for president and vice president:
  - **July 18–21:** Republican National Convention
  - **July 25–28:** Democratic National Convention
- **November 8:** Election

Image: "US Flag Backlit.jpg" by Jnn13, on [Wikimedia Commons](#). CC BY-SA 2.0.



# Rules of Thumb for Data Literacy and Voting



## 1. Know how polling works.

*What is polling? How do they get those numbers?*

As Charles Wheelan writes:

**“...one might reasonably ask, How do we know all this? How can we draw such sweeping conclusions about the attitudes of hundreds of millions of adults? And how do we know whether those sweeping conclusions are accurate?”**

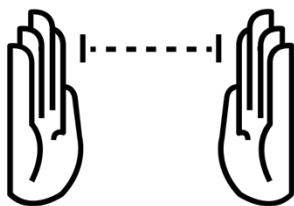




## Ways that polls trip us up

- Polls are formed from **samples** of a **population**.
  - *Is the sample representative of the population?*

- Polls results are an **inference** or **speculation**.



## Ways that polls trip us up, continued

- Types of bias:
  - **Nonresponse bias**: who chose *not* to participate in the poll?
  - **Selection bias**: who participated in the poll?

- **Question wording and order**
  - *How might respondents respond?*



## Types of polls

- **Interactive poll:** an interviewer speaks with a respondent. It includes landlines and cell phones.
- **Automated poll:** a robo-call to respondents. Respondents use their landline keypad to respond.
- **Online poll:** poll completed online.
  - Not all people have Internet access.
  - Online polls have issues with bias.



## Indications of a good poll

- **Transparency** – Participates with one of these organizations:

American Association for Public Opinion Research (AAPOR)

National Council on Public Polls (NCPP)


- Includes article called “20 Questions A Journalist Should Ask About Polls Results”

Roper Center’s Polling Data

- **Methodology**
  - Representative of population
  - Type of poll



# Consult ratings



## FiveThirtyEight's Pollster Ratings

by Nate Silver

FiveThirtyEight's pollster ratings are calculated by analyzing the historical accuracy and the methodology of each firm's polls. Accuracy scores account for the type of election, a poll's sample size, the performance of other polls surveying the same race and other factors. We also calculate measures of statistical bias in the polls.


See more: [The State Of The Polls, 2016](#) | [How this works](#) | [Download the data](#)

RATINGS
DEFINITIONS

POLLSTER	HOW CALLED WITH CELLPHONES	HOW CALLED BY INTERNET	NO. OF POLLING POINTS	POOLS ANALYZED	BIAS SCORE	ACCURACY SCORE	ADVANCED METRIC	PRECEDENCE SCORE	OVERALL GRADE	REPUTATION SCORE	REAR-LOADED SCORE
SurveyUSA		●	763	4.0	90%	-1.0	-0.8	A	3+0.1		
YouGov	●		707	6.7	83%	-0.3	+0.1	B	3+1.8	■	
Roanoke Reports/ Pulse Opinion Research			257	5.3	79%	+0.4	+0.7	C+	3+2.0	■	
Zogby Interactive/ IZ Analytics	●		455	5.6	78%	+0.8	+1.2	C-	3+0.8	■	
Mason-Dixon Polling & Research, Inc.	●		413	3.2	88%	-0.4	-0.2	B+	3+1.0	■	
Public Policy Polling			381	4.0	82%	-0.5	-0.1	B-	3+0.2	■	
Research 2000			279	3.5	88%	+0.2	+0.5	F	3+1.4	■	

<http://projects.fivethirtyeight.com/pollster-ratings/>

# Example: Franklin and Marshall College Poll



**March 2016  
Franklin & Marshall  
College Poll**

SUMMARY OF FINDINGS


Prepared by:  
Center for Opinion Research  
Floyd Institute for Public Policy  
Franklin & Marshall College

March 24, 2016

A poll of registered voters in Pennsylvania asking about candidates and political parties

**RACE.** Which of the following categories best describes your racial background?

93% White  
8% Non-white



## Example: Pew Research Center report

Survey conducted June 15-26, 2016

Group	Weighted proportion of public	Unweighted sample size	Plus or minus ...
Total sample	100%	2,245	2.4 percentage points
Republican/Lean Rep	40%	898	3.7 percentage points
Democrat/Lean Dem	49%	1,104	3.4 percentage points
Registered voters	72%	1,655	2.7 percentage points
<b>Among registered voters</b>			
	<b>Weighted proportion of registered voters</b>		
Republican/Lean Rep	44%	734	4.1 percentage points
Democrat/Lean Dem	49%	801	3.9 percentage points
Donald Trump supporters	42%	701	4.2 percentage points
Hillary Clinton supporters	51%	839	3.9 percentage points
White	69%	1,114	3.3 percentage points
Black	11%	146	9.2 percentage points
Hispanic	11%	274	6.7 percentage points

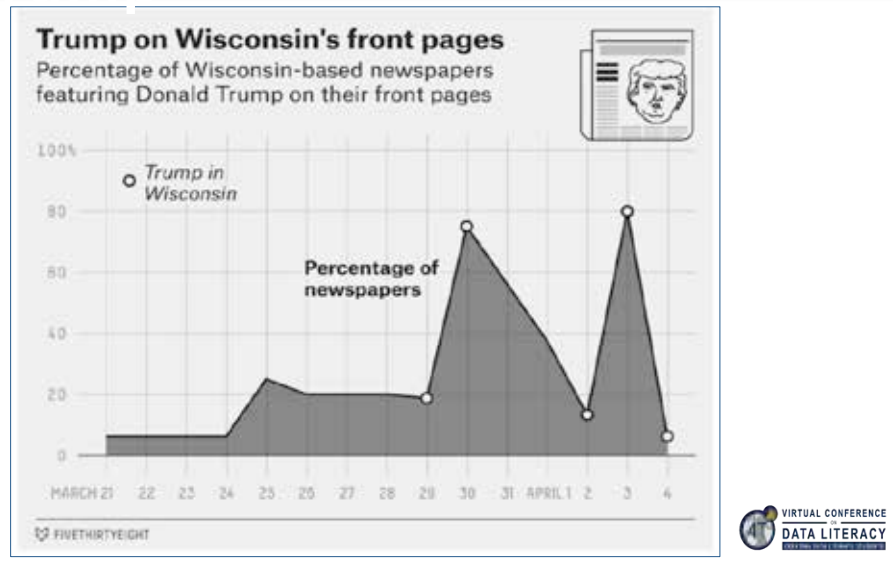


## 2. Apply statistical skills.

- *Questions to ask:*
  - What is the **sample**, and is it **representative**?
  - What kind of **average** is it?
    - *Mean, median, or mode*
  - What is the **inverse** of the statistic?
    - *Is this a big number?*
  - What is the **margin of error**?
    - *+ or – percentage point*



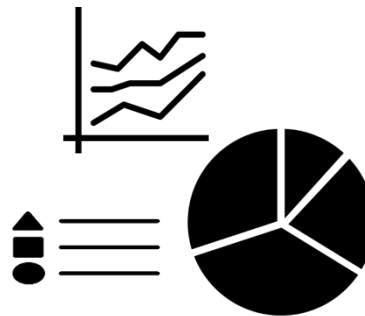
## Example: News coverage of Trump



### 3. Apply data visualization skills.

- **Type of chart or graph**

- Is it the right one?
- Is it used correctly?
- Is it misleading?

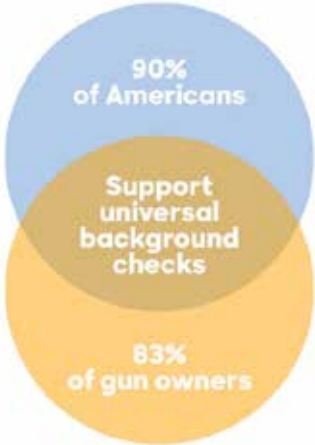


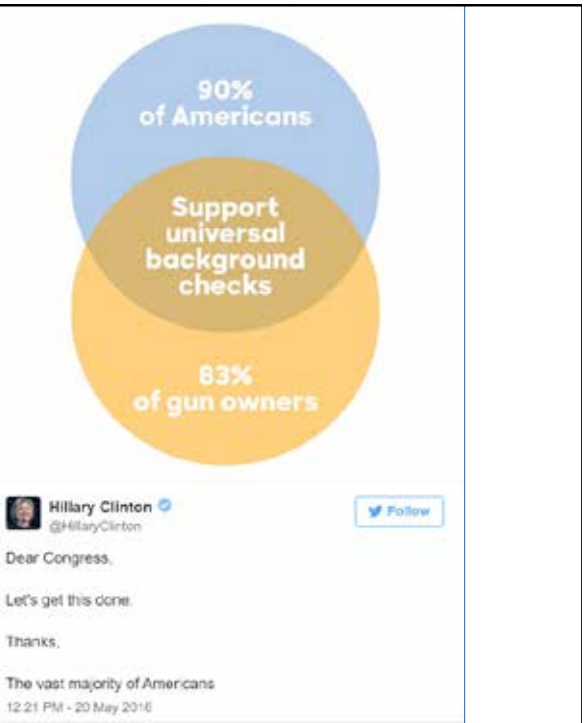
- **Colors**

- What are the colors supposed to indicate?
- Do they make the data seem dramatic?



**Example:  
Venn  
diagram by  
Hillary  
Clinton**





**Hillary Clinton** @HillaryClinton

Dear Congress,


Let's get this done.

Thanks,

The vast majority of Americans

12:21 PM - 20 May 2016

**Example:  
Revised visualization**




**Improving the Clinton campaign's terrible graph**

Population estimates from the Census Bureau. Gun ownership estimate based on calculations from Gallup compared with Census household data. Percentages based on Clinton campaign figures.

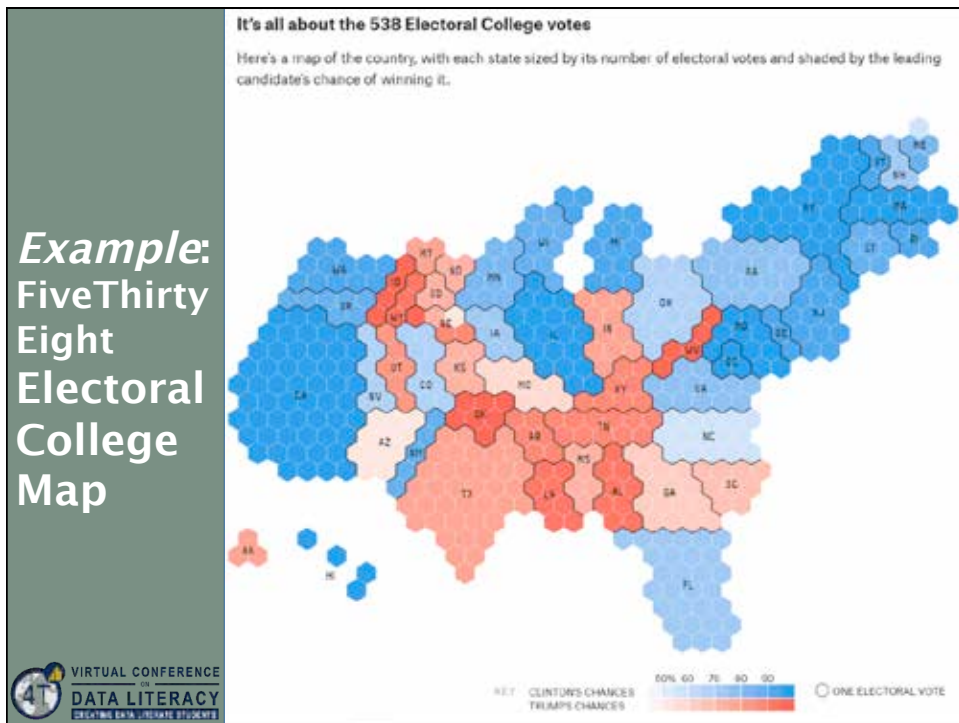
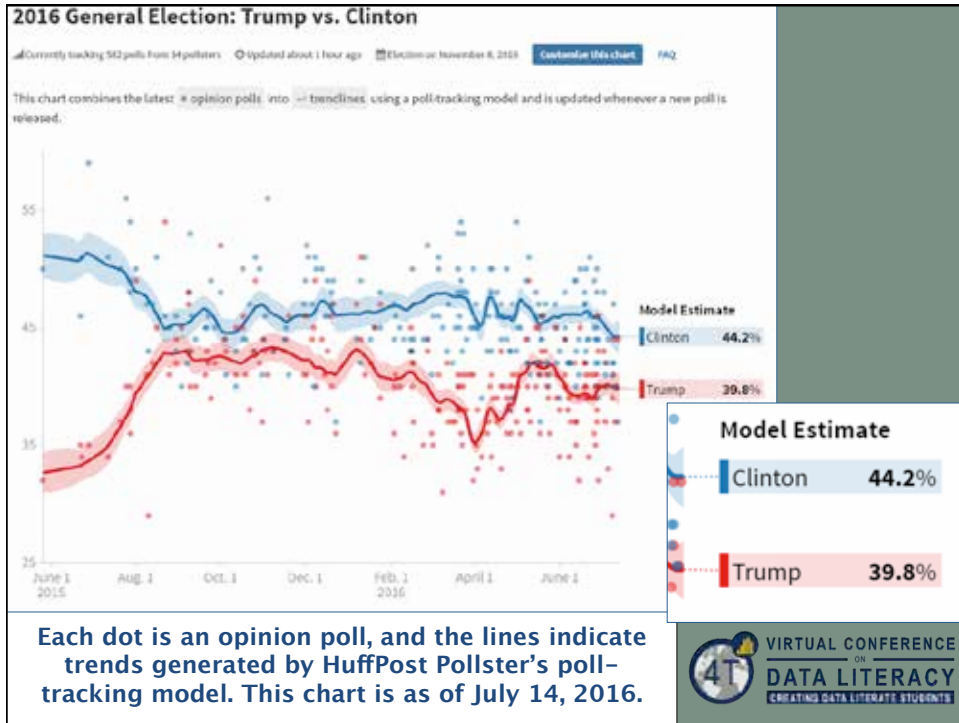
All Americans 319 MILLION

Don't own gun -183 MILLION      Own gun -136 MILLION



95% -174 MILLION      83% -113 MILLION

90% support universal background checks -287 MILLION



## 4. Look at multiple sources.

- Seek **multiple sources** that convey a variety of **perspectives**.
  - Look for counterarguments to articles and opinions.
- Seek **good methodology** in the sources.
- Apply the **statistics** and **data visualization skills** to these sources.



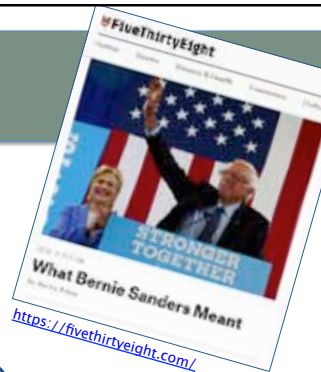
## Sources for Election Statistics and Visualizations





## Sources

- **FiveThirtyEight (Nate Silver)**
  - In-depth analysis and visualizations
- **Flowing Data (Nathan Yau)**
  - Compelling visualizations
- **Vote411 (League of Women Voters)**
  - Local election information
- **The New York Times: The Upshot**
  - Highlights methodology
- **Pew Research Center**
  - Includes methodology



<http://lwv.org/>



## Aggregators of Polls



- **FiveThirtyEight's Pollster Ratings**
  - Gives polls a grade
- **HuffPost Pollster**
  - Aggregates results of polls in visualizations
- **RealClearPolitics**
  - Lists recent polls by date



## Others...

 **What are your favorites?**



## Resources

- Citations on Google Doc Handout: <http://bit.ly/4TDL-votingresources>
- Icons courtesy of The Noun Project and licensed with Creative Commons.



## Recap

1. Know how **polling** works.
2. Apply **statistical skills**.
3. Apply **data visualization skills**.
4. Look at **multiple sources**.

## Questions?

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**Evaluation:**  
<http://bit.ly/4TDL-voting>

