

Data and the State

PUBPOL 2130 / INFO 3130

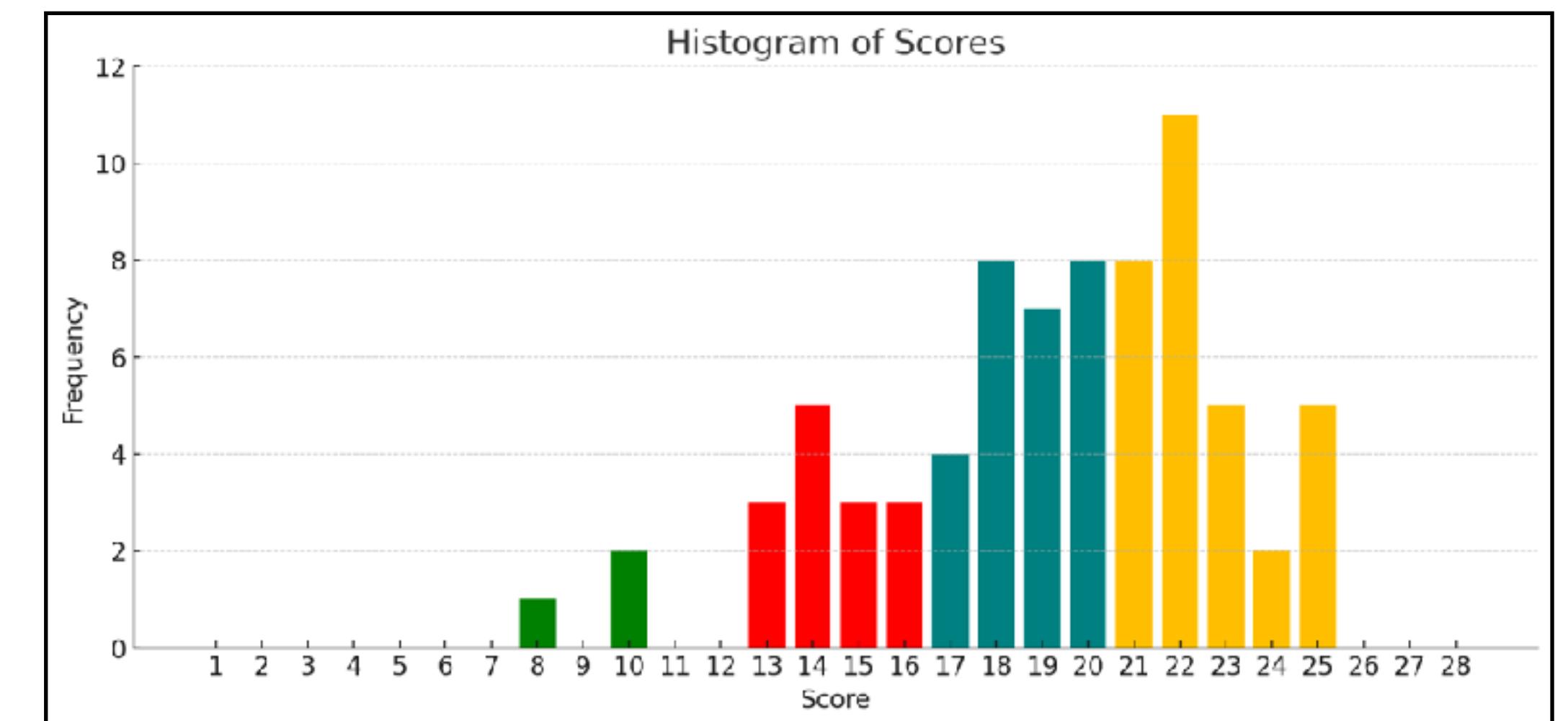


Elections and Election Data 1

Lecture 9, Tuesday Feb 25

Announcements

- Returning the exams today. Graded out of 28 points. Median grade was 20/28 (B+/A-). Same four-point scale as always.
- High-level: you are trying to show learning/knowledge (not memorization). Many responses were too vague.

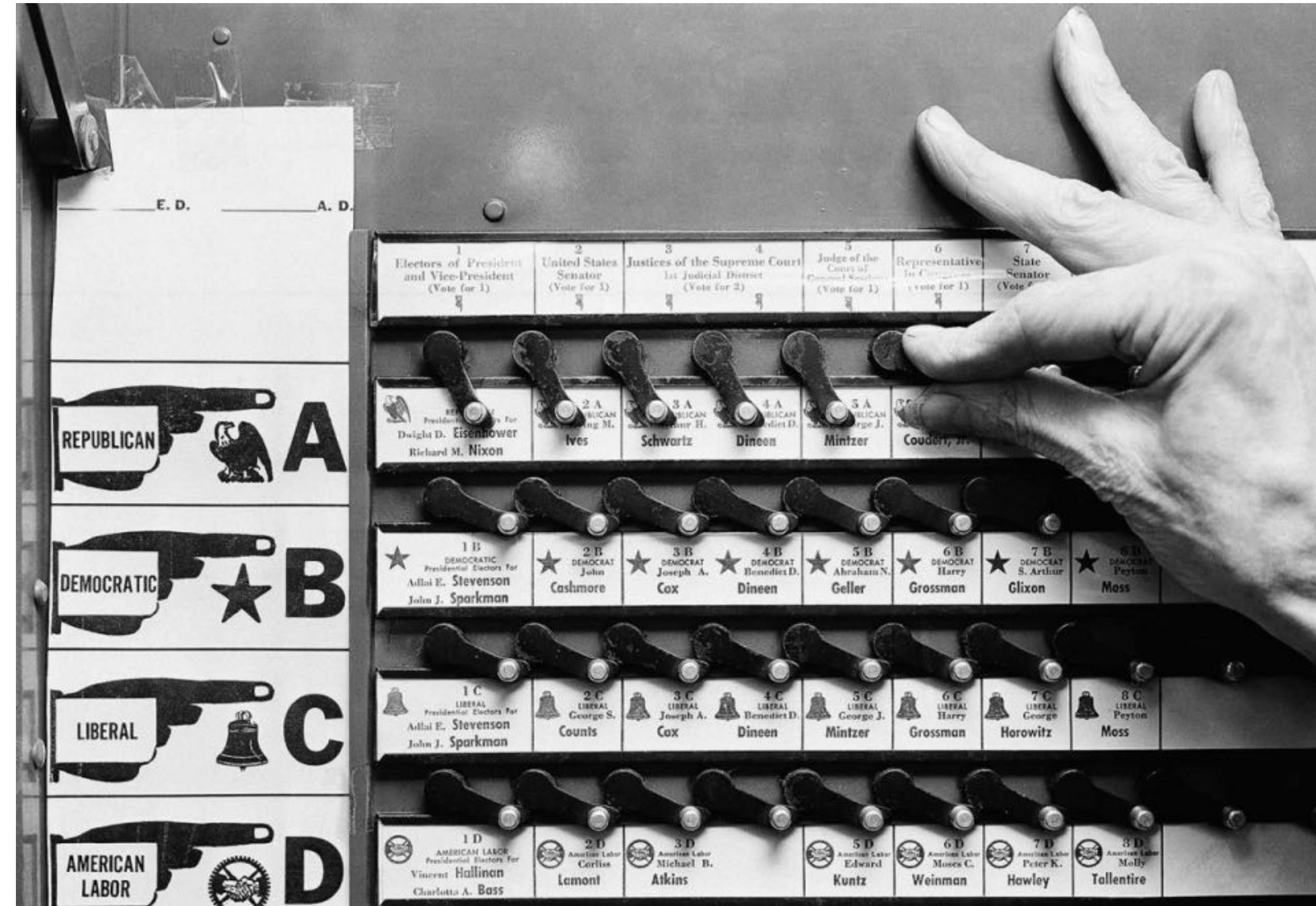


Where we're at

- Concepts
 - tabular vs geospatial data
 - human/technological innovations in mapping
 - intertwining of classification, institutions, and policy
- Data sources
 - Decennial Census (PL94-171)
 - American Community Survey
 - SIPRI
- Data products
 - Python/Pandas dataframes, geodataframes
 - Histograms / bar plots
 - Pie charts (beware haters!)
 - Choropleths
 - Interactive/scrollable maps
 - Graphs (NetworkX)
 - Flowmaps

Over the next weeks, I will introduce new datasets (usually one per week) and bring in domain experts to discuss geospatial issues in their fields of specialization.

elections



New stakeholders

- Stakeholders are **election administrators**, **voters**, and **elected officials**
- Election administration is extremely decentralized in U.S.
- It's absolutely crucial that administrators (county clerks, etc) can accurately tell people where to go to vote

New data sources - state/local data

- Even good data departments can make messy shapes!
- Shapes may have to be cleaned and reconciled

New geounits - precincts

- Precincts are administrative geography — not made by the Census!
- These are the **level at which results are reported**, usually in 1-1 correspondence to polling places (where you actually go to vote)
- Control can be hyper-local, or sometimes made by successive intervention by different agencies — makes very messy units!
- e.g., **California** has a law that no more than 1000 registered voters can be assigned to a single precinct — this means that precincts must be split as they grow. Given exponential population growth, boundaries can change on a weekly basis.
- So to map election results over a decade onto common units, there's a major challenge of choosing an appropriate spatial snapshot and transferring data to those units

Example of the mess: CA election law

decisions are local

“map” and “description”
— no GIS requirement

no requirement that they fit
together to tile the county

no requirement that
changes are reported to the
state in digital format

cap of 1000 and
halving procedure

ELECTIONS CODE - ELEC

DIVISION 12. PREELECTION PROCEDURES [12000 - 12327] (Division 12 enacted by Stats. 1994, Ch. 920, Sec. 2.)

CHAPTER 3. Precincts [12200 - 12288] (Chapter 3 enacted by Stats. 1994, Ch. 920, Sec. 2.)

ARTICLE 2. Precinct Formation [12220 - 12225] (Article 2 repealed and added by Stats. 1996, Ch. 725, Sec. 6.)

12220. The elections official shall divide the jurisdiction into precincts and prepare detail maps or exterior descriptions thereof, or both, and as many copies as the elections official may determine. The county surveyor, if requested by an elections official, shall provide assistance to the elections official in the preparation of these maps or exterior descriptions. (Repealed and added by Stats. 1996, Ch. 725, Sec. 6. Effective January 1, 1997.)

12221. In any order establishing precincts, their boundaries shall be defined by reference to exterior descriptions or delineation thereof on a map or maps.

(Repealed and added by Stats. 1996, Ch. 725, Sec. 6. Effective January 1, 1997.)

12222. (a) No precinct shall be established so that its boundary crosses the boundary of any supervisorial district, congressional district, senatorial district, Assembly district, board of equalization district, judicial district, incorporated city, ward, or city council district.

(b) If, at any election, any precinct contains an insufficient number of qualified persons to make up a precinct board, the precinct may be consolidated with an adjoining precinct.

(Amended by Stats. 2012, Ch. 504, Sec. 1. (AB 2692) Effective January 1, 2013.)

12223. (a) Whenever a jurisdiction is divided into election precincts or whenever the boundary of an established precinct is changed or a new precinct is created, the precinct boundary shall be fixed in a manner so that the number of voters in the precinct does not exceed 1,000 on the 88th day prior to the day of election, unless otherwise provided by law.

(b) An elections official may subtract the number of permanent vote by mail voters, pursuant to Chapter 3 (commencing with Section 3200) of Division 3, from the total number of voters for purposes of complying with subdivision (a) if after subtracting the number of permanent vote by mail voters, the number of voters in the precinct does not exceed the percentage of nonpermanent vote by mail voters in the jurisdiction on the 88th day prior to the election multiplied by 1,000, unless otherwise provided by law.

(Amended by Stats. 2010, Ch. 111, Sec. 1. (SB 1342) Effective January 1, 2011. Section operative January 1, 2005, by its own provisions.)

12224. (a) At the discretion of the elections official, the voters of the precinct may be divided into two or more groups, as nearly equal as possible, and one precinct board appointed to serve each group. When the voters of a precinct are so divided, there may be one or more polling places and a ballot box for and a set of returns from each group.

(b) This section does not apply to elections conducted using vote centers.

(Amended by Stats. 2017, Ch. 806, Sec. 32. (SB 286) Effective January 1, 2018.)

Partial solution: VTDS

- The Census Bureau has a small team (of just 3-6 people) called the Redistricting Data Program — among their many tasks, they try to give a clean snapshot of precincts
- These are called **VTDS**, or **voting tabulation districts** (unfortunately you sometimes see them called “voting districts,” but that is confusing)
- They start by collecting precinct boundaries from the states in the year ending in 8 (so the last time this happened was 2018)
- Then they clean them up, rebuild them out of census blocks, make them fit together nicely and tile the state, and release them with the Decennial process

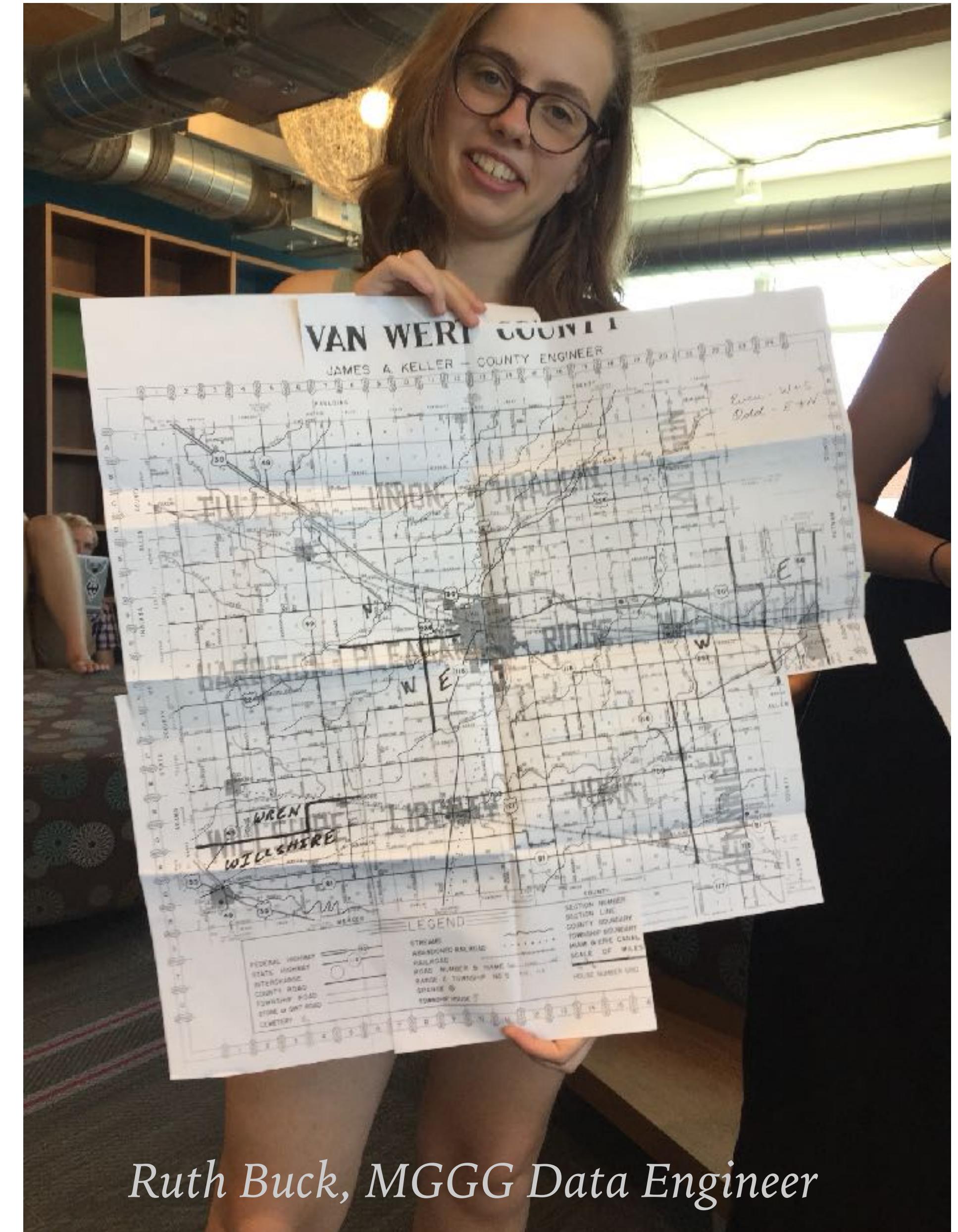
New data challenge + tool — **MAUP**

- There are many reasons that you need to do some inference in spatial statistics to move data from one set of units to another
- An important one is to join demographics (from the Census or from voter registration, on blocks/block groups/tracts) to election results (from the state, on precincts), or to move election results from the precincts from one timestamp to another
- Data+Democracy Lab has built a Python package called **MAUP** that helps!
 - **maup.assign** figures out what census blocks are inside a shape
 - **prorate** function lets you break down data according to population of the blocks
- Note this is an example of naming the tool after the “problem” it is trying to solve

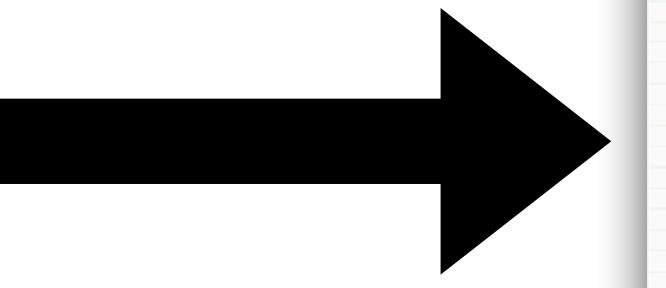
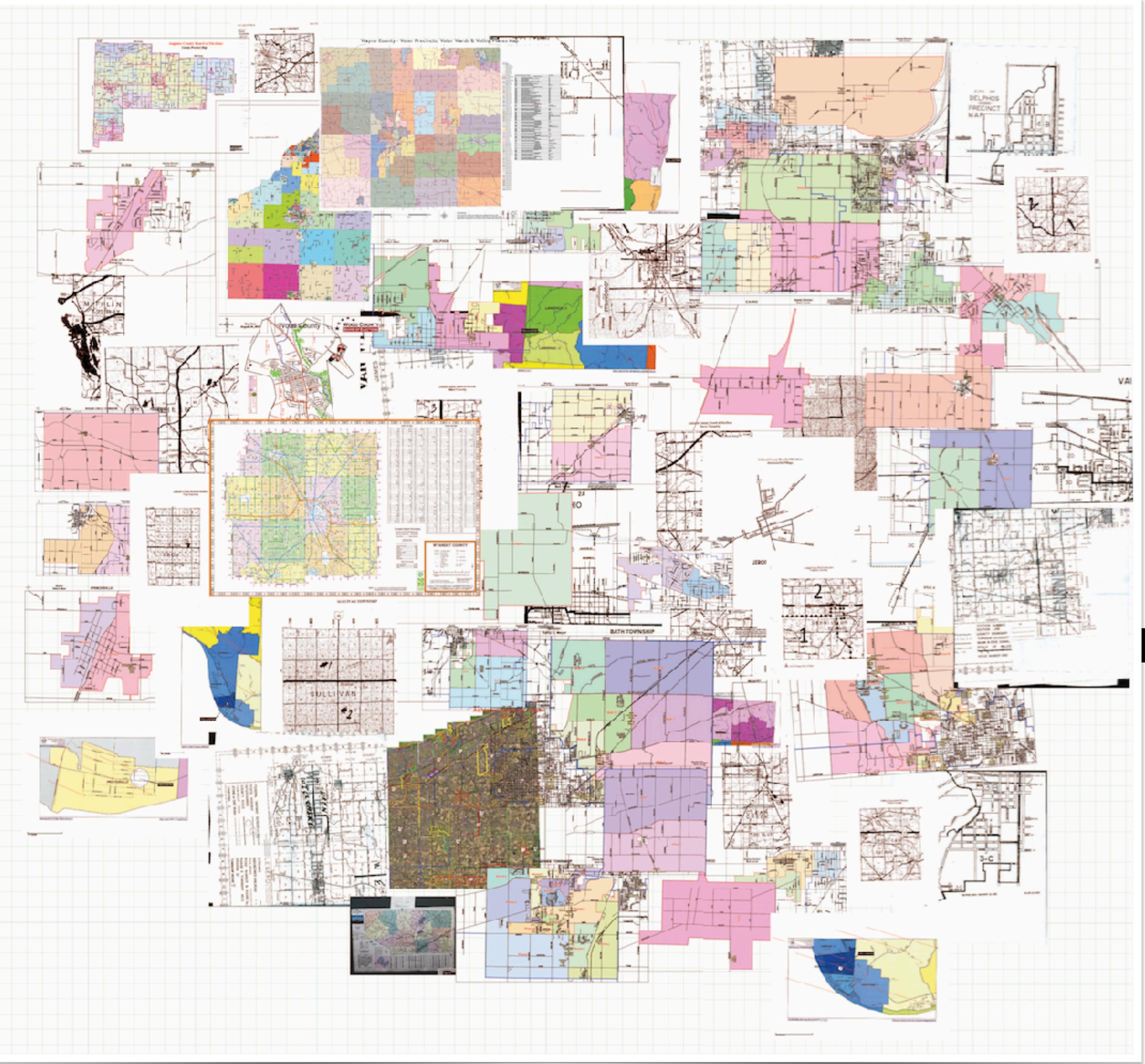
Example: mapping Ohio

In Voting Rights Data Institute 2018,
we called all 88 counties in Ohio to
ask the simple question: **where are
your precincts?**

- 46 counties had shapefiles
- 27 counties had PDF maps
- 8 counties sent paper maps ↗
- 7 had nothing



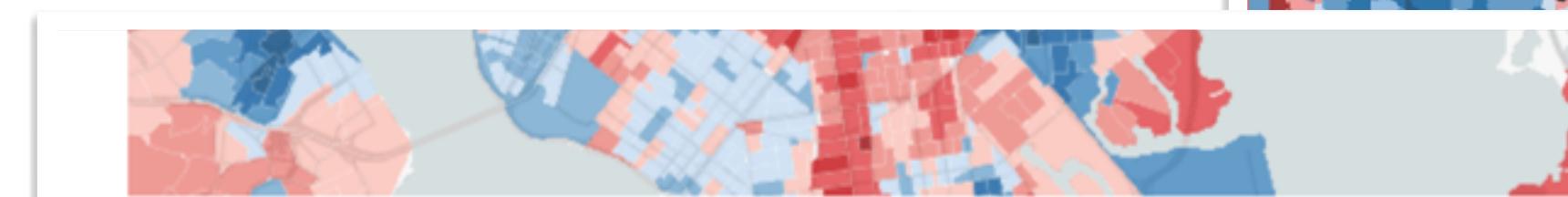
collecting, digitizing, aligning, and using voter file inference to fill in missing data was over 400 person-hours of work



we turned this into an art exhibit at Tufts

Example: Shady NYTimes

- NYT claimed to have a precinct-level map of the 2016 election for the whole country (cool feature tho! — see [link](#))
- In the small print, they sourced the entire data collection to one graduate student



The precinct-level data was compiled by [Ryne Rohla](#), a doctoral student at Washington State University, who obtained it from government websites and election officials. Because these results are not standardized within a state or sometimes even within a county, the vote totals do not perfectly match official tallies. About 3 percent of the

