The sources of demographic information

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U N I V E R S I T Y ®

Outline

- Three basic demographic data sources

  - National censuses

  - Registration systems

  - Surveys

National censuses

- Total process of collecting, compiling, and publishing demographic, economic, and social data pertaining, at a specified time, to all persons in a country or delimited territory

- Purpose: obtain data about size, composition, and distribution of the population
  - Demographic characteristics: fertility, mortality, education, employment, economic, health...
  - Information on country of birth, citizenship, language, migration, ethnic heritage...

Origin and current status

- First censuses: ancient Egypt, China, and Rome
- First modern censuses in large countries
  - 1790 US census: 3.9 million people
    - Differentiated "free white" males by whether they were over or under the age of 16 to determine fiscal and military obligations of citizens
  - 1787 census of Kingdom of Spain: 10.4 million people
- 230+ countries completed a census by the end of the 2010 "census round" (2005–2014)
  - 96% of the world's population
- Only 7 countries did not complete 2010 round
  - Eritrea, Iraq, Lebanon, Pakistan, Somalia, Uzbekistan, western Sahara

1790 American Census

- Assistant marshals listed the name of each head of household and the number of persons in each household of the following descriptions
  - Free White males of 16 years and upward (to assess the country's industrial and military potential)
  - Free White males under 16 years
  - Free White females
  - All other free persons
  - Slaves

https://www.census.gov/history/www/through_the_decades/index_of_questions/1790_1.html

https://www.census.gov/history/www/through_the_decades/overview/1790.html

https://www.census.gov/programs-surveys/decennial-census/decade/decennial-publications.1790.html

https://www.census.gov/library/publications/1793/dec/number-of-persons.html

https://www.census.gov/library/publications/1907/dec/heads-of-families.html

SCHEDULE *of the whole number of* PERSONS *within the several Districts of the* UNITED STATES, *taken according to* " An Act providing for the Enumeration of the Inhabitants of the United States;" *passed March the 1st,* 1790.

DISTICTS	Free white Males of 16 years and upwards, including heads of families.	Free white Males under sixteen years.	Free white Females, including heads of families.	All other free persons.	Slaves.	Total.
Vermont	22435	22328	40505	255	16	85539
N. Hampshire	36086	34851	70160	630	158	141885
Maine	24384	24748	46870	538	NONE	96540
Maffachufetts	95453	87289	190582	5463	NONE	378787
Rhode Ifland	16019	15799	32652	3407	948	68825
Connecticut	60523	54403	117448	2808	2764	237946
New York	83700	78122	152320	4654	21324	340120
New Jerfey	45251	41416	83287	2762	11423	184139
Pennsylvania	110788	106948	206363	6537	3737	434373
Delaware	11783	12143	22384	3899	8887	59094
Maryland	55915	51339	101395	8043	103036	319728
Virginia	110936	116135	215046	12866	292627	747610
Kentucky	15154	17057	28922	114	12430	73677
N. Carolina	69988	77506	140710	4975	100572	393751
S. Carolina	35576	37722	66880	1801	107094	249073
Georgia	13103	14044	25739	398	29264	82548
	807094	791850	1541263	59150	694280	3893635

Total number of Inhabitants of the United States exclufive of S. Weftern and N. Territory.	Free white Males of 21 years and upwards.	Free Males under 21 years of age.	Free white Females.	All other Perfons.	Slaves.	Total
S. W. territory	6271	10277	15365	361	3417	35691
N. Ditto	—	—	—	—	—	

US Decennial Censuses

- They had short-form and long-form questionnaires until the 2000 censuses

- Since the 2010 census, only the questions from the short-form questionnaire were included in the census questionnaire
  - Name, sex, age, race, ethnicity, relationship, home ownership

- The long-form questionnaire was revised to comprise the major part of the American Community Survey (ACS)

- The census questions are filled by one person in every household and covers every person in the household

United States® Census 2020

U.S. DEPARTMENT OF COMMERCE
Economics and Statistics Administration
U.S. CENSUS BUREAU

This is the official questionnaire for this address.
It is quick and easy to respond, and your answers are protected by law.

Para completar el cuestionario en español, dele la vuelta y complete el lado verde.

Start here OR go online at **my2020census.gov** to complete your 2020 Census questionnaire.

Use a blue or black pen.

Before you answer Question 1, count the people living in this house, apartment, or mobile home using our guidelines.

- Count all people, including babies, who live and sleep here most of the time.
- If no one lives and sleeps at this address most of the time, go online at my2020census.gov or call the number on page 8.

The census must also include people without a permanent place to live, so:

- If someone who does not have a permanent place to live is staying here on April 1, 2020, count that person.

The Census Bureau also conducts counts in institutions and other places, so:

- Do not count anyone living away from here, either at college or in the Armed Forces.
- Do not count anyone in a nursing home, jail, prison, detention facility, etc., on April 1, 2020.
- Leave these people off your questionnaire, even if they will return to live here after they leave college, the nursing home, the military, jail, etc. Otherwise, they may be counted twice.

1. How many people were living or staying in this house, apartment, or mobile home on April 1, 2020?

Number of people = ☐

2. Were there any additional people staying here on April 1, 2020 that you did not include in Question 1?
Mark ☒ all that apply.

- ☐ Children, related or unrelated, such as newborn babies, grandchildren, or foster children
- ☐ Relatives, such as adult children, cousins, or in-laws
- ☐ Nonrelatives, such as roommates or live-in babysitters
- ☐ People staying here temporarily
- ☐ No additional people

3. Is this house, apartment, or mobile home — *Mark ☒ ONE box.*

- ☐ Owned by you or someone in this household with a mortgage or loan? *Include home equity loans.*
- ☐ Owned by you or someone in this household free and clear (without a mortgage or loan)?
- ☐ Rented?
- ☐ Occupied without payment of rent?

4. What is your telephone number?
We will only contact you if needed for official Census Bureau business.

Telephone Number

☐☐☐ – ☐☐☐ – ☐☐☐☐

FORM **DI-Q1(E/S)** (05-31-2019)

11100013

A̱TM

Person 1

5. Please provide information for each person living here. If there is someone living here who pays the rent or owns this residence, start by listing him or her as Person 1. If the owner or the person who pays the rent does not live here, start by listing any adult living here as Person 1.

What is Person 1's name? *Print name below.*

First Name   MI

Last Name(s)

6. **What is Person 1's sex?** *Mark* **X** *ONE box.*

☐ Male   ☐ Female

7. **What is Person 1's age and what is Person 1's date of birth?** *For babies less than 1 year old, do not write the age in months. Write 0 as the age.*

Print numbers in boxes.

Age on April 1, 2020   Month   Day   Year of birth

☐ years

➜ NOTE: Please answer BOTH Question 8 about Hispanic origin and Question 9 about race. For this census, Hispanic origins are not races.

8. Is Person 1 of Hispanic, Latino, or Spanish origin?

☐ **No,** not of Hispanic, Latino, or Spanish origin

☐ Yes, Mexican, Mexican Am., Chicano

☐ Yes, Puerto Rican

☐ Yes, Cuban

☐ Yes, another Hispanic, Latino, or Spanish origin – *Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc.*

9. **What is Person 1's race?**

Mark **X** *one or more boxes* **AND** *print origins.*

☐ White – *Print, for example, German, Irish, English, Italian, Lebanese, Egyptian, etc.*

☐ Black or African Am. – *Print, for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.*

☐ American Indian or Alaska Native – *Print name of enrolled or principal tribe(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.*

☐ Chinese   ☐ Vietnamese   ☐ Native Hawaiian
☐ Filipino   ☐ Korean   ☐ Samoan
☐ Asian Indian   ☐ Japanese   ☐ Chamorro
☐ Other Asian –   ☐ Other Pacific Islander –
*Print, for example,   Print, for example,
Pakistani, Cambodian,   Tongan, Fijian,
Hmong, etc.*   Marshallese, etc.*

☐ Some other race – *Print race or origin.*

➜ If more people were counted in Question 1 on the front page, continue with Person 2 on the next page.

2   11100021

1. Print name of **Person 2**

First Name

MI

Last Name(s)

2. Does this person usually live or stay somewhere else?
Mark ☒ all that apply.

☐ No

☐ Yes, for college
☐ Yes, for a military assignment
☐ Yes, for a job or business
☐ Yes, in a nursing home

☐ Yes, with a parent or other relative
☐ Yes, at a seasonal or second residence
☐ Yes, in a jail or prison
☐ Yes, for another reason

3. How is this person related to Person 1? Mark ☒ ONE box.

☐ Opposite-sex husband/wife/spouse
☐ Opposite-sex unmarried partner
☐ Same-sex husband/wife/spouse
☐ Same-sex unmarried partner
☐ Biological son or daughter
☐ Adopted son or daughter
☐ Stepson or stepdaughter
☐ Brother or sister

☐ Father or mother
☐ Grandchild
☐ Parent-in-law
☐ Son-in-law or daughter-in-law
☐ Other relative
☐ Roommate or housemate
☐ Foster child
☐ Other nonrelative

4. What is this person's sex? Mark ☒ ONE box.

☐ Male   ☐ Female

5. What is this person's age and what is this person's date of birth? For babies less than 1 year old, do not write the age in months. Write 0 as the age.

Print numbers in boxes.

Age on April 1, 2020 _____ years

Month

Day

Year of birth

➜ **NOTE: Please answer BOTH Question 6 about Hispanic origin and Question 7 about race. For this census, Hispanic origins are not races.**

6. Is this person of Hispanic, Latino, or Spanish origin?

☐ **No**, not of Hispanic, Latino, or Spanish origin
☐ Yes, Mexican, Mexican Am., Chicano
☐ Yes, Puerto Rican
☐ Yes, Cuban
☐ Yes, another Hispanic, Latino, or Spanish origin – Print, for example, Salvadoran, Dominican, Colombian, Guatemalan, Spaniard, Ecuadorian, etc. ↘

7. What is this person's race?
Mark ☒ one or more boxes AND print origins.

☐ White – Print, for example, German, Irish, English, Italian, Lebanese, Egyptian, etc. ↘

☐ Black or African Am. – Print, for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc. ↘

☐ American Indian or Alaska Native – Print name of enrolled or principal tribe(s), for example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc. ↘

☐ Chinese
☐ Filipino
☐ Asian Indian
☐ Other Asian – Print, for example, Pakistani, Cambodian, Hmong, etc. ↘

☐ Vietnamese
☐ Korean
☐ Japanese

☐ Native Hawaiian
☐ Samoan
☐ Chamorro
☐ Other Pacific Islander – Print, for example, Tongan, Fijian, Marshallese, etc. ↘

☐ Some other race – Print race or origin. ↘

➜ **If more people were counted in Question 1 on the front page, continue with Person 3 on the next page.**

11100039

De jure vs. de facto

- De jure (e.g. U.S., Canada): counts persons based on their "usual"/"normal" place of residence

  - In the U.S., people answer questions related to their place of residence on April 1st (Census Day)

- De facto: counts persons based on their location on the day of the census

- De facto censuses are more common

Justification for censuses

- Utilization
  - Data for public policy
  - Data for crime/death rates, per capita income...
  - Market analyses by private businesses
  - Estimation of cohabiting households, as well as same-sex households

- Principal reason/justification for censuses written in the US Constitution
  - Provide population counts to be used for apportionment of the House of Representatives

Issues with the 2020 Census

- Quality and accuracy of the 2020 Census might be compromised

  - Delays in census operations due to the COVID-19 pandemic

  - Federal government decided to end activities on September 30, 2020

  - It could undercount vulnerable populations (e.g., minorities, rural areas)

- The 2020 Census Deadline Extensions Act was introduced by Senators Brian Schatz (D-HI) and Lisa Murkowski (R-AK)

  - Required the Census Bureau to continue 2020 Census field operations until October 31, 2020, giving the Census Bureau more time to collect and process data, leading to a more complete and accurate count

  - Extended the deadline for the delivery of apportionment data to the U.S. House of Representatives from December 31, 2020 to April 30, 2021

  - Extended the statutory delivery of redistricting data to states from March 31, 2021 to July 31, 2021

2020 Census results (4/26/21)

- U.S. resident population
  - People living in the 50 states and DC
  - April 1, 2020: 331,449,281
  - April 1, 2010: 308,745,538
  - Increased by 22,703,743 (7.4%)

- Apportionment population
  - People living in the 50 states (excludes DC)
  - Military, federal civilian employees, and dependents living overseas allocated to their home state
    - Reported by the employing federal agencies
  - April 1, 2020: 331,108,434

Apportionment of the U.S. House of Representatives Based on the 2020 Census
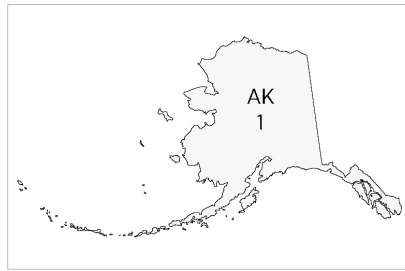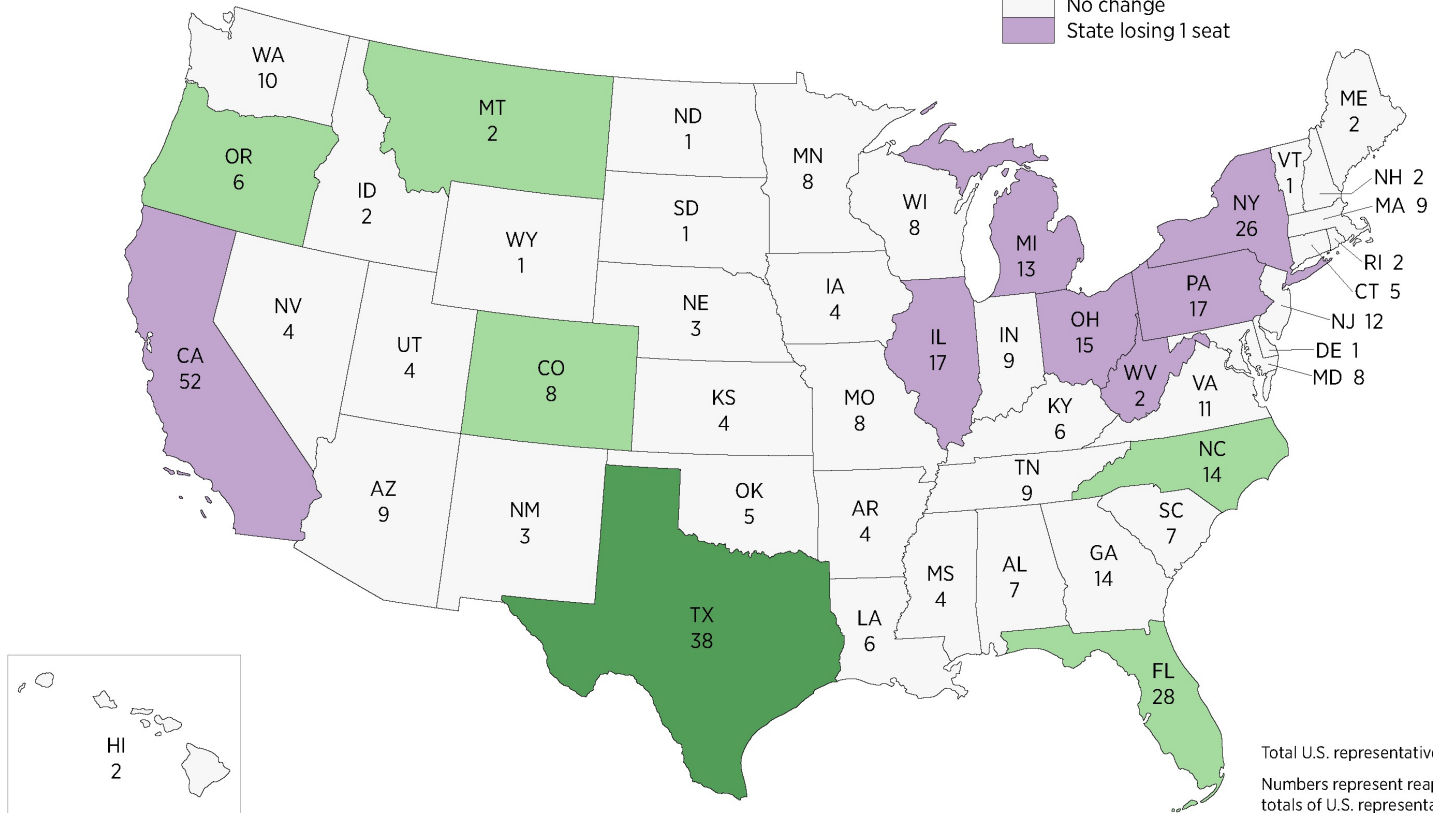
Citizenship question

- Deceased G.O.P. Strategist's Hard Drives Reveal New Details on the Census Citizenship Question

- "**Thomas B. Hofeller** achieved near-mythic status in the Republican Party as the Michelangelo of gerrymandering, the architect of partisan political maps that cemented the party's dominance across the country.

- But after he died last summer, his estranged daughter discovered hard drives in her father's home that revealed something else: **Mr. Hofeller had played a crucial role in the Trump administration's decision to add a citizenship question to the 2020 census.**

- Files on those drives showed that he wrote a study in 2015 concluding that **adding a citizenship question to the census would allow Republicans to draft even more extreme gerrymandered maps to stymie Democrats.**

- And months after urging President Trump's transition team to tack the question onto the census, **he wrote the key portion of a draft Justice Department letter claiming the question was needed to enforce the 1965 Voting Rights Act — the rationale the administration later used to justify its decision.**"

Gerrymandering

- Issue of political gerrymandering
  - State legislatures draw congressional districts boundaries to favor one party

- Gerrymandering is against the law
  - Unless topography gets in the way, districts are supposed to be contiguous regions

- Using data from the US Census Bureau, Alasdair Rae, a geographer and urban planner at Sheffield University, built maps of all 435 congressional districts
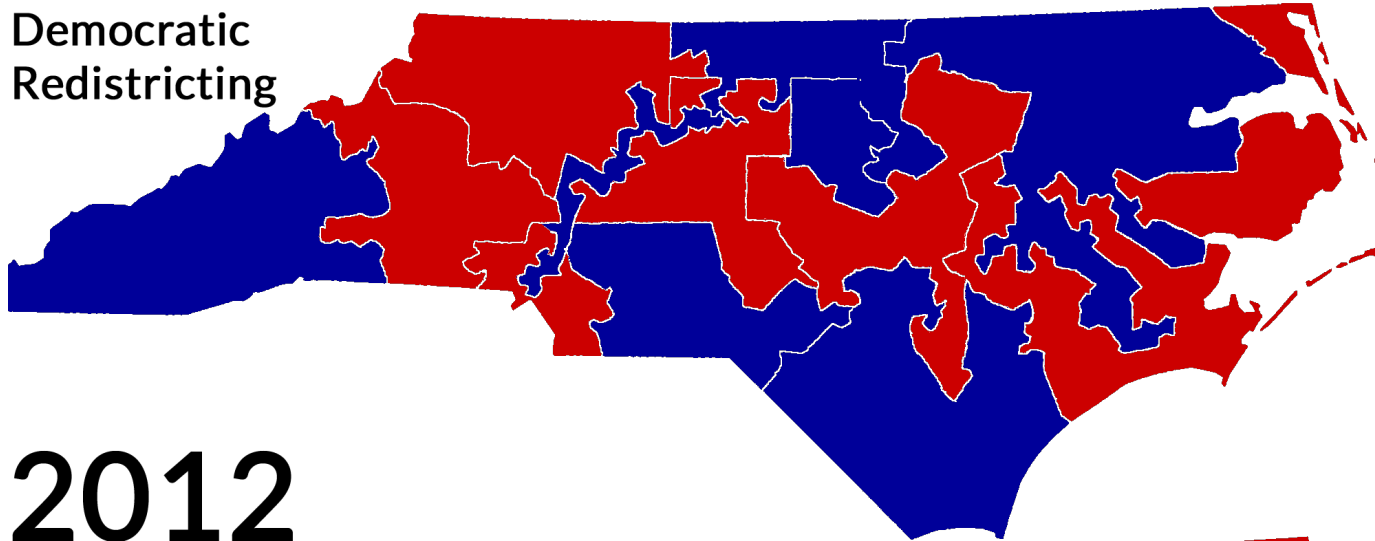
North Carolina

- Republican-drawn legislative map packed African-American and Hispanic voters into a few districts

  – In 2010, Democrats won popular vote and a 7 to 6 majority in the state's House delegation

  – In 2012, Democrats won popular vote, but a racially gerrymandered map allowed Republicans to win a 9 to 4 majority

North Carolina

2010
Democratic
Redistricting

2012
Republican
Redistricting
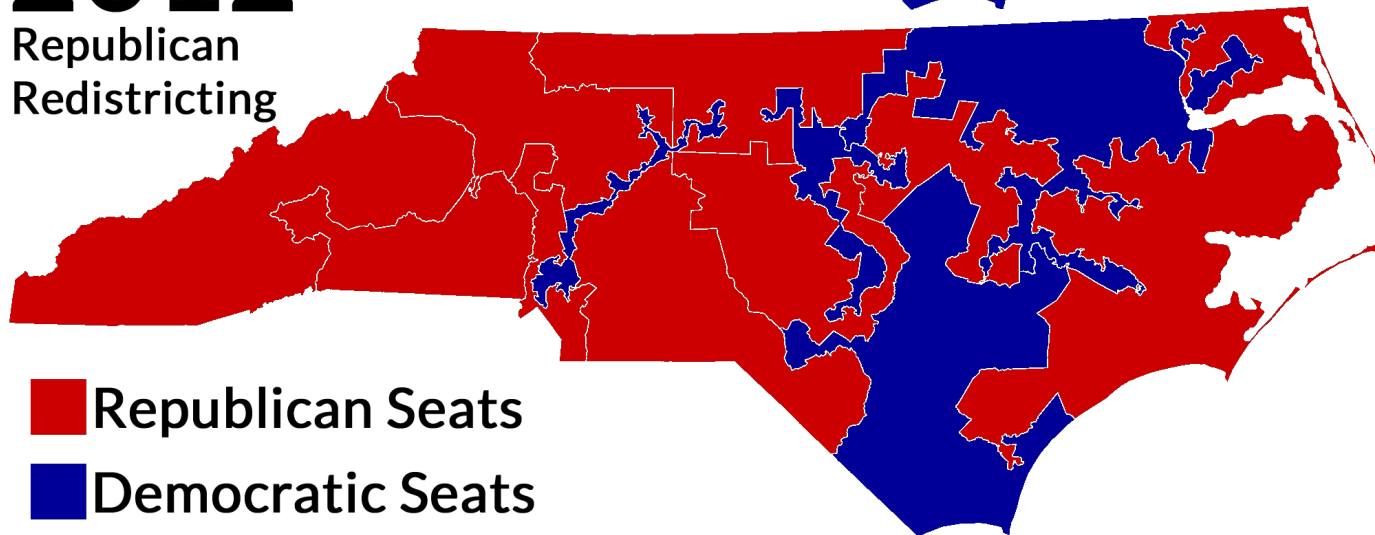
■ Republican Seats
■ Democratic Seats

North Carolina

The Evolution of North Carolina's 12th Congressional District

103rd Congress 1993-1995

106th Congress 1999-2001

107th Congress 2001-2003

108th Congress 2003-2005

110th Congress 2007-2009

114th Congress 2015-2017
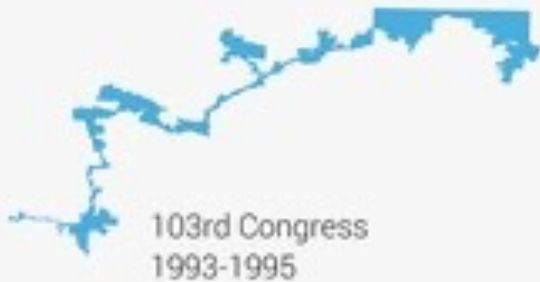
Court decisions

- In 2016, North Carolina lawmakers were ordered by a US federal court to redraw 28 state House and Senate districts

  - State's legislative map was considered an unconstitutional racial gerrymander

- June 2019, the U.S. Supreme Court ruled that it's not the job of federal courts to decide if boundaries are politically unfair

- September 2019, a state court panel considered the maps as an unconstitutional partisan gerrymander and ordered lawmakers to draw up new ones

Texas

District: Texas (02)

Location
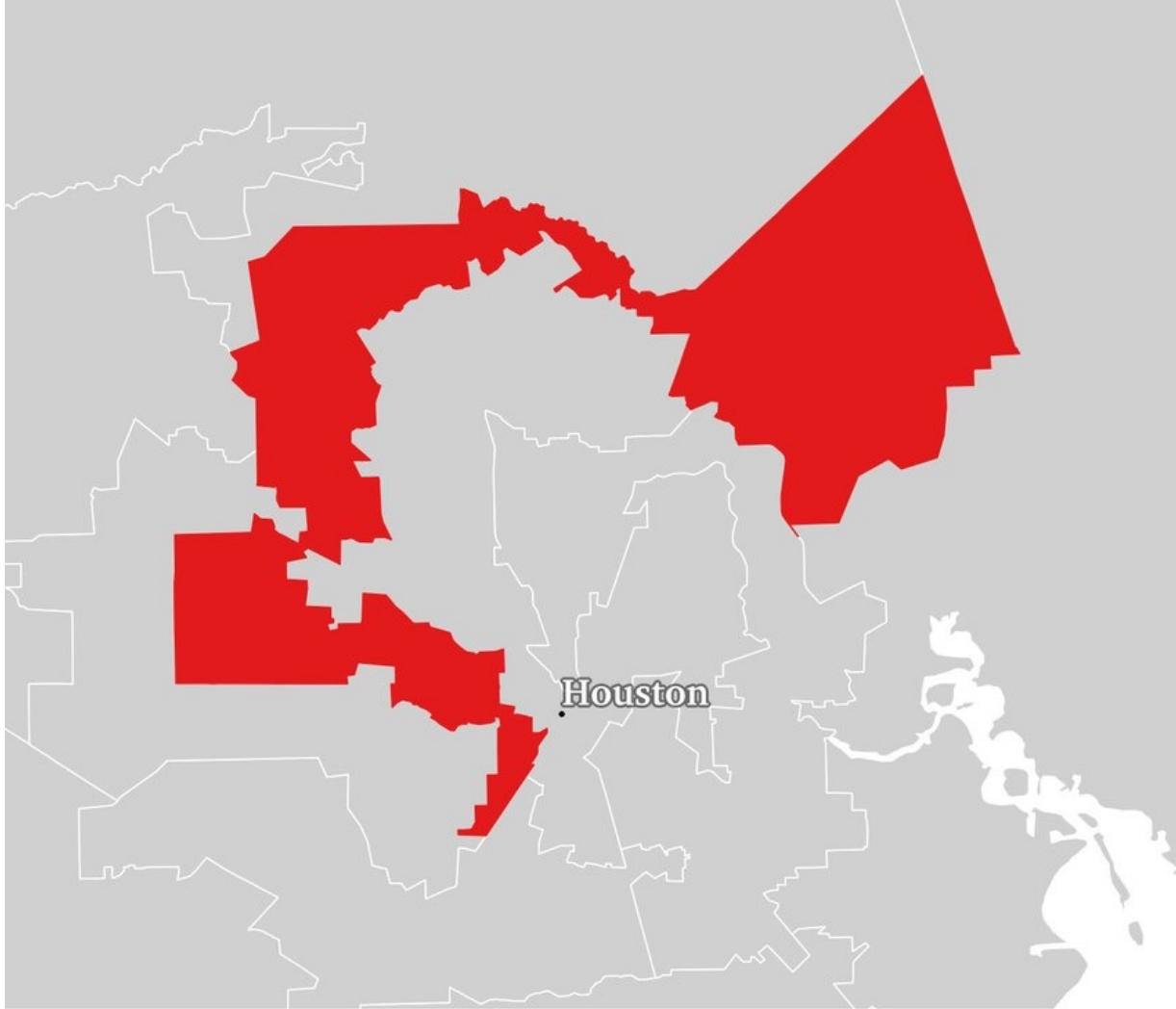
114th Congress

Rep: Ted Poe
Party: Republican

Houston

Data source: USGS
http://nationalmap.gov/small_scale/mld/cgd114p.html

Mapping: Alasdair Rae, University of Sheffield

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Michigan

GOP victory

● **MORE THAN 60 PERCENT OF VOTE**
● **LESS THAN 60 PERCENT**

Dem. victory

● **MORE THAN 60 PERCENT OF VOTE**
● **LESS THAN 60 PERCENT**

23
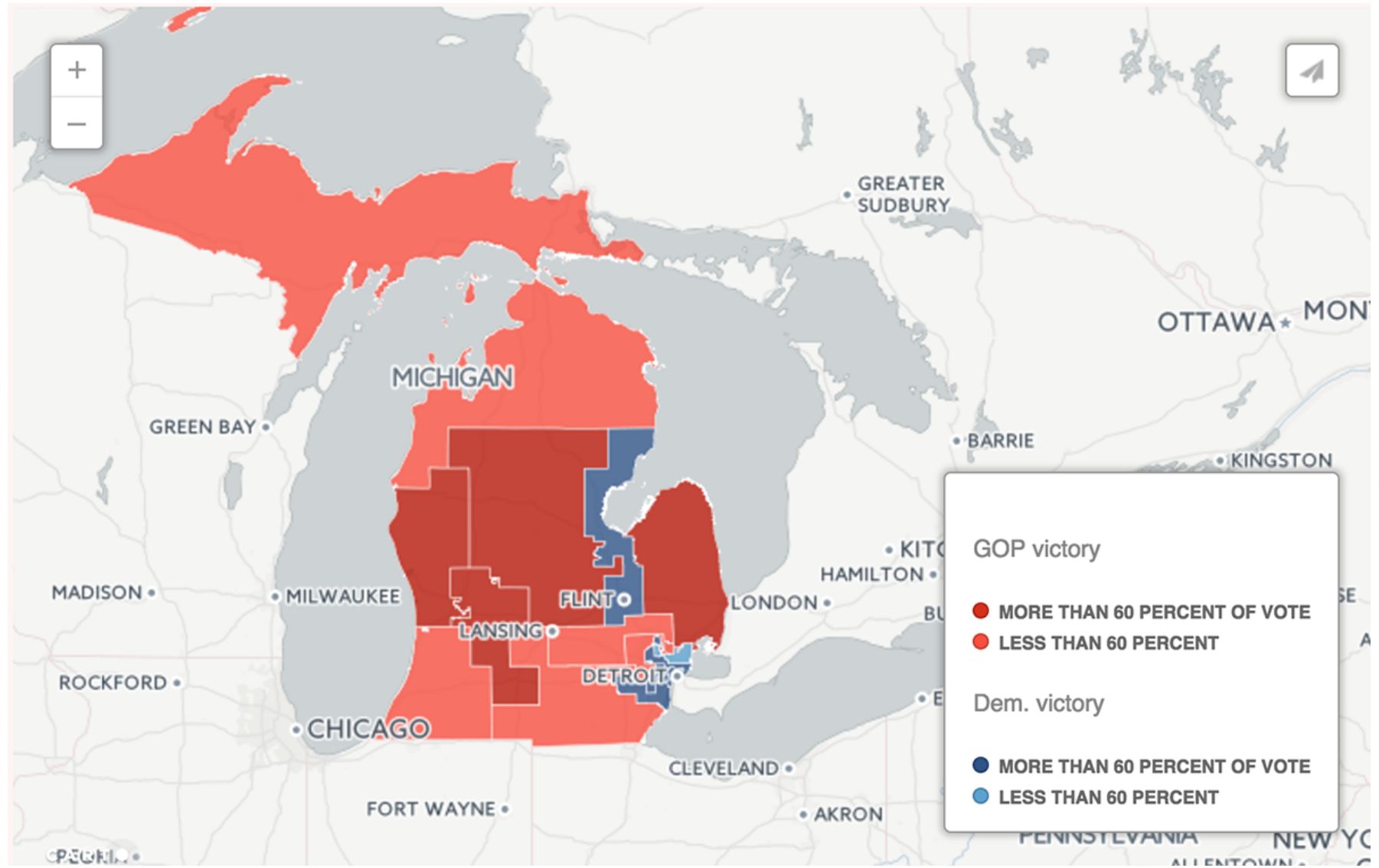
TEXAS A&M UNIVERSITY

Registration systems

- Population register: national list of persons with their names, addresses, dates of birth, and personal identification numbers

- Vital statistics: data from civil registration systems, as well as from actual records of vital events

Accuracy worldwide

- Births
  - 57 million unregistered babies in 2012 (UNICEF, 2013)
  - The percentage of children under age five
    - 230 million unregistered children (UNICEF, 2013)
    - 90% are registered in industrialized countries
    - Less than 20% are registered in sub-Saharan Africa

- Deaths
  - Only 25% of the world population lives in countries with 90% or more of deaths registered (usually high-income countries)

Legal authority

- Vital records were responsibilities of the clergy in 17th century England
    - This practice was followed by the English colonies in North America

- Individual US states are now the legal authorities
    - All US states had birth and death records on file by 1919

- US Registration Areas established
    - Death Registration Area (1900), Birth Registration Area (1915), National Registration Areas for Marriages (1957) and Divorces (1958)

- Birth and death data are sent by the states to the National Center for Health Statistics who compiles the data for the U.S.

Birth and death certificates

- Birth certificates
  - Names and ages of parents, their occupations, and sometimes levels of education
  - Filled out by physician, midwife, mother, or father

- Death certificates
  - The decedent's age, occupation, place of death, and cause of death
  - Filled out by funeral homes, with personal information about the descendent provided by surviving family members, physician, or coroner

Registered events

- **<u>Fetal deaths</u>:** Disappearance of life prior to live birth, which include miscarriages, abortions, stillbirths

- **<u>Miscarriages</u>:** Spontaneous or accidental termination of fetal life that occurs early in pregnancy

- **<u>Abortions</u>:** Premature expulsion of a fetus, spontaneous or induced, at a time before it is viable of sustaining life

- **<u>Stillbirths</u>:** Late fetal death of 20–28 weeks or more of gestation

- **<u>Deaths</u>:** Permanent disappearance of all evidence of life at any time after a live birth has taken place

- **<u>Births</u>:** Extraction from its mother of a product of conception, which breathes or shows any evidence of life

Censuses versus registrations

	Census	**Registration**
Contents	Cross-sectional portrayal of the size, composition, and distribution	Demographic events (principally births and deaths) measured as they occur
Characteristic	Static	Dynamic and continuous
Authority (U.S.)	Federal government	State government
De jure/de facto (U.S.)	De jure	De jure
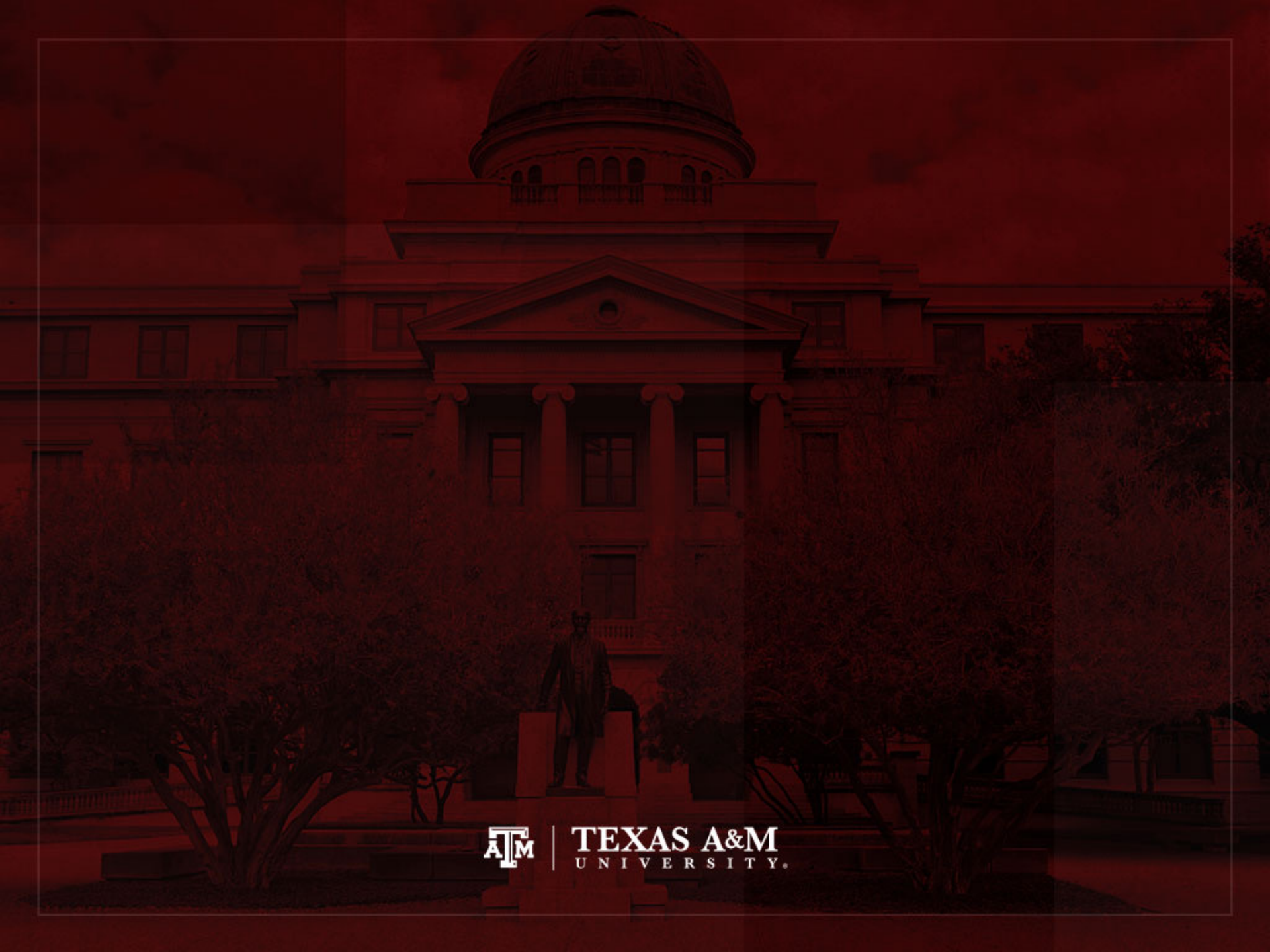
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Inferential statistics

- Social scientists need inferential statistics

  - They almost never have the resources or time to collect data from every case in a population

- Inferential statistics uses data from samples to make generalizations about populations

  - **Population** is the total collection of all cases in which the researcher is interested

  - **Samples** are carefully chosen subsets of the population

- With proper techniques, generalizations based on samples can represent populations
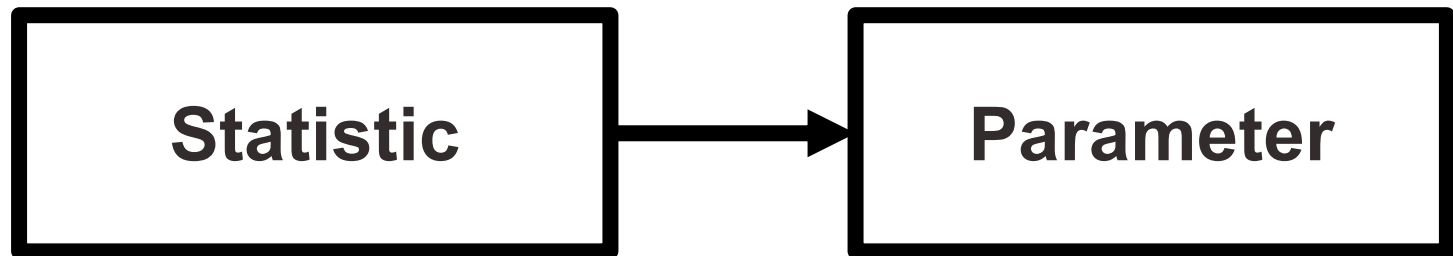
Basic logic and terminology

- Information from samples is used to estimate information about the population
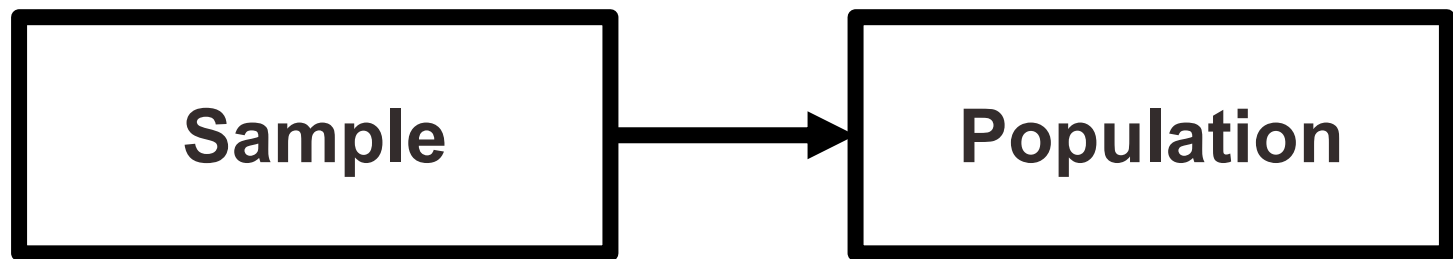
Sample	→	Population

- Statistics: characteristics of samples
- Parameters: characteristics of populations

- Statistics are used to estimate parameters

Statistic	→	Parameter

Surveys

- Required for the collection of more detailed demographic information that is not contained on censuses and registers

- Extensive kinds of information available through sample surveys

- Some examples...

Demographic and Health Surveys

- 260 sample surveys in 90 developing countries since 1984 every five years

- Data on fertility, population, health, and nutrition

- Interim surveys between DHS rounds

- Provide demographic information previously unknown about developing countries

- Total fertility rate, contraceptive use, child mortality rate...

Examples of fertility surveys

- World Fertility Surveys (WFS)
  - Coordinated cross-national fertility surveys between 1974 and 1986
  - Data on reproductive behavior and related social and psychological indicators in 62 countries, about 40% of the world's population

- Other fertility surveys
  - Focus on a single country or community
  - Examples: European Fertility Project, surveys of family and reproductive behavior in Puerto Rico and Mexico

U.S. federal government surveys

- American Community Survey (ACS)

- Current Population Survey (CPS)

- National Survey of Family Growth (NSFG)

- National Longitudinal Study of Adolescent to Adult Health (Add Health)

American Community Survey

- Redesigned from the census long-form questionnaire to be a "continuous measurement" survey in the late 1990s
- Conducted every year in all counties in the U.S. and Puerto Rico
- Purpose: collect economic, demographic, housing data
- Sample
  - Communities with 65,000 and more population: receive data estimates every year since 2006
  - Communities with 20,000 to 64,999: receive data each year based on three-year estimates since 2008
  - Communities with less then 20,000: receives data each year based on five-year estimates since 2010
- ACS sample had 3.54 million housing unit addresses in 2013

Current Population Survey

- Monthly nationwide survey sponsored by the US Bureau of the Census and US Bureau of Labor Statistics

- Purpose: collect labor force data about the civilian non-institutional population

- Sample: 14 years of age and older in around 60,000 households

- Basic labor force questions, census-type questions, and supplementary questions

National Survey of Family Growth

- A nationally representative multistage survey conducted on a continuous basis

- Sample: male and female respondents between the ages of 15 and 44

- Purpose: collect data on family life, marriage, divorce, pregnancy, infertility, contraception, and men's and women's health

- Audio Computer-Assisted Self-Interviewing (ACASI) for sensitive topics, such as sexuality
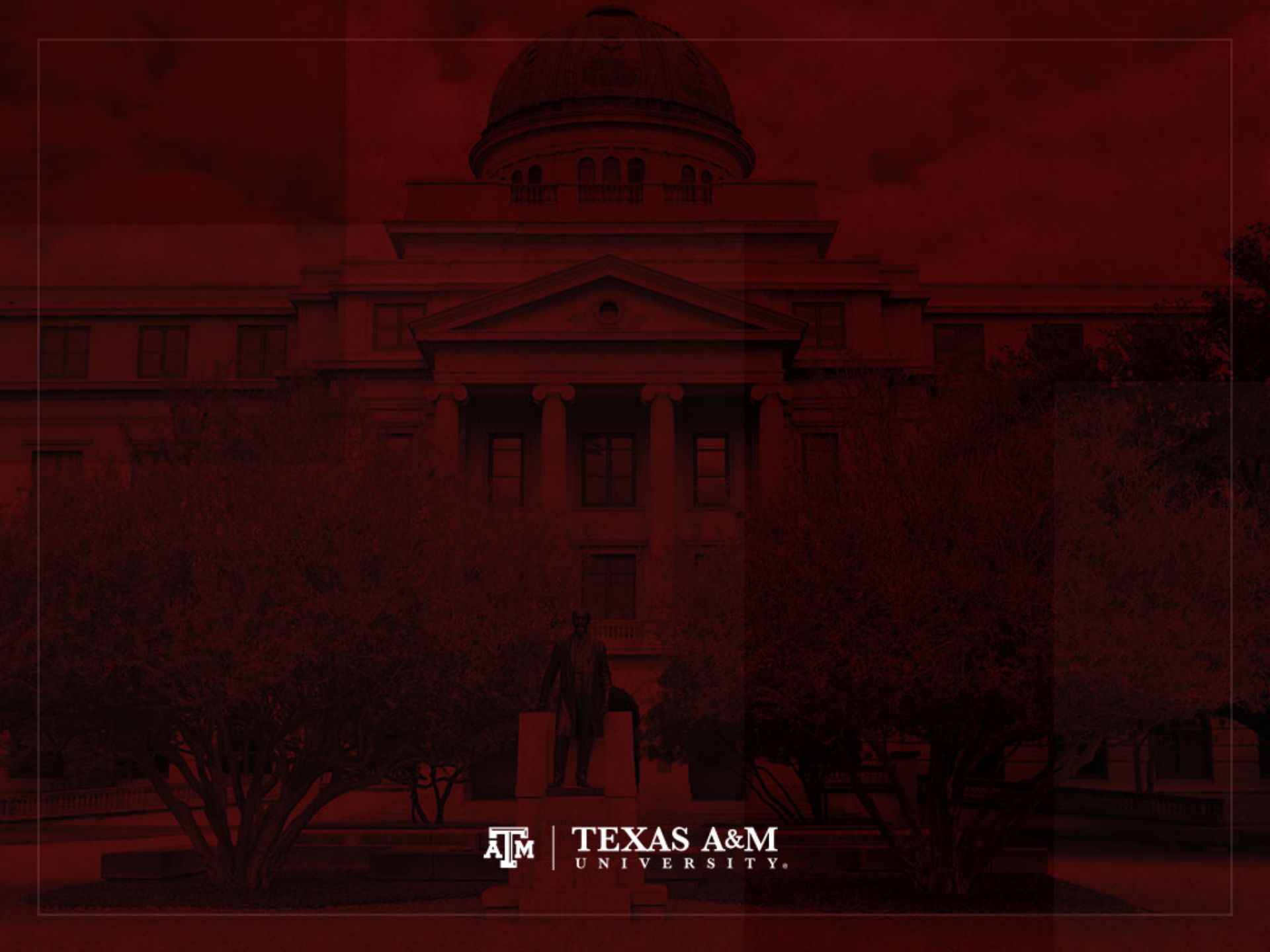
Add Health

- National Longitudinal Study of Adolescent to Adult Health (Add Health)

- Started by Professor J. Richard Udry in the early 1990s

- Sample: adolescents in grades 7–12 in the U.S. in 1994–1995

- Four follow-up interviews with the adolescent cohort transitioning into young adulthood, the last occurring in 2008

References

Poston DL, Bouvier LF. 2017. Population and Society: An Introduction to Demography. New York: Cambridge University Press. 2nd edition. Chapter 3 (pp. 35–58).

Weeks JR. 2015. Population: An Introduction to Concepts and Issues. Boston: Cengage Learning. 12th edition. Chapter 4.