

# Demographic and Geographic Data for Population Health Research

Sarah Ehresman

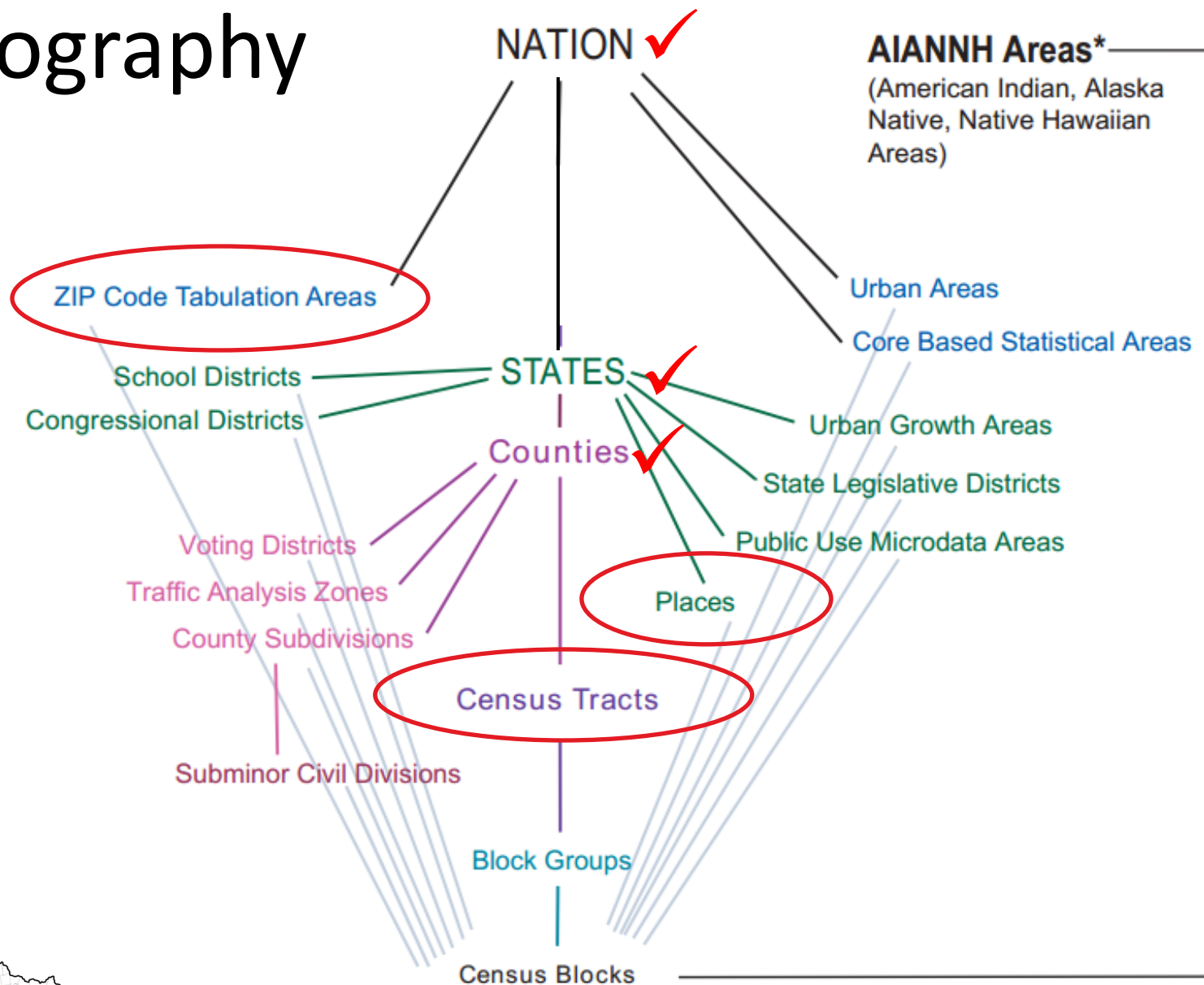
Research Coordinator

Kentucky State Data Center

# Agenda

- Census Geography
- Data Sources
- Accessing Data

# Geography

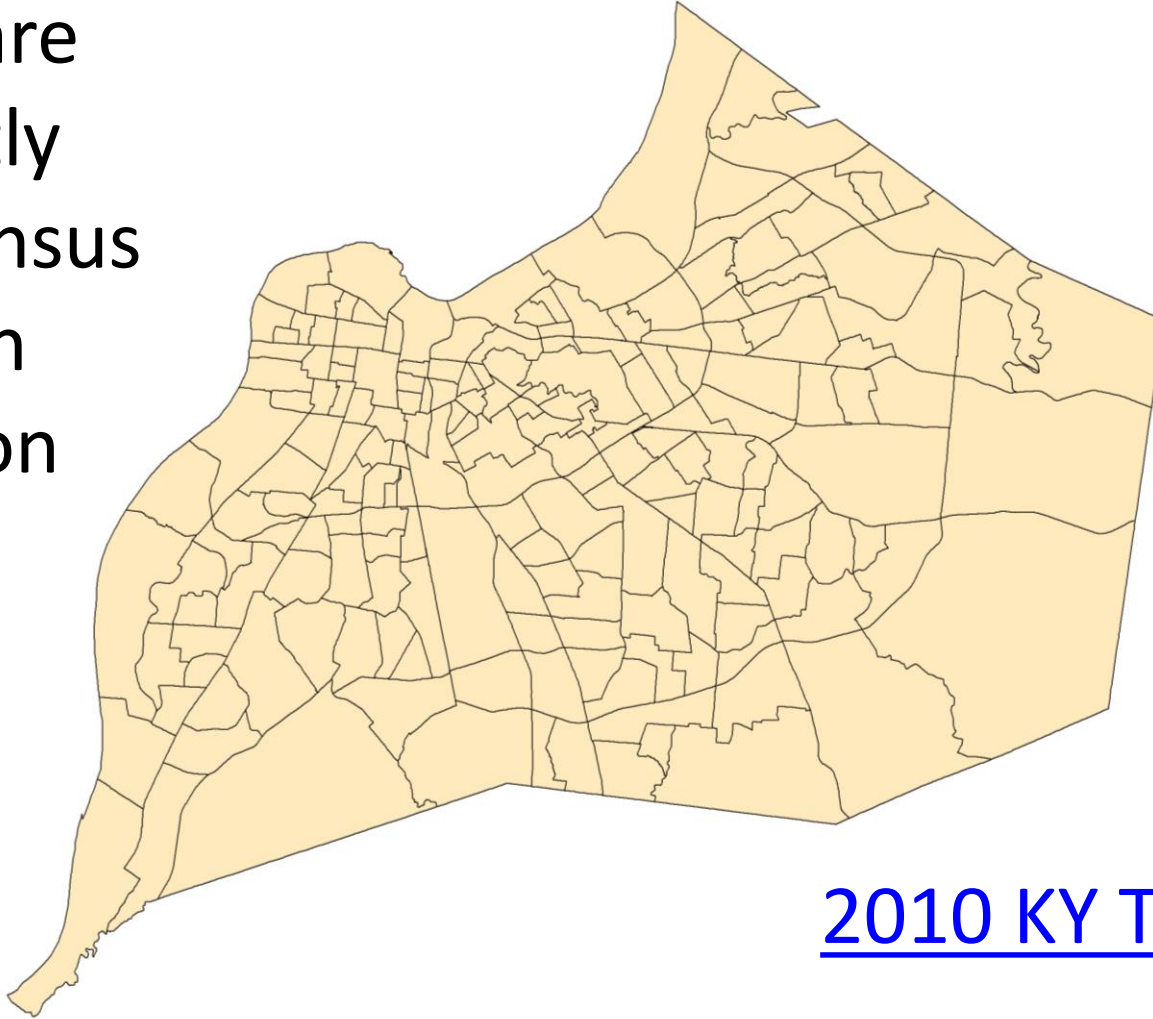


# Census Tracts

- Statistical unit with around 1,200 to 8,000 people, optimum size of 4,000
- Generally follow identifiable features
- Boundaries often change every 10 years
- Often used to represent neighborhoods
- Named with a numeric ID, up to 6 digits

# Census Tracts

There are  
currently  
191 Census  
tracts in  
Jefferson  
County

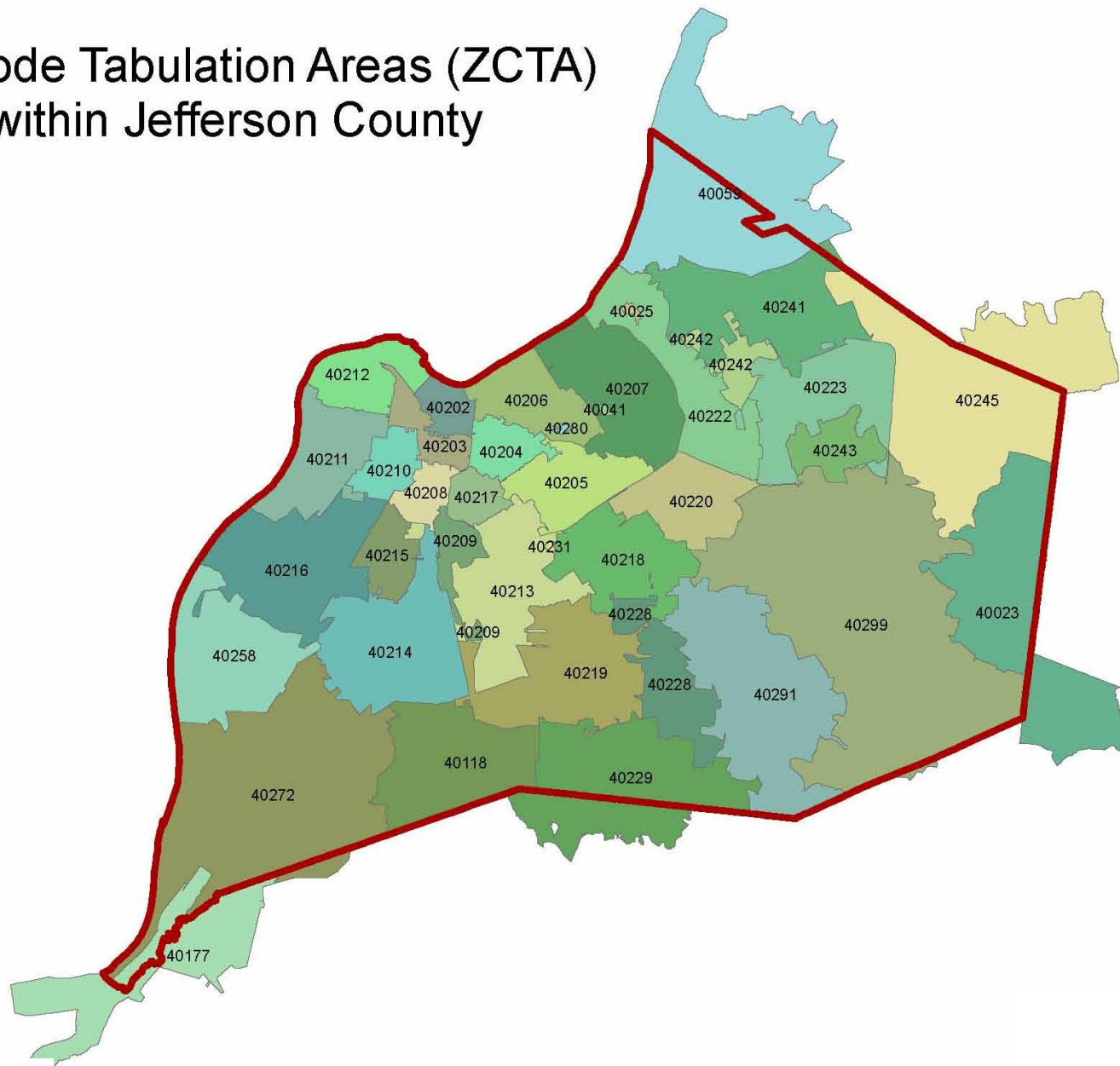


[2010 KY Tract Maps](#)

# ZIP Codes

- ZIP codes define delivery routes, not polygons
- Census Bureau created ZIP Code Tabulation Areas (ZCTAs) in 2000 due to user demand
  - Do not easily conform to other statistical/administrative units
  - May be discontinuous
  - More heterogeneous than Census tracts
  - PO Boxes and rural routes may be poorly identified

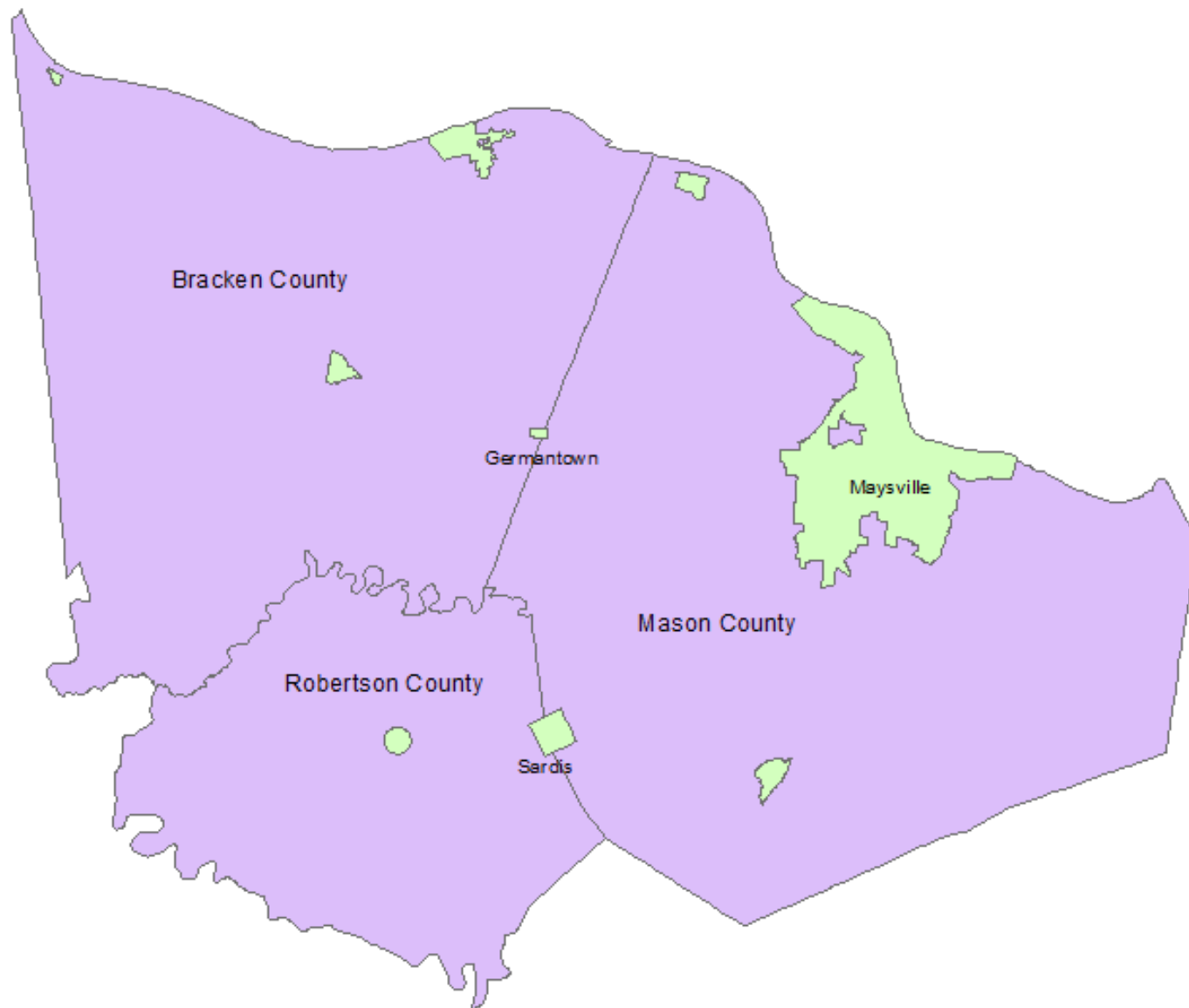
# Zip Code Tabulation Areas (ZCTA) within Jefferson County

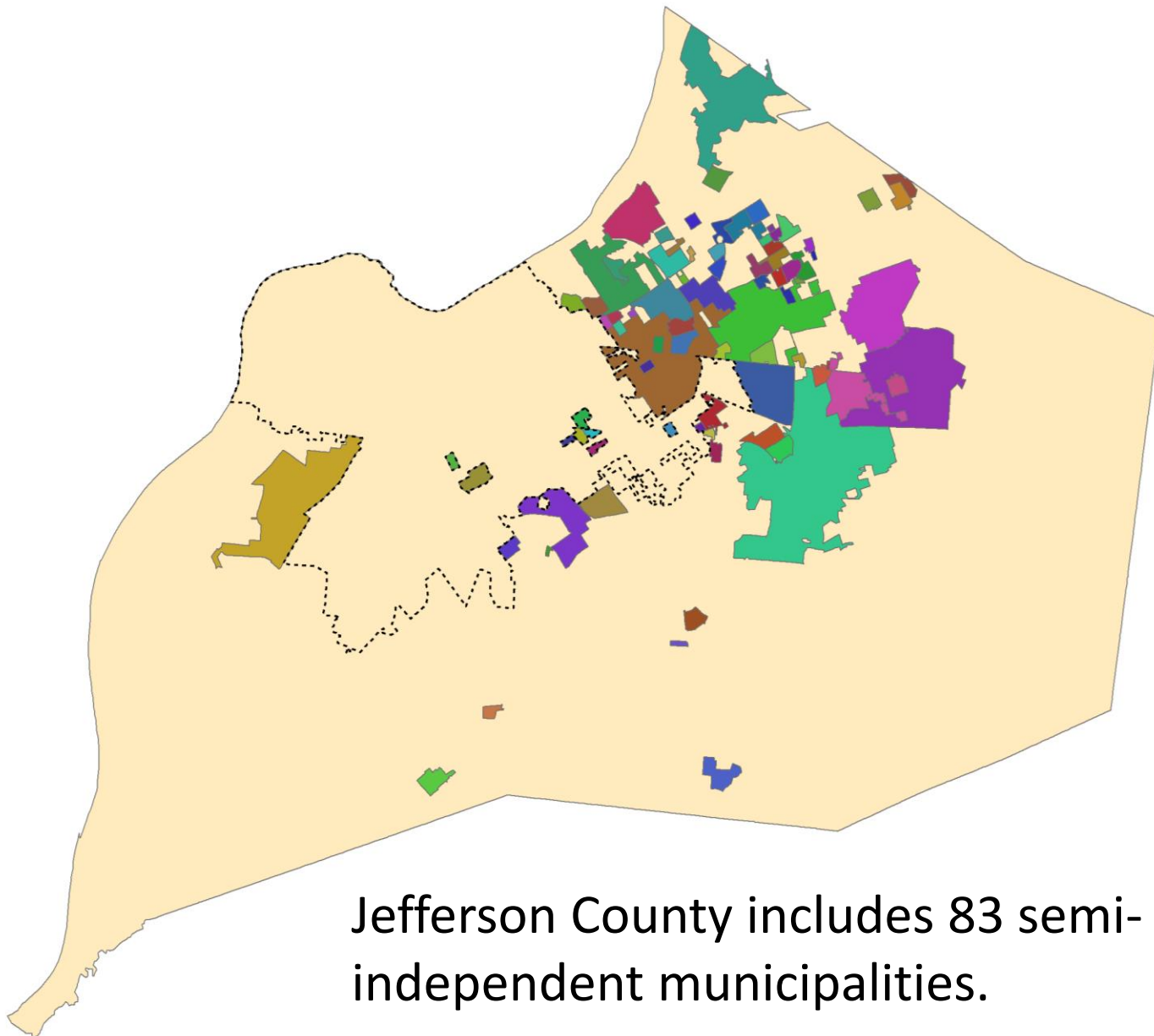


# Places

- A place is a concentration of population
- Must have a name, be locally recognized, and not be part of any other place
- Incorporated place
- Census Designated Place (CDP)







Jefferson County includes 83 semi-independent municipalities.

# Data Sources

- U.S. Census Bureau
  - Decennial Census
  - American Community Survey
  - Population Estimates
- National Center for Health Statistics
  - Population Estimates
  - Vital Statistics

# Decennial Census

- Mandated by Article 1, Section 2 of the U.S. Constitution
- Counts the population every 10 years
- Used for apportionment and redistricting

# Census 2000

- During the 2000 Census and previous census years two forms were used:
  1. Short form
    - Basic demographics – age, sex, race, household size
  2. Long form
    - Characteristics of population – income, education, marital status, language spoken, lots more
- All persons receive the short form
- Sample of population receive long form

# Census 2010

- Only used the short form
  - Basic demographics : age, sex, race, household size, housing units-owned, rented, vacant
- Focus on counting the population
- Characteristics of the population no longer collected with the decennial Census

# American Community Survey

- Began collecting data in all areas in 2005
- Published first estimates for all areas in 2010
- Updates every year
- Available for small geographic areas and areas with small population
- Smaller sample size than Census Long Form

# Census 2010 and ACS

- 2010 Census **counts** the population
- ACS produces **estimates** on characteristics of population and housing
- The purpose of the ACS is not to count the population but to provide data showing how people live and the needs of the community



# Characteristics of the Population

- Social
  - Ancestry
  - Citizenship Status
  - Disability
  - Educational Attainment
  - Fertility
  - Grandparents
  - Language
  - Marital status and history
  - Migration
  - School enrollment
  - Veteran Status
- Economic
  - Employment and work status
  - Health insurance
  - Income and earnings
  - Industry and occupation
  - Commuting
  - Poverty
  - SNAP
- Demographic
  - Age and sex
  - Race and Hispanic origin

# Characteristics of Housing

- Financial
  - Housing costs
    - Utilities
    - Insurance
    - Condo fee
    - Taxes
    - Mortgage
    - Rent
  - Tenure
  - Property value
- Physical
  - Heating fuel
  - Kitchen facilities
  - Plumbing facilities
  - Telephone available
  - Rooms and bedrooms
  - Units in structure
  - Vehicles available
  - Year moved in
  - Year structure built

# A Dynamic Survey

- 2008
  - Marital history
  - Health insurance coverage
  - VA service-connected disability status and rating
  - Disability
- 2009
  - Bachelor's degree field of study
- 2013
  - Computer ownership (including smart phones)
  - Internet access

# A Continuous Survey

- ACS collects survey data throughout the year
- Estimates produced are period estimates
- Reflects a period of time, not a point in time
- Different from the decennial Census which asks respondents to answer questions as of April 1

# Period Estimates

- 1-year estimates
  - Produced for areas with at least 65,000 people
- ~~3-year estimates~~
  - ~~Produced for areas with at least 20,000 people~~
  - Discontinued
- 5-year estimates
  - Produced for all areas

# Which Period Estimates?

- Availability
- Comparisons
- Currency vs. Precision

# Limitations

- American Community SURVEY
- Margins of error reported for 90% confidence levels
- Test for reliability
  - Standard error = Margin of Error / 1.645
  - Coefficient of Variation =  
 $(\text{Standard Error} / \text{Estimate}) * 100$
- Census says use caution when  $CV > 15\%$

# Census Population Estimates

- Demographic data published between decennial Census years
- Annual updates and revisions
  - Most current vintage will include data for previous years
- Derived from mathematical models
  - Components of population change



# Census Population Estimates

- Age, Sex, Race, Ethnicity
  - 5-year age groups at county level
  - 6 racial categories, including multiple races
- Nation, state, counties, incorporated places
- Often used as the denominator in rate calculations

# NCHS Population Estimates

- Modification of the Census Population Estimates
- Age, Sex, Race, Ethnicity
- Bridged-Race Estimates
  - 4 categories for race
- Single year of age at county level

# NCHS Population Estimates

- Primary reason for NCHS to develop distinct population estimates are for the bridged-race categories
- Network of vital statistics (at the state level) use the racial categories consistent with NCHS population estimates
- Important for race-specific rates

# NCHS Population Estimates

- Also useful for special age groups that do not conform to the 5-year age groups
  - Children under 18 years
  - Infants under 1 year
- Internally consistent with Census Population Estimates

# NCHS Vital Statistics

- Mortality data for state and counties
- Natality data for state and counties with at least 100,000 population
- Any data with less than 10 cases is suppressed
- Any rates produced from less than 20 cases is flagged as unreliable

# American Fact Finder

<http://factfinder.census.gov>

- Decennial Census
- American Community Survey
- Census Population Estimates



## ▼ Community Facts

Find popular facts (population, income, etc.) and frequently requested data about your community.

Enter a state, county, city, town, or zip code:

**GO**

## ▶ Guided Search

## ▶ Advanced Search

## ▶ Download Options

# CDC WONDER

The screenshot shows the CDC WONDER website. At the top, there's a navigation bar with links for 'CDC Home', 'Search', and 'Health Topics A-Z'. Below this, the 'CDC WONDER' logo is prominently displayed. A secondary navigation bar includes 'WONDER Home', 'FAQ', 'Help', 'Contact Us', and another 'Search' link. A descriptive text block states: 'WONDER online databases utilize a rich ad-hoc query system for the analysis of public health data. Reports and other query systems are also available.' Below this, there are three tabs: 'WONDER Systems', 'Topics', and 'A-Z Index'. The 'Topics' tab is active, showing a list of categories and sub-topics. On the left side of the page, there's a sidebar with a search box and several links: 'What is WONDER?', 'Frequently Asked Questions', 'Data Use Restrictions', 'Data Collections', 'Citations', 'Republishing WONDER Data', and 'What's New?'. The main content area is divided into three columns. The first column, 'WONDER Online Databases', lists links for 'AIDS Public Use Data', 'Births', 'Cancer Statistics', and an 'Environment' section with links for 'Daily Air Temperatures & Heat Index', 'Daily Land Surface Temperatures', 'Daily Fine Particulate Matter', 'Daily Sunlight', and 'Daily Precipitation'. The second column, 'Mortality', lists links for 'Underlying Cause of Death' (with sub-links for 'Detailed Mortality' and 'Compressed Mortality'), 'Multiple cause of death (Detailed Mortality)', 'Infant Deaths (Linked Birth/Infant Death Records)', and 'Online Tuberculosis Information System'. The third column, 'Population', lists links for 'Bridged-Race Population (from NCHS)', 'Population (from Census)', 'Sexually Transmitted Disease Morbidity', and 'Vaccine Adverse Event Reporting'. A fourth column, 'Reports and References', lists links for 'Prevention Guidelines (Archive)' and 'Scientific Data and Documentation (Archive)'. A fifth column, 'Other Query Systems', lists links for 'Healthy People 2010', 'MMWR Morbidity Tables', and 'MMWR Mortality Tables'. At the bottom of the main content area, a note states: '► Denotes numerical data available to query or download'.

**CDC WONDER**

WONDER Home    FAQ    Help    Contact Us    Search

WONDER online databases utilize a rich ad-hoc query system for the analysis of public health data. Reports and other query systems are also available.

WONDER Systems    Topics    A-Z Index

**WONDER Online Databases**

- [AIDS Public Use Data](#)
- [Births](#)
- [Cancer Statistics](#)
- Environment**
  - [Daily Air Temperatures & Heat Index](#)
  - [Daily Land Surface Temperatures](#)
  - [Daily Fine Particulate Matter](#)
  - [Daily Sunlight](#)
  - [Daily Precipitation](#)
- Mortality**
  - Underlying Cause of Death**
    - [Detailed Mortality](#)
    - [Compressed Mortality](#)
  - [Multiple cause of death \(Detailed Mortality\)](#)
  - [Infant Deaths \(Linked Birth/Infant Death Records\)](#)
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- Population**
  - [Bridged-Race Population \(from NCHS\)](#)
  - [Population \(from Census\)](#)
  - [Sexually Transmitted Disease Morbidity](#)
  - [Vaccine Adverse Event Reporting](#)

► Denotes numerical data available to query or download

**Reports and References**

- [Prevention Guidelines \(Archive\)](#)
- [Scientific Data and Documentation \(Archive\)](#)

**Other Query Systems**

- [Healthy People 2010](#)
- [MMWR Morbidity Tables](#)
- [MMWR Mortality Tables](#)

**Left Sidebar:**

- Search
- [What is WONDER?](#)
- [Frequently Asked Questions](#)
- [Data Use Restrictions](#)
- [Data Collections](#)
- [Citations](#)
- [Republishing WONDER Data](#)
- [What's New?](#)

<http://wonder.cdc.gov>

# CDC WONDER

<b>1. Organize table layout:</b>		<b>Send</b>	<b>Help</b>
<b>2. Select location:</b>		<b>Send</b>	<b>Help</b>
<b>3. Select years and demographics:</b>		<b>Send</b>	<b>Help</b>
<b>4. Select cause of death:</b>		<b>Send</b>	<b>Help</b>
<b>5. Select rate options:</b>		<b>Send</b>	<b>Help</b>
<b>Calculate Rates Per</b> 1,000 10,000 100,000 1,000,000	<b>Age-Adjusted Rate Options:</b> <input checked="" type="radio"/> No age-adjusted rates <input type="radio"/> Use standard populations for age-adjusted rates <input type="radio"/> Use non-standard populations for age-adjusted rates		
<b>6. Other options:</b>		<b>Send</b>	<b>Help</b>
<b>Export Results</b> <input type="checkbox"/> (Check box to download results to a file) <b>Show Totals</b> <input checked="" type="checkbox"/> <b>Show Zero Values</b> <input type="checkbox"/> <b>Show Suppressed Values</b> <input type="checkbox"/> <b>Precision</b> 1 <input type="button" value="v"/> decimal places <b>Data Access Timeout</b> 5 <input type="button" value="v"/> minutes			
		<b>Send</b>	<b>Reset</b>
<b>Browse</b> the list by opening and closing items. <b>Use</b> Ctrl+Click to multiple select, Shift+Click for a range.			



# CDC WONDER

Five-Year Age Groups ↓	➡ Deaths ↑↓	↔ Population ↑↓	↔ Crude Rate Per 100,000 ↑↓
< 1 year	68	10,198	666.8
1-4 years	17	39,032	Unreliable
5-9 years	Suppressed	47,006	Suppressed
10-14 years	Suppressed	47,648	Suppressed
15-19 years	35	45,837	76.4
20-24 years	61	49,909	122.2
25-29 years	64	53,960	118.6
30-34 years	80	52,047	153.7
35-39 years	94	46,881	200.5
40-44 years	146	48,354	301.9
45-49 years	208	52,692	394.7
50-54 years	381	56,492	674.4
55-59 years	479	51,307	933.6
60-64 years	505	44,660	1,130.8
65-69 years	495	29,442	1,681.3
70-74 years	594	22,758	2,610.1
75-79 years	750	18,500	4,054.1
80-84 years	1,081	15,443	6,999.9
85-89 years	1,095	Not Applicable	Not Applicable
90-94 years	725	Not Applicable	Not Applicable
95-99 years	236	Not Applicable	Not Applicable
100+ years	67	Not Applicable	Not Applicable
Not Stated	Suppressed	Not Applicable	Not Applicable
<b>Total</b>	<b>7,196</b>	<b>746,906</b>	<b>963.4</b>

# Additional Data Sources

- [Kids Count Data Center](#)
  - Data related to children's well-being
  - Socioeconomics, education, health, safety
- [Kentucky Health Facts](#)
  - Social and behavioral indicators, health outcomes, access to care, maternal and child health
- [County Health Rankings](#)
  - Health outcomes, health behaviors, clinical care, socioeconomics, physical environment

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Sarah Ehresman

Kentucky State Data Center

<http://ksdc.louisville.edu>

sarah.ehresman@louisville.edu

502.852.7990