Volunteering in the US

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Outline

Charity in the United States

Project + Dataset

Visualization Techniques

Demo

Future Directions

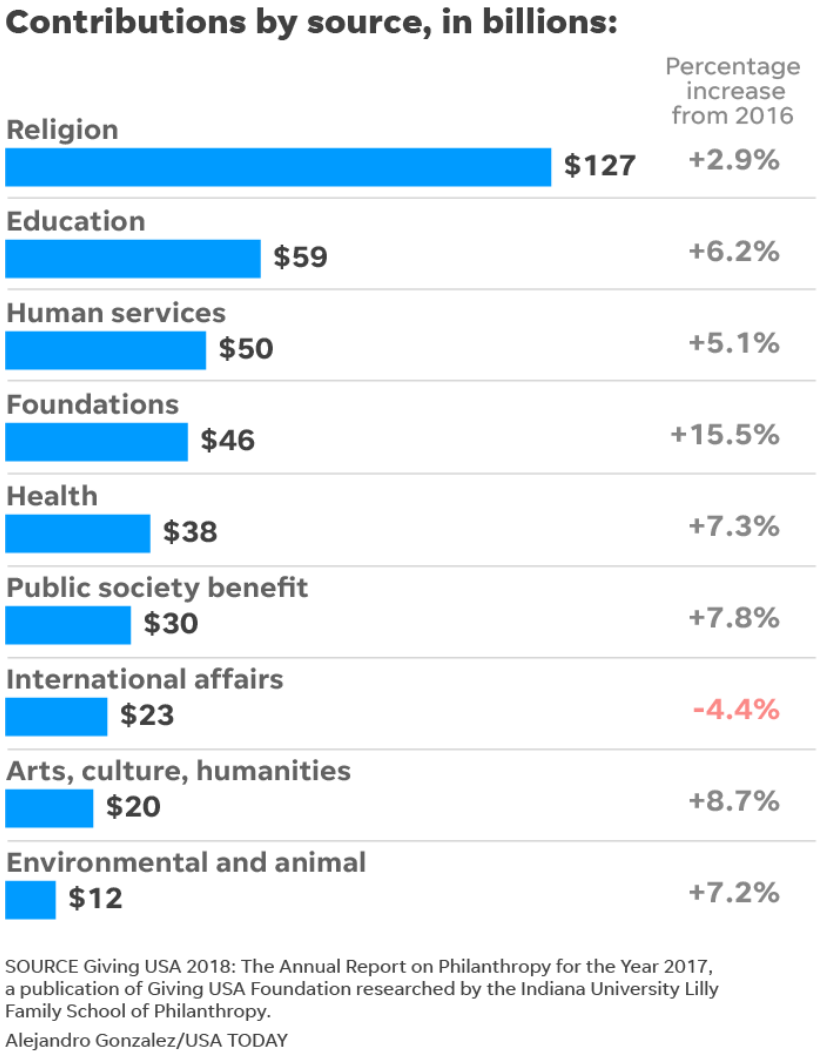
Charity by the Numbers

Donations (2017)

- $410 billion
  - Individuals (70%)
  - Foundations (16%)
  - Bequests (9%)
  - Corporations (5%)

General decline in % giving

- 66% (2000) to 55% (2014)
- Nonprofits shifting focus towards wealthier donors



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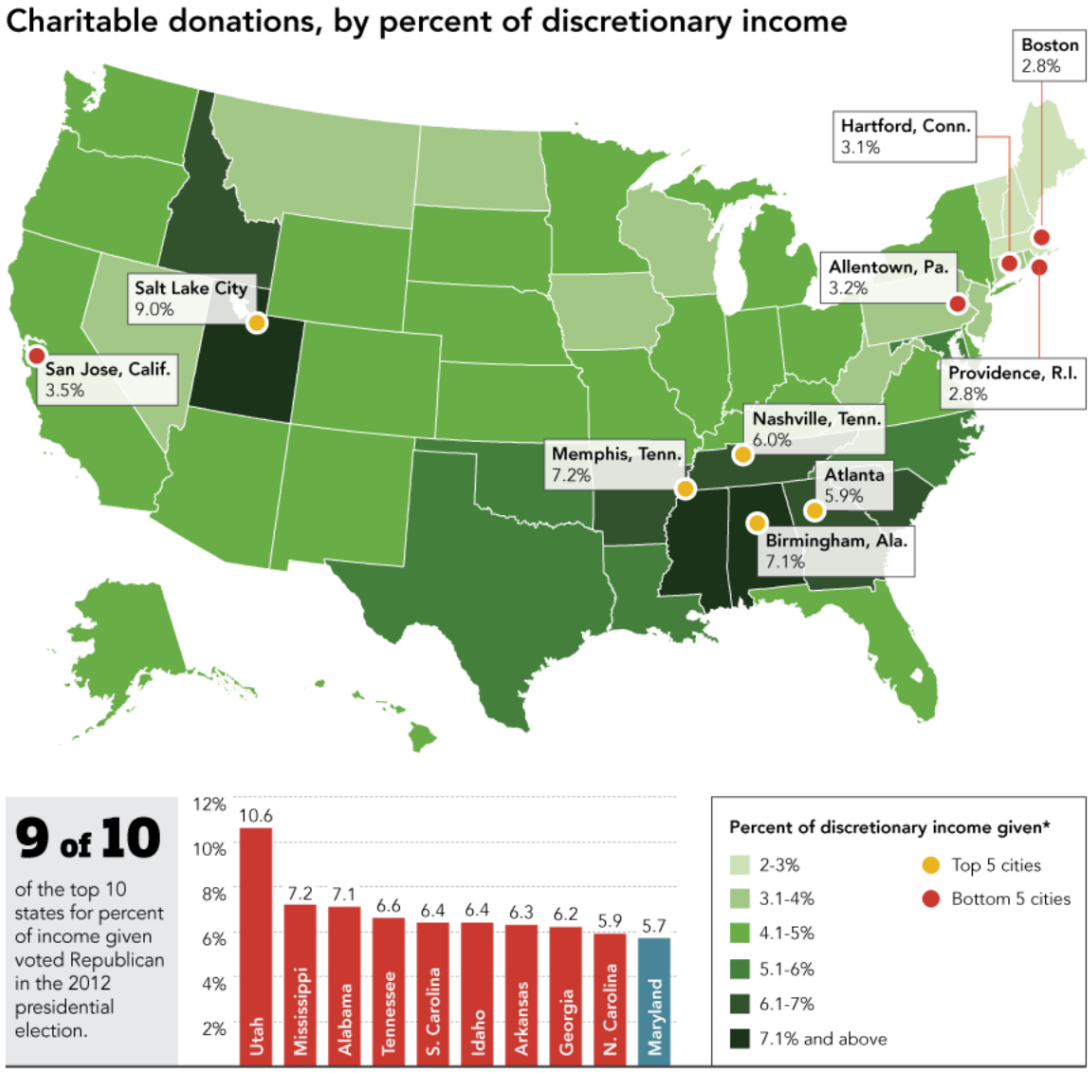

Charity by the Numbers

Volunteering (2017)

- 30% of adults
- 6.9 billion hours
    - $167 billion

Compared with 2015

- 25% of adults
- 7.9 billion hours
    - $184 billion

Demographic	Volunteer Rate (%)
Men	26.5
Women	33.8

Demographic	Volunteer Rate (%)
Generation Y	26.1
Millennials	28.2
Generation X	36.4
Baby Boomers	30.7
Silent Generation	24.8

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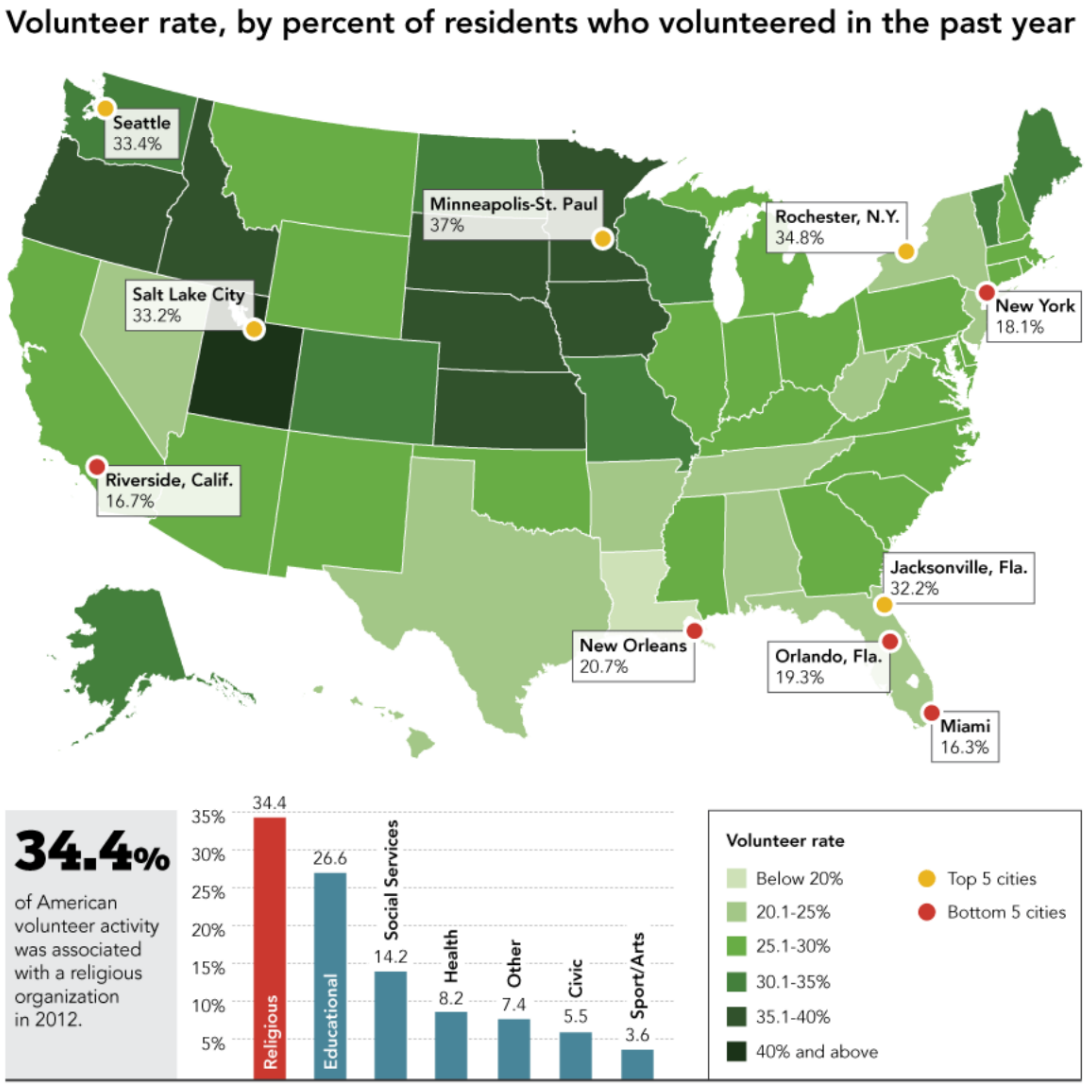


Project

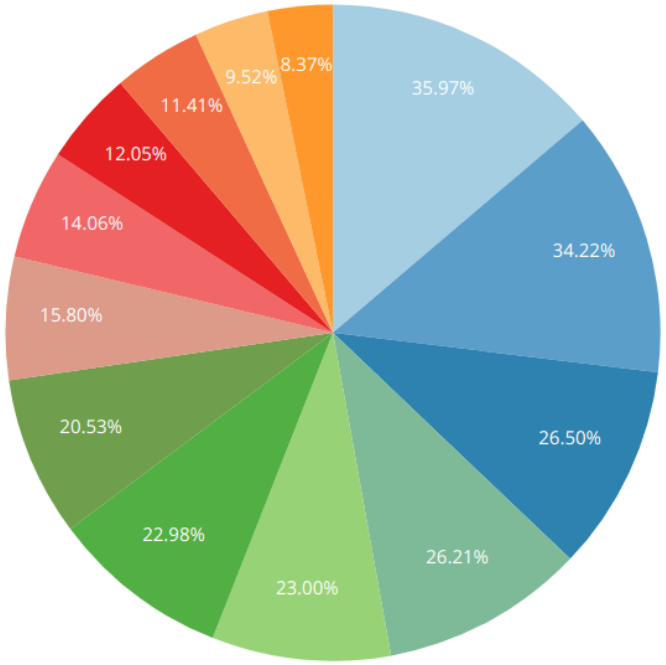
Volunteering

- Organizations, Activities
- Spatial Distribution
- Demographic Factors

Dataset

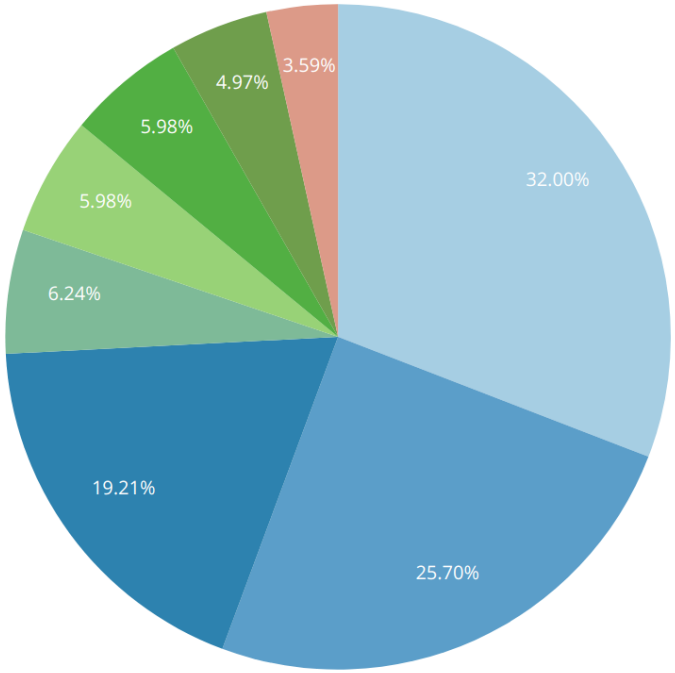
- Volunteering and Civic Life in America
  - **State** / Metropolitan Statistical Area
  - 2017 Dataset
- Survey
  - ~60,000 Household / ~100,000 individuals
  - Response / Sampling Bias

Activities



- Fundraise or sell items to raise money?
- Collect, prepare, distribute, or serve food?
- Collect, make or distribute clothing, crafts, or goods other than food?
- Mentor youth?
- Tutor or teach?
- Engage in general labor; supply transportation for people?
- Provide professional or management assistance including serving on a board or committee?
- Usher, greeter, or minister?
- Engage in music, performance, or other artistic activities?
- Coach, referee, or supervise sports teams?
- Provide general office services?
- Provide counseling, medical care, fire/EMS, or protective services?
- (Other)

Organizations



- Religious
- Sport, hobby, cultural or arts
- Educational or youth service
- Civic, political, professional or international
- Hospital or other health
- Public safety
- Environmental or animal care
- Other
- (Other)

@National Level

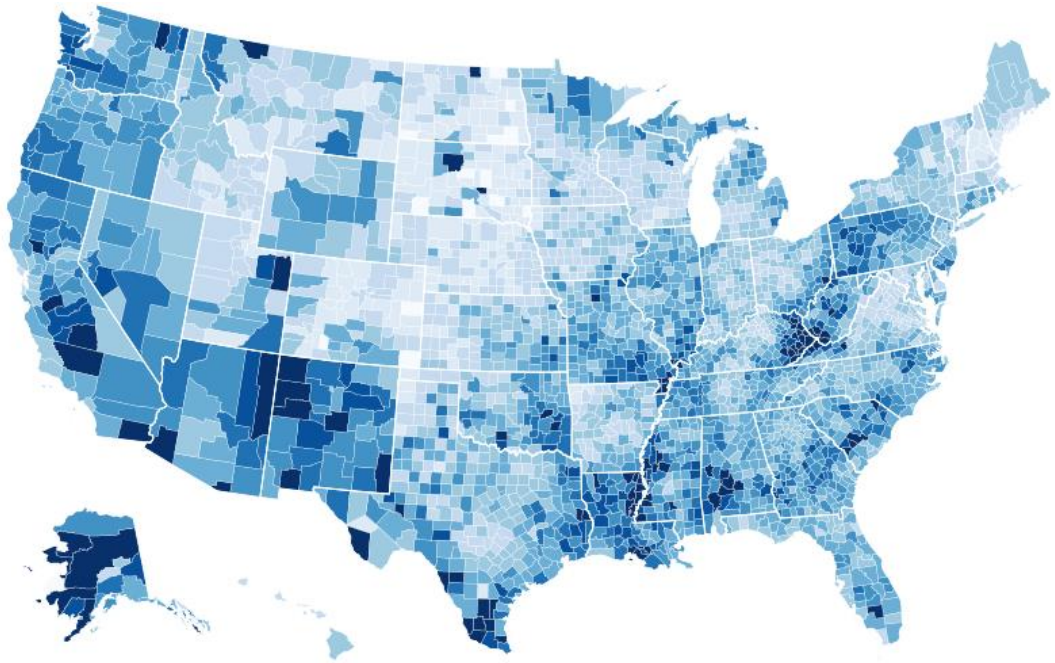
Visualization Techniques

Task

- Show the spatial distribution of volunteer rates across the US at the state level

Choropleth Mapping

- Univariate
  - Volunteer Activity / Organization
- Bivariate
  - Volunteer Types
  - Demographic vs. Volunteer ✓



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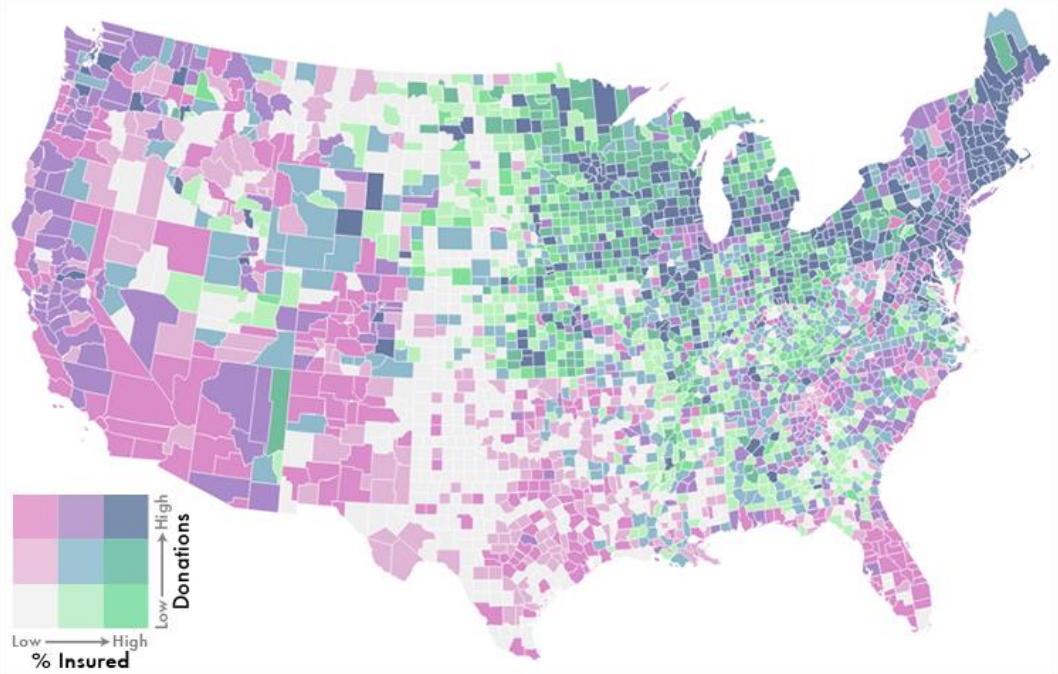


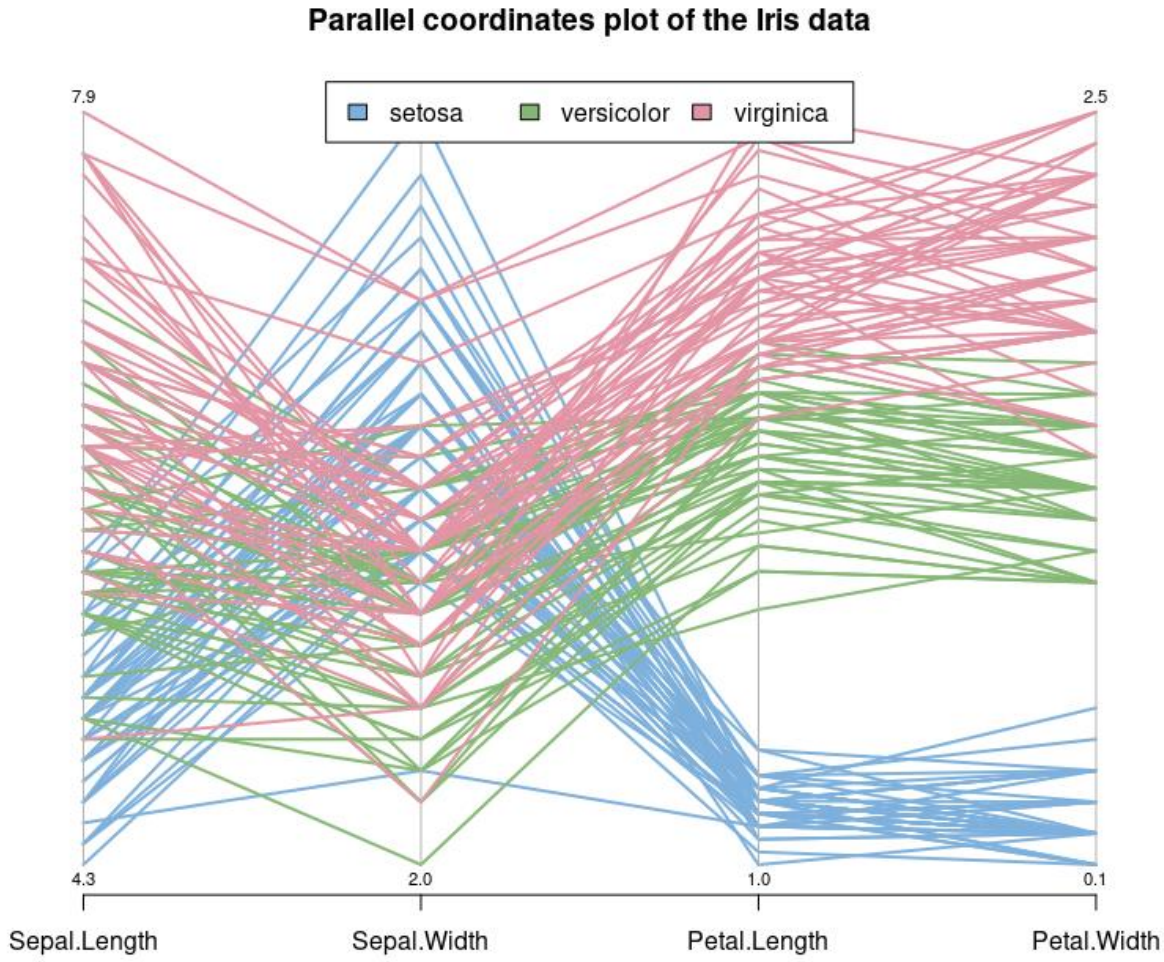
Visualization Techniques

Task

- Show how the volunteer rates are distributed among the different activities & organizations

Options

- Parallel Coordinate Plot
- Pie Chart
- Radar Chart



Visualization Techniques

Pie Chart

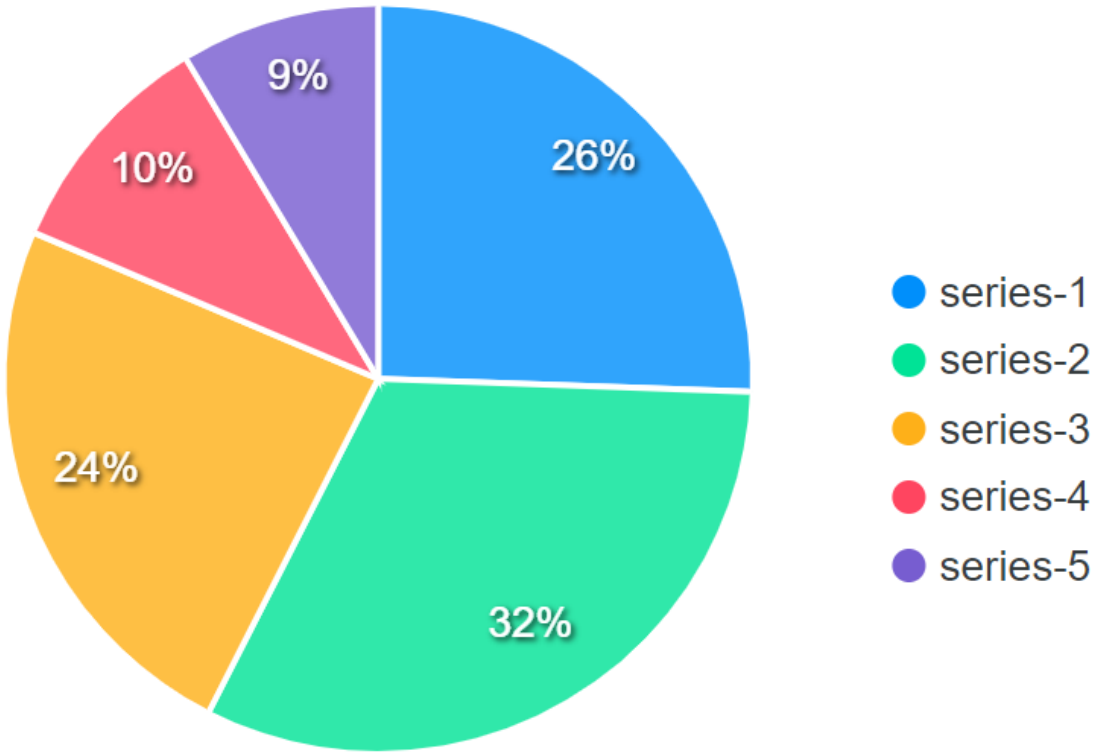
- Limited to a single state at a time
- Activities don't add up to 100%

Parallel Coordinate Plot

- Did in lab
- Compare across states (cluttered)

Radar Chart ✓

- Plot all state data
- Highlight indicated state



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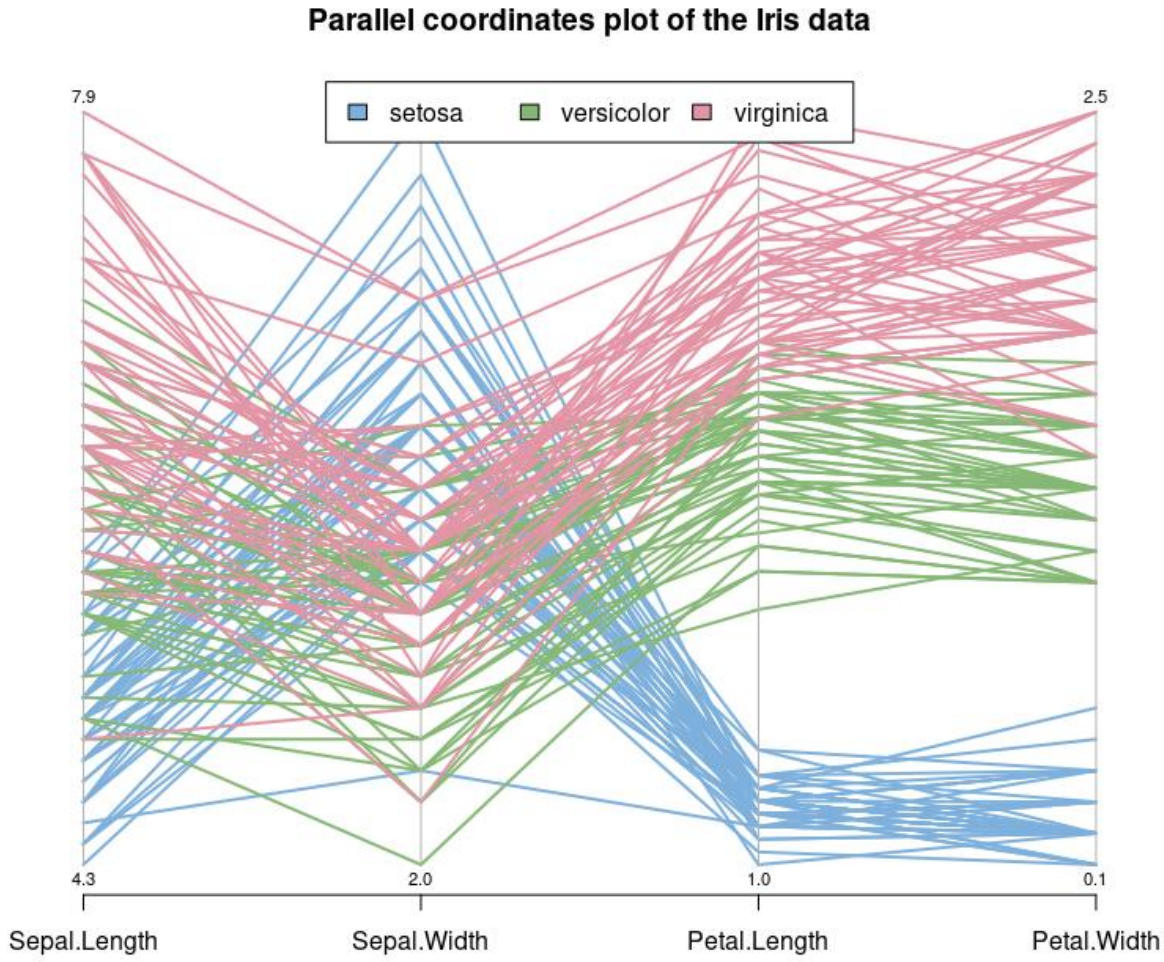

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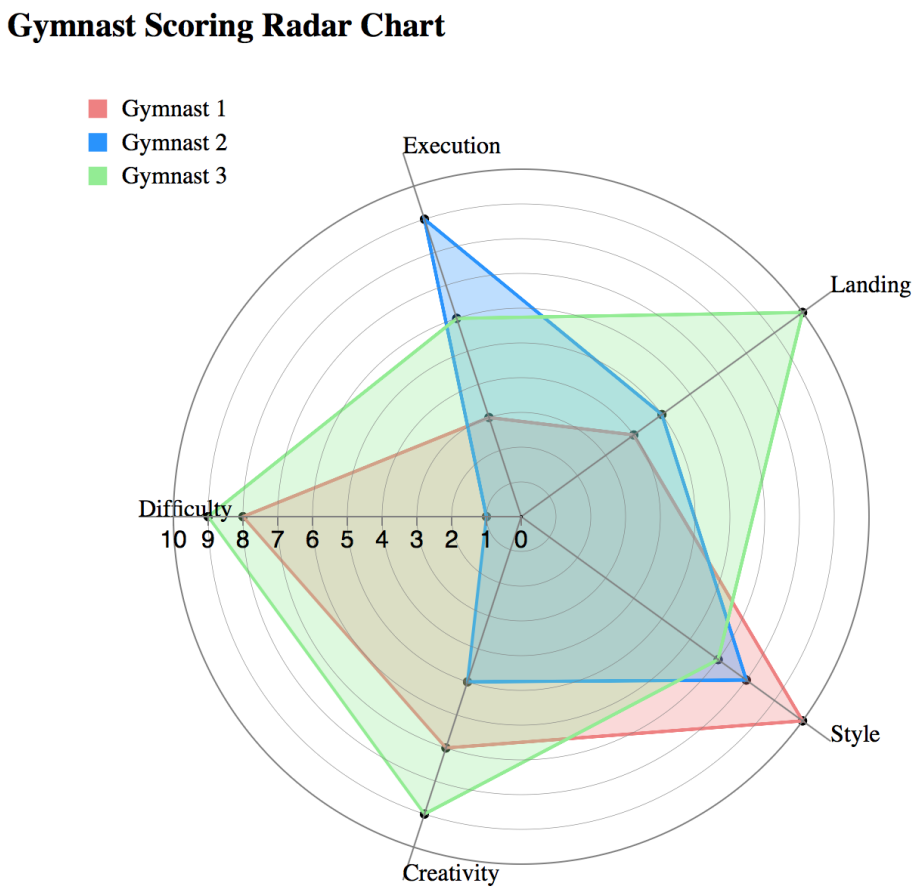


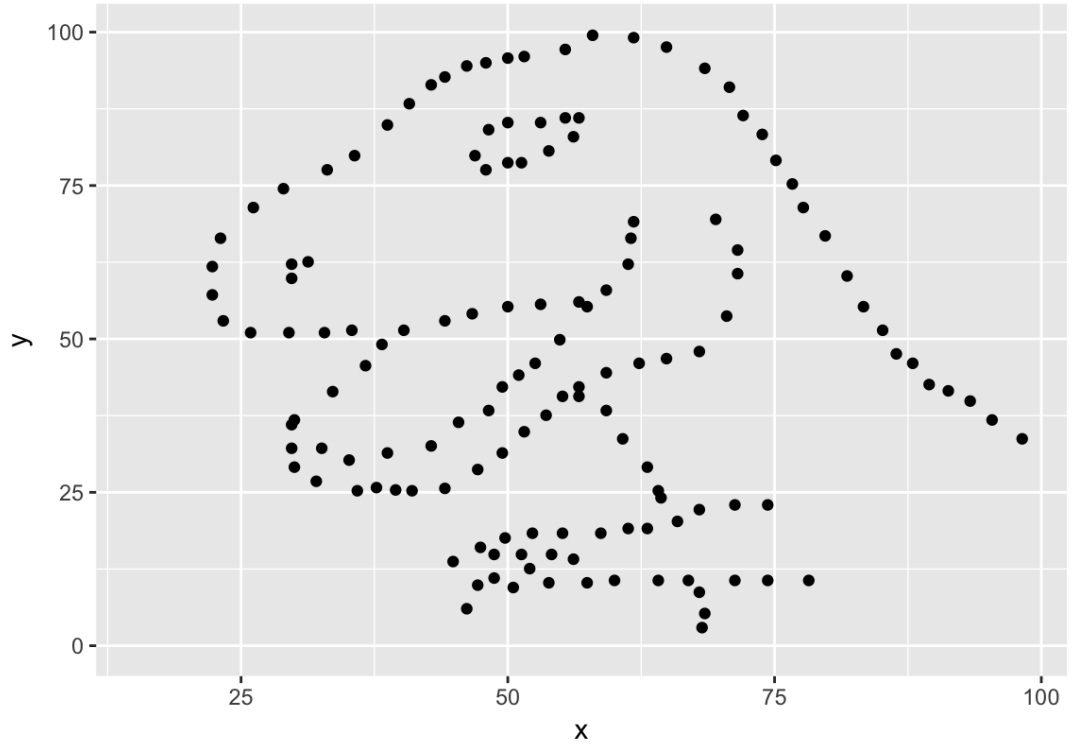
Visualization Techniques

Task

- Show the relationship between the demographic variable and the volunteer rate

Scatterplot

- x = Demographic Variable
- y = Volunteer Rate



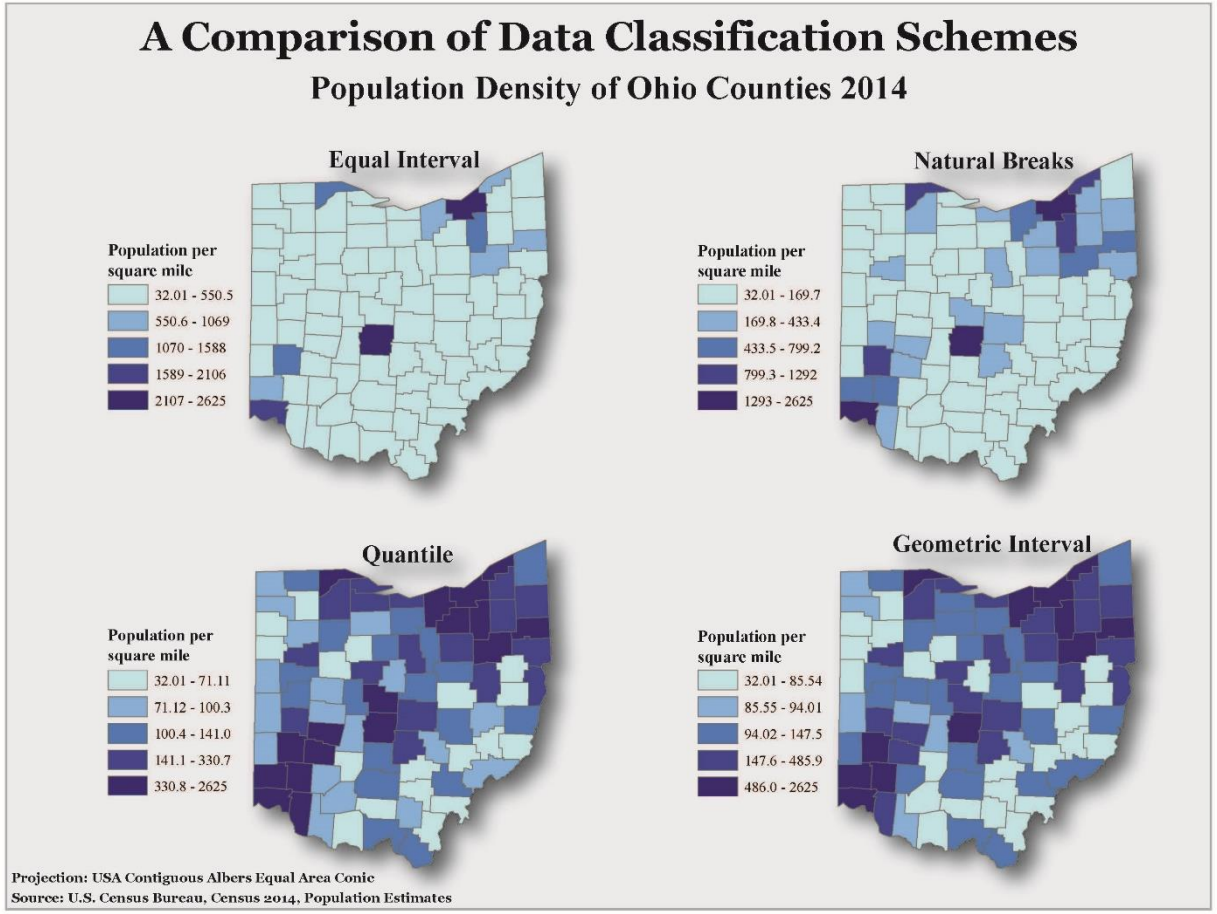

DEMO

Future Directions

Choropleth Maps

Option to choose breaks, e.g.

- Equal Interval
- Quantile
- Natural
- Manual



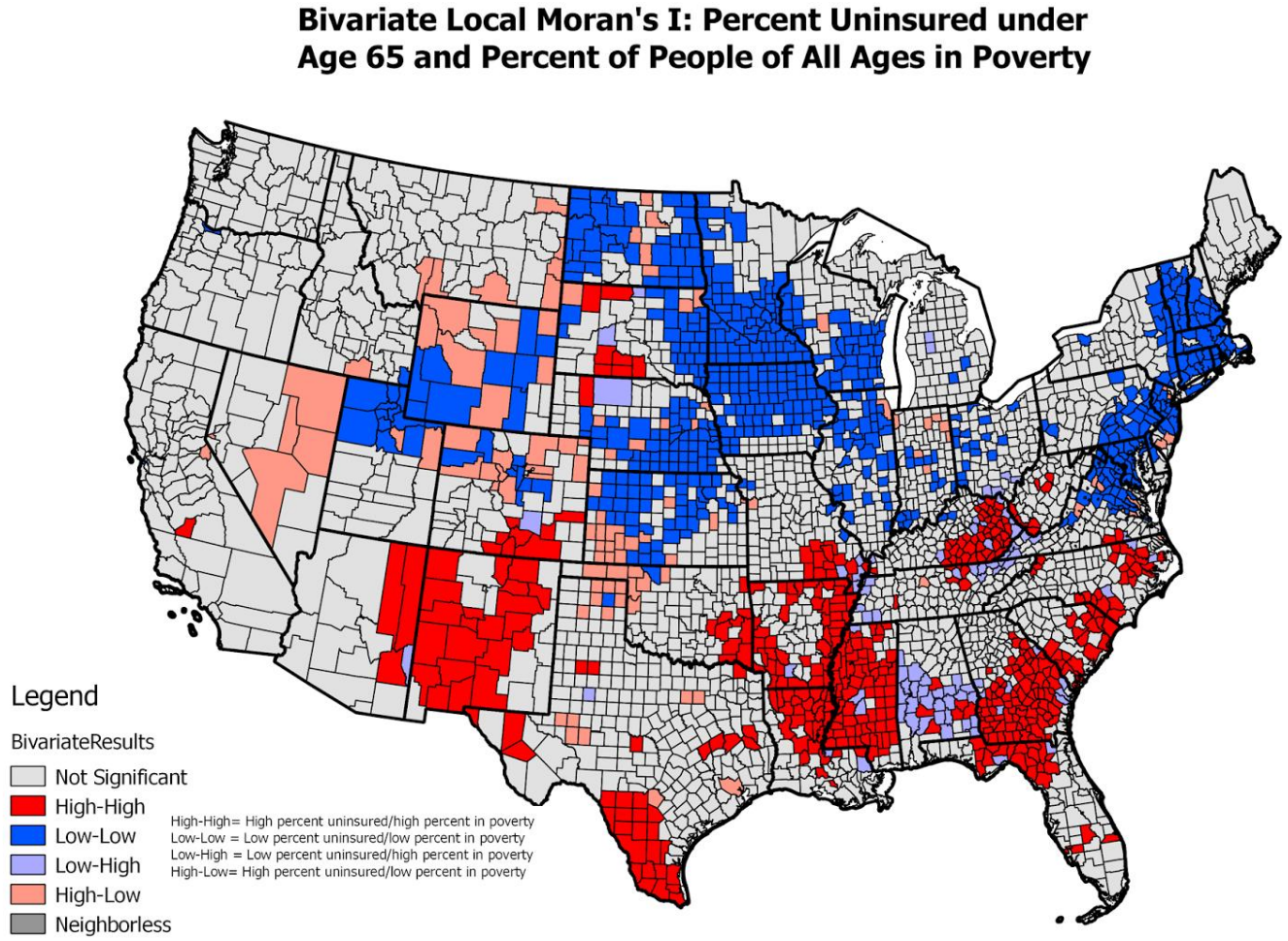
Future Directions

Local Moran's I

Identifies spatial outliers

Issues

- Tedious in ArcMap
  - Map for each activity / organization
  - Join state names
  - Python scripting?



Future Directions

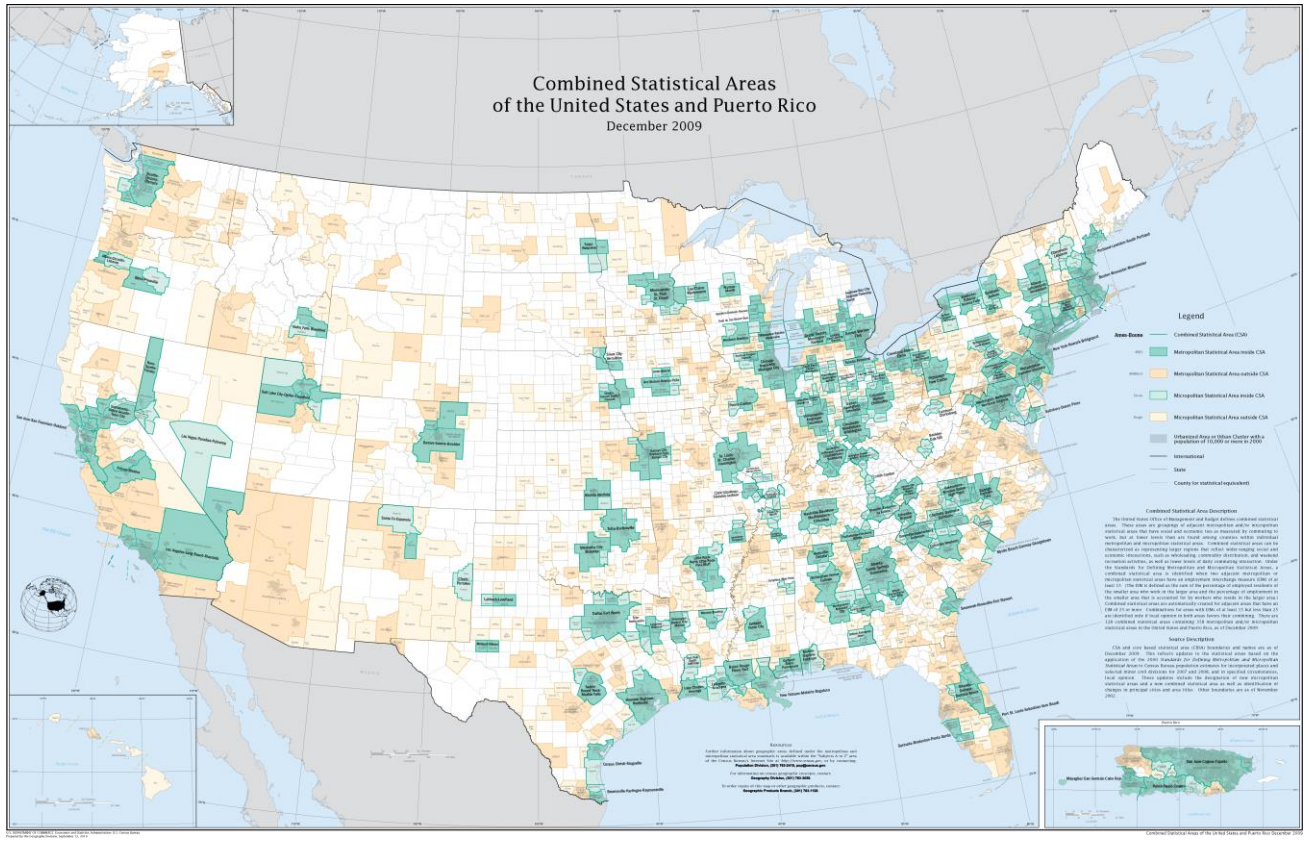
Metropolitan Statistical Areas

Advantages

- Smaller Units
- Less loss of information

Disadvantages

- Longer rendering time (simplify polygons?)
- Less border sharing (Moran's I)



Future Directions

Explore Additional Data

Demographic

- Age / Sex
- Survey responses

Charity

- Donations
- Changes over time