In The News

- On Saturday New Mexico’s state legislature passed the creation of an advisory redistricting commission
  - Passed almost unanimously (state government is 2/3 Dem.)
- 7 citizen members
  - 2 D / 2 R / 2 I + retired state judge serving as chair
- 12 public meetings (6 before and after drawing plans)
- Not allowed to use partisan data during process
- Not allowed to use candidate addresses except to avoid pairing incumbents
- Commission will send 3 proposals for each map to legislature for consideration which can be used, adopted, or ignored
Racial Gerrymandering
14th Amendment (1868)

• Equal Protection Clause
  “No state shall deny to any person the equal protection of the laws”
• Applied to voting districts
  “This Clause prohibits a state from separating its citizens into different voting districts on the basis of race”
• Racial gerrymandering
  The deliberate distortion of district boundaries for racial purposes
Challenges under 14th Amendment

- To have standing, need to live in a racially gerrymandered district
- Race as a consideration does not imply racial gerrymandering
- Cases must look at individual districts, not state as a whole
- Need to show race was the predominant factor in district boundaries
  - Oddly shaped districts (low compactness)
  - Direct evidence from people involved in redistricting
  - Use of racial and voting data in the technology
15th Amendment (1870)

- Jim Crow era – literacy tests, poll taxes, state constitution tests, harassment, intimidation, violence, etc.

“The right of citizens of the United States to vote shall not be denied by the United States or by any State on the basis of race, color, or previous condition of servitude.”

- It’s one thing to enact a law but it’s another to enforce it
- 95 years later we get the Voting Rights Act
Voting Rights Act of 1965

- VRA: State and local governments cannot pass voting laws that discriminate against racial or language minorities
- Vote denial – minorities denied opportunity to vote
- Vote dilution – laws dilute strength of minority votes
  
  “diminish ability to elect their candidate(s) of choice”
- (Section 5) Federal oversight – for states with history of discrimination, need to submit any changes in voting laws/procedures to U.S. government
  - Includes redistricting plans
Shelby County v. Holder (2013)

• (Section 5) Federal oversight – for states with history of discrimination, need to submit any changes in voting laws/procedures to U.S. government

• Supreme Court ruled that the criteria for determining states with history of discrimination was out of date (despite evidence that this federal oversight was effective in preventing racial discrimination in voting)
  • States no longer need to adhere to preclearance (federal oversight guidelines)

• Higher potential risk for discriminatory maps this redistricting cycle
  • Loss of Section 5 of Voting Rights Act
  • Expedited drawing processes (pandemic) and less time for legal challenges
Voting Rights Act Challenges

• Vote dilution – laws dilute strength of minority votes
  • “diminish ability to elect their candidate(s) of choice”
  • “dispersal of minorities into districts in which they constitute an ineffective minority of voters or concentrated into districts in which they constitute an excessive majority”
    (aka packing and cracking)

• Evidence of racially polarized voting

• Evidence of other discriminatory voting practices or other areas that hinder effective democratic participation
Thornburg v. Gingles (1986)

Established a test for claims of (racial) vote dilution preventing racial minority groups from electing “candidates of choice”:

• A racial minority group forms a numerical majority of voting-age population in a compact area

• Minority group is “politically cohesive” – vote similarly

• Majority group votes similarly to defeat minority's preferred candidate

If all these conditions are met, then there is required to be a Majority–Minority district in that area

• Majority of the population is of a minority race, ethnic, or language group
Racially Polarized Voting

1) Is it possible to draw a geographically compact district that includes the majority of the racial or language minority’s members?

2) Does the racial or language minority tend to vote as a bloc and back the same preferred candidate?

3) Does the remaining population also generally vote as a bloc and in doing so defeat the candidate backed by the racial or language minority?
Racially Polarized Voting

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View demographic maps such as Connecticut
Racially Polarized Voting

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Requires some statistical analysis
Hypothetical example

Suppose a city has 60% ★ voters and 40% ♦ voters.

The racial makeup of the city is 55% White and 45% non-White.

In the most recent election, ★ wins every district and local activists are prepared to file a lawsuit for dilution of minority votes under the Voting Rights Act of 1965, but to have a legitimate case they need to show evidence that Whites vote in bloc for ★ and that non-Whites vote in bloc for ♦.

Keep in mind that individual votes are always “secret”, so we can only use group totals to infer voting patterns of different groups.
## Hypothetical example

<table>
<thead>
<tr>
<th></th>
<th>★ voters</th>
<th>♦ voters</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>White voters</td>
<td>??</td>
<td>??</td>
<td>55</td>
</tr>
<tr>
<td>Non-white voters</td>
<td>??</td>
<td>??</td>
<td>45</td>
</tr>
<tr>
<td>Totals</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>
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<table>
<thead>
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<th>♦ voters</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>White voters</td>
<td>??</td>
<td>??</td>
<td>55</td>
</tr>
<tr>
<td>Non-white voters</td>
<td>??</td>
<td>??</td>
<td>45</td>
</tr>
<tr>
<td>Totals</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>
## Hypothetical example

<table>
<thead>
<tr>
<th></th>
<th>★ Voters</th>
<th>♦ Voters</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>White voters</td>
<td>45</td>
<td>10</td>
<td>55</td>
</tr>
<tr>
<td>Non-white voters</td>
<td>15</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>Totals</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

- \( \frac{45}{55} = 82\% \)
- \( \frac{15}{45} = 33\% \)
## Hypothetical example

<table>
<thead>
<tr>
<th></th>
<th>★ voters</th>
<th>♦ voters</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>White voters</td>
<td>30</td>
<td>25</td>
<td>55</td>
</tr>
<tr>
<td>Non-white voters</td>
<td>30</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>Totals</td>
<td>60</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

- \( \frac{30}{55} = 55\% \)
- \( \frac{30}{45} = 67\% \)
Ecological Inference

“Ecological inference is the process of using aggregate (historically called “ecological”) data to draw conclusions about individual-level behavior when no individual-level data are available. The fundamental difficulty with such inferences is that many different possible relationships at the individual level can generate the same observation at the aggregate level.”

Relevant methods:

• Homogeneous precincts
• Scatterplots and regression lines
• Confidence intervals
Homogeneous Precincts

Suppose there was a voting precinct in which 90% of voters are White and 95% of votes were for ⚫.

<table>
<thead>
<tr>
<th></th>
<th>★ voters</th>
<th>♦ voters</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>White voters</td>
<td>??</td>
<td>??</td>
<td>90</td>
</tr>
<tr>
<td>Non-white voters</td>
<td>??</td>
<td>??</td>
<td>10</td>
</tr>
<tr>
<td>Totals</td>
<td>95</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>
Homogeneous Precincts

Suppose there was a voting precinct in which 90% of voters are White and 95% of votes were for ★.

<table>
<thead>
<tr>
<th></th>
<th>★ voters</th>
<th>♦ voters</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>White voters</td>
<td>85-90</td>
<td>0-5</td>
<td>90</td>
</tr>
<tr>
<td>Non-white voters</td>
<td>5-10</td>
<td>0-5</td>
<td>10</td>
</tr>
<tr>
<td>Totals</td>
<td>95</td>
<td>5</td>
<td>100</td>
</tr>
</tbody>
</table>

\[
\frac{85}{90} = 94%+
\]
Ecological Inference

Analyzing districts where a high percentage of voters are of the same race can give valuable information about the voting patterns of the different races. (One potential downside is the assumption that people in racially dominant areas vote the same as people in racially mixed areas.)

This is the first step in detecting potential Racially Polarized Voting. We should also look at a scatterplot of:

% of a racial group in each precinct vs. % of ★ votes in each precinct
Hypothetical example

The table at right shows hypothetical data from the 15 voting precincts in the town.

For each precinct, the % of White voters and the % of votes for ★ are shown.

Each of these pairs will become a \((x, y)\) coordinate point on a scatterplot.

<table>
<thead>
<tr>
<th>Precinct</th>
<th>% White</th>
<th>% ★</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>80</td>
<td>72</td>
</tr>
<tr>
<td>2</td>
<td>45</td>
<td>55</td>
</tr>
<tr>
<td>3</td>
<td>64</td>
<td>69</td>
</tr>
<tr>
<td>4</td>
<td>78</td>
<td>65</td>
</tr>
<tr>
<td>5</td>
<td>50</td>
<td>47</td>
</tr>
<tr>
<td>6</td>
<td>59</td>
<td>57</td>
</tr>
<tr>
<td>7</td>
<td>61</td>
<td>62</td>
</tr>
<tr>
<td>8</td>
<td>35</td>
<td>46</td>
</tr>
<tr>
<td>9</td>
<td>41</td>
<td>52</td>
</tr>
<tr>
<td>10</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>11</td>
<td>52</td>
<td>60</td>
</tr>
<tr>
<td>12</td>
<td>28</td>
<td>42</td>
</tr>
<tr>
<td>13</td>
<td>46</td>
<td>60</td>
</tr>
<tr>
<td>14</td>
<td>37</td>
<td>45</td>
</tr>
<tr>
<td>15</td>
<td>55</td>
<td>60</td>
</tr>
</tbody>
</table>
\[ y = 0.6003x + 24.718 \]

\[ R^2 = 0.8193 \]
Regression Line

How do we interpret the equation of the regression line?

*Also called “line of best fit” – a regression line is the line that minimizes the total distance from the points to the line*

In our example we got $y = 0.6x + 24.7$ or using the variables:

$(\% \text{ of votes for } \star) = 0.6 (\% \text{ of White voters}) + 24.7$

This can be used to predict the voting patterns of each group!
Regression Line

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\[(\% \text{ of votes for } \star) = 0.6 \times (\% \text{ of White voters}) + 24.7\]

This can be used to predict the voting patterns of each group!

If a precinct is 0\% White, then \% of \star votes $= 0.6 (0) + 24.7 = 24.7\%$

If a precinct is 100\% White, then \% of \star votes $= 0.6 (100) + 24.7 = 84.7\%$

*Note*: Prediction only accurate for values within range of data, extrapolation can lead to illogical conclusions.
Correlation

Correlation coefficient – a measure of the strength of a linear relationship between two variables (denoted by $r$)

- $r$ can only be between -1 and 1
  - Negative values mean line of best fit has negative slope
- Closer to zero means weak/no linear relationship
- Closer to 1 or -1 means strong linear relationship
- In redistricting cases, $r > 0.7$ ($r^2 > 0.5$) has been used as benchmark for significant linear relationship
Combining information from homogeneous districts and the ecological regression line, confidence intervals can be created to estimate (with error):

• The % of White voters who prefer ★
• The % of non-White voters who prefer ★

If there is no overlap between these confidence intervals, then that is significant evidence that there is a difference in voting patterns between the two racial groups!
Hypothetical example

Suppose in our example the confidence intervals are shown in the graphical display below. The yellow box represents the interval predicting the % of White voters who prefer ★ and the blue box represents the interval predicting the % of non-White voters who prefer ★.

There is enough evidence for a Voting Rights Act lawsuit!
Fortunately, we have tools to help us perform these analyses – it’s up to us to provide the data and know how to interpret the results.

- **Microsoft Excel** – scatterplots and regression lines
- **Ecological Inference App** – an online tool made specifically for this purpose
  Need to upload and categorize data and then all results will be provided

We will explore both with sample data from Waterbury, CT.
(Download file on Moodle)
Putting the Pieces Together

To make the strongest case for racial gerrymandering, you should show:

• That you can draw a majority-minority district that is compact
• That there is a significant difference in preferred candidate by racial group
• Spatial data – maps that show location of minority group(s) and location of votes for each candidate*

(*In real life, demographic data from Census doesn't match up exactly to voting precincts)
Main Question

How do we balance the competing goals of minority representation within a district vs. minority representation across all districts of a state?

How can we measure racial gerrymandering, especially among other redistricting criteria such as communities of interest?
Case Study Assignment

As a class, we will investigate 10 different court cases involving claims of racial gerrymandering.

Each of you will have a court case and write a 1-page summary of the case and as a pair you will create 2-3 slides to present for class on Thursday.