



University of California  
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# Neighborhoods and breast cancer: data and research for health equity

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**David Williams**

“Unnatural Causes. Place Matters.” (PBS documentary, 2008)



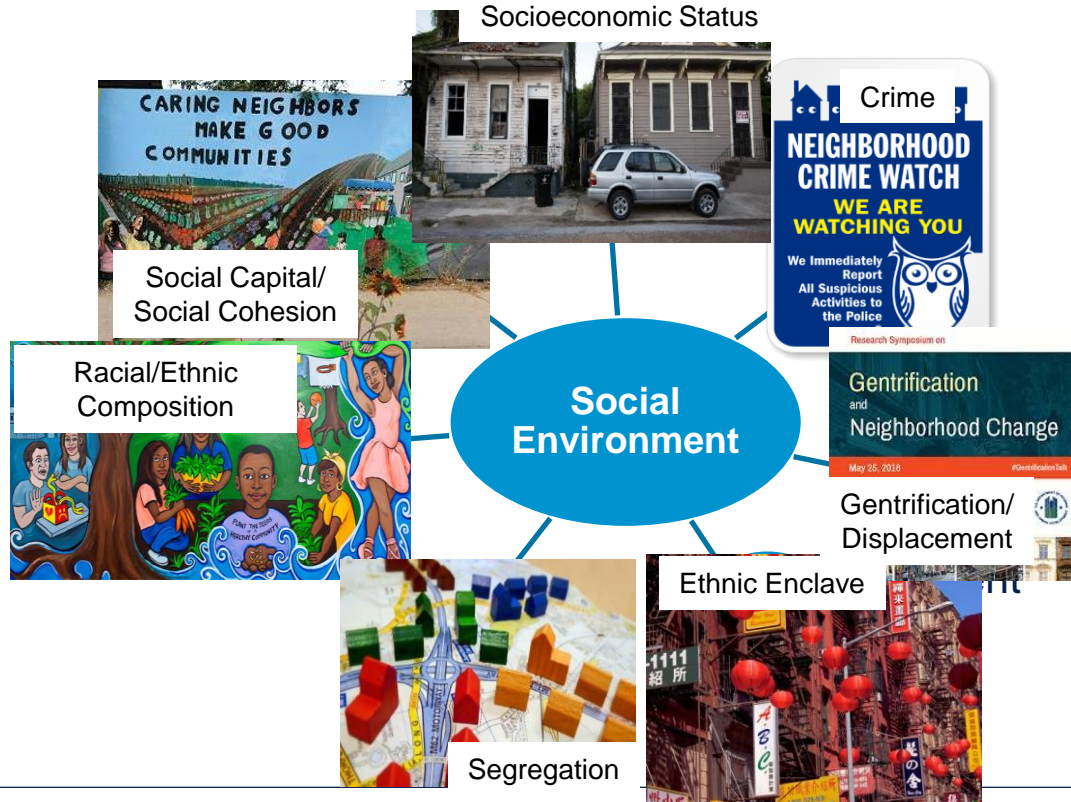
When we think about health, we usually think about health care and access to health care and the quality of care. But what research clearly shows is that health is embedded in the larger conditions in which we live and work....

Sometimes, we naively think of improving health by simply changing behaviors. But the **choices of individuals are often limited by the environments in which they live.**”

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# Social Environment Characteristics



# Built Environment Characteristics



# Built environment provides context for health behaviors

- Studies showing **food environment** is related to weight and obesity
  - Number of convenience stores
  - Distance to fast food restaurants
  - Living in a food desert (area with limited access to affordable & nutritious food)
  - Studies in children and adults



Built environments are shaped by segregation, vary by socioeconomic status



# Segregation and disparities in breast cancer survival

- In moderate & highly segregated regions:
    - Neighborhoods with more Black residents → better survival among Black women with breast cancer
    - Worse survival among White women
  - Social support & social networks from community members of same race/ethnicity?
- The power of human resources to collectively overcome adverse living conditions

Warner, Gomez. J Community Health 2010



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# Neighborhoods and breast cancer: What do we know (so far)?

Neighborhood characteristic	Risk factors	Risk or incidence	Stage	Quality of life	Survival
Neighborhood socioeconomic status	+/-	+	-	-	-
Latino & Asian ethnic enclave/density	+	-	+		-
Black ethnic composition	+	+	-		-
Segregation	+		+		+
Structural racism	+				+
Rurality	-	-	+		+
Built environment	+			+	+

- + Positive association between higher level of neighborhood characteristic and higher/worse disease outcome
- Negative association between higher level of neighborhood characteristic and higher/worse disease outcome

# Research on neighborhoods and breast cancer survivorship in the Pathways Study



- Link to existing geospatial data
  - Built (food environment, walkability), social (socioeconomic status, housing, crime, ethnic enclaves, segregation), physical (air, water, ground pollutants) environment
- Self-report on neighborhood features
  - Aesthetics, disorder, collective efficacy, walkability
- Virtual street audits using Google Street View
  - Natural aesthetics, street aesthetics/condition, physical disorder, pedestrian safety, signage, street/traffic safety, public transit

# Future directions

- Promote multi-level research
  - Better understanding of which neighborhood attributes are related to higher or lower risk, and for which population groups
- Links to biological mechanisms
  - Health behaviors
  - Stress
  - Healthcare access
- Identify resiliency factors
- Intersectionality
  - Between personal and contextual factors

# Data for stakeholders



californiahealthmaps.org



healthatlas.ucsf.edu



California Health Maps is an interactive mapping tool of health data for geographies beyond the county level in California. You can map cancer incidence for 12 of the most common invasive cancer sites and filter by sex and race/ethnicity. [Visit Learn](#) to review methodology, data sources, and more.

## Cancer Incidence ?

Select Area Type  
Zone

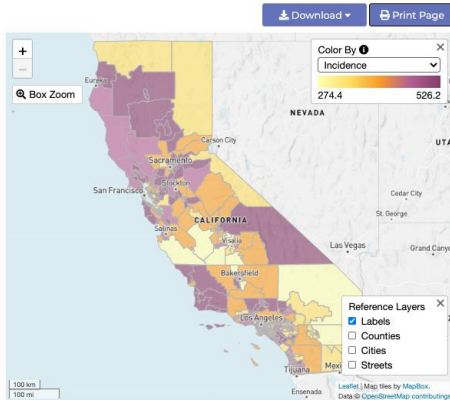
Location Search  
Search by address or city

Date Range  
5-Year: 2013-2017

Cancer Site/Type ?  
All Cancer Sites

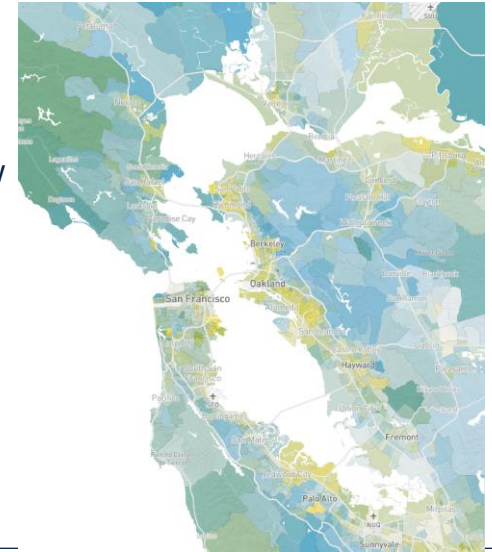
Sex ?  
All Sexes

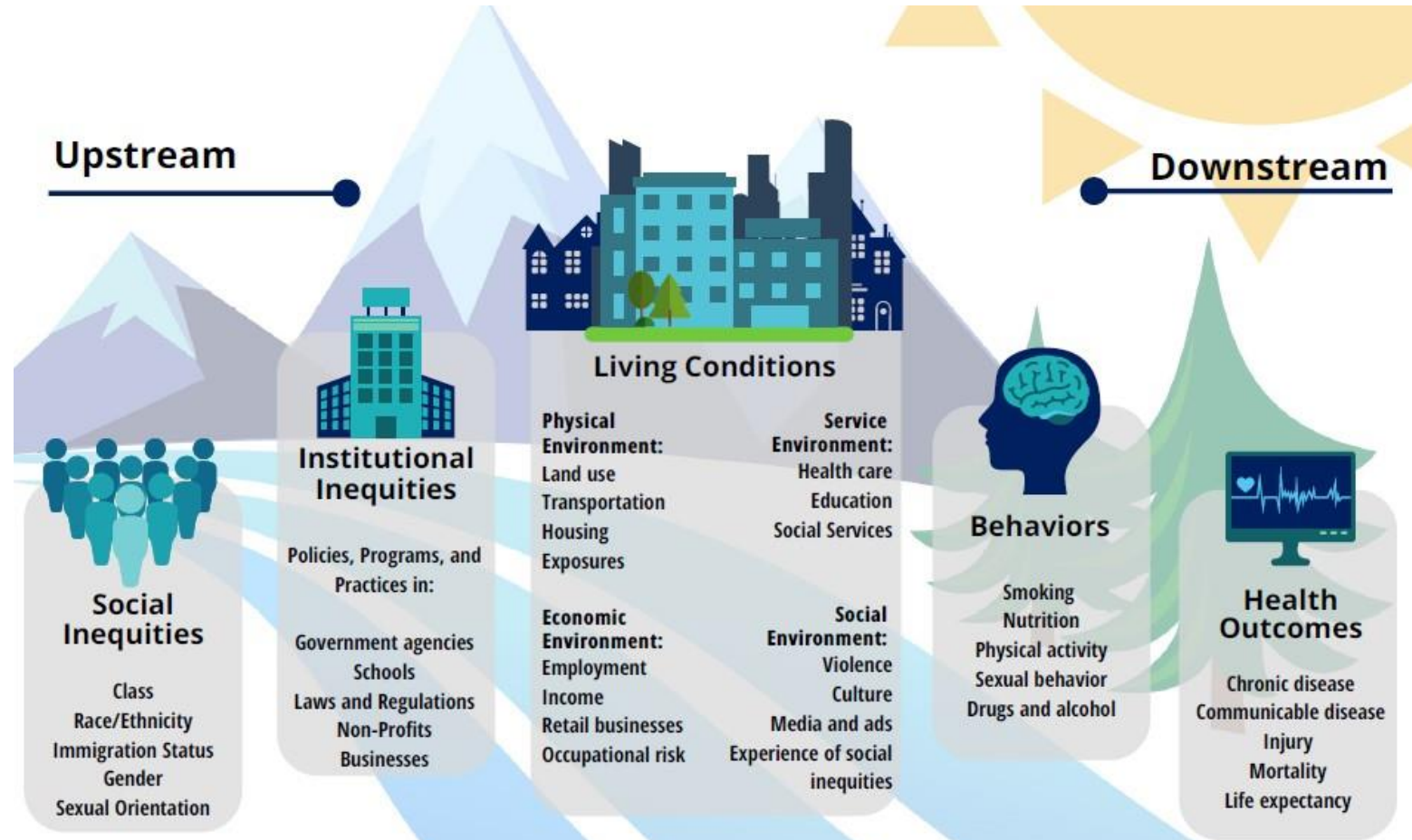
Race/Ethnicity ?  
All Ethnicities



Interactive map of over 100 variables to explore neighborhood-level characteristics and see how they relate to health at a population level.

Map includes historical and current COVID-19 case, death, and hospitalization data as well as nursing facility and prison-specific COVID data.





From Benton-Franklin Health District