

# Exploring Cancer

Examining the Role of Biology, Race, Class, and Socioeconomics



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UNC Lineberger Cancer Network's  
live webinar**

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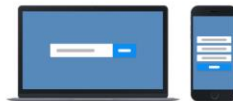


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# Exploring Cancer

Examining the Role of Biology, Race, Class, and Socioeconomics



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A collaboration between



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# Exploring Cancer

Examining the Role of Biology, Race, Class, and Socioeconomics

**Fridays**

11:00 - 11:50 AM EST/EDT

**August 25**

Welcome to Cancer(s) and Health Disparities 101 - The Introduction

**October 13**

Breast Cancer Health Disparities

**November 10**

Precision Medicine and Immunotherapy

**September 1**

Radiation Oncology - What Is It, and What Is It Good For?

**October 20**

Pancreatic Cancer

**November 17**

Expanding Cancer Care Quality and Delivery in Sub-Saharan Africa: a collaborative approach

**September 8**

New Strategies in Treating GI Cancers

**October 27**

Career Panel

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# Exploring Cancer

Examining the Role of Biology, Race, Class, and Socioeconomics

**September 8, 2023**

## **New Strategies in Treating GI Cancers**



**Ashwin Somasundaram, MD**

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**Ashwin Somasundaram,  
MD**

Ashwin Somasundaram's research interests are focused on understanding mechanisms of resistance and response in the tumor microenvironment from both an immunology and cancer cell biology perspective. He is focused on validating findings of checkpoint blockade resistance mechanisms found in animal models in ex vivo patient samples and in early phase clinical trials. These translational efforts are meant to improve understanding of meaningful biomarkers and novel therapeutic combinations for patients with solid tumors. More specifically, he has an interest in the role of systemic inflammation leading to T cell dysfunction in patients with solid tumors.

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## Professional Highlights

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## Professional Highlights

- 3.** Dr. Somasundaram is a tumor immunologist and clinical trialist

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## Professional Highlights

- 3.** Dr. Somasundaram is a tumor immunologist and clinical trialist
- 2.** He has an interest in the treatment of GI cancers

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## Professional Highlights

- 3.** Dr. Somasundaram is a tumor immunologist and clinical trialist
- 2.** He has an interest in the treatment of GI cancers
- 1.** He has a scientific interest in the role of systemic inflammation shaping the tumor microenvironment

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# “Exploring Cancer”:

*A Career in Colon Cancer Research*

Ashwin Somasundaram, MD



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## Introduction: Who am I?




***Why Cancer Research?***



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 **Who can you name?**



Nobody has responded yet.  
Hang tight! Responses are coming in.

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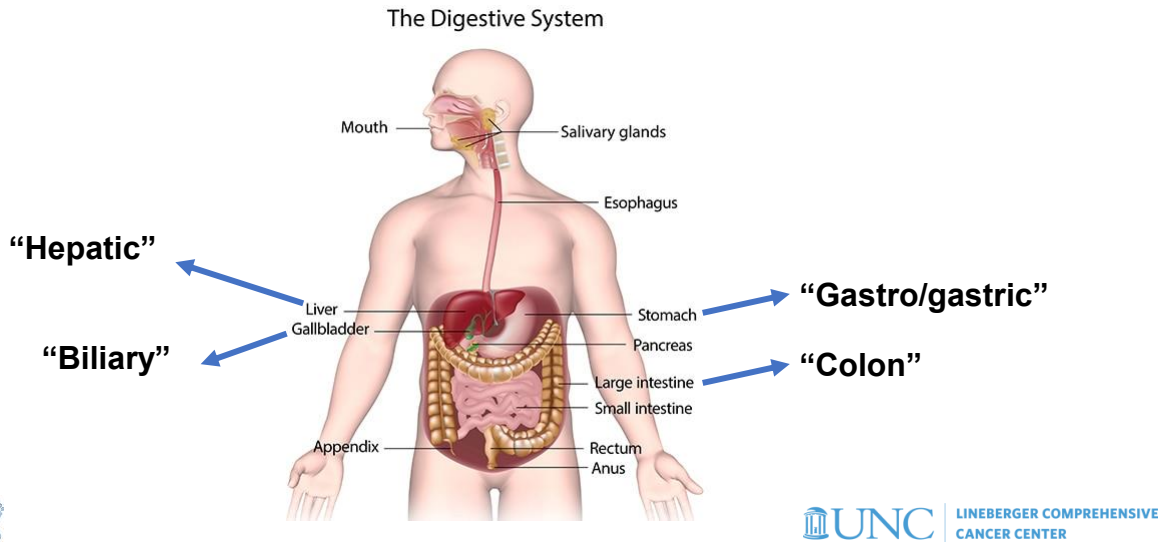
 **What organs are included in gastro-intestinal "GI" cancers?**

Nobody has responded yet.  
Hang tight! Responses are coming in.

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## What are gastro-intestinal “GI” cancers?



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## What kind of treatments do we use to treat these types of cancers?

Nobody has responded yet.  
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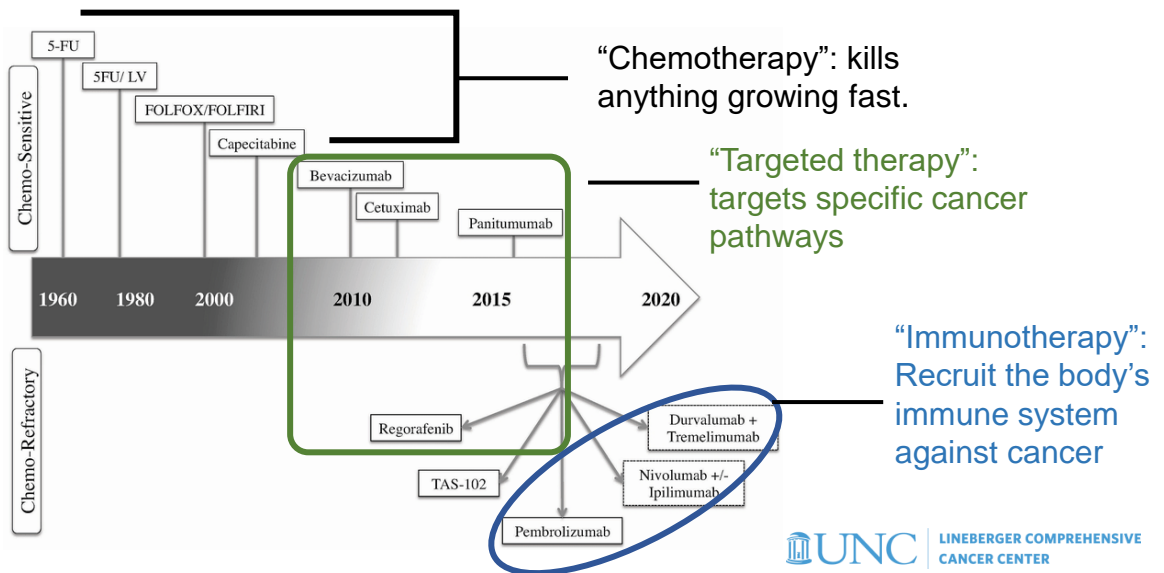
### Surgery...with downsides



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### “Chemotherapy”/ “Immunotherapy” -> RESEARCH!!!



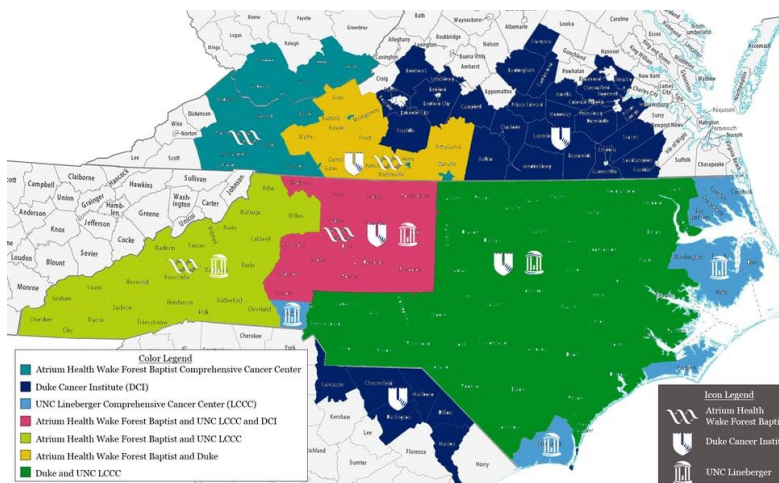
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## One of the most exciting recent studies...



## Who comes to see me in my clinic?



## Who comes to see me in my clinic?

### Key Demographic and Equity Metrics

	North Carolina Statistics	Compared to U.S. Average
<b>White Residents</b>	63 Percent of Population	Higher
<b>Black Residents</b>	21 Percent of Population	Higher
<b>Hispanic or Latino Residents</b>	10 Percent of Population	Lower
<b>Median Household Income</b>	\$52,752	Lower
<b>Average Life Expectancy</b>	78.1 Years	Lower
<b>Uninsured Rate</b>	11 Percent of Population	Higher
<b>Maternal Mortality Rate</b>	18.6 Deaths per 100K Births	Higher
<b>Lack Broadband Access</b>	5.3 Percent of Residents	Higher
<b>Residents Living in Primary Care Shortage Area</b>	1.95M Residents	Higher
<b>Mental Health Workforce Shortage Areas</b>	76 Percent of Counties	Lower
<b>Adopted Medicaid Expansion (37 States Expanded)</b>	No	N/A

Sources: Kaiser Family Foundation *Population Distribution by Race/Ethnicity*, *Life Expectancy at Birth*, *Median Annual Household Income*, *Primary Care Health Profession Shortage Areas* and *Status of State Medicaid Expansion* data; World Population Review 2020 *Maternal Mortality Rate by State* data; United States Census Bureau *QuickFacts*.



## How do patients usually come to see me?

- Colonoscopy screening
- From a hospital admission
- From a local surgeon after surgery
- From another medical center -> usually for clinical trials



## How much progress have we made in treating cancer?

Chances of surviving  
Colon cancer in **1970s**



Chances of surviving  
Colon cancer **now**



## How does this differ by race?

- More cases, and deaths in Black patients along with worse disease when found.








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## Why is this happening? Is it geographic location?

During 1999-2019, the percent annual **decline in mortality rates from gastrointestinal cancers in rural areas was about half that of urban areas** (0.6 percent versus 0.8-1.2 percent, respectively).





*American Association for Cancer Research® (AACR)  
Cancer Disparities Progress Report 2022*

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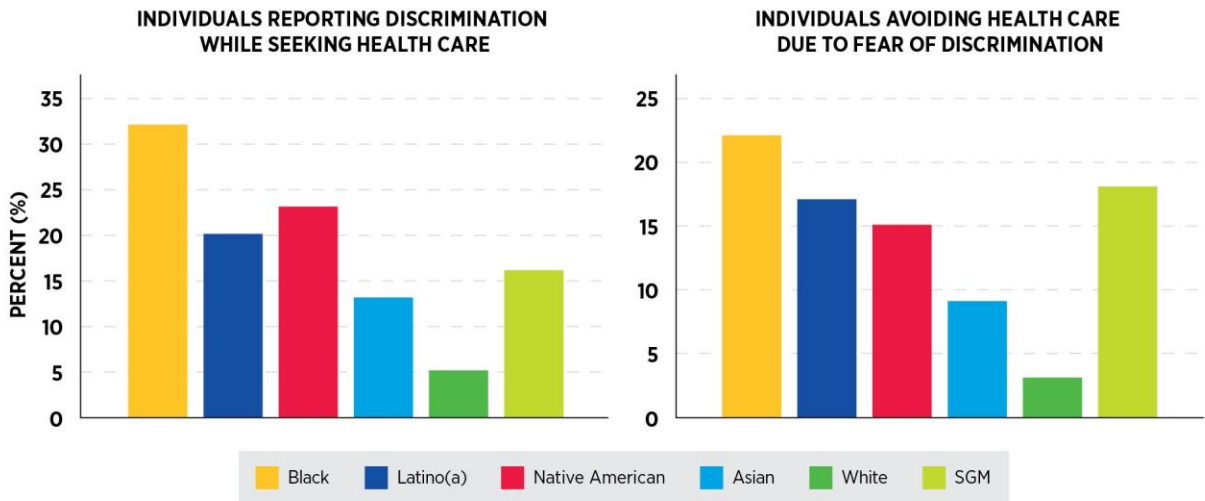
## Why is this happening? Is it diet?

OBESITY	<ul style="list-style-type: none"> <li>Among adults, <b>prevalence of obesity is higher among Black women</b> (57 percent) compared to White women (40 percent).</li> <li>Among <b>youth ages 10 to 17</b>:                             <ul style="list-style-type: none"> <li><b>Obesity rates are significantly higher for those who are non-Hispanic Black</b> (23.8 percent), <b>Hispanic</b> (21.4 percent), or <b>non-Hispanic American Indian/Alaska Native</b> (28.7 percent), compared to those who are non-Hispanic White (12.1 percent) or non-Hispanic Asian (8.1 percent);</li> <li><b>Obesity rates</b> were 8.6 percent in the highest income group versus <b>23.1 percent in the lowest income group</b>.</li> </ul> </li> <li>The <b>prevalence of obesity is significantly higher among U.S. adults living in rural counties</b> (34.2 percent) compared to those living in urban counties (28.7 percent).</li> </ul>	
DIET	<ul style="list-style-type: none"> <li>In <b>Philadelphia, PA</b>, the sixth most populous city in the United States, neighborhoods with the lowest median income have <b>28 percent fewer stores with healthier foods per capita</b> compared to places with the highest median income; more people living in areas with an overabundance of unhealthy food are Black (45 percent) compared to White (27 percent).</li> <li>Between 2013 and 2016, <b>consumption of unhealthy "fast food" was higher among Black adults</b> (42 percent) compared to White (37 percent), Hispanic (36 percent) and Asian (31 percent) adults.</li> </ul>	

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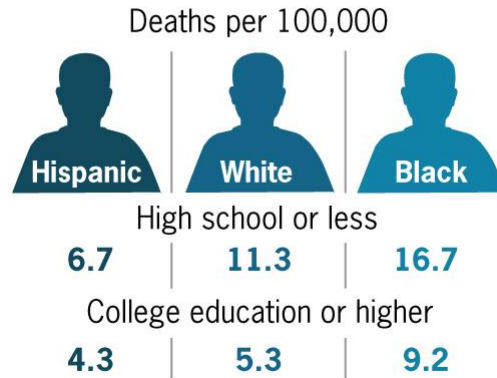
## Why is this happening? -> Not one answer!



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## Does Education Level Help?...and if so, HOW?

### Colon cancer disparities by race & education level



Source: Journal of Clinical Oncology Study

## Does Screening Help? (Delaware Study)-> Importance of RESEARCH

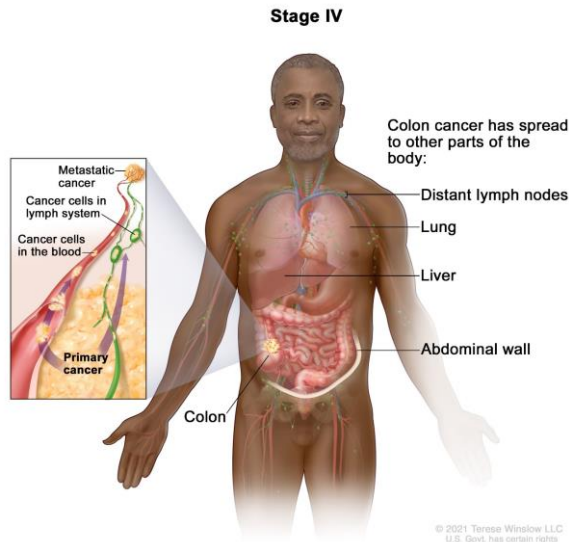


- **Colorectal cancer screening among African Americans rose from 48 percent in 2001 to 74 percent in 2009**, which was almost equivalent to the 2009 screening rate among whites, which was 75 percent.
- **Disparities in the colorectal cancer incidence rates among African Americans and whites were almost eliminated** as a result of the equivalent screening rates between the two groups, falling from 15 percent higher among African Americans in 2001 to 3 percent higher in 2009.
- **Disparities in the colorectal cancer death rates among African Americans and whites were almost eliminated**, falling from 60 percent higher among African Americans in 2001 to 7 percent higher in 2009.

American Association for Cancer Research (AACR) Cancer Disparities Progress Report 2020



## What about later stages of cancer?

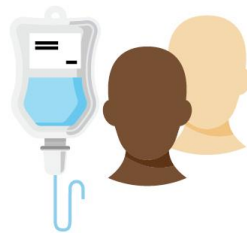


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## Later stages require chemotherapy...but cost has been a barrier

**Expansion of Medicaid** under the Affordable Care Act 2010 has **nearly eliminated the disparity between Black patients and White patients in receiving chemotherapy** within a month of cancer diagnosis from a 4.8 percentage point difference to a 0.8 percentage point difference.



*American Association for Cancer Research® (AACR)  
Cancer Disparities Progress Report 2022*

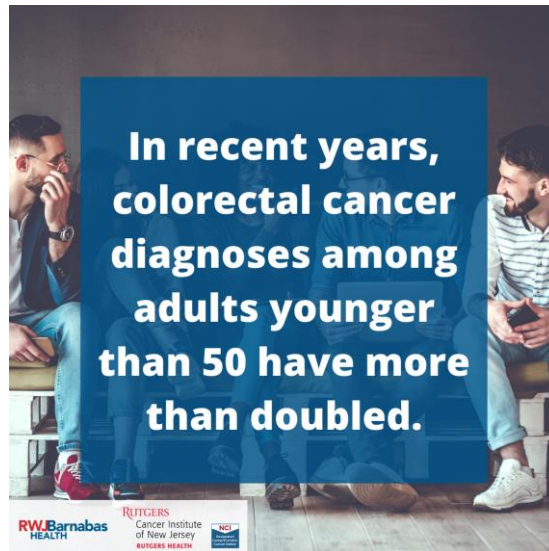


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## What about younger patients?



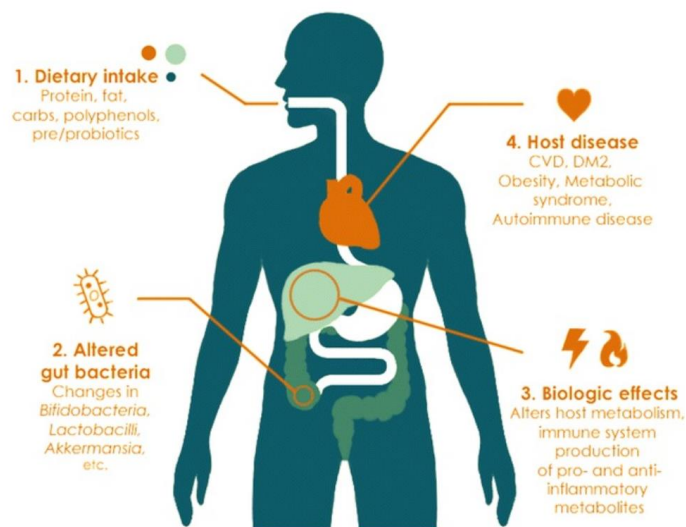
RW Barnabas HEALTH  
RUTGERS Cancer Institute of New Jersey  
BARNABAS HEALTH



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## What about younger patients? Why?

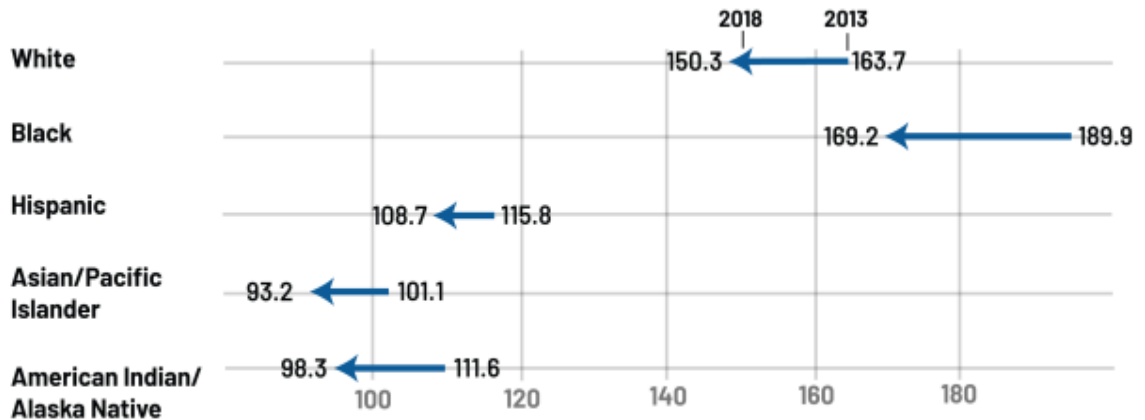


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## Are things getting better?

Age-Adjusted Rate of Cancer Deaths per 100,000 by Race/Ethnicity, 2013 and 2018



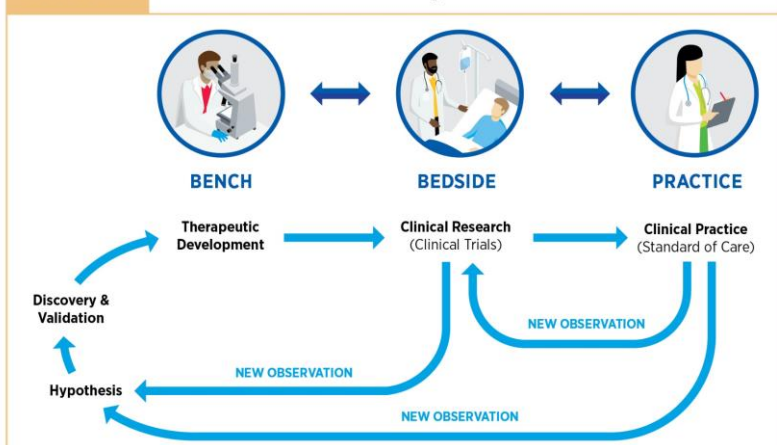
SOURCE: U.S. Cancer Statistics Working Group. U.S. Cancer Statistics Data Visualizations Tool, based on 2020 submission data (1999-2018); U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute; www.cdc.gov/cancer/data-viz, released in June 2021



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## Importance of RESEARCH

FIGURE 14 The Medical Research Cycle



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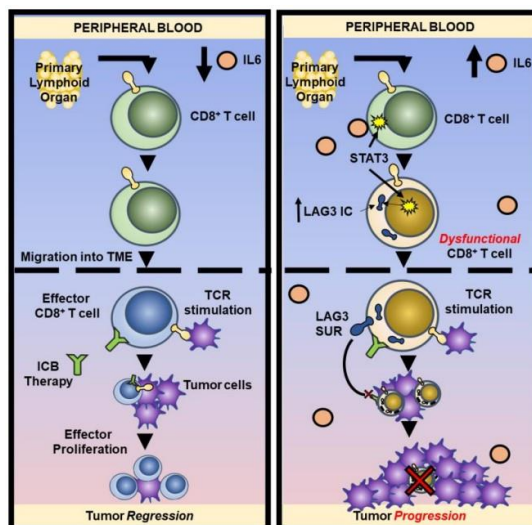
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## What research do I do?

- **BENCH:** I take tissues and cells from patients and donors receiving therapy or on clinical trials and I experiment on the tissue to determine why their tumors died or survived and how their immune system attacked the cancer or failed. I then verify what we find in mice or cell lines.
- **BEDSIDE:** I design and run clinical trials where we use the science done in the lab to find new drugs and targets and see if they work in patients.
- **PRACTICE:** I work with our public health researchers to ensure that we are providing quality care to everyone and that no one is missed or lacking in treatment due to race, gender, age, etc.



## What research do I do? BENCH:



*Somasundaram et al. CIR 2022*



## What research do I do? BEDSIDE:

*ClinicalTrials.gov*

[Home](#) > [Search Results](#) > Study Record Detail

**RP2/RP3 in Combination With Atezolizumab and Bevacizumab for the Treatment of Patients With CRC**

ClinicalTrials.gov Identifier: NCT05733611



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## The benefits of clinical trials

Patient involved in clinical trials have a higher chance of surviving!

[J Am Coll Surg. 2013 Apr; 216\(4\): 774–781.](#)



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## UNC-led effort ACCURE trial in Lung and Breast Cancer



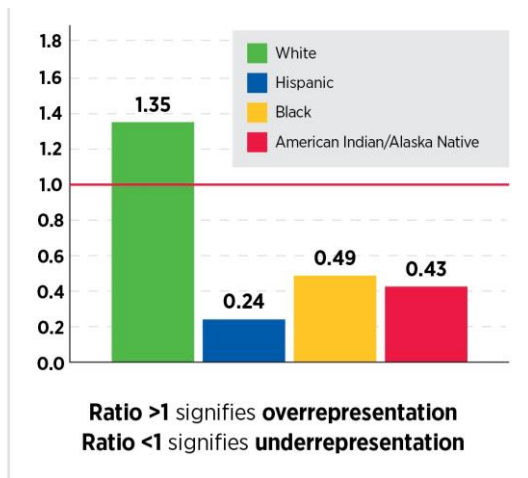
5-Year Survival for Breast Cancer		
	Before ACCURE	With ACCURE
White	91%	94%
Black	89%	94%

5-Year Survival for Lung Cancer		
	Before ACCURE	With ACCURE
White	43%	56%
Black	37%	54%



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## What can we do in research and clinical trials?



American Association for Cancer Research® (AACR)  
 Cancer Disparities Progress Report 2022



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## Clinical Trial Accrual

Cross-Sectional Analysis of Clinical Trial Availability and North Carolina Neighborhood Social Vulnerability



*Dr. Marjory Charlot MD*



*Dr. Shakira Grant MBBS*



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## Clinical Trial Accrual: PROCLAIM study for Pancreatic Cancer



*Dr. Jen Jen Yeh MD*

*Dr. Ugwuji Maduekwe MD*

*This is a study trying to recruit more black patients with pancreatic cancer to our clinical trials at Lineberger.*

*We are trying to do the same for colon cancer next.*



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UNC Lineberger Cancer Network **Questions/Comments?**

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# Exploring Cancer

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Exploring Cancer is a webinar series taught by cancer biologists, physicians, public health experts, and other cancer specialists from NCCU, UNC-Chapel Hill, and NC A&T.

## UNC Lineberger Cancer Network

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# Exploring Cancer

Examining the Role of Biology, Race, Class, and Socioeconomics

**Upcoming Live Webinar**



**October 13**

**11:00 AM**

## ***Breast Cancer Health Disparities***



**Checo Rorie, PhD**

Chair of the Department of Biology  
Associate Professor of Genetics, Department of Biology  
College of Science and Technology  
North Carolina Agricultural and Technical State University

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# Exploring Cancer

Examining the Role of Biology, Race, Class, and Socioeconomics

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