Health Disparities and COVID-19 in EJ COMMUNITIES

Deepak Kumar, PhD

Julius L. Chambers Biomedical Biotechnology Research Institute (JLC-BBRI)

NORTH CAROLINA CENTRAL UNIVERSITY

DURHAM, NC

NCCentral UNIVERSITY

Discover what's Central to you.

NCCentral UNIVERSITY

ACCORD
NC CENTRAL UNIVERSITY ADVANCED CENTER FOR COVID RELATED DISPARITIES

Advance Center for COVID-19 Related Disparities

WWW.NCCU.EDU/ACCORD

A Central Resource for **GOOD HEALTH.**

WWW.NCCU.EDU

Health Equity, Environment, and Population Health (HOPE)

Building healthy communities and reducing the impact of health disparities through promotion of healthy living practices, education on chronic disease prevention, and examining the links between environment, technology and health.

NCCentral UNIVERSITY
Julius L. Chambers Biomedical Biotechnology Research Institute

HOPE
HEALTH EQUITY ENVIRONMENT AND POPULATION HEALTH PROGRAM

NC Central University
Julius L. Chambers Biomedical Biotechnology Research Institute

HOPE
HEALTH EQUITY ENVIRONMENT AND POPULATION HEALTH PROGRAM

ACCORD
NC CENTRAL UNIVERSITY ADVANCED CENTER FOR COVID RELATED DISPARITIES

RCHDR
NORTH CAROLINA CENTRAL UNIVERSITY
RCMI CENTER FOR HEALTH DISPARITIES RESEARCH

Overview:

1. JLC-BBRI and RCMI Center for Health Disparities (RCHDR)
2. Kumar-Research on Social Epigenomics
3. Health Equity, Environment and Population Health (HOPE) Program
4. Advanced Center for COVID-19 Related Health Disparities (ACCORD)

North Carolina Central University

RCMI CENTER FOR HEALTH DISPARITIES RESEARCH
NORTH CAROLINA CENTRAL UNIVERSITY

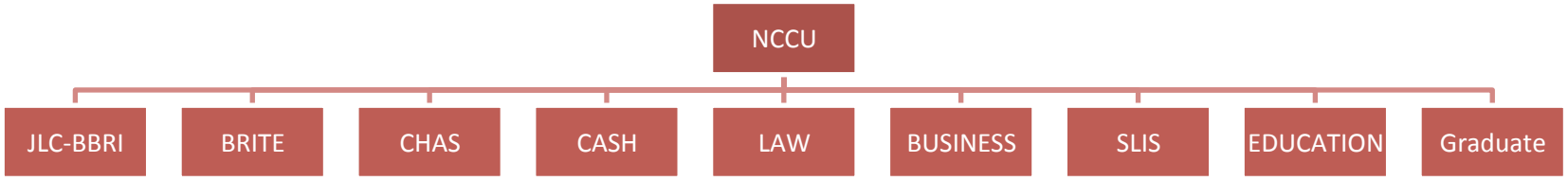
- Founded in 1910 as an HBCU; a component of the 17-member University of North Carolina system.

- Strong commitment to training students who pursue degrees in **STEM** disciplines, behavioral sciences and conduct **Health Disparities** research, including a **PhD program in Integrated Biosciences, with emphasis on health disparities**.

- Houses two signature biomedical research institutes: the Julius L. Chambers Biomedical Biotechnology Research Institute (**JLC-BBRI**, est. 1998) and the Biomanufacturing Research Institute and Technology Enterprise (**BRITE,** est. 2008).

- **RCMI grant awarded in September 2017**

JLC-**BBRI**



JLC-**BBRI - Durham, NC**

Health Disparities Research
Prepare minority Researchers

JLC-**BBRI - Kannapolis, NC**

Julius L. Chambers Biomedical Biotechnology Research Institute (JLC-BBRI)

- Cancer
- Cardio-metabolic
- Neuroscience and Drug Abuse
- Nutrition
- HOPE

RCMI CENTER FOR HEALTH DISPARITIES RESEARCH
NORTH CAROLINA CENTRAL UNIVERSITY

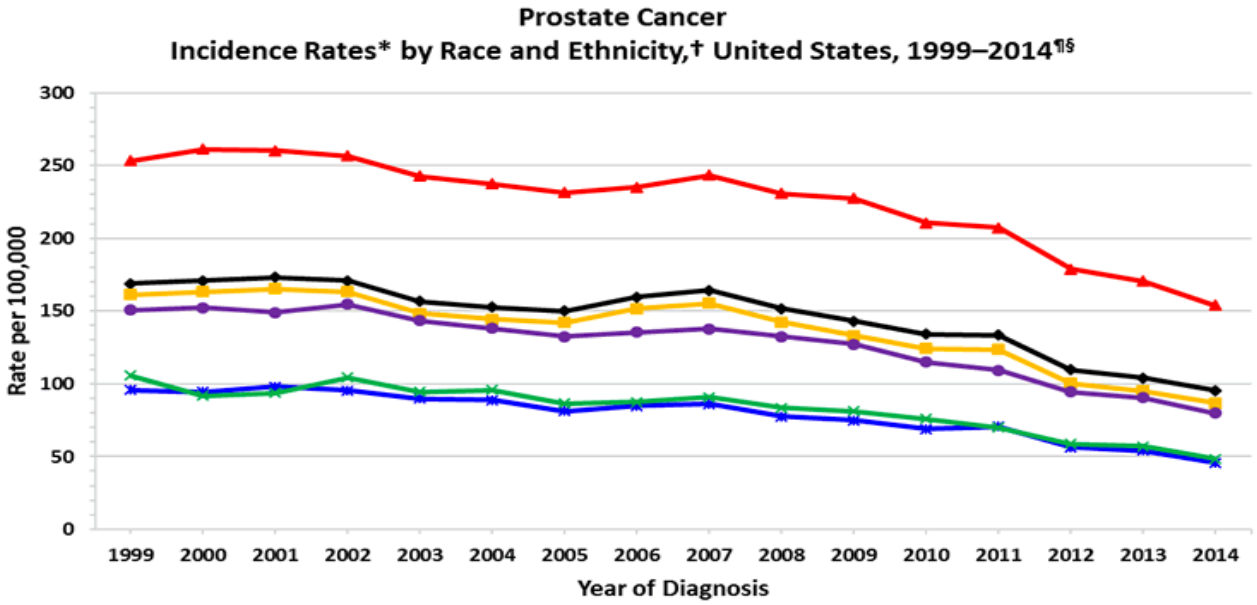
RCMI Community Engagement Core

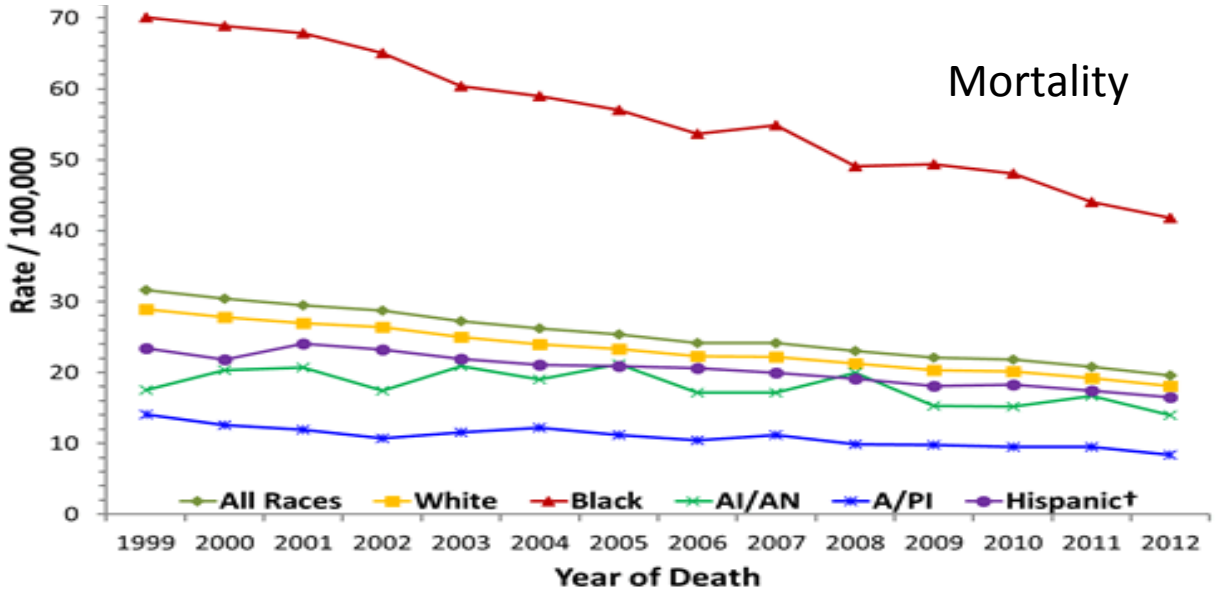
Research With Care

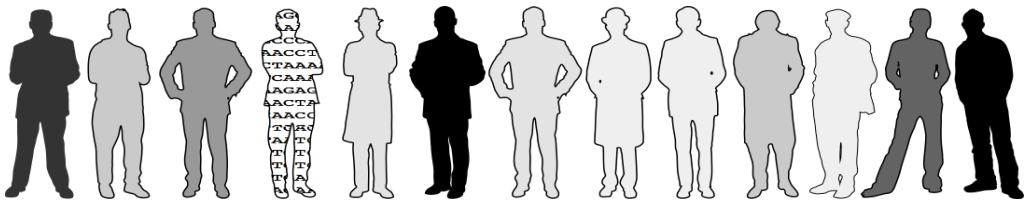
TEAM NCCU

Collaborations with Durham (Urban) and Halifax County (Rural), NC

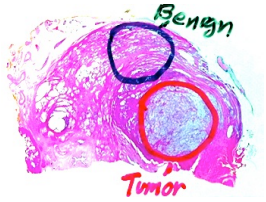
Prostate Cancer Disparities

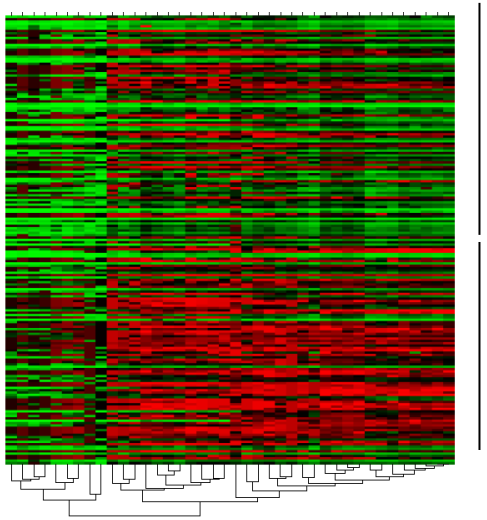


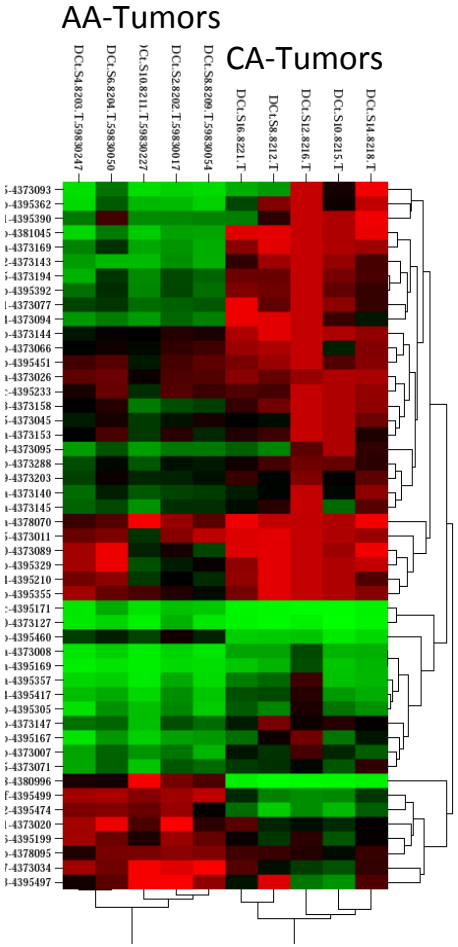


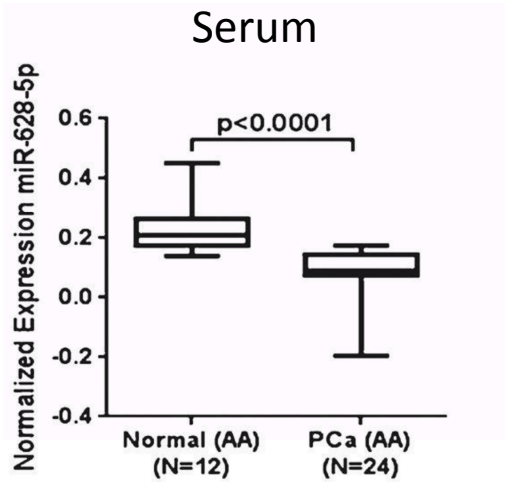


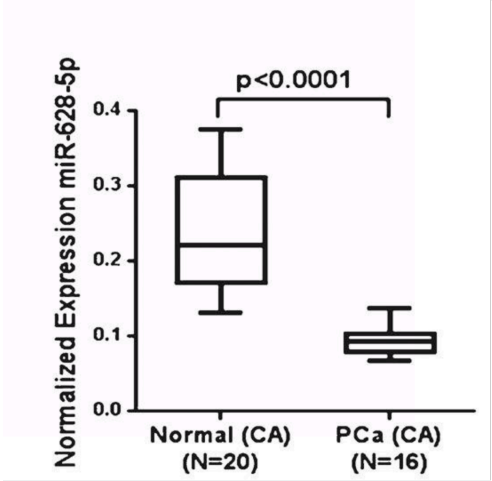
Differentially modulated genes and microRNAs in prostate cancer tissues and body fluids

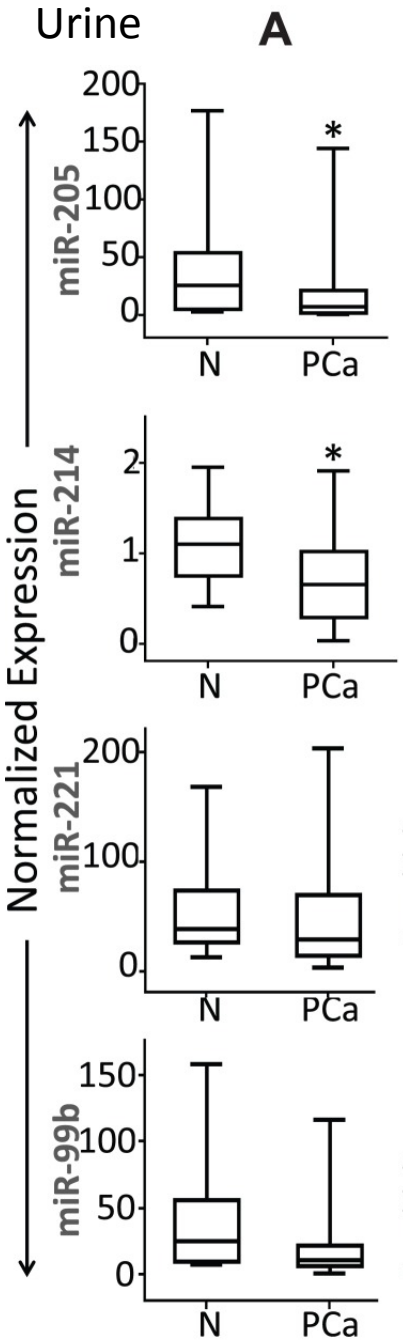












Srivastava et al., PLOS one 2014

MicroRNAs: Race associated biomarkers to targets for epigenetic therapy in prostate cancer

www.impactjournals.com/oncotarget/ Oncotarget, 2017, Vol. 8, (No. 10),

The role of miR-24 as a race related genetic factor cancer

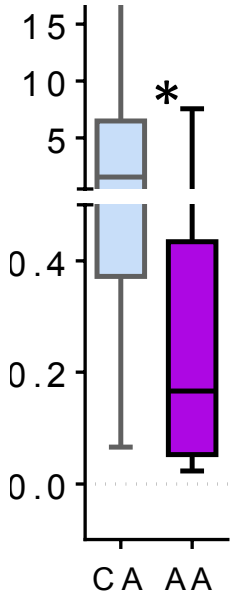
Yutaka Hashimoto[1,*], Marisa Tanaka[1], Shahana Majid[1], Kulkarni[1], Pritha Dasgupta[1], Tabatabai[2], Deepak Kumar[3],

[1]Department of Urology, VA Medical Center

[2]Department of Pathology, Veterans Affairs 94121, USA

[3]Julius L. Chambers Biomedical/Biotechnol Carolina Central University, Durham, NC 2

*These authors contributed equally to this v



Differentially expressed microRNAs in African American vs. Caucasian American prostate Cancer

www.impactjournals.com/oncotarget/ Oncotarget, 2017, Vol. 8, (No. 5), pp: 8356-8368

Research Paper

Differential expression of miR-34b and androgen receptor pathway regulate prostate cancer aggressiveness between African-Americans and Caucasians

ato[1], Soichiro Yamamura[1], Yuichiro , Shahryari Varahram[1], Priyanka itsuho Sumida[1], Laura Tabatabai[1],

isco and University of California San Francisco, San

OPEN ACCESS Freely available online

PLOS ONE

MicroRNA Profiling in Prostate Cancer - The Diagnostic Potential of Urinary miR-205 and miR-214

Anvesha Srivastava[1], Helle Goldberger[1], Alexand Catalin Marian[2], Eric K. Oermann[3], Sunghae Uhm Deborah L. Berry[3], Bhaskar V. S. Kallakury[3], Subh Deepak Kumar[1,3]*

1 Cancer Research Laboratory, Department of Biology, Chemistry and Physics, 2 Biochemistry Department, Victor Babes University of Medicine and Pharmacy T Washington, D. C., United States of America, 4 University of Tennessee Health Sc

Abstract

Prostate cancer (PCa) is the most common type of cancer

www.nature.com/scientificreports

SCIENTIFIC REPORTS

OPEN

MicroRNA-214 targets PTK6 to inhibit tumorigenic potential and increase drug sensitivity of prostate cancer cells

Patrice Cagle[1], Suryakant Niture[1], Anvesha Srivastava[2], Malathi Ramalinga[2], Rasha Aqeel[2], Leslimar Rios-Colon[1], Uchechukwu Chimeh[1], Simeng Suy[4], Sean P. Collins[4], Rajvir Dahiya[5] & Deepak Kumar[1,2,3]

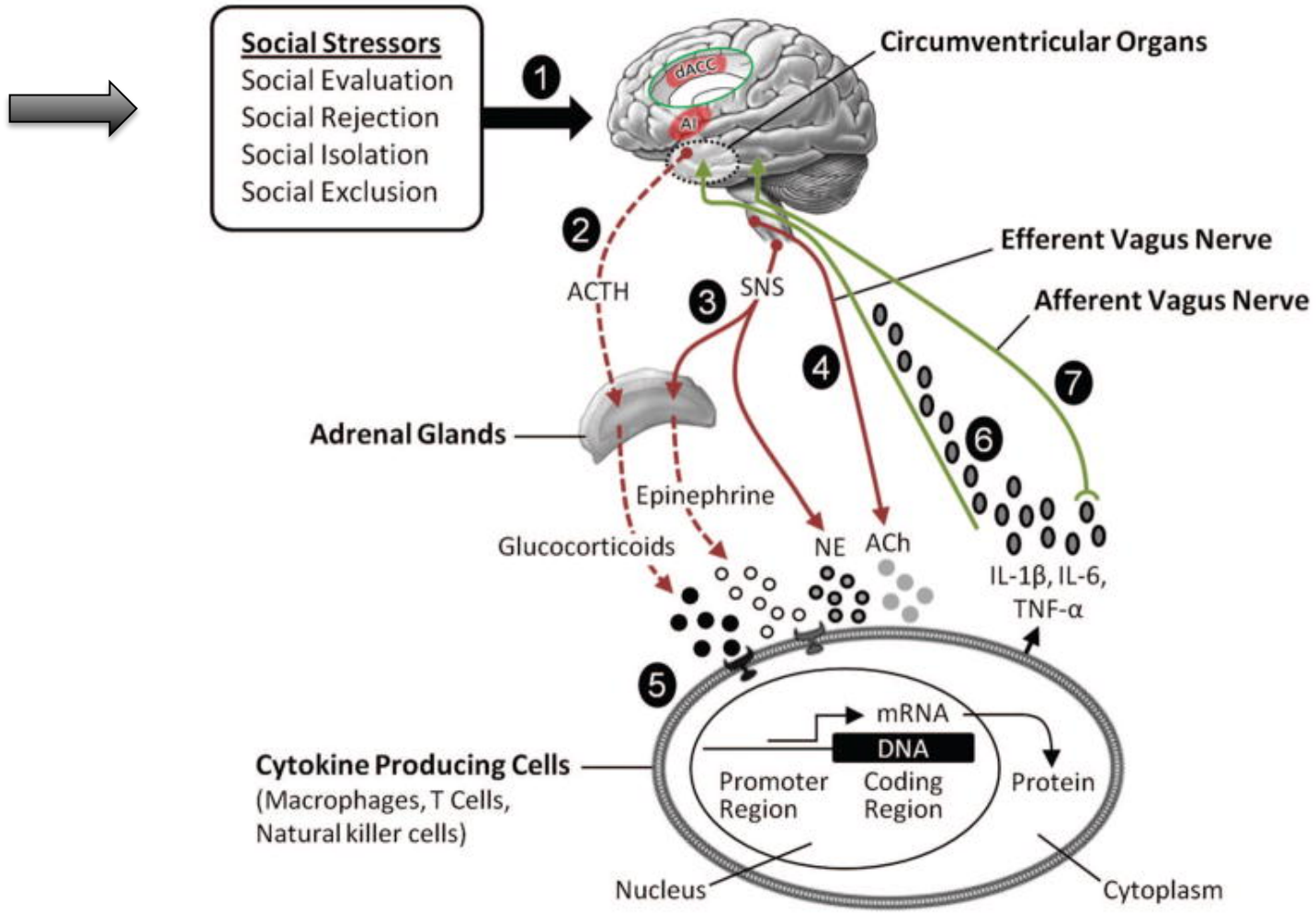
Received: 21 March 2019
Accepted: 14 June 2019
Published online: 05 July 2019

Differentially expressed microRNAs in AA PCa – Biological basis of health disparities

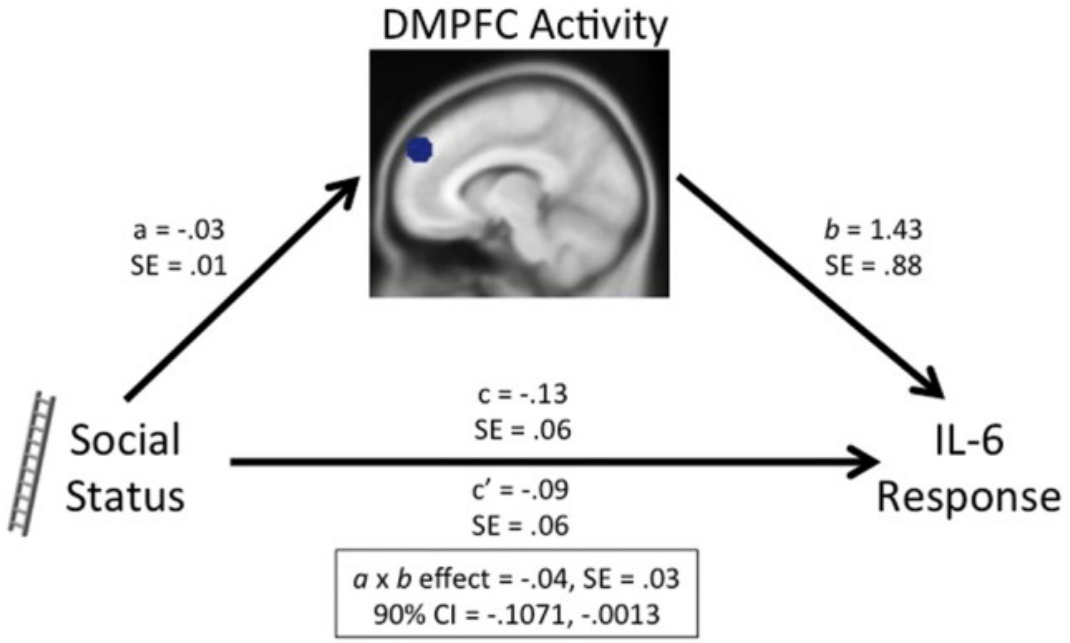
Social Signal transduction theory:

Social Determinants of Health Disparities

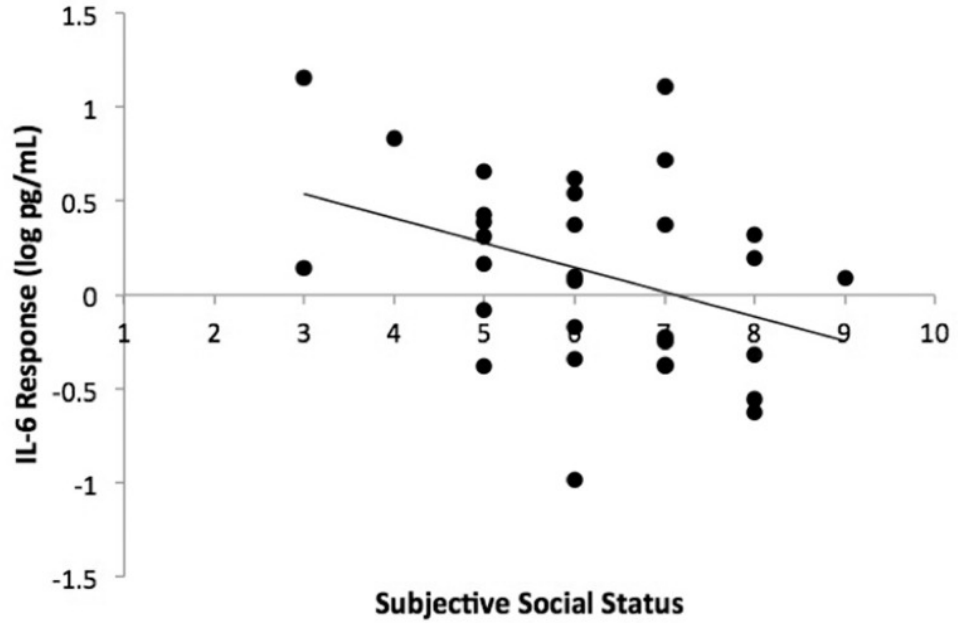
- Economic Stability
- Education
- Neighborhood/Built Environment
- Health and Health Care
- Social and Community Context



Slavich and Irwin, 2014, Psychol Bull. 2014 May;140(3):774-815.

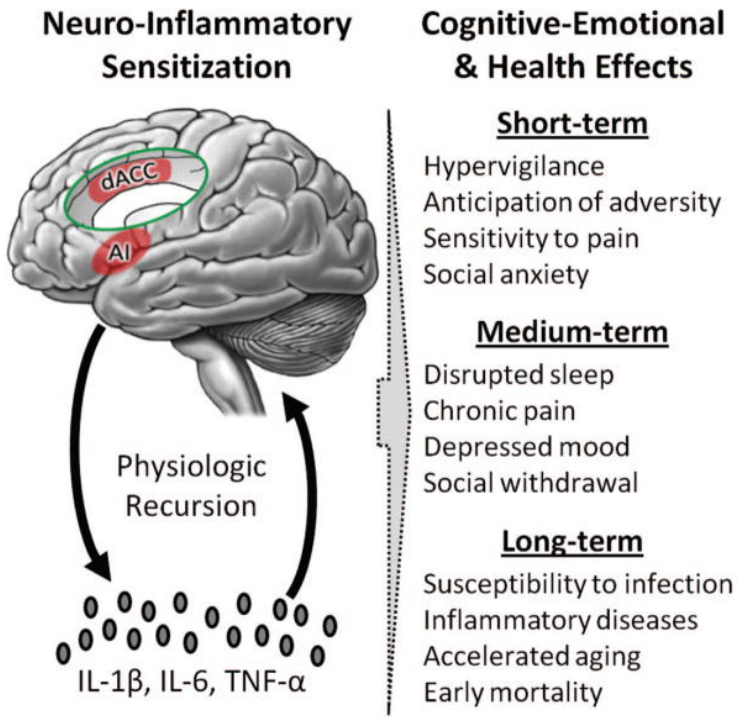


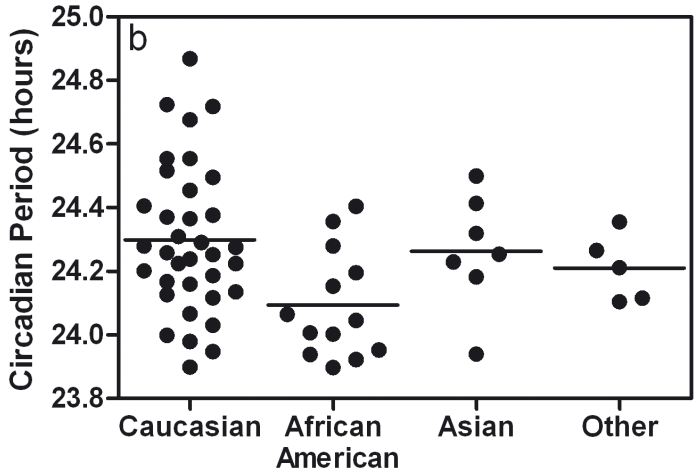
Inflammatory response
Cell signaling
Epigenetic response
miRNAs



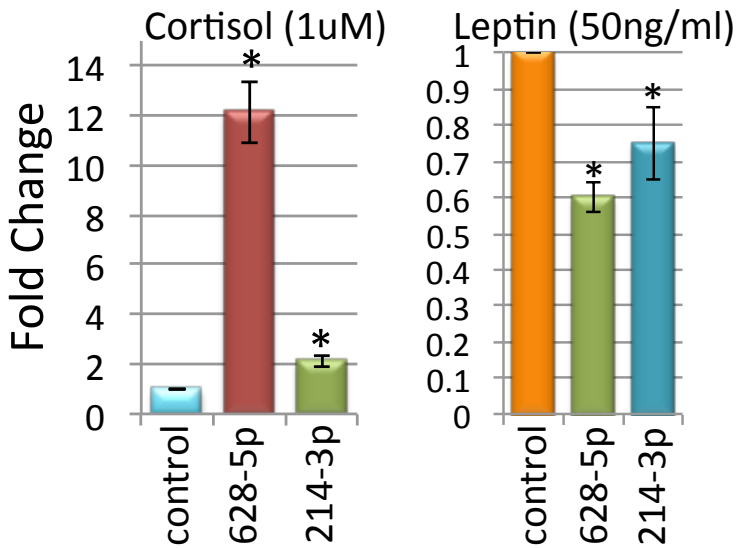
Muskatell et al., 2016, Soc Cogn Affect Neurosci. 2016 Jun;11(6):915-22

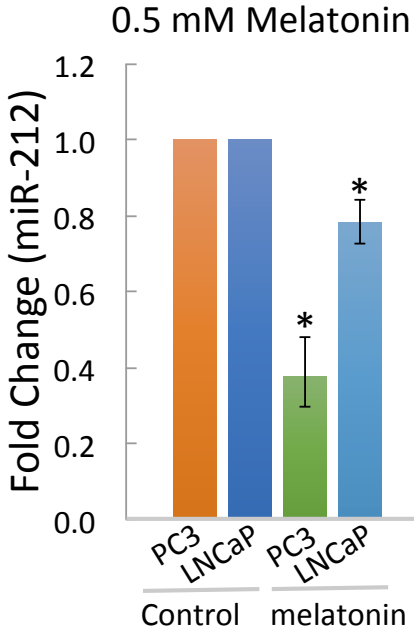
Social Stress

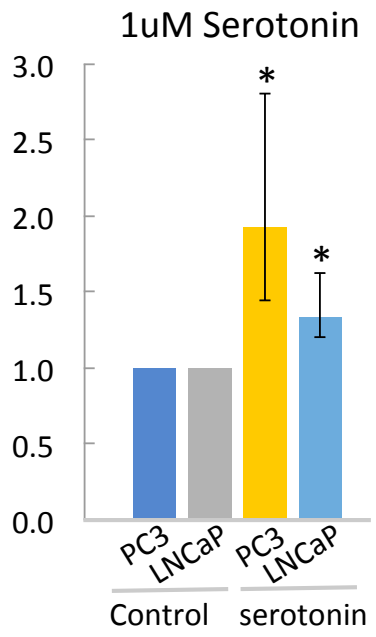


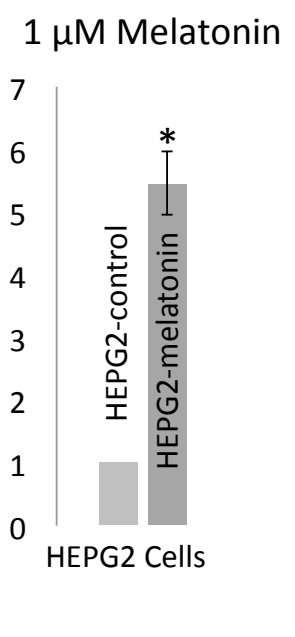


Eastman – Rush University Medical center

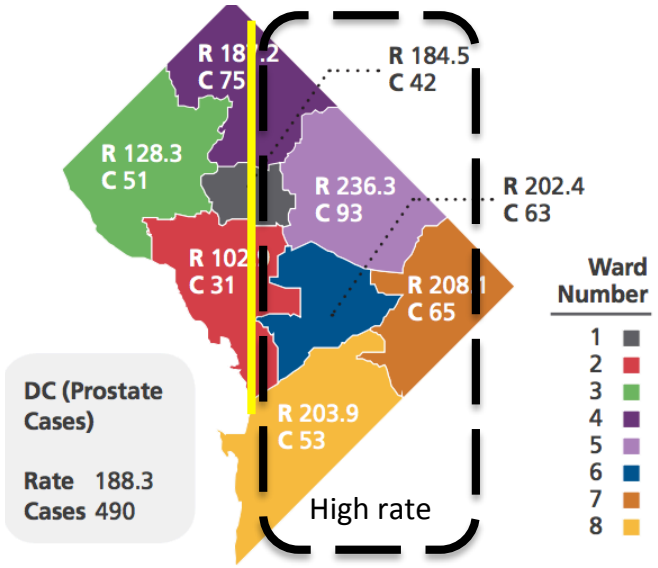


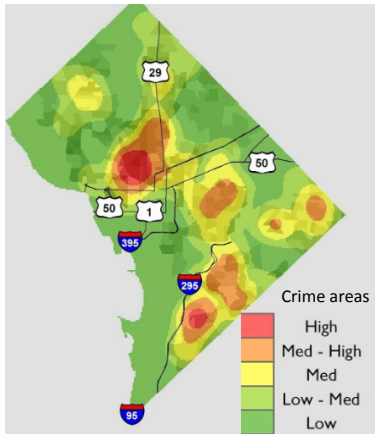




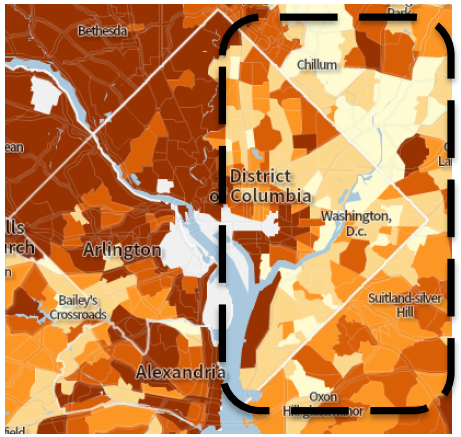


Model to study social epigenomics

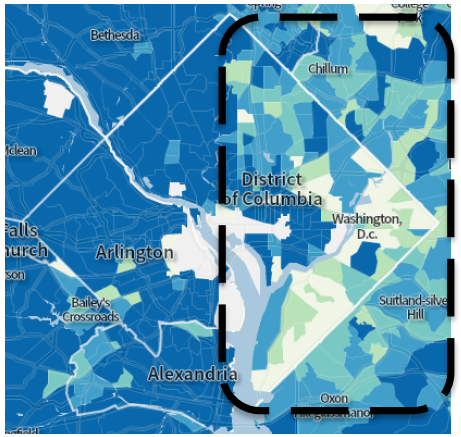




Crime rate



High income Low income



High education Low education

Predom CA Predomo AA

Social Stress / Individual and Neighborhood factors

↓

Mitogens: Hormones / cytokines / enzymes etc.

↓

Epigenetic changes / miRNA expression

↓

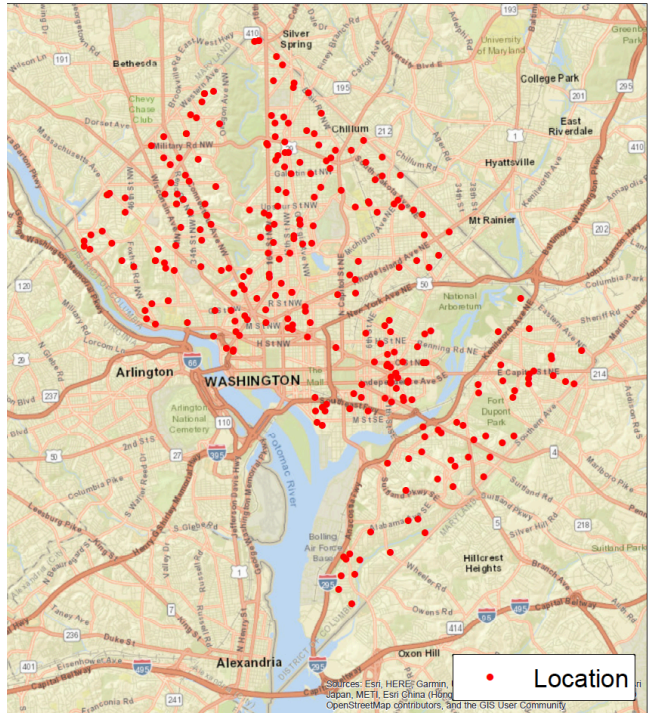
Cancer cell signaling / Cancer hallmarks

↓

Aggressive Disease / Poor outcomes

↓

miRNA biomarkers / therapeutics

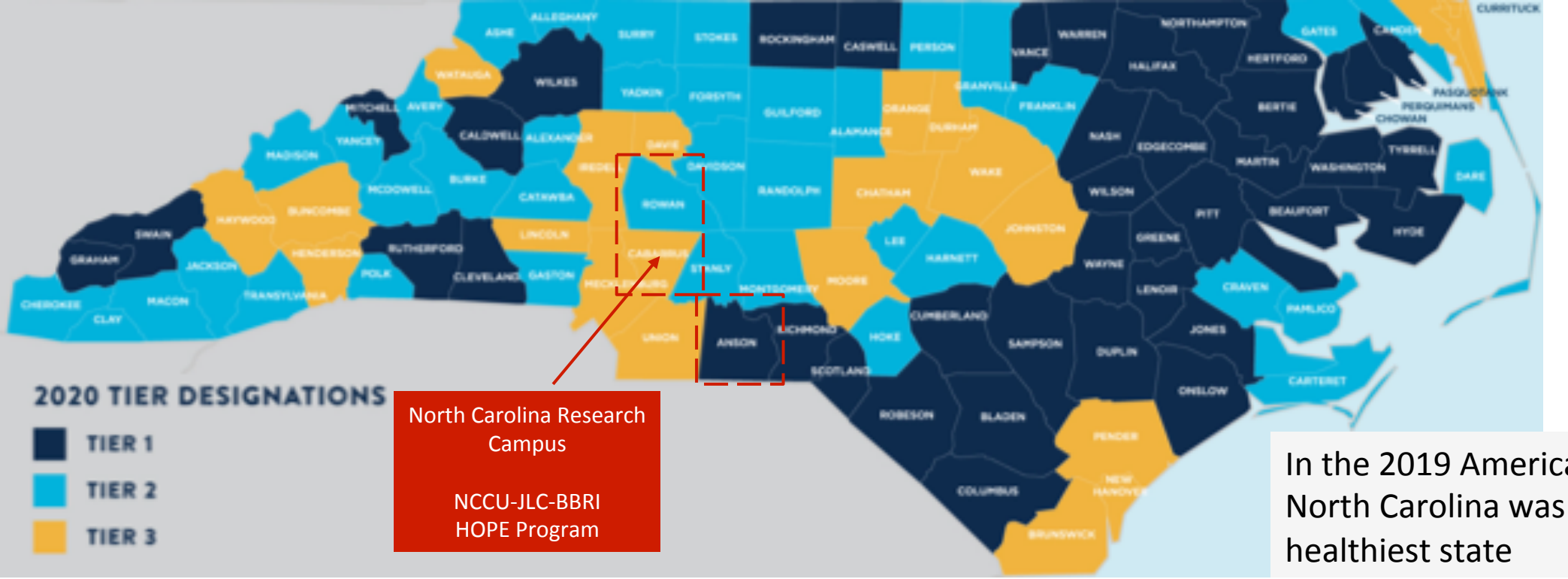


NCCentral UNIVERSITY

Julius L. Chambers Biomedical Biotechnology Research Institute

HOPE HEALTH EQUITY ENVIRONMENT AND POPULATION HEALTH PROGRAM

*Building healthy communities by developing and implementing **evidence based interventions** to address health disparities, promote healthy living, chronic disease prevention and management, and exploring interactions between environment, health and technology.*



In the 2019 America's Health Rankings, North Carolina was ranked the 36rd healthiest state

County Tiers are calculated using 4 factors

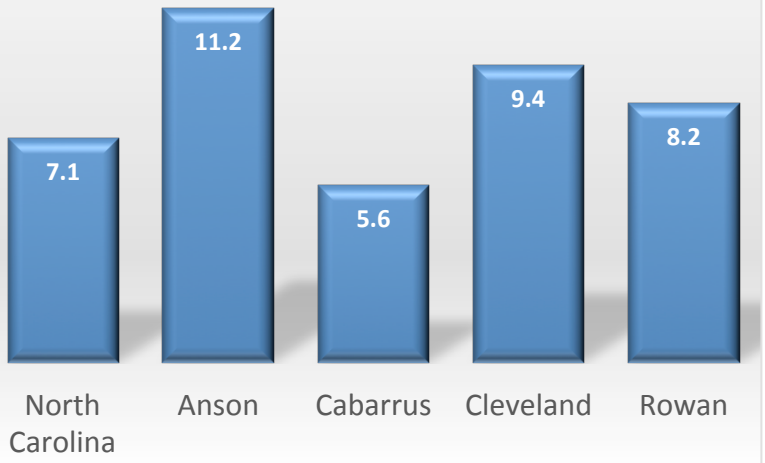
- Average unemployment rate
- Median household income
- Percentage growth in population
- Adjusted property tax base per capita

Initial Focus:

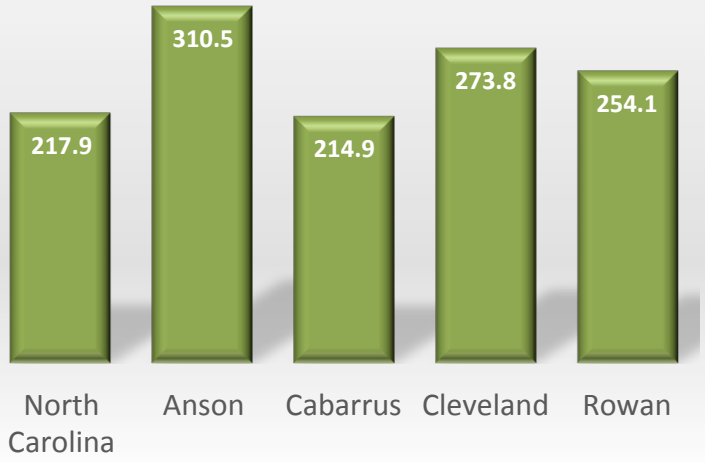
- Cabarrus -3 (health ranking – 9)
- Rowan – 2 (health ranking – 62)
- Anson -1 (health ranking – 90)

Beginning with the 2019 rankings, only these four factors determine final Tier rank. In previous years, additional 'adjustment factors' were also considered in the calculations. In 2018, the North Carolina General Assembly eliminated these adjustment factors from the Tier ranking methodology (S.L. 2018-5, Section 15.2.a)

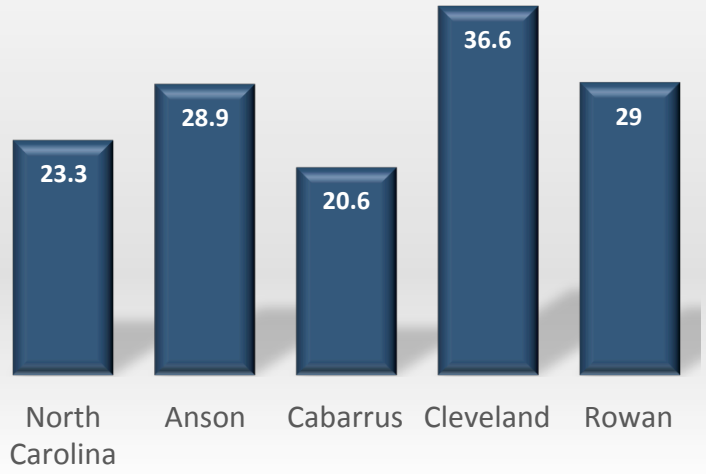
Infant Death per 1'000 Live Birth



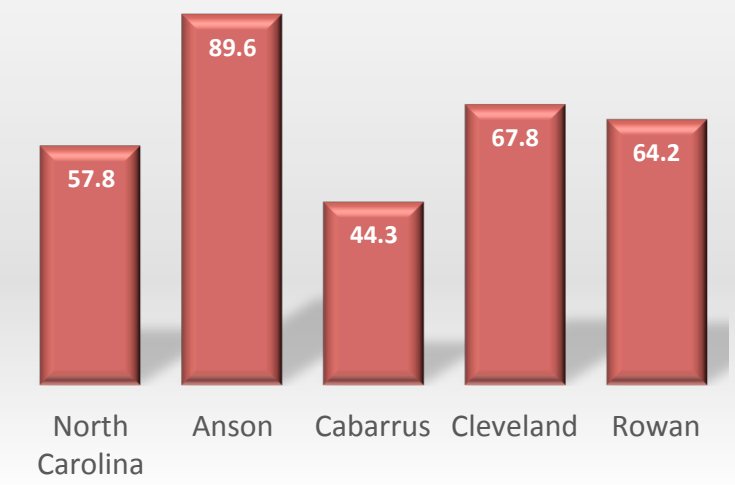
Age-Adjusted Cardiovascular Disease Death Rate per 100'000



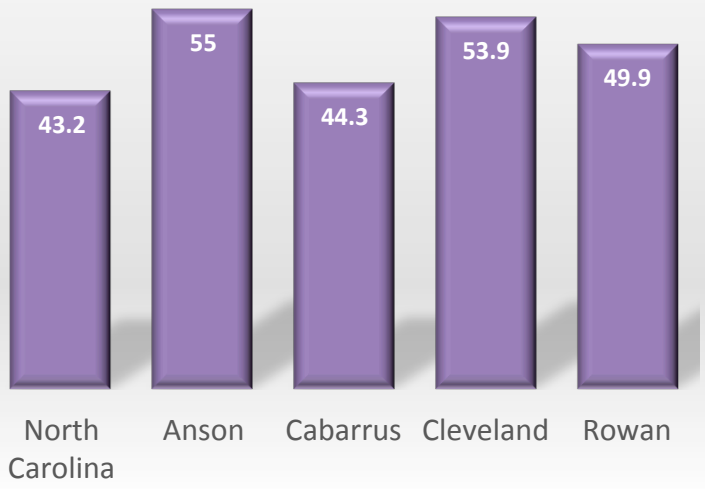
Age-Adjusted Diabetes Death Rate per 100'000 Residents



Child Death per 100'000 Residents Age 0-17



Age-Adjusted Stroke Death Rate per 100'000 Residents



GOALS – HOPE program

facilitate evidence-based interventions and evaluate policies that advance population health

Examine **environmental factors** that may effect human health and health disparities

Implement **strategies to positively impact racial health disparities** that contribute to poor health outcomes especially in **medically underserved areas**

Leverage **NCCU/NCRC resources** to convert research into community practice

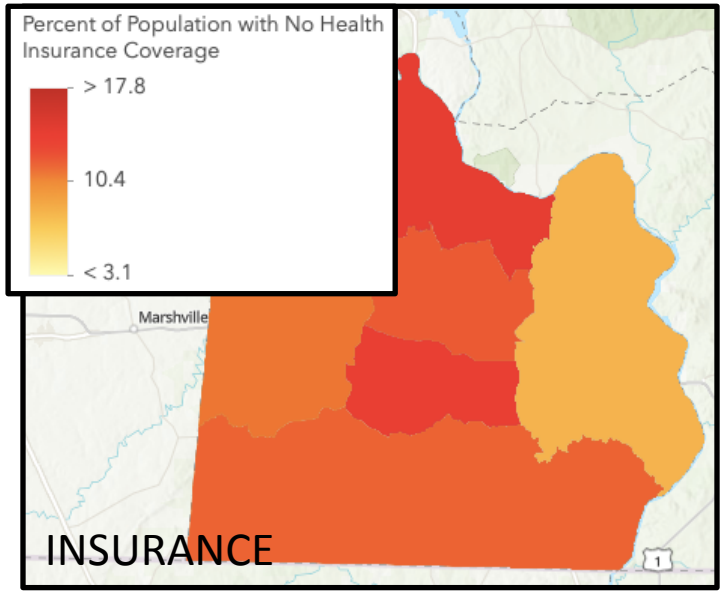
Conduct **population health research** and develop a core platform to assist in community based research

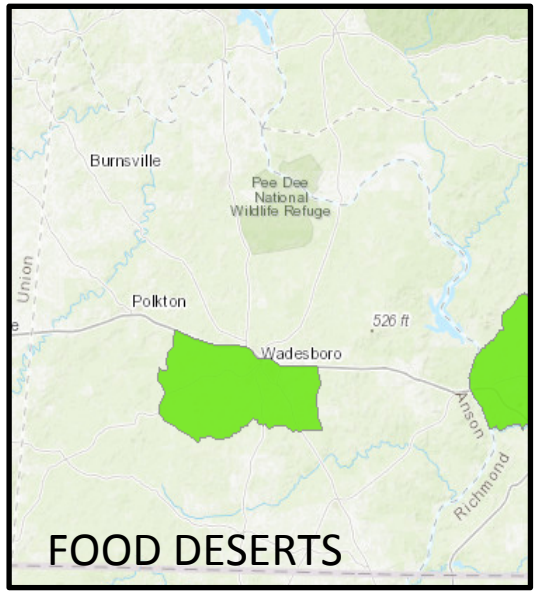
1. The HOPE program focuses to serve minorities, low income and medically underserved and address social determinants of health at a deeper level.
2. **Partnering** with Public Health Departments in 3 counties to initiate assessment and understand the needs.
3. **Buy-ins** from other local organizations and community free clinics.

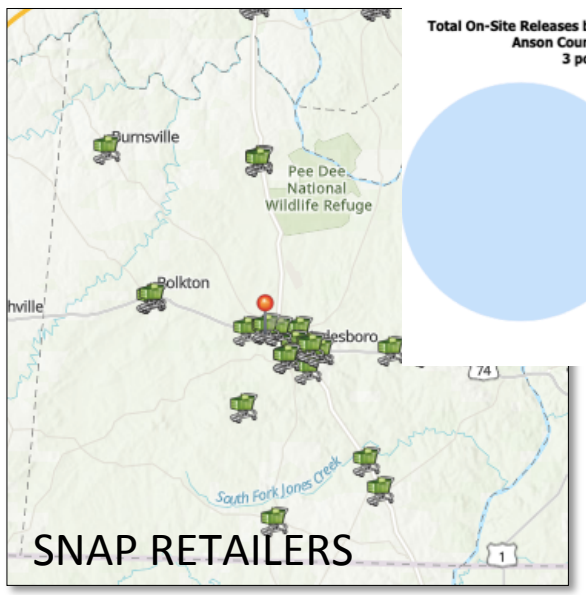
Activities:

1. Health Equity Mapping for the counties
2. Mobile Health Unit
3. Food insecurity Research Interest Group
4. COVID19 related activities - ACCORD

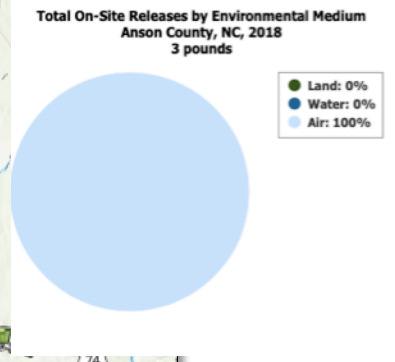
ANSON





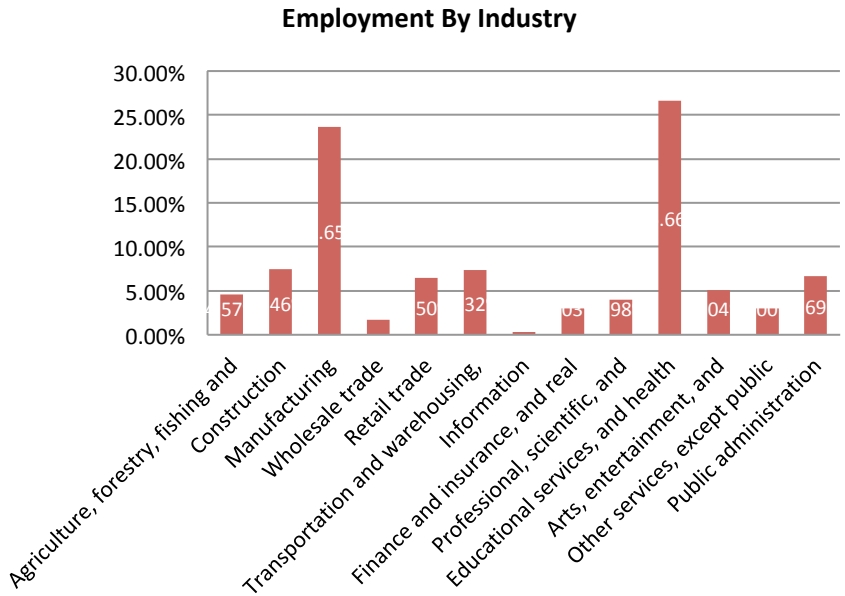


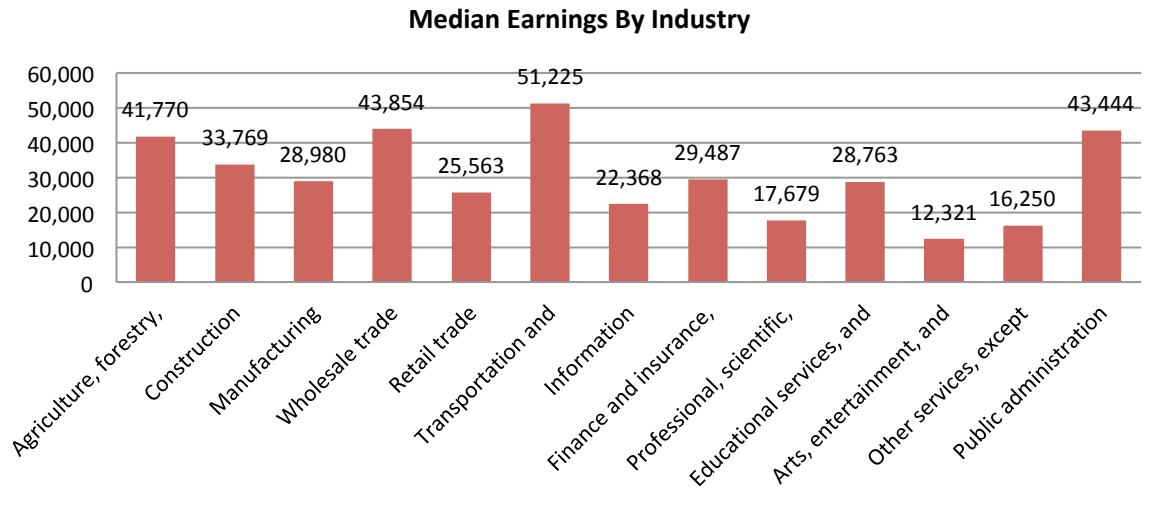
TOXIC RELEASES-ANSON COUNTY[28]



Quick Facts for 2018

	Anson County, NC
Number of TRI Facilities:	5
Total Production-Related Waste Managed:	3 lbs
Total On-site and Off-site Disposal or Other Releases:	3 lbs
Total On-site:	3 lbs
• Air:	3 lbs
• Water:	0 lbs
• Land:	0 lbs
Total Off-Site:	0 lbs





Mobile Screening and Health Education Van - The mobile van will take resources to the community and medically underserved, build relationships, bring exposure to NCCU while improving the health of North Carolinians in rural counties. Health Departments and Local organizations have stepped upon providing personnel and fiscal support for the mobile unit operations.

Strategy – Partnering with Stakeholders

cha CABARRUS HEALTH ALLIANCE
at NC Research Campus

March 5, 2020

Deepak Kumar, PhD
Director
H.O.P.E Program
Julius L. Chambers Biomedical/Biotechnology R
North Carolina Central University (NCCU)
North Carolina Research Campus (NCRC)
Kannapolis, NC

Re: Letter of Support for Mobile Health Clini

Dear Dr. Kumar,

On behalf of the Cabarrus Health Alliance, I wou
support for the purchase of a mobile health clinic
Program is addressing a major gap in our commu
impacted disproportionately by a number of heal
and leadership!

As the public health department, we are at the fo
community outreach, and realize greatly the valu
patients and neighbors where they are. Transport
community, and in participant focus groups and
patients, especially minorities and those living in
transportation to keep their medical appointment
care.

CHA believes a mobile unit would provide treme
services including:
•Breast exams (Cabarrus County has the fourth h
African American female breast cancer)
•Wellness exams (Cabarrus County is a Health P
dental, and mental health care)
•Communicable Disease screening (Cabarrus and
rates of sexually transmitted infections, especiall
Americans. Although rates of infection are 2-3 h
STI, teens are currently account of less than 2%
additionally, CHA could create an Express Clini
often experience a delay in testing and treatment

ANSON COUNTY HEALTH DEPARTMENT
POST OFFICE BOX 473
WADESBORO, NORTH CAROLINA 28170

Public
Prevent. Pro

March 18, 2020

William Pilkington, DPA, MPA, MA
Director, H.O.P.E. Program
North Carolina Central University
Julius L. Chambers Biomedical/Biotechnology Research Institute
North Carolina Research Campus
600 Laureate Way
Kannapolis, North Carolina 28081

Dear Dr. Pilkington:

It is with a great deal of enthusiasm that I support the efforts of North Carolina Cent
University to address racial disparities in health care through its newly established
H.O.P.E. program

In my role as the Public Health Director for Anson County, I appreciate the need for
additional health services for the medically underserved. One of the exciting compo
of H.O.P.E. programming will be a mobile health screening/food pantry unit. We p
work closely with the H.O.P.E. staff to ensure that the services offered by this mobi
unit involve collaborative planning engaging all affected community partners. We h
already been working with H.O.P.E. staff to plan and develop new programs and ser
for our citizens, including health equity mapping and planning for assessing
neighborhood community health needs.

The Anson County Health Department is especially pleased that North Carolina Cer
University will be making a long-term commitment to the health of our community,

Healthy Cabarrus
Partnerships for Life

April 8, 2020

William Pilkington, DPA, MPA, MA
Director, H.O.P.E. Program
North Carolina Central University
Julius L. Chambers Biomedical/Biotechnology Research Institute
North Carolina Research Campus
600 Laureate Way
Kannapolis, North Carolina 28081

Dear Dr. Pilkington:

It my pleasure, on behalf of Healthy Cabarrus, to express my full support for North Carolina Central University's (NCCU) efforts to bring a mobile health clinic to Cabarrus County through its H.O.P.E program. As the Executive Director of Healthy Cabarrus, our organization recognizes the tremendous impact a mobile clinic can make on communities with limited personal and public transportation.

Founded in 1997, Healthy Cabarrus is a multi-sector collaboration designed to improve the health of

With tremendous enthusiasm, I strongly support the North Carolina Central University (NCCU) Julius L. Chambers Biomedical/Biotechnology Research Institute (BBRI) expansion in Kannapolis and the mobile health unit. This mobile health unit will offer multiple opportunities for nursing faculty/nurse practitioners and students for community-based research and engagement.

For NCCU Department of Nursing faculty members with a research focus on health disparities with vulnerable populations, this unit will allow them to expand their research towards decreasing health disparities. Nursing faculty who are nurse practitioners would have an opportunity to meet the healthcare and educational needs of this community. Lastly, the unit will assist nursing students to be prepared to deliver culturally competent care and meet the needs for quality healthcare in a global society.

As Interim Department Chair of Nursing at NCCU, I am very pleased to provide this letter of commitment to and support for BBRI expansion in Kannapolis and the mobile health unit. With this letter of commitment, we are assuring our support to North Carolina Central University in moving NCCU research's agenda forward.

Sincerely,

Yolanda

Yolanda M. VanRiel, PhD, RN-BC, OCN, CNE, ANEF
Interim Department Chair of Nursing
Visiting Associate Professor

Main Telephone: (704) 216-8777

ROWAN COUNTY PUBLIC HEALTH
Prevent. Promote. Protect.
Be an original.

FAX: (704) 216-7991

Rowan County Health Department
1811 East Innes Street – Salisbury, NC 28146-6030

March 5, 2020

Deepak Kumar, PhD
H.O.P.E Program
Julius L. Chambers Biomedical/Biotechnology Research Institute
North Carolina Central University
North Carolina Research Campus
Kannapolis, NC 28081

On behalf of the Rowan County Health Department, and our community coalition Healthy Rowan, we would like to express our strong support for the purchase of a mobile health clinic and food pantry for our community and those the H.O.P.E program serves. We are thrilled to have the H.O.P.E program working to address a significant gap in our community by providing targeted to support to those individuals who are most impacted by chronic disease, diabetes, obesity, lack of access to healthcare, and other social and health-related challenges.

Our department of public health is at the center of prevention and management of disease in Rowan County. We appreciate the thoughtful inclusion of a mobile clinic and food pantry to address one of the most significant barriers for our citizens—transportation. Rowan County is comprised of both areas of urban and rural poverty as a large county—over 524 square miles. The need is ever present and without additional resources, we will continue to see significant health disparities, especially along racial lines.

ealthy Rowan works to bring organizations out of silos to address chronic disease and obesity by advocat-
g for health, collaborating on programming, and educating community members and organizations to better
pport health. In 2020, Rowan County was ranked 73rd out of all North Carolina counties for our health
tcomes by the Robert Wood Johnson Foundation. We understand that significant improvement cannot be
ade without dedicated resources to helping those most vulnerable populations. Healthy Rowan represents
collaborative energy of Rowan County Government, Novant Health Rowan Medical Center, the City of
lisbury Government, the Rowan County Health Department, and the Community Care Clinic of Rowan
unty, a nonprofit free clinic, and countless other municipal, business, nonprofit, recreational, and
althcare organizations serving Rowan County.

e are truly thankful to have the leadership Dr. Kumar and Dr. Pilkington bringing innovative approaches to
dressing our community realities. Our community partners appreciate the opportunity to collaborate on ad-
essing health and human service issues in Rowan County. We pledge to support to the HOPE program and
the mobile clinic and mobile food pantry and look forward to a day where health disparities can be less-
ed and eliminated all together.

ncerely,

a Oliver, MS
lic Health Director
an County Health Department

Alyssa L. Smith, MPH
Executive Director,
Healthy Rowan

NOVANT HEALTH · ROWAN COUNTY PUBLIC HEALTH Prevent. Promote. Protect. Be an original. · COMMUNITY CARE CLINIC of Rowan County, Inc. · THE CITY OF Salisbury North Carolina · ROWAN COUNTY NORTH CAROLINA Be an original.

ACCORD
NC CENTRAL UNIVERSITY ADVANCED CENTER FOR COVID RELATED DISPARITIES

NC Central University
Discover what's Central to you.

NCCU Advanced Center for COVID19 Related Disparities (ACCORD) will conduct multidisciplinary research to study the public health and economic impact of COVID19 on underserved communities of NC.

ACCORD is supported by the North Carolina Policy Collaboratory at the University of North Carolina at Chapel Hill with funding from the North Carolina Coronavirus Relief Fund established and appropriated by the North Carolina General Assembly.

www.nccu.edu/accord

9	12	25
Counties	*Projects*	*Faculty*

COVID-19 CASES, HOSPITALIZATION, AND DEATH BY RACE/ETHNICITY

FACTORS THAT INCREASE COMMUNITY SPREAD AND INDIVIDUAL RISK


CROWDED SITUATIONS


CLOSE / PHYSICAL CONTACT


ENCLOSED SPACE

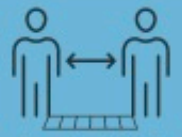

DURATION OF EXPOSURE

Rate ratios compared to White, Non-Hispanic Persons	American Indian or Alaska Native, Non-Hispanic persons	Asian, Non-Hispanic persons	Black or African American, Non-Hispanic persons	Hispanic or Latino persons
CASES[1]	2.8x higher	1.1x higher	2.6x higher	2.8x higher
HOSPITALIZATION[2]	5.3x higher	1.3x higher	4.7x higher	4.6x higher
DEATH[3]	1.4x higher	No Increase	2.1x higher	1.1x higher

Race and ethnicity are risk markers for other underlying conditions that impact health — including socioeconomic status, access to health care, and increased exposure to the virus due to occupation (e.g., frontline, essential, and critical infrastructure workers).

ACTIONS TO REDUCE RISK OF COVID-19


WEARING A MASK


SOCIAL DISTANCING (6 FT GOAL)


HAND HYGIENE


CLEANING AND DISINFECTION

[1] Data source: COVID-19 case-level data reported by state and territorial jurisdictions. Case-level data include about 80% of total reported cases. Numbers are unadjusted rate ratios.

[2] Data source: COVID-NET (https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html, accessed 08/06/20). Numbers are ratios of age-adjusted rates.

[3] Data source: NCHS Provisional Death Counts (https://www.cdc.gov/nchs/nvss/vsrr/COVID19/index.htm, accessed 08/06/20). Numbers are unadjusted rate ratios.

cdc.gov/coronavirus

CS319360-A 08/08/2020

Heath Disparities as Driver of COVID-19

HEALTH EQUITY REPORT SUMMARY

Subject	Subcategory	African American	American Indian	Hispanic/Latinx	Other
Social and Economic Well-Being	Income				
	Education				
	Employment				
Maternal/Child Health	Infant Death Rate				
	Late or No Prenatal Care				
Child and Adolescent Health	Death of Children				
	Teen Pregnancy				
	Children without Health Insurance		♦		
Risk Factors	Current Smokers				
	Overweight		♦		
Mortality Rates	Cancer				
	Heart Disease				
Communicable Diseases	HIV Infection				
	Chlamydia				
Violence and Injury	Homicide				
	Suicide				
Access to Health Care	No Health Insurance				
	Could Not See a Doctor		♦		

■ Green indicates a group is faring better than the referent group
■ Red indicates a group is faring worse than the referent group
□ White indicates there is no significant difference between the referent and co
♦ Symbol indicates reliable rates could not be calculated

RACIAL AND ETHNIC HEALTH DISPARITIES IN NORTH CAROLINA

NORTH CAROLINA HEALTH EQUITY REPORT 2018

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES
Office of Minority Health and Health Disparities

Received: 22 May 2020 | Revised: 10 June 2020 | Accepted: 16 June 2020

DOI: 10.1111/jcmm.15599

REVIEW

WILEY

Diseases with health disparities as drivers of COVID-19 outcome

John T. Moore[1] | **William Pilkington**[2] | **Deepak Kumar**[1,2]

[1]Julius L. Chambers Biomedical/Biotechnology Research Institute (JLC-BBRI), North Carolina Central University, Durham, NC, USA

[2]HOPE Program, JLC-BBRI, North Carolina Research Campus (NCRC), Kannapolis, NC, USA

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Funding information
The National Institutes of Health, Grant/Award Number: U01CA194730, U54MD012392 and R01MD012767

Abstract

The COVID-19 pandemic has forced our society to come face to face with complex issues that were once theoretical but are now being played out in real time. As data from the pandemic accumulates, it is clear that COVID-19 is impacting some parts of society more than others. Unfortunately, there is an almost complete overlap between COVID-19 risk factors and conditions that are already represented as health disparities, such as hypertension, diabetes, heart disease, lung disease and immune disorders. In this review, we discuss our current understanding of the physiological and pathophysiological pathways that link these diseases to COVID-19 outcome. An increased awareness of the factors underlying this issue, both societal and medical, is needed to understand the long-term implications and possible solutions needed going forward.

KEYWORDS
COVID-19, health disparities, risk factors

1 | INTRODUCTION

York City where 35 per cent of the total COVID-19 deaths have occurred.[4] This pandemic has overwhelmed surge capacity in all sec-

COVID-19 Testing

- Nucleic acid (RNA) based) testing
- Study the impact of COVID19 in the underserved communities

Counties

County	Population	Minority (%)	AA %	Uninsured adults (%)	Distress Tier
Anson	25,306	52	49	16	1
Cabarrus	201,448	28	18	12	3
Durham	306,457	49	37	15	3
Granville	58,874	39	30	15	2
Halifax	51,737	60	53	17	1
Rowan	139,605	23	16	16	2
Vance	44,482	56	50	16	1

Source: United States Census Bureau (2018); NC Institute of Medicine; NC Commerce

Who would you trust to provide you with information about COVID testing? (Check all that apply.)

- ☐ Health websites
- ☐ Community health educator or community organization
- ☐ Pastor and other faith leaders
- ☐ Health provider offering COVID testing
- ☐ Someone from your community or someone you can relate to

Which of the reasons below would stop you or delay you from getting vaccinated against COVID-19 as soon as the vaccine becomes available? (Check all that apply.)

- ☐ Don't believe that vaccines work
- ☐ Do not trust the medical system
- ☐ Have concerns about vaccine safety
- ☐ Want others to take the vaccine first
- ☐ Do not trust the government about the vaccine

Deliverable: Increased testing and identification of barriers to testing and immunization in the underserved.

Messaging

- Developing and disseminating culturally sensitive messaging on COVID19 to medically underserved populations. *What is the right message!*

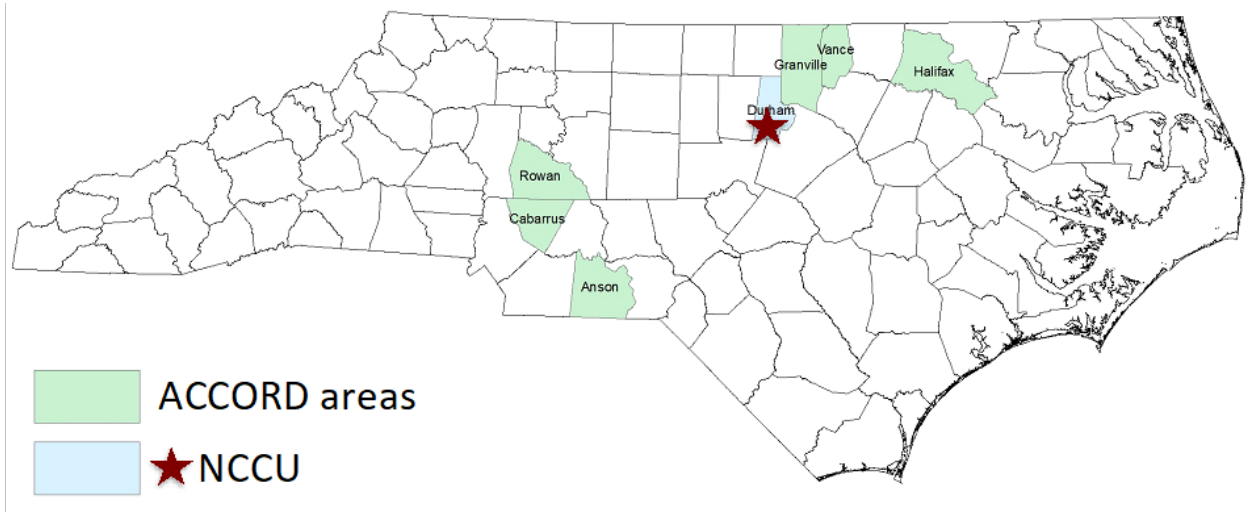
Deliverable: Impactful and positive messaging in underserved communities about COVID19, prevention measures and informed decision making on upcoming immunization and continued testing.

Team:

- Mass media faculty
- Social media strategist
- Social media/communications company
- Faith based organization leaders
- Community liaison
- Bioinformatics/Text mining

Preliminary Social Media Assessment

- 100% of participating ACCORD counties actively use Facebook to post/ track COVID-19 cases
- Other platform (e.g. Twitter, Instagram, YouTube) use is sparse
- Facebook pages are generally much more active and up-to-date than Health Department websites



The Problem:

- COVID-19, has attracted **agenda seekers** to shape the narrative of COVID testing, clinical trial and vaccination for self-interest purposes. **Multiple conspiracy theories** become trending search terms on Google.

- We observed organized **misinformation campaigns** and anti-trust campaigns undermining the trust between the general public and public health organizations.

- **Private anti-vaccination** groups starts to occur on social media

- **This can be more problematic for the underserved community where trust between public and public health organization is already low.**

Winning the battle with misinformation and anti-trust campaign requires constant monitoring them as part of the social environmental scan. Understanding of their strategy also helps in developing counteracting messages and action.

EDITORIAL

A dangerous rush for vaccines

The chasm between science and politics continues to grow, with Russian President Putin announcing this week that a fast-tracked vaccine for coronavirus disease 2019 (COVID-19) is ready for use, and President Trump indicating days earlier that a vaccine could be ready in the United States before the 3 November presidential election. There's been a dangerous rush to get to the vaccine finish line first. In a race of "Sputnik" proportions (as Putin puts it), quick approval by regulatory agencies is needed to "win." This is dangerous thinking, driven by political goals and instant gratification: Shortcuts in testing for vaccine safety and efficacy endanger millions of lives in the short term and will damage public confidence in vaccines and in science for a long time to come.

The Russian vaccine remains shrouded in mystery—there is no published information about it, and what has been touted comes from the mouths of politicians. In the United States, the pressure applied to government scientists by the administration on any aspect of the pandemic is becoming increasingly palpable, as they have been criticized or quieted in plain sight by the administration and Trump. Anthony Fauci, the nation's foremost leader on infectious diseases and a member of the White House Coronavirus Task Force, has been the most willing to state things clearly, but he has had to deal with muzzling and outright abuse from Trump and White

> "...Shortcuts in testing for vaccine safety and efficacy endanger millions of lives..."

a Vaccines and Related Biological Produc
Committee to consult on the approval of v
any associated emergency use authorizati
are calls for assurances that there will not
authorization for COVID-19; the only eme
authorization ever granted for a vaccine
against anthrax because of the purported th
logical warfare involving this agent. In any
scientific community in the United States
that approvals of an emergency use authoriz
a COVID-19 vaccine itself should be made i
tion with the FDA's Committee—and actions
world should involve similar scientific overs

Premature approval of a vaccine in the U
(or anywhere) could be a disastrous replay
droxychloroquine fiasc
much higher stakes. Ap
vaccine that is harmful
fective could be leverage
ical forces that already propagate
vaccine fears.

So far, U.S. government scientists are holding strong. Francis Collins, director of the National Institutes of Health,
called for phase 3
cines, and FDA dire
Hahn also has state
follow the science.
riding on Hahn, an
he holds firm with
the scientific comm
support him. He made a mistake in grant
gency use authorization for hydroxychloroquine but

The chasm between science and politics continues to grow, with Russian President Putin announcing this week that a fast-tracked vaccine for coronavirus disease 2019 (COVID-19) is ready for use, and President Trump indicating days earlier that a vaccine could be ready in the United States before the 3 November presidential election. There's been a dangerous rush to get to the vaccine finish line first. In a race of "Sputnik" proportions (as Putin puts it), quick approval by regulatory agencies is needed to "win." This is dangerous thinking, driven by political goals and instant gratification: Shortcuts in testing for vaccine safety and efficacy endanger millions of lives in the short term and will damage public confidence in vaccines and in science for a long time to come.

Countless lives are at stake—no compromises on the vaccine.

–H. Holden Thorp

ACCORD Projects

PILOTS

PIs	Title
Glenn and Beneby	COVID-19 Impacts on Community-Based Interventions for Justice-Involved Minority Young Adults: Practitioner and Consumer Perspectives
Burford and Watkins-Sneed	The Pandemic of Stress: Examining the Relations among Occupational Status, Perceived Stress, Self- Rated Health, and Sleep during COVID-19
Doherty	Contact tracing for COVID-19: acceptability and barriers in African American communities
Smith	COVID-19: IMPACT ON BLACK FAMILIES
Tomlinson	Stress, Coping, Perceptions & Professional Outlook of HBCU Nursing Students Related to COVID-19

PROJECTS

Paul, Diggs, Mulrooney, Lee, Pilkington	The Role of Food Security in the Social Determinants of Health: Contingent Impacts of COVID-19 in North Carolina
Wymer, Constantini and Sivaraman	Development of a Conjugate Vaccine Against SARS-CoV-2
Zheng	Drug Repurposing for COVID19 Using Data Mining and Machine Learning Technologies
Baker and Doherty	Acceptability and Barriers to COVID-19 Testing, Tracing, and Immunization Among African American Students and Residents in Low-Income Communities
Dannai	Experiences of African American Caregivers of Children with Autism: Rurality and Resources during the COVID-19 Pandemic
Kayvan	Global Supply Chain of Medical Equipment: Vulnerability Assessment, Emergency Response Tool, and Financial Impact Analysis
Moore	Field-ready genetic coronavirus test for use in low-resource underserved populations

COVID-19 and the Food Security Environment in North Carolina

Timothy Mulhrooney, Christopher Paul, William Pilkington, S. Nicole Diggs, Dohyun Lee, Meghana Sai Iragavarapu, Amanda Padden, Deepak Kumar

To the Editor

Five steps to address hunger in America today

H.O.P.E. Food Security Research Team

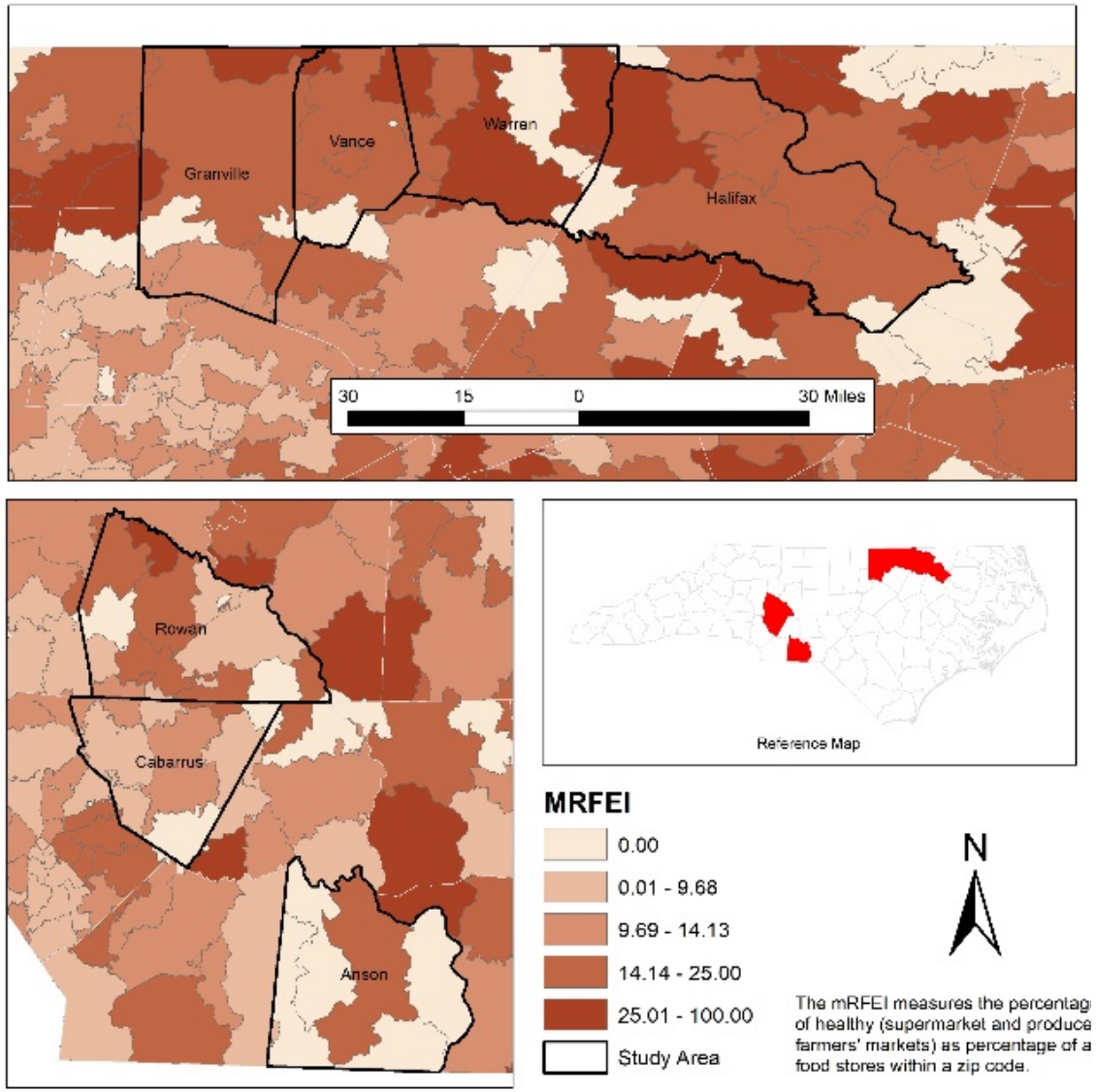
Hungry America, now hungrier.

Before the coronavirus outbreak, 1 in 7 Americans relied on Feeding America's food bank network. On any given day it is estimated that over 40 million Americans are hungry. COVID-19 has exacerbated food insecurity as jobs have been lost and schools — a primary source of food for poor children — have been closed.

In early April, 22 million Americans, 13.5 percent of the U.S. workforce filed for unemployment benefits. Eight weeks later, a total of approximately 44.1 million Americans have filed for unemployment benefits. Since mid-March, the state of North Carolina has received more than 1.25 million jobless claims, spiking the state unemployment rate by 8 percentage points to 12.2 percent statewide.

Unfortunately, COVID-19 has exacerbated and exposed the depths of racial disparities in the United States as well. On average, COVID-19 is killing African Americans at a rate three times higher than white people in the United States. In North Carolina, 34 percent of COVID-19 deaths are African Americans, when African Americans represent 22 percent of the state population.

Modified Retail Food Environment Index



COVID-19 Incidence Rate (per 10,000 population)

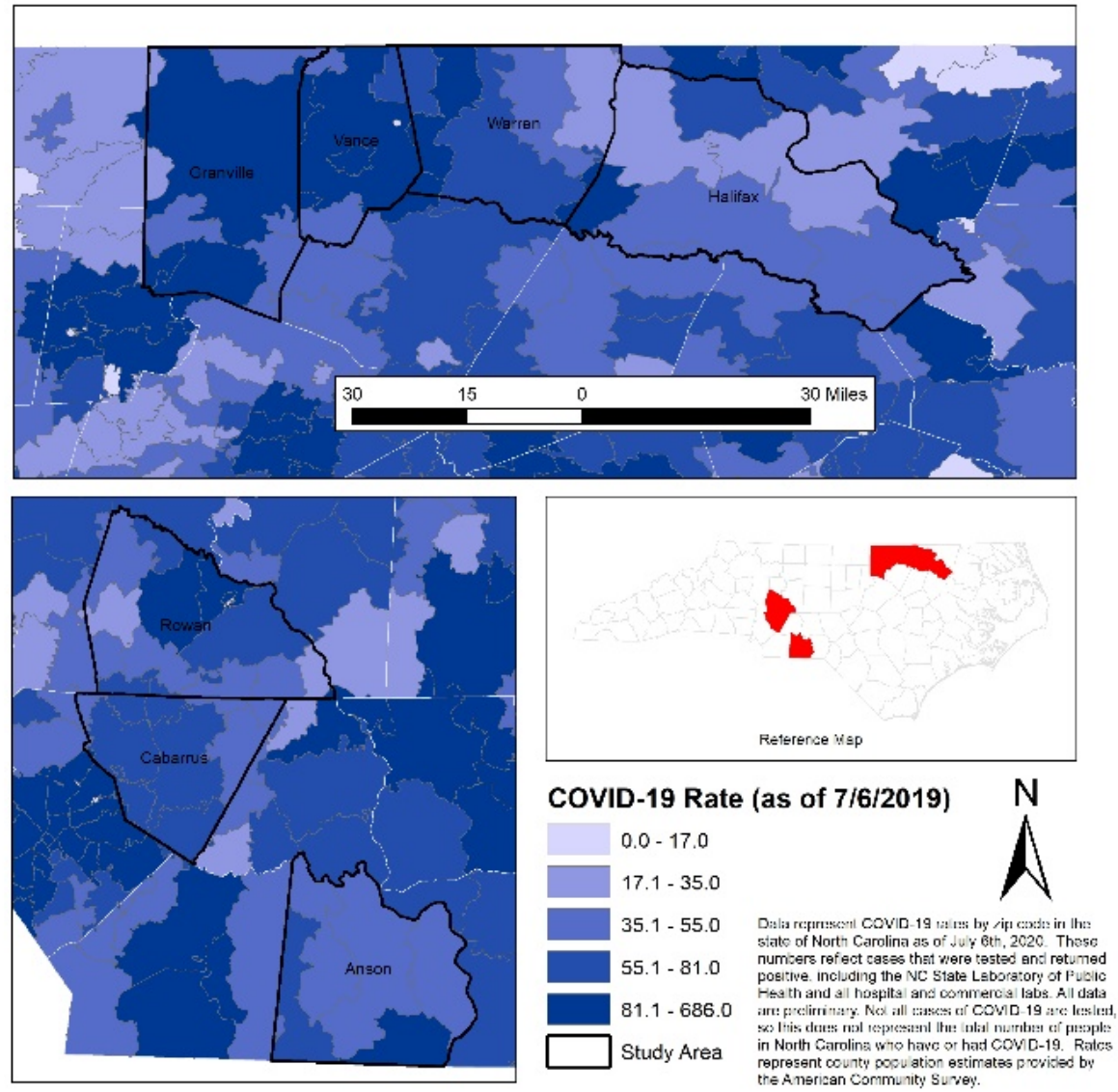


Table: Comparison of USDA-defined food deserts in study area versus COVID-19, socio-economics and food environment metrics.		
	USDA Food Desert (Low Income and Low Access)	Non-Food Desert
Number of Zip Codes	19	25
COVID-19 Rate	78.22**	55.6**
Median Household Income	$45,720	$42,643
Percentage below Poverty Rate	20.30%	20.41%
Percentage below 2x Poverty Rate	44.38%	43.68%
Percentage receiving SNAP	19.26%	19.65%
Percentage Minority	42.73%	44.51%
SNAP Providers per 10,000	10.08	18.22
Retail Food Environment Index	9.09***	3.68***
Modified Retail Food Environment	12.22	17.82
Distance to supermarket	3.82**	2.43**
Statistically different at the following significance levels: *p < .1 **p < .05 ***p <.01		

Thank you

TEAM NCCU

NCCentral UNIVERSITY

ACCORD
NC CENTRAL UNIVERSITY ADVANCED CENTER FOR COVID RELATED DISPARITIES

Advance Center for
COVID-19 Related Disparities

WWW.NCCU.EDU/ACCORD

A Central Resource for
GOOD HEALTH.

WWW.NCCU.EDU

Health Equity, Environment, and Population Health (HOPE)

Building healthy communities and reducing the impact of health disparities through promotion of healthy living practices, education on chronic disease prevention, and examining the links between environment, technology and health.

NCCentral UNIVERSITY
Julius L. Chambers Biomedical Biotechnology Research Institute

HOPE
HEALTH EQUITY ENVIRONMENT AND POPULATION HEALTH PROGRAM