Cape Fear Collective

RACIAL EQUITY DASHBOARD

Unpacking Systemic Inequity

Nick Pylypiw, Director of Data Science
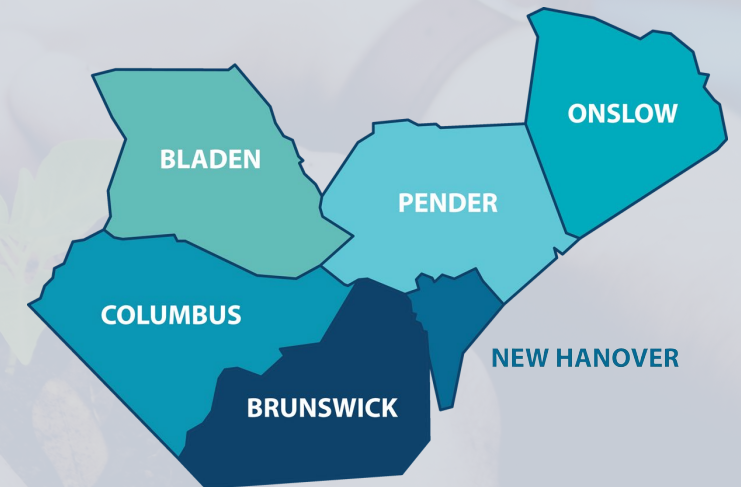
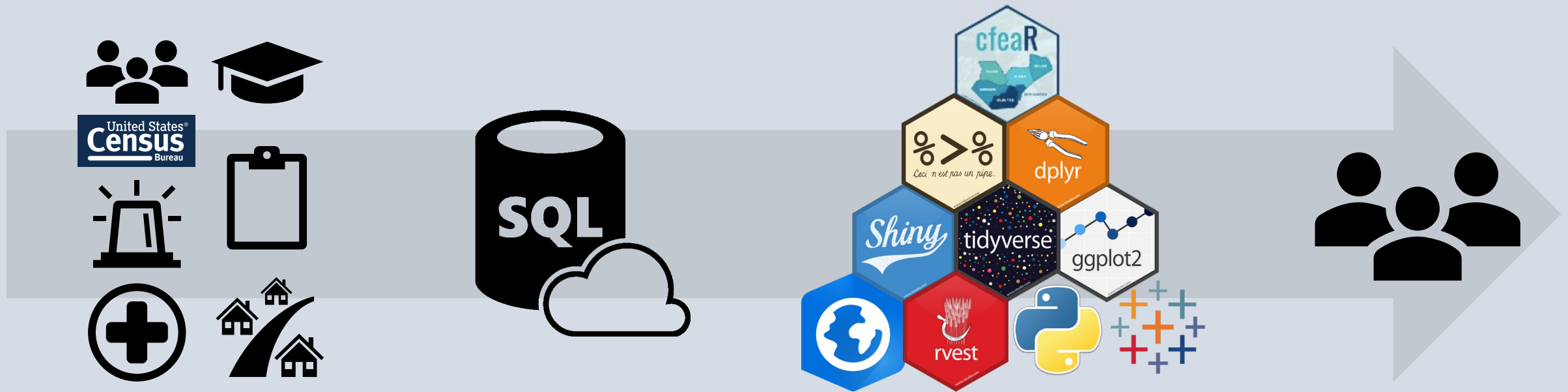December 2, 2020

Cape Fear Collective
What do we do?

We're redefining what a town square looks like in our community, serving as a place where all people, organizations, and ideas can come together to effect real, lasting, and systemic change. By merging cutting edge data science with an emphasis on equity and the lived experience of our most marginalized communities, the Cape Fear Collective supports Southeastern North Carolina's front-line organizations in combating poverty, racism, poor health and education outcomes, and socio-economic disparities.

BLADEN

ONSLOW

PENDER

COLUMBUS

NEW HANOVER

BRUNSWICK

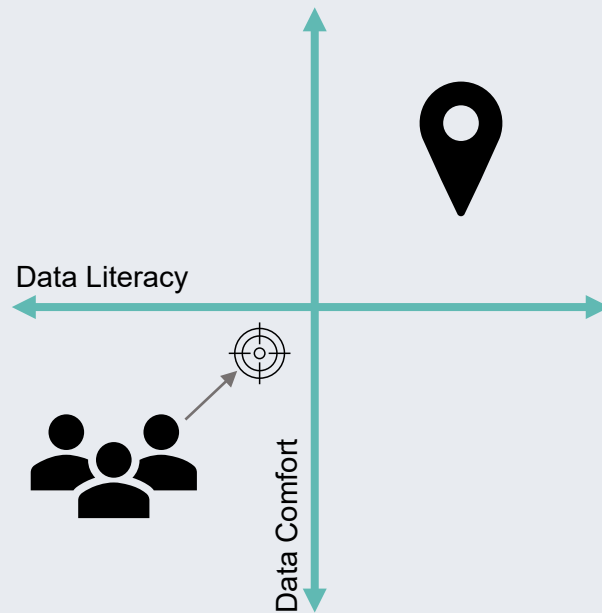# ANALYTICS ECOSYSTEM

End-to-end analytics from ingestion to socialization

CRITICAL COMPONENTS

Data science for social good

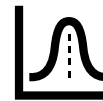| Meet Them In the Middle	Introduce the Lived Experience	Engage the Community

What do we mean by "Meet Them in the Middle?"

- Data literacy and comfort are separate continuums, with data scientists and typical audience in different quadrants.

- Too often, data scientists meet the audience in their comfort/literacy zone. This is painless in short‑term, but harmful long‑term.

- Instead, meet the audience somewhere in the middle, and pull them up the continuum.

Data Literacy

Data Comfort

How do we accomplish this?

Easy and Relevant Metrics

Thinking in Distributions

Explaining visuals and output

CRITICAL COMPONENTS

Data science for social good

Introduce the Lived Experience

What do we mean by "The Lived Experience?"

- Most people have a difficult time "connecting" with dots on an xy plane.

- Personalizing a data visualization with a face and story helps the audience contextualize and aid in hypothesis generation.

- Qualitative data and research can also validate model output and inform future data collection and modeling efforts.

How do we accomplish this?

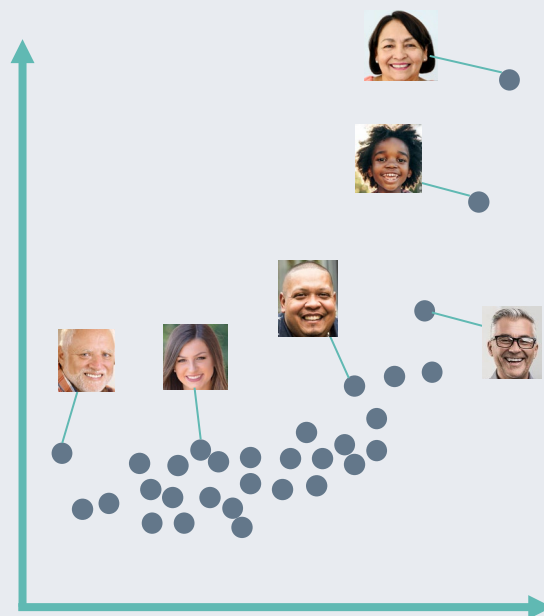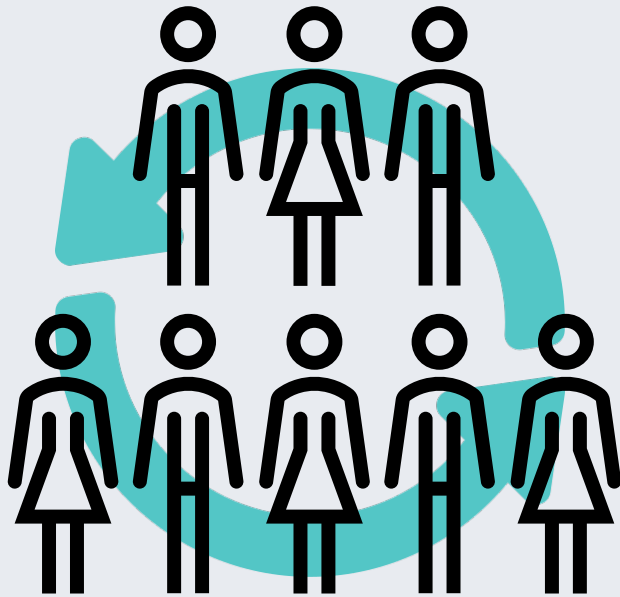| Community Surveys	Interviews and Podcasts	Qualitative Research

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CRITICAL COMPONENTS

Data science for social good

| Meet Them In the Middle | Introduce the Lived Experience | Engage the Community |

Benefits of Community Engagement:

- There exists a wealth of expertise and experience in the community. We need to turn that knowledge into attributes in our analyses.

- Adoption of model output and tools increases when end users are involved in the ideation and creation process.

How do we accomplish this?

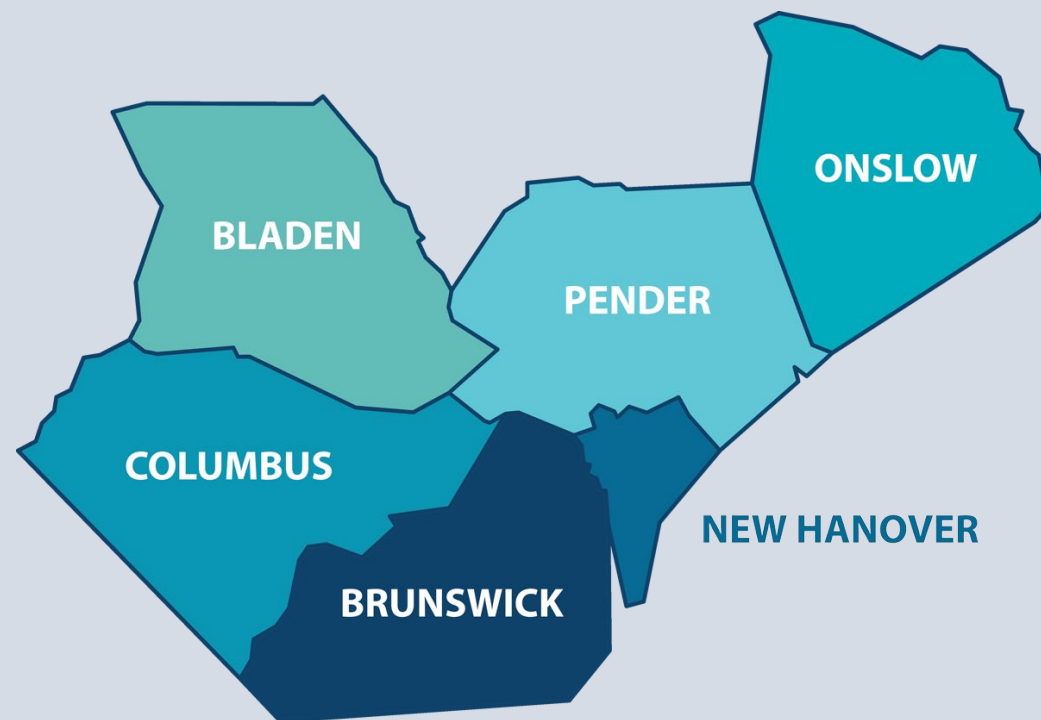Community Surveys

Participation in Community

Hosting Community Forums

RACIAL EQUITY DASHBOARD

Why did we take on this work?

Systemic racism is a complex and multi-dimensional problem that manifests in several different ways. No single narrative or data point can fully capture the pervasive and damaging nature of this crisis, but we have to start somewhere. In this dashboard we attempt to decompose the far-reaching effects of systemic racism into tangible components. We hope these insights will aid in the development of strategies and solutions to combat systemic racism and forge a more equitable future.

OVERVIEW OF RED

What is it?

➔ R Shiny Dashboard containing:
  ◆ R visualizations (ggplot)
  ◆ Links to interactive visualizations (ArcGIS, Tableau)

➔ Collection of "Data Stories" by Category
  ◆ Affordable Housing
  ◆ Civic Representation
  ◆ Educational Opportunity
  ◆ Historical Narrative
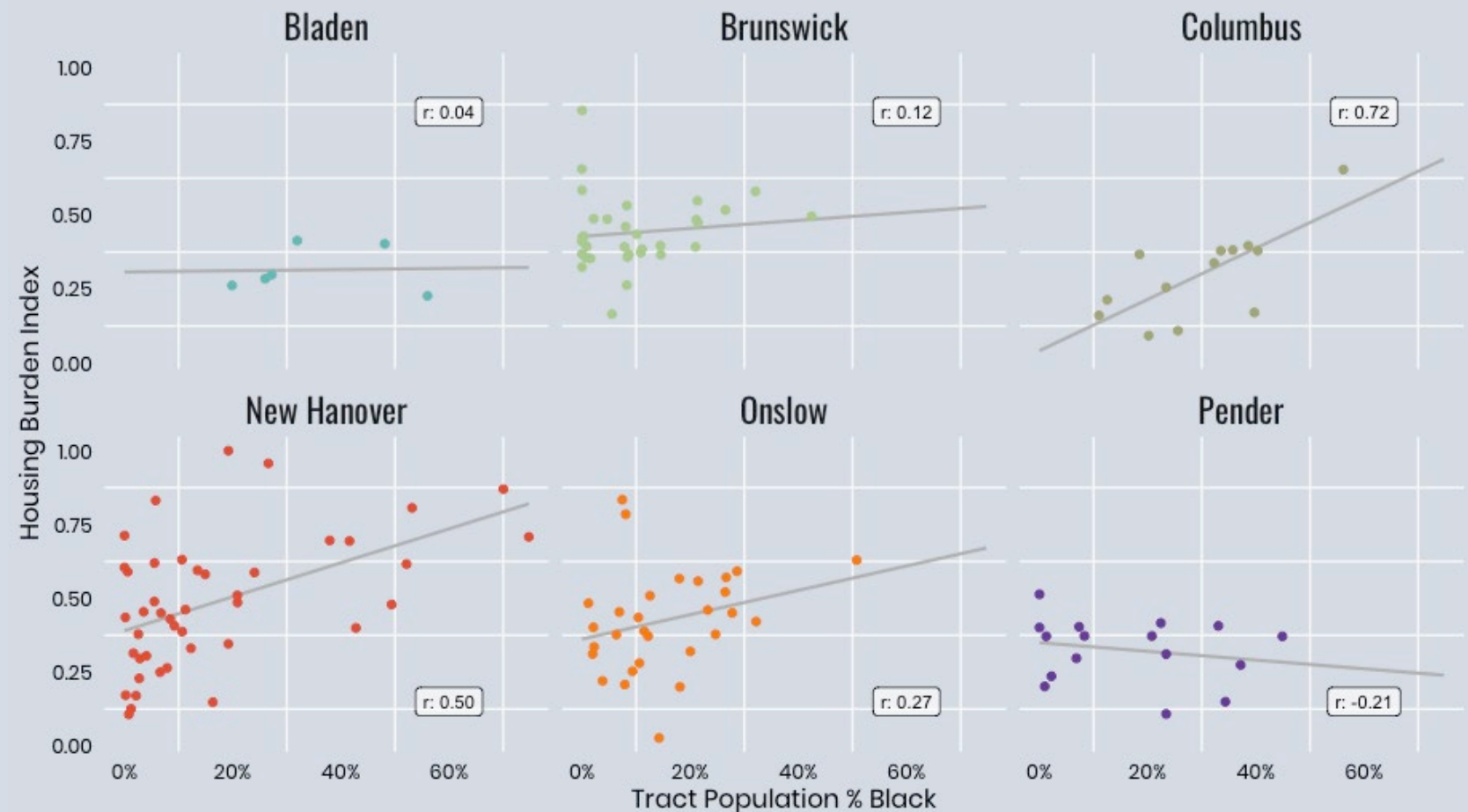 ◆ Justice System
  ◆ Public Health

Black Communities Disproportionately Impacted By Housing Burc

Race and Housing Burden Index, Cape Fear Region

Of the six counties in the Cape Fear region, three have non -trivial positive correlations between race and HBI. This means that, for these counties, the tracts with the highest Housing Burden Index also tend to be those with the highest percent of Black residents. These three counties are:

Columbus County: r = 0.72
New Hanover County: r = 0.50
Onslow County: r = 0.27

The remaining three counties (Bladen, Brunswick, and Pender) have weak correlations, an indication that race and HBI are not linearly related.

Source: Census Bureau (2018 American Community Survey 5-Year)
The HBI calculation is based on an rent/mortage-to-income ratio.
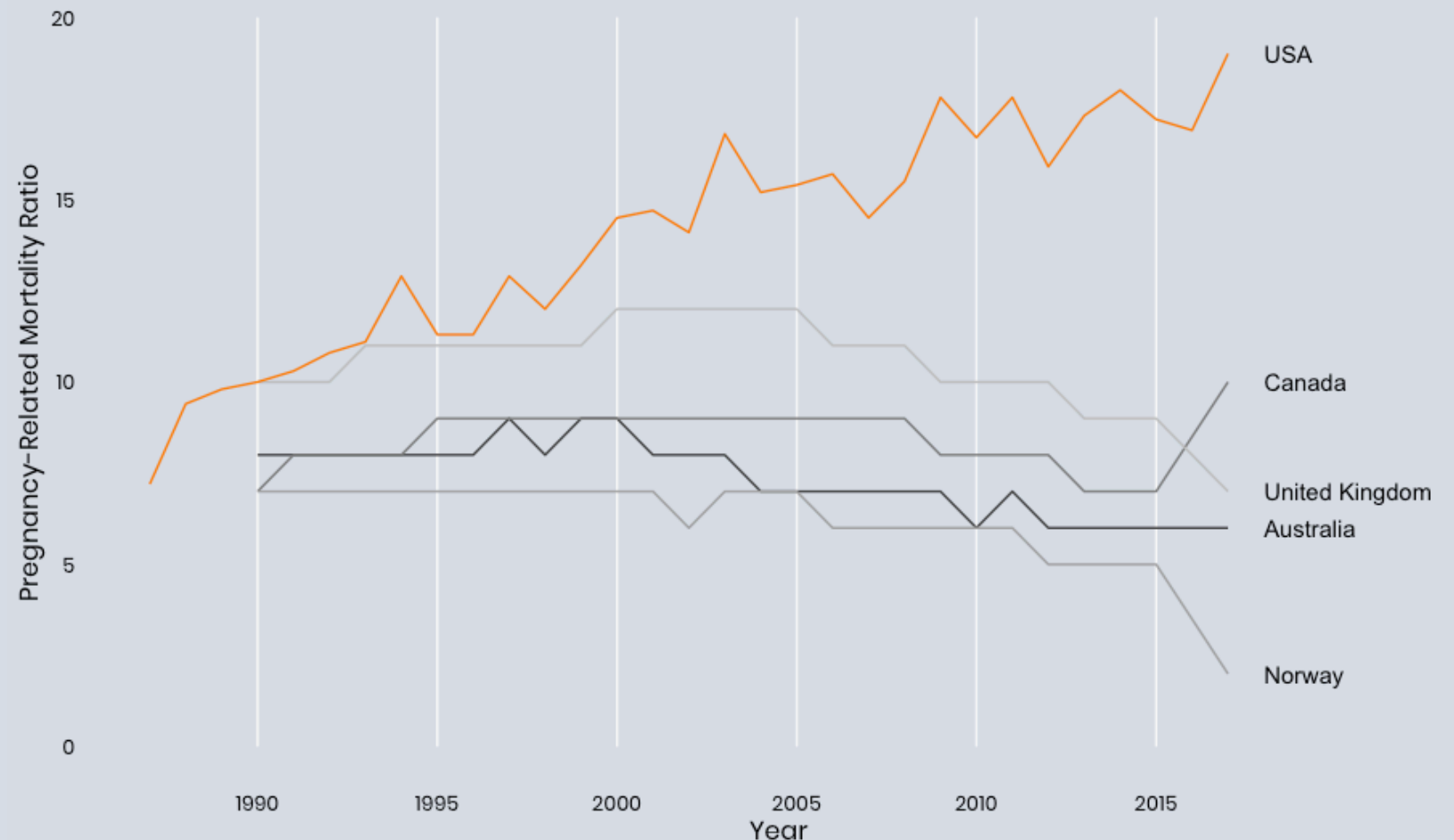Homeowners without a mortgage were excluded from this analysis.

Pregnancy Related Deaths Nearly Tripled in USA Since 1987

Pregnancy - Related Mortality Ratio, 30 - Year National Trend

The maternal mortality ratio fell significantly in the United States during the 20th century due to medical and technological advances.

Over the last 30 years, however, the pregnancy - related mortality ratio in the United States has nearly tripled, from 7.2 in 1987 to 19.0 in 2017. Of the 186 countries with available data, the United States ranks 56th, tied with Ukraine, Romania, and Oman.

The United States has the highest GDP in the world, followed closely by China (ranked 70th in maternal mortality), which makes this increase even more troubling. It is obvious that the United States is moving in the wrong direction.
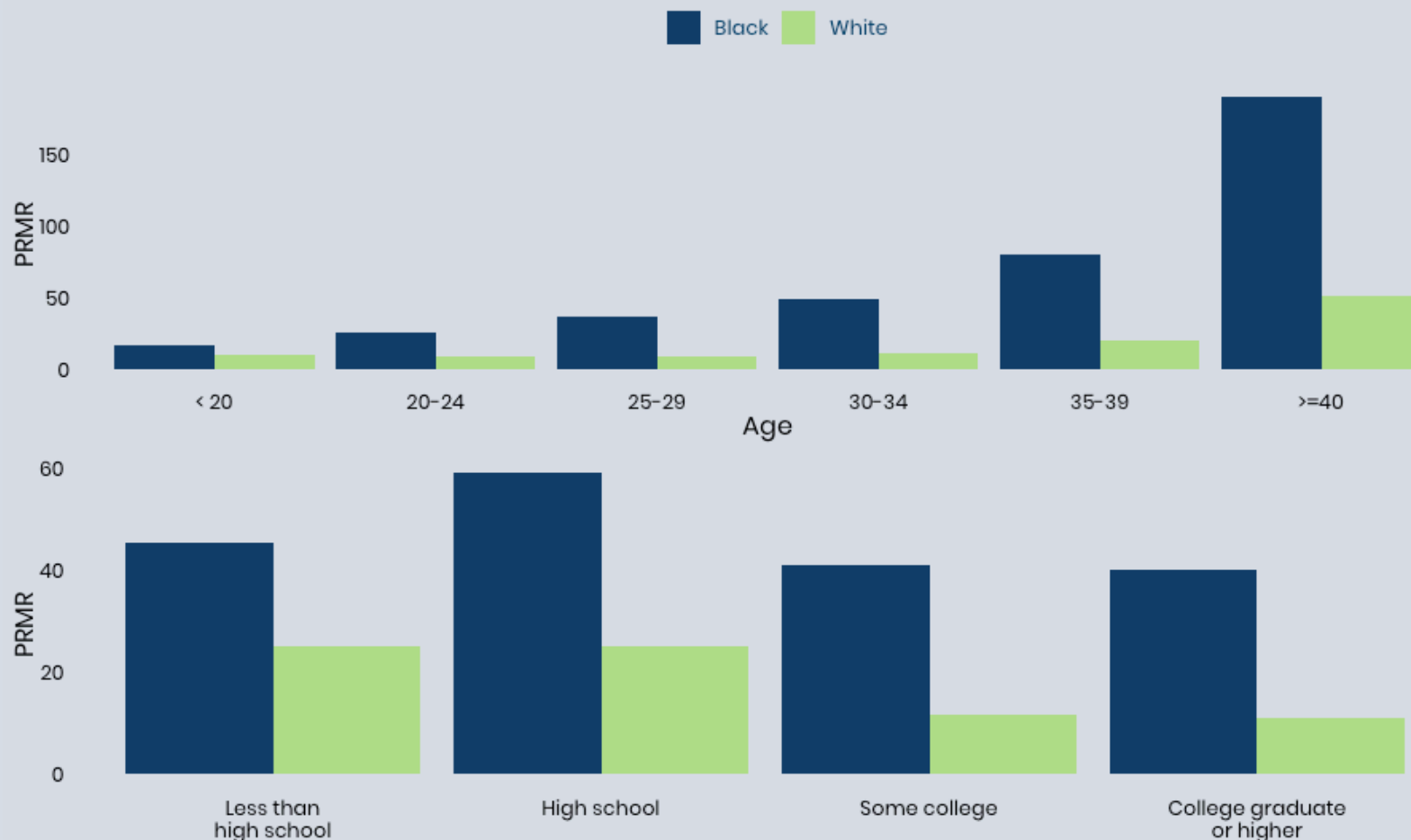

Source: Center for Disease Control and Prevention (CDC); World Bank; Our World in Data

Age and Education Impact Black and White Mothers Differently

Pregnancy Risk Factors By Race, United States

The risk of pregnancy complications increases with age, but the rate of this exponential growth differs greatly among Black and White mothers. Close to parity for mothers 20 years old or younger, the gap grows significantly by age group. Black mothers aged 40 and older have a PRMR almost four times that of their White peers.

Educational attainment is another indicator of disparity. A college education appears to have a mitigating effect for White mothers, cutting PRMR by more than half. PRMR for Black mothers, is unaffected by educational attainment, with the exception of an increase for high school graduates.

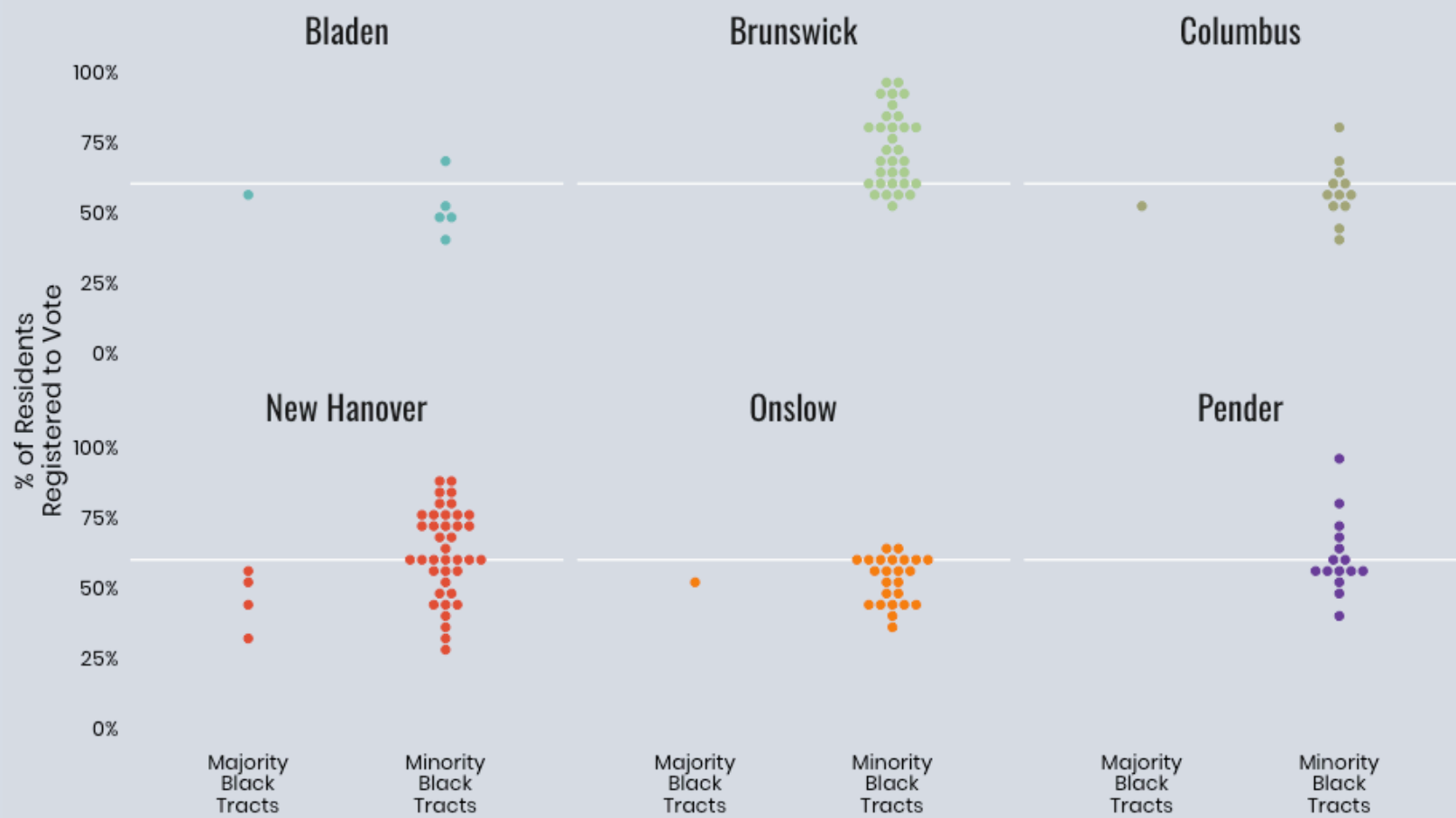Source: Center for Disease Control and Prevention (CDC)

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Voter Registration Varies Greatly in the Cape Fear Region

Voter Registration by Census Tract and County, Cape Fear Region

Though 60% of the Cape Fear region's eligible citizens are registered to vote, there is a wide range at both the county and the census tract level.

Almost all Brunswick County census tracts have a higher percentage of registered voters than the regional baseline of 60%. Meanwhile, almost all Onslow County census tracts are below the regional baseline.

There are seven census tracts in which greater than 50% of the population is Black. Every one of these tracts has a voter registration lower than the rest of the region. Four of these tracts are in New Hanover Count (Tract 101 and 114 in Northside, Tract 111 in Southside, and Tract 103, 129 just south of the airport.

Source: North Carolina State Board of Elections
Camp Lejeune tracts were excluded.
White line indicates the 60% of eligible voters in Cape Fear that are registered.

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Annual Incidents Roughly Proportional by Black/White Suspects

Count of Incidents 2000 - 2019 Wilmington, North Carolina

The number of incidents WPD responded to over the last 20 years has fluctuated. Incidents decreased by 22% from 2003 to 2008 and steadily increased for the ensuing 5 years, peaking in 2013. Despite the year-to-year fluctuations, 2019 numbers were only marginally higher than in 2000 (7,653 vs 7,186).

Incidents involving Black/White suspects remained consistent from 2000 to 2011, when an uptick in incidents involving White suspects created a divergence. Although incidents involving White suspects currently outnumber those involving Black suspects, comparing that trend to the demographic shift in the City (see the Charge-Population Ratio below) reveals an apparent and growing disparity.

Source: Wilmington Police Department

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Trend of Racial Disproportion Growing Over Last 20 Years

Charge - Population Ratio 2010 - 2019 Wilmington North Carolina

Charge - Population Ratio (CPR) has increased over the last 20 years, for both incidents and arrests. If charges were distributed proportionally, this number would be close to 1. However, this metric is close to 3, which means that charges involving Black people are close to 3 times higher than we would expect, based on the population percentages.

Arrests: Between the years 2011 to 2018, the percentage of all arrest charges associated with a Black suspect rose from 47% to 50%. Meanwhile, the percentage of Wilmington's population that is Black has decreased from 21% to 19%. These opposite trends result in the increase of CPR from 2.24 to 2.68.

Incidents: Between the years 2011 to 2017, the percentage of all incident charges associated with a Black suspect rose from 39% to 52%. Meanwhile, the percentage of Wilmington's population that is Black has decreased from 21% to 19%. These opposite trends result in the increase of CPR from 1.87 to 2.82.

Source: Wilmington Police Department; Census Bureau (2018 American Community Survey 5-Year)

THANK YOU

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