

Exploring Cancer
Examining the Role of Biology, Race, Class, and Socioeconomics Live Lecture

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live webinar

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

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A collaboration between

NCCentral UNIVERSITY **UNC** LINEBERGER COMPREHENSIVE CANCER CENTER NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY

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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	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 **August 25, 2023**

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



Antonio T. Baines, PhD

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Antonio Baines, PhD

Science was always one of the courses that Dr. Antonio (Tony) Baines excelled in throughout school. It was this love for science that led him to major in biology as an honor student at Norfolk State University in Norfolk, Virginia. As a college student, Tony attended scientific conferences and participated in summer internships at NASA's Kennedy Space Center in Florida and the University of Arizona.

After graduating with a bachelor's degree in biology in 1995, Tony was admitted to the Ph.D. program in pharmacology and toxicology at the University of Arizona in Tucson, Arizona. As a graduate student, he studied potential treatments against colon cancer in the Arizona Cancer Center. In 2001, Tony received his Ph.D. in Pharmacology and Toxicology, becoming the 2nd African-American to graduate from the department in its approximately 30 years of its existence.

Afterwards, Tony received a postdoctoral fellowship at the University of North Carolina at Chapel Hill (UNC-CH) to study pancreatic cancer in the Dept of Pharmacology and the Lindeberger Comprehensive Cancer Center. In addition to research, Tony received training in pedology and taught biology for a year at Fayetteville State University.

In August 2006, Tony accepted a faculty position in the Department of Biology at North Carolina Central University (NCCU) in Durham, North Carolina where he currently teaches and conducts research on potential targeted therapies for pancreatic cancer. In addition, he is an adjunct faculty member in the Department of Pharmacology and a member in the Curriculum in Toxicology and Environmental Medicine at UNC-CH. At both institutions, Tony encourages students to pursue advanced degrees in STEM.

During his free time, Tony likes to jog, practice martial arts, watch movies, read, travel, and most importantly, spend quality time with his family.

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Professional Highlights

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Professional Highlights

5. Dr. Baines is a proud graduate of an HBCU - Norfolk State University - Behold, the Green and Gold!!

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3. He is a proud NCCU Eagle Faculty! EAGLE PRIDE AMPLIFIED!

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1. He is passionate about helping to increase the diversity of students going into STEM careers!

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What do you think this is?




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

Start the presentation to see live content. For screen share software, share the entire screen. Get help at poller.com/app

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Liver Metastases from Pancreatic Cancer



By Maymang - Self-photographed, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=3662694>

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Question

- How many of you know someone who has or has had cancer?

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

Antonio T. Baines, Ph.D.

Associate Professor
Department of Biological and Biomedical Sciences
Cancer Research Program
J.C. Biomedical/Biotechnology Research Institute
College of Health & Sciences
North Carolina Central University

Adjunct Associate Professor
Department of Pharmacology
Member, Curriculum in Toxicology and Environmental Medicine
School of Medicine
University of North Carolina-Chapel Hill

08/26/23

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Learning Outcomes

- Define “cancer” and list some of the causes
- Describe the terms “health disparity” and “health equity”
- Discuss why more need to be done to improve healthcare for all people

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Outline

- A Career in Cancer Research
- Important details about Cancer: including statistics, definition, causes, and treatments
- My Research Interests in Pancreatic Cancer
- What is Health Disparity and Health Equity?
- What can we do to prevent Cancer?

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Do you like to ask **Questions**? Do you like to find out **Answers**?
Do you want to **Help people**?

Let's talk about being a CANCER RESEARCHER



Dr. Antonio (Tony) Baines, Ph.D.

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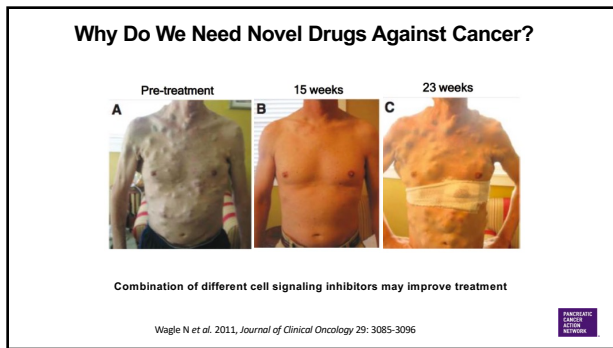
Careers in Cancer Research:

University Professor (Teach and Conduct Research)

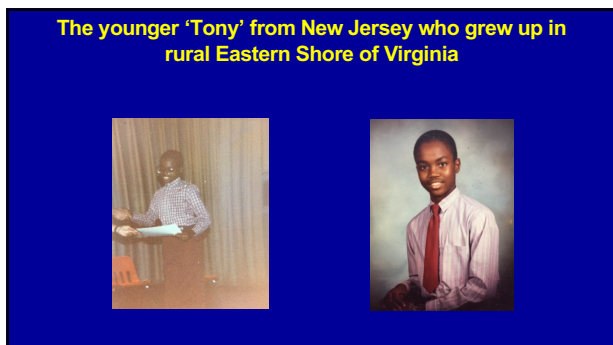
Cancer Biology

Cancer Pharmacology –
study normal cell machinery and cellular processes,
interested in developing novel drugs to treat cancer cells

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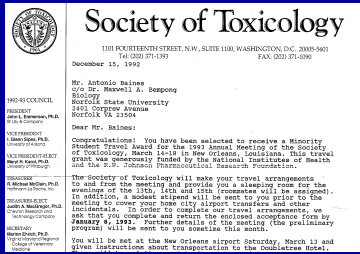


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The trip that changed my life and helped to chart my path



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The college honors graduate from an HBCU



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My 1st formal encounter with cancer was in graduate school



<https://deptmedicine.arizona.edu/news/2019/transition-leadership-university-arizona-cancer-center-announced>

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The Journey that Shaped this Passion for Science and Cancer Research

- DNIMAS Science Honors Program, B.S. in Biology (4 yrs)

- Colon Cancer, Ph.D. in Pharmacology and Toxicology (5.5 yrs)

- Pancreatic Cancer, NIH Postdoctoral Fellowship (5 yrs)

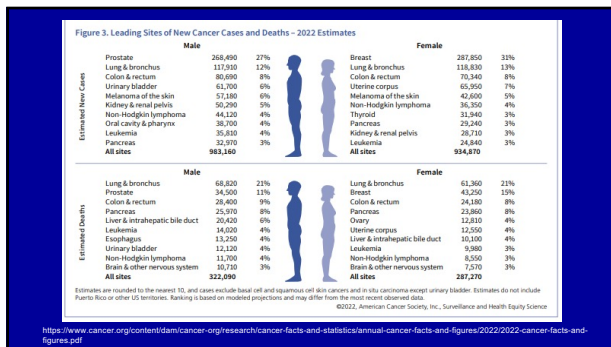
- Pancreatic Cancer, Associate Professor (Teaching, Research, and Service) (17 yrs)

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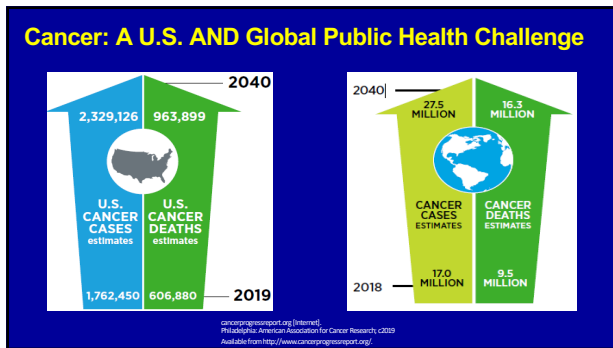
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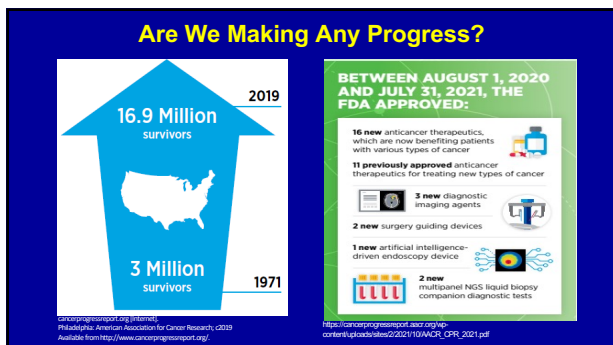
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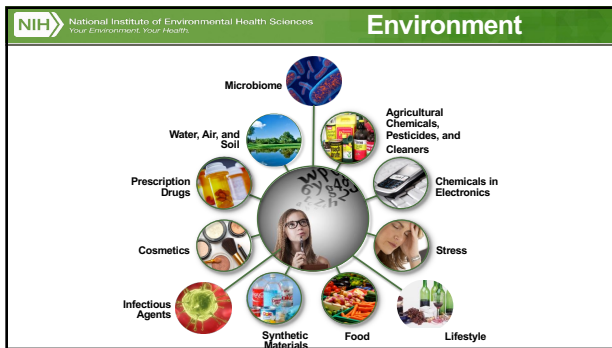
What is Cancer?

Cancer - A collection of diseases that arise when processes that control normal growth control, division, and life span go awry; Happens mainly due to **mutations**

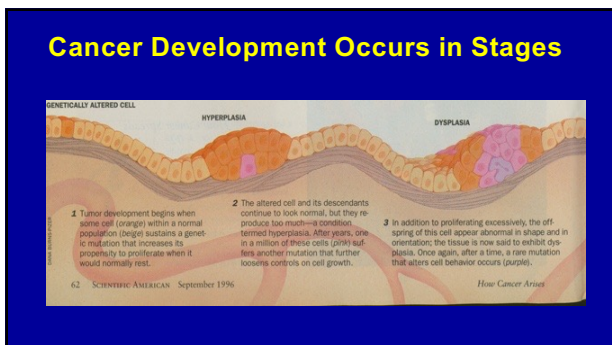
Mutations – Changes in genetic material of normal cells; Sometimes mutations are inherited (10%) but most mutations are acquired over time due to exposure to **carcinogens**

Carcinogens – chemicals or physical substances that can cause cancer (tobacco smoke, UV light)

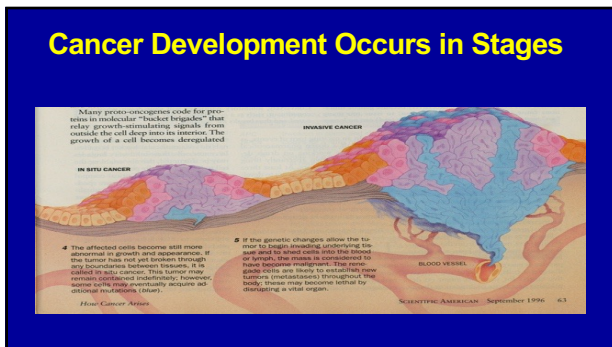
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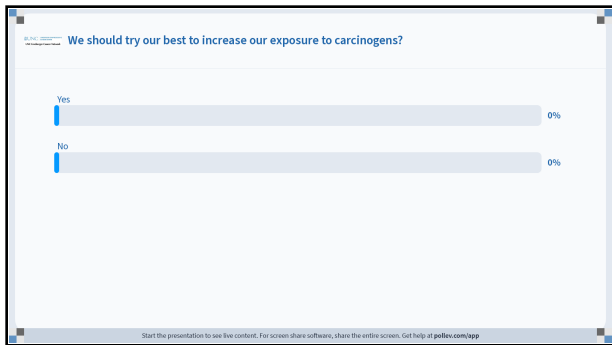
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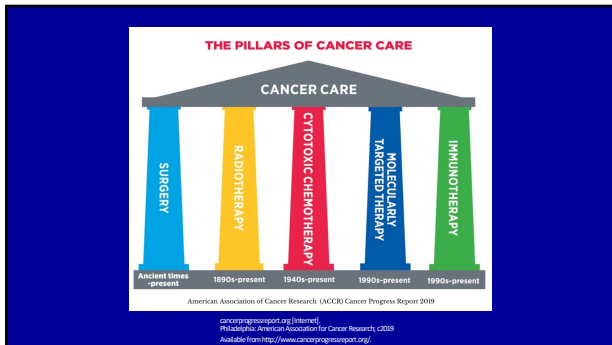
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Video

Please visit the following YouTube video for this portion of the presentation:

<https://www.youtube.com/watch?v=ISJm8Z2nV5Y&t=160s>



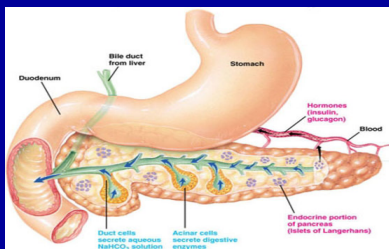
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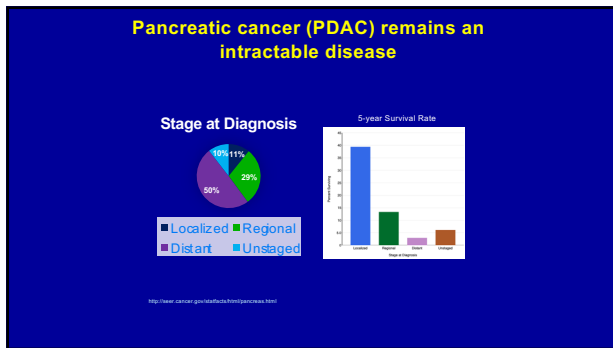
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What is the function of the Pancreas?

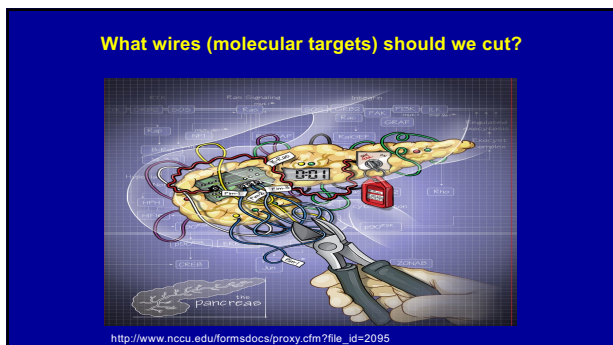


<http://www.olivelab.org/the-pancreas-overview.html>

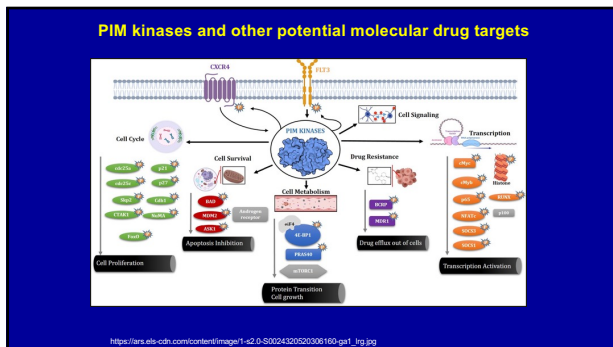
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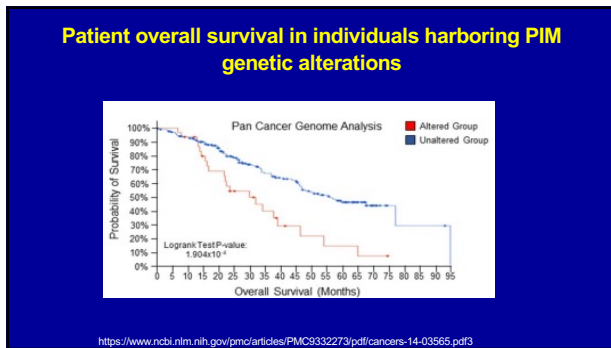
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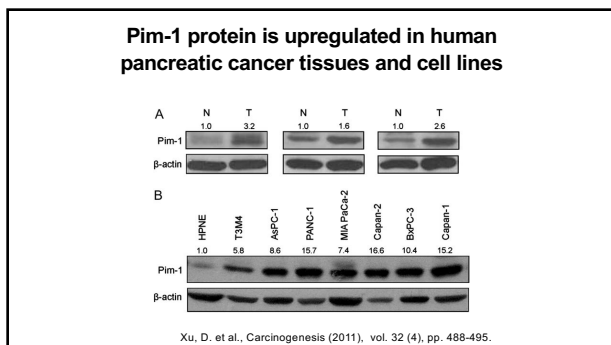
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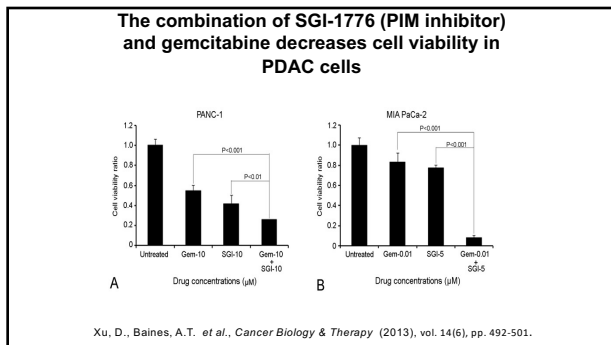
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Pancreatic cancer is not only lethal, but a health disparity

- The incidence of pancreatic cancer is **50-90%** higher in African-Americans than in any other ethnic group in the U.S.
- African-Americans have the poorest prognosis of any ethnic group in the U.S.
- African-Americans are less likely to receive surgery than any other ethnic group in the U.S.

<http://pathology.jhu.edu/po/Pan/ATAm.php?area=pa>

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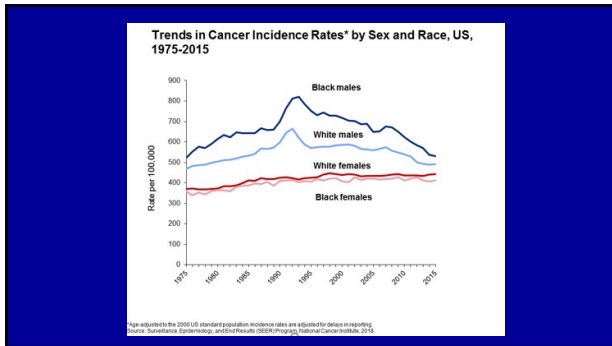
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What is the Definition of a Cancer Health Disparity?

The National Cancer Institute (NCI) defines "cancer health disparities" as *adverse differences in cancer **incidence** (new cases), cancer **prevalence** (all existing cases), cancer **death** (mortality), cancer **survivorship**, and **burden of cancer or related health conditions** that exist among **specific population groups** in the United States.*

<https://www.cancer.gov/about-nci/organization/orchd/about-health-disparities/definitions>

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What is the Definition of Health Equity?

The Human and Health Services Office of Minority Health states that **"Health equity is attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and healthcare disparities".**

<https://www.cancer.gov/about-nci/organization/ochd/about-health-disparities/definitions>

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WHICH U.S. POPULATION GROUPS EXPERIENCE CANCER HEALTH DISPARITIES?

According to the National Cancer Institute (NCI), cancer health disparities are adverse differences in cancer such as the number of new cases and deaths, cancer-related health complications, quality of life after cancer treatment, financial burden, screening rates, and stage at diagnosis that are shouldered by certain U.S. population groups (PH) including:

Racial and ethnic minority groups	Individuals of different ancestry	Individuals of low socioeconomic status	Individuals with disabilities
Individuals who lack or have limited health insurance coverage	Residents in certain geographic locations, including rural areas	Refugees or asylum seekers	Immigrants
Members of the lesbian, gay, bisexual, and transgender community	Adolescents and young adults (AYA)	Elderly	

https://cancerprogressreport.aacr.org/wp-content/uploads/sites/2/2021/04/MCR_CPR_2021.pdf

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WHY DO U.S. CANCER HEALTH DISPARITIES EXIST?

Complex and interrelated factors contribute to cancer health disparities in the United States. For racial and ethnic minorities, adverse differences in many, if not all, of these factors are directly influenced by structural and systemic racism. The factors contributing to differences or inequalities include:

Social factors <ul style="list-style-type: none">• Education• Income• Employment• Health literacy	Clinical factors <ul style="list-style-type: none">• Access to health care• Quality of health care
Psychological factors <ul style="list-style-type: none">• Stress• Mental health	Cultural factors <ul style="list-style-type: none">• Cultural beliefs• Cultural health beliefs
Behavioral factors <ul style="list-style-type: none">• Tobacco use• Diet• Weight• Physical activity• Adherence to cancer screening and vaccination recommendations	Environmental factors <ul style="list-style-type: none">• Air and water quality• Transportation• Housing• Community safety• Access to healthy food sources and spaces for physical activity
Genetic and biological factors	General health <ul style="list-style-type: none">• Infection with certain pathogens, such as human immunodeficiency virus (HIV)• Having other health conditions, e.g., diabetes

https://cancerprogressreport.aacr.org/wp-content/uploads/sites/2/2021/10/AACR_CPR_2021.pdf

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Health Disparities only occur with black and brown people.

True 0%

False 0%

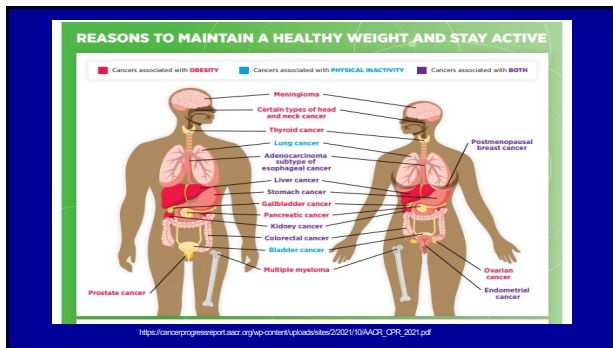
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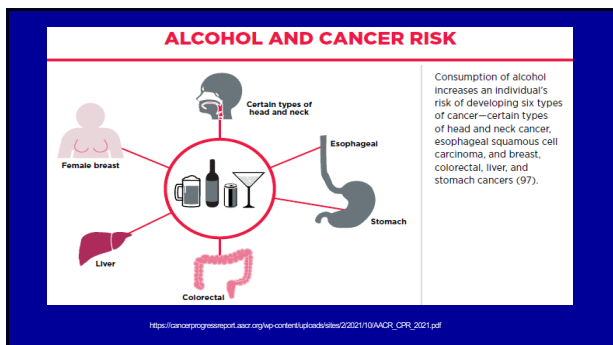
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NIH National Institute of Environmental Health Sciences
Your Environment. Your Health.

Prevention is the Key

- Genetic and environmental factors individually contribute and interact with each other to increase risk
- Impacts of exposure vary based on timing of the exposure (windows)

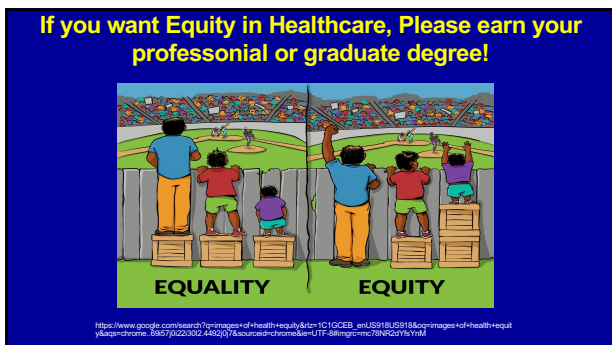
Environmental factors are more readily identified and modified than genetic factors, and therefore, present a tremendous opportunity to prevent non-communicable disease.

You can't change your genes, but you can change your environment!

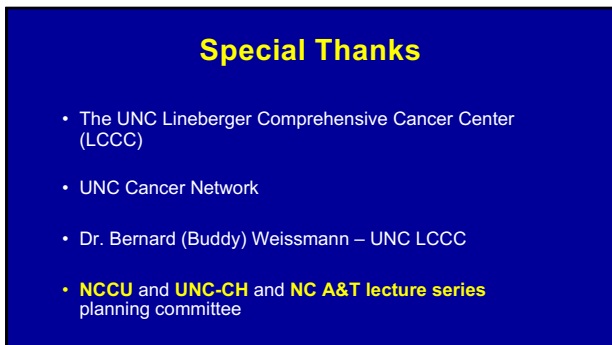
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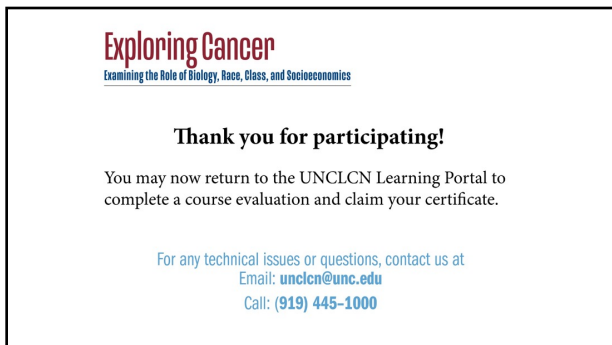
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Exploring Cancer is a webinar series taught by cancer biologists, physicians, public health experts, and other cancer specialists from NCCU, UNC-Chapel Hill, and NC A&T.

We hope to see you next time!

UNC Lineberger Cancer Network

