Spatial Dimensions of Political Representation:
Understanding Gerrymandering Through GIS

Benjamin Forest
Dartmouth College &
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NW stiffed on energy bill aid

Federal money | Oregon and Washington say they need relief, too; it's not just for states with extreme weather

By GAIL KINSEY HILL THE OREGONIAN

The U.S. Department of Health and Human Services released an extra $1 billion this spring to help low-income Americans pay home heating and cooling bills pushed to record levels by scaring energy prices.

The move was almost universally applauded, as states welcomed millions of additional dollars for their poorest residents. But there were no cheers in Oregon or Washington. To the dismay of state officials and social service agencies, the two states were virtually ignored, bypassed by distribution formulas that favored areas with more extreme temperatures.

Oregon and Washington received $280,430 and $461,288, respectively, in supplemental grants — 1.1 percent of their allocations under the initial grant for fiscal 2006. Other states received anywhere from an extra 17 percent to 86 percent of their first-round allotments.

"It was absolutely ridiculous," said Jim Abrahamson, a coordinator for Community Action Directors of Oregon, a statewide association of community service organizations."We need to right this wrong."

The predicament means community service organizations in the two states have no extra money to help low-income households pay utility bills and keep the power on.

Grounded | Record-breaking rain in Northeast
Gerrymandering

The manipulation of election districts boundaries to “unfairly” reduce or enhance the political power of a ethnic/racial group or political party.

• What is “unfair”?
“Fair” vs. “Unfair” Redistricting

Many possible election districts

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Redistricting: How?

- Districts are composed of *Census tracts and Census blocks*
- Census tracts = ~4300 people (National average)
- Census blocks = ~33 people (National average)
Redistricting: How?

• Redistricting is like a jigsaw puzzle…

16 Census tracts \rightarrow 2 Districts
…a jigsaw puzzle with many solutions
Redistricting Houston: Group exercise

**Active learning:** Students create districting plans

**GIS:** ArcMap with Redistricting extension

**Data:** Census and political data

**Spatial thinking:**

- The *same* voting pattern produces *different* results

- *Different* political goals require *different* spatial boundaries

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Redistricting Houston

Six groups
• 2 partisan
• 2 racial/ethnic
• 1 “anti-factional” (homogeneous)
• 1 incumbent protection

Create a plan with six new districts
Redistricting Houston

Goals:

• Population equality
• Voting Rights Act requirements
• Political objectives
Redistricting Houston

Initial Districts

• 3 Republicans
• 3 Democrats
• 2 Anglo-majority
• 4 open to interpretation
Redistricting Houston

Democratic plan

Republican plan

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“Anti-factional” (Homogeneous) plan

Incumbent protection plan*

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Redistricting Houston

Results:

• Flexibility and limits of gerrymandering

• Spatial relationships among party and ethnicity/race
New Project:
Political Representation and Sovereignty in Quebec

• Adapt redistricting exercise to Quebec

• CSISS/SPACE Instructional Development Award
New Project: Political Representation and Sovereignty in Quebec

• Linguistic, not racial/ethnic division

• Federalist vs. Sovereigntist

• Five major parties

• Up to 25% population deviation

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Representation in Quebec

Federal “ridings” (districts)

Quebec

Montreal

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Representation in Quebec
Part I

Redistrict Montreal

• 1/3 Anglophone (English)
• 2/3 Francophone (French)

Develop *predictive* models

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Representation in Quebec
Part II

Quebec “national” boundaries?

• Separate Federalist from Sovereigntyist voters

Evaluate different boundaries
Thank you!