

USDA National Institute of Food and Agriculture U.S. DEPARTMENT OF AGRICULTURE

> **BIOENERGY, CLIMATE, AND ENVIRONMENT** FOOD PRODUCTION AND SUSTAINABILITY YOUTH, FAMILY, AND COMMUNITY FOOD SAFETY AND NUTRITION INTERNATIONAL PROGRAMS

Cancer Moonshot: Cancer Prevention Day of Action

INVESTING IN SCIENCE | SECURING OUR FUTURE | WWW.NIFA.USDA.GOV USDA IS AN EQUAL OPPORTUNITY PROVIDER, EMPLOYER, AND LENDER



Cancer Moonshot

- Cancer has impacted virtually every American family in one way or another.
- USDA NIFA is proud to be working together toward the President's goal of cutting the death rate from cancer by at least 50% over the next 25 years and improving the experience of individuals and their families who are living with and surviving cancer.



National Institute of Food and Agriculture U.S. DEPARTMENT OF AGRICULTURE

About USDA NIFA

Part of USDA's Research, Education, and Economics mission area, NIFA administers federal funding to the nation's Land-grant Universities and other organizations to address food and agricultural issues impacting people's daily lives and the nation's future.



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The Land-grant University System





More About USDA NIFA

- Our programs propel cutting-edge discoveries from research laboratories to farms, classrooms, communities, and back again.
- We collaborate with leading scientists, policymakers, experts, and educators in organizations around the world to find innovative solutions to the most pressing local and global problems.
- Scientific progress—made through discovery and application.



NIFA Nutrition Programs

- Community Food Projects Competitive Grants Program
- Expanded Food and Nutrition Education Program
- AFRI Food Safety, Nutrition and Health
- Food and Agriculture Service-learning Programs
- Gus Schumacher Nutrition Incentive Program



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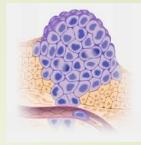
Dr. Mary Murimi **Professor of Nutrition** College of Human Sciences Texas Tech University

Community-Based Cancer Prevention Best Practices

Mary Murimi, PhD, RDN Professor of Nutrition Department of Nutritional Sciences

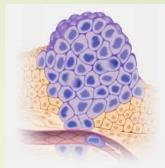


Cancer Prevalence



- Cancer is the 2nd leading cause of death globally
- More than 60% of new cancer cases and associated deaths occur in developing countries
- Despite the growth, cancer is underestimated, under-reported and under-managed
- Lung cancer is the most common cancer, followed by breast cancer, colorectal cancer, prostate cancer and stomach cancer
- All these cancers are lifestyle and nutrition related and preventable if identified and treated

Understanding Risk Factors at the Community Level



- Cancerous cells divide uncontrollably, negatively affecting hosting tissues
- Risk factors for cancer include lifestyle behaviors, genetic factors, dietary practices, infections, environmental and occupational exposure, among others
- Lifestyle related factors include smoking, alcohol consumption, dietary habits and related weight status, virus and other infections
- Environmental and occupational factors include air pollution and exposure to industrial carcinogens.

Risk factors and related cancers

- High-fat diet is related to breast and colon cancers
- A low-fiber diet is associated with intestinal cancers
- Smoked fish and beef consumption are associated with stomach and bowel cancers respectively
- Alcohol consumption is associated with esophageal and liver cancers
- Smoking or chewing tobacco is associated lung, pharynx, esophagus, bladder, pancreas and mouth cancers
- Occupational exposure to chemical substances such as arsenic, asbestos and others are associated with cancers of various organs
- Environmental—air pollution, sunlight and radiation are associated with sin, oral and leukemia cancers



Stopping Cancer Before it Starts

- Assess the magnitude

 → develop strategy
 → set priorities and set measurable objectives
- Identifying the most common type of cancer in a particular community or region
- Identifying the most vulnerable population by ethnicity, age or gender in each community
- Identifying the risk factors for the common type of cancers and the vulnerable population
- Identify cancer-related health illiteracy for a given community
- Establish basic cancer knowledge and misconceptions at the community level
- Open channels of cancer related communication through community-based groups and gate keepers



Systematic approach to combat cancer at the community and population level

Blood cancer UK

> Because knowing the symptoms

> > saves lives

Primary and Individual Level:

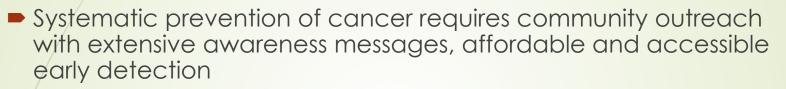
- Develop the culture of prevention by increasing awareness on cancer-related risk factors
- Increase awareness on the relationship between risk factors and common cancers in each community
- Increasing awareness of early symptoms as a prompt to screening
- Community and population level:
- Legislative measures to reduce or control air pollution
- Legislative measures to protect workers from occupational risk factors
- Legislative measures to control the promotion of cancer-causing aspects
- Secondary Level:
- Develop access to affordable screening sites
- Tertiary—affordable and accessible early diagnosis and treatment

Best Practice: Early Diagnosis



- Make screening accessible for early diagnosis
- Develop multiskilled, culture-sensitive teams that include nurses, doctors, dietitians, behavior scientists, psychologists and counselors
- Increase cancer awareness by educating the community on risk factors, symptoms and the importance of early diagnosis and treatment
- Applying the principles of equity by making cancer diagnosis and screening affordable to low-income population
- Increase access to testing and address fear of testing results
- Improve health literacy through culturally sensitive education

Cancer Prevention Strategies



- Effective prevention initiatives should target smoking cessation efforts and early immunizations
- Nutrition education that promotes fruit and vegetable consumption and moderation in fat, sugar, and red and processed foods
- Promotion of lifestyle behaviors that include increased physical activity and maintenance of normal weight
- Development of culturally and health literacy sensitive training programs

Goals for Reducing Cancer in the Community

- Keeping the healthy people healthy by building a culture that supports a healthy lifestyle
- Making healthy lifestyle the preferred choice in the community
- Understanding the cancer magnitude by continuous assessment
- Understand what drives unhealthy and healthy behaviors
- Provide people with tools and information to make healthy choices
- Saturate the message by engaging multiple sectors of a community such as schools, neighborhoods, after-school programs and clinics, etc.
- Improving treatment and health management of those diagnosed with cancer

Best Practices of Reducing Causes of Cancer



- Develop policies and environmental approaches to make healthy choices available, affordable, and easy to access
- Develop educational programs to inform healthy lifestyle decisions
- Develop healthy social and cultural values that will guide and govern community thoughts, beliefs and behaviors
 - Develop social and physical environments that positively influence health with a range of healthy options that are accessible, attractive, and ease to use
- Address societal determinants of health to prevent or delay the development of cancer diseases



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Dr. Lexi MacMillan Uribe **Assistant Professor** Texas A&M AgriLife Institute for Advancing Health through Agriculture

TEXAS A&M GRILIFE

INSTITUTE FOR ADVANCING HEALTH THROUGH AGRICULTURE

Increasing Adoption of Healthy Eating Practices for Cancer Prevention in Low-Income Communities

August 10, 2022

Alexandra L. MacMillan Uribe, PhD, RDN Assistant Professor of Healthy Living Institute for Advancing Health Through Agriculture Texas A&M AgriLife Research & Extension Center at Dallas NO CONFLICTS OF INTEREST TO DISCLOSE

Texas A&M AgriLife Institute for Advancing Health Through Agriculture

World's first academic institute to bring together **precision nutrition**, **responsive agriculture**, and **social and behavioral research** to reduce dietrelated chronic disease and lower health care costs in a way that supports producers, consumers, and the environment.



PRECISION NUTRITION



RESPONSIVE AGRICULTURE



AGRILIFE

HEALTHY LIVING



IHA Healthy Living Program

Community-Engaged Social & Behavioral Science to Advance Health Equity

Mission:

To engage people in the communities in which they live, work, and play to implement health promotion programs that are relevant, acceptable, and tailored to their personal, sociocultural, community, and environmental context.

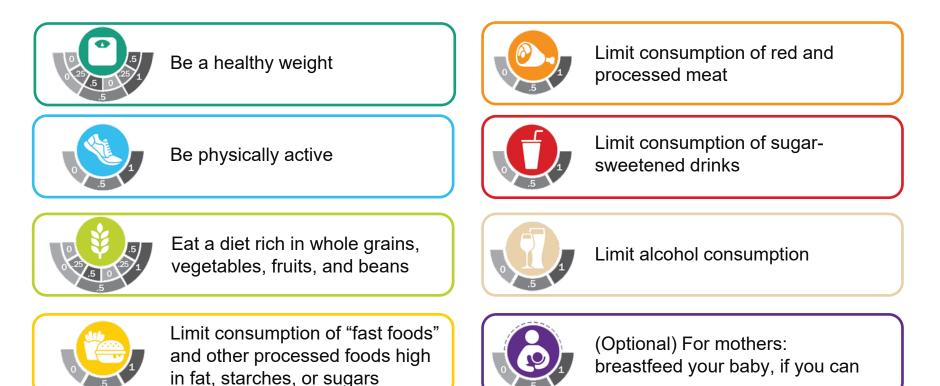
Vision:

To positively affect community and population-level health behavior and health outcomes using cost-effective, sustainable strategies, with particular attention to rural and other underserved groups, and to lead the translation of new discoveries from IHA's *responsive agriculture* and *precision nutrition* hubs to community settings.



HEALTHY LIVING





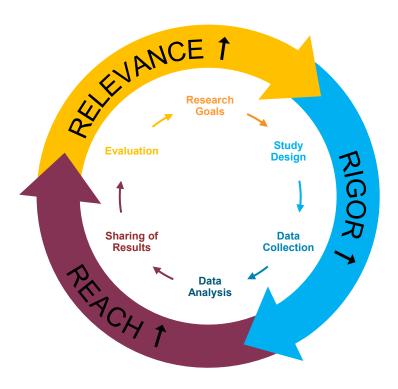
AICR, Scoring Standards for the WCRF/AICR Score

AGRILIFE.

INSTITUTE FOR ADVANCING



Community-informed Research at Key Research Phases



Balazs & Morello-Frosch, 2013



Civic Engagement

Change Club Civic Engagement Study #1

- Multilevel (individual, social, and built environment), multicomponent intervention to improve cancer risk factors
- 2K+ participants in 12 medically underserved, rural counties
- Baseline in 2022, with three years of follow up
- Change Club Civic Engagement Study #2
 - Adapting civic engagement intervention leadership for rural librarians; cardiometabolic health outcomes
- Change Club Civic Engagement Study #3
 - Adapting civic engagement intervention leadership for middle school students; diet and physical activity behavior change





Adaptation of Evidence-based Programs

• Strong People Programs

- Evidence-based healthy eating and/or physical activity intervention programs originally tested with rural at-risk women adapted for:
 - Rural Latinx women
 - Urban populations
 - Digital delivery



Relevant Citations: Seguin-Fowler 2018 Obesity. 26(5).



FV Incentive Programs

- Farm Fresh Food for Healthy Kids
 - Multi-state RCT of CO-CSA + education program for rural low-income households with children
 - Improved food security and dietary intake among caregivers but not children (study duration may have been inadequate)
 - Urban projects forthcoming

IHA Healthy Living Produce Rx Studies

- Healthcare provider partnership: weekly FV allotment + education
 - One intervention with toddler-caregiver dyads; one with adults with 1+ chronic disease risk factor
- Twelve week changes in BMI, metabolic syndrome, and FV intake
- Key features: RCT; clinical outcome measures; multisector partnership



Relevant Citations: Hanson 2017 Nutrients 9; Seguin-Fowler 2021 Int. J. Behav. Nutr. Phys. Act. 18.



Best Practices

- Identify partners who provide key services (e.g., Extension for education, food bank for FV, clinical services to at-risk groups)
- Multilevel, multisector interventions that go beyond individual-level focus
- Enhance interventions with linguistically and culturally appropriate, audience-specific nutrition education

Relevant Citations: Engel 2020 Nutrients 12; Just 1997 Am J Agric Econ 79; Choi 2017 Am. J. Prev. Med 52; Wolfenden 2021 Int. J. Behav. Nutr. Phys. Act. 18; CDC 2011 Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Increase the Consumption of Fruits and Vegetables.



Future Directions

- Evaluation and adaptation of EBPs on cancer and obesity outcomes
- Novel programs for increasing access and consumption of FV (e.g., meal kits)
- Stronger linkages between producers/local food systems and consumers via clinics, food programs, retail environments, etc.
- Real-time FV education, shopping, and meal-planning support in retail spaces
- Cost and cost-effectiveness analysis with specific program features
- Improved dietary assessment/measurement
- Cohort studies with embedded interventions... mobile health assessment centers...

RESPANSIVE

Healthy Living Mobile Health Assessment Centers (MHAC)



Activities and Services

- Study recruitment and enrollment
- Collecting biometric measures
- Behavioral-biometric research on neurophysiological responses
- Community-engaged interventions
- Hybrid intervention delivery



INSTITUTE FOR ADVANCING HEALTH THROUGH AGRICULTURE

THANK YOU

Rebecca A. Seguin, PhD, RD Associate Director, Healthy Living r.seguin-fowler@ag.tamu.edu



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Dr. Erin Yelland Interim Director Center on Aging Kansas State University

Erin Yelland, Ph.D. Kansas State University

Gerontological Interventions and Partnerships

&

The National Cooperative Extension Model of Health Equity and Well-Being

Quick Stats

Age = Significant Risk Factor

Adults over 65 represent:

- 60% of all new malignancies
- 70% cancer deaths

Incidence rate: **2,151**/100,000 (65+) vs. **208**/100,000 (<65)

Sample Programs and Partnerships in Gerontology



High-Level Best Practices

- Reaching diverse audiences
 - Home-Bound, Isolated and Rural
 - Oldest Old, BIPOC and LGBTQIA+
- Building trust (family/community/physician partnerships)
- Consistent contact
- Virtual interventions

Cooperative Extension's National Framework for Health Equity and Well-Being

HEALTH EQUITY

Improving population health and achieving equity in health status

SOCIAL DETERMINANTS OF HEALTH

Improving social predictors of health through policy, systems, and environmental changes

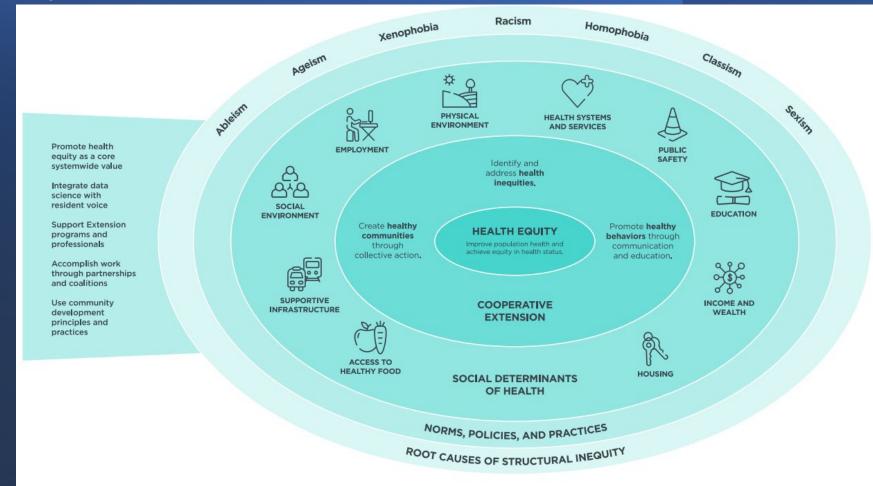
COALITIONS AND COMMUNITY HEALTH ASSETS

Promoting, establishing and providing support for community-based entities

THE ISMS

Addressing the root causes of structural inequity

Cooperative Extension's National Framework





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Ms. Heidi Rader Associate Professor of Extension University of Alaska Fairbanks

Promoting Healthy, Thriving Tribes that Hunt, Fish, Gather, & Grow Heidi Rader, Associate Professor of Extension

l acknowledge the Alaska Native nations upon whose traditional lands our campuses reside. In Fairbanks, our Troth Yeddha' Campus is located on the traditional lands of the Dena people of the lower Tanana River.

Brought to you by:



Alaska Tribes Tanana Extension Program

Conference



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ork is supported by the Federally Recognized Tribes Extension Program Project 2017-41580-26928. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

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The Focus of the Tribes Extension Program is

- Providing education and multi-platform outreach on behaviors that promote health and self-sufficiency.
- Examples, gardening, food preservation, food policies that are indigenous focused
- Partnering with traditional knowledge bearers is a big focus of the program



Photo provided by Freda Beasley of Galena

Why is Eating Traditional Foods Important?



Traditional Food Production Fosters Culture

#myexistenceisresistance



Partnering with Traditional Knowledge Bearers

With Co-Chefs



Molly Cerridwen Yup'ik Traditional Healer & Owner of Shapeshifting Wellness

Molly was brought up learning and respecting the plant, fungi, animal, gem and spirit kingdoms to better understand the interconnectedness of all life and that same interconnectedness within each one of us. She is a Master Massage Therapist, LMT, E-RYT, C-IAYT and a medical education provider. OWE Cooking with Alaska Gathered & Grown



Lesley Jones Nutrition Educator Tribes Extension, UAF

HANDS-ON OR VIRTUAL WORKSHOPS ARE TAUGHT ON A RANGE OF TOPICS



Starting a New Habit like growing a garden can help people start many new habits.

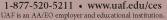
- Getting exercise
- Eating fresh food
- Building community

2outine Cue Keward

Social Media Campaign

Start a New Tradition Grow a Garden Find out more here: www.uaf.edu/ces/tcc









Tanana Chiefs Conference If produce is available in villages, it is often not fresh and very expensive. Some villages do not receive groceries for weeks at a time because of weather delays.

Gardening provides fresh produce in locations where it would otherwise be unavailable. The difference in freshness between local and non-local produce in rural Alaska is HUGE!

Benefits of a Community Garden

- Families that participated in community garden efforts ate 89% more fresh veggies than usual¹
- 70 to 80% consumed at least five servings of fruit and vegetables daily
- 74% of gardeners preserved produce (freezing, pickling, drying)
- 95% shared produce with neighbors, emergency food service providers, and others
 - ¹Sullivan, A.F. 1999. Community Gardening in Rural Regions: Enhancing Food Scurit and Nutrition. Center on Hunger and Poverty Tufts University

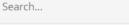
IT GROWS IN ALASKA

In the Alaska Garden with Heidi Rader

Raised Beds Make it Possible to Garden Just About Anywhere

🋗 May 16, 2022

Gardening in raised beds offers a lot of benefits, and a few drawbacks. Raised beds are a great option for gardening on top of a porch, concrete, or on poor, rocky soil. They're ideal for corralling good soil while keeping it from getting compacted. They make it easy to employ no-till gardening and to eliminate weeds in the aisles, especially if your walkways are made of concrete or something else that completely keeps weeds from growing.



RECENT POSTS

- Raised Beds Make it Possible to Garden Just About Anywhere
- Gardening in the Aleutian Pribilof Island Region of Alaska
- Bolting THE Challenge with Growing Spinach in the Land of the Midnight Sun
- Luscious Flowers that Blossom and Climb



AFPC IS DEDICATED to making change so our food system works better for all Alaskans.

How we do it:

CONNECT: Engage with Alaskans to get input to strengthen our food system, and to connect them with each other to learn and collaborate.

ADVOCATE: Develop recommendations and share them with policy makers at the local, state, federal, and tribal level.

INFORM: Share information, resources, opportunities and risks with all food stakeholders (everyone who eats!)

AFPC is a coalition of Alaskans who want to improve Alaska's food system. Our statewide volunteer board of directors represents:

» FOOD BUSINESSES » GOVERNMENT AGENCIES » SUBSISTENCE USERS » FARMERS » FISHERMEN » SCHOOLS » NON-PROFITS » FOOD CONSUMERS OF ALASKA





PHYSICAL INACTIVITY & UNHEALTHY EATING $\downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow contribute to \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow$ overweight • obesity • chronic diseases (including some cancers, cardiovascular disease, & diabetes)

O N

web: akfoodpolicycouncil.org facebook: akfoodpolicy instagram: akfoodpolicycouncil email: akfoodpolicycouncil@gmail.com



After Participating in a Tribes Extension Program, Did you. . .

	Yes	No	
Start a garden?	64	16	
Increase your garden's productivity?	58	21	
Start a tribal, school, or community garden?	31	48	
Start a farm?	9	70	
Help someone else start or improve their garden?	53	26	
Become more self-sufficient?	66	14	
Safely preserve food in a new way?	56	24	
Improve your diet?	68	12	1
Improve your family's diet?	69	11	4
Improve your health?	67	13	
Find answers to your questions with research-based			
 information (example: from the Cooperative Extension)?	54	25	
Share the information you learned with others?	69	11	

Read more about gardening in Alaska here: **itgrowsinalaska.community.uaf.edu** Find out more about the Tribes Extension Program here: **www.uaf.edu/ces/tribes**. If you are a Tribe, request a workshop in your village.

Find the full reports of the vegetable variety trials here: uaf.edu/afes/research/variety-trials/ or here: afesresearch.uaf.edu/

UAF Cooperative Extension Service publications: cespubs.uaf.edu In the Alaska Garden with Heidi Rader on YouTube: https://bit.ly/37NBCfK



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Dr. Fatemah Malekian Director Institute for Food, Nutrition and Wellness Southern University Agricultural **Research and Extension Center**

Healthy Eating and a Healthy Lifestyle to Reduce Cancer in Louisiana

Fatemeh Malekian, Professor

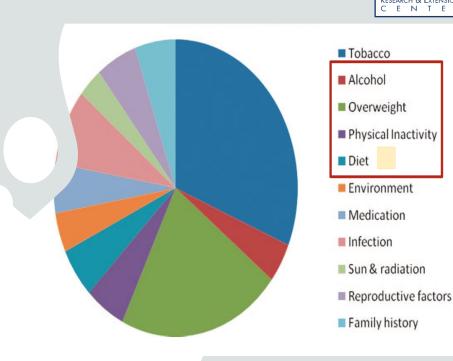
Director, Southern University Institute for Food, Nutrition and Wellness **Director**, Center of Excellence for Nutrition, Health, Wellness, and Quality of Life Southern University Agricultural Research and Extension Center (SUAREC)





Introduction

- Research has pointed toward certain foods and nutrients that may help prevent—or, conversely, contribute to—certain types of cancer.
- Many factors can't be changed that increase cancer risk, such as genetics and environment, there are others that can be controlled.
- According to the World Health Organization (WHO), 17 people die every minute from cancer, which claimed 8.8 million lives in 2020.
- Around 22 % of cancer-related deaths have been triggered by predisposing factors such as an unhealthy lifestyle, excessive alcohol consumption and smoking.
- Obesity is linked to a higher risk of many cancers such as cancers of the breast (in women who have been through menopause), colon, rectum, endometrium (lining of the uterus), esophagus, kidney, pancreas, and gallbladder.



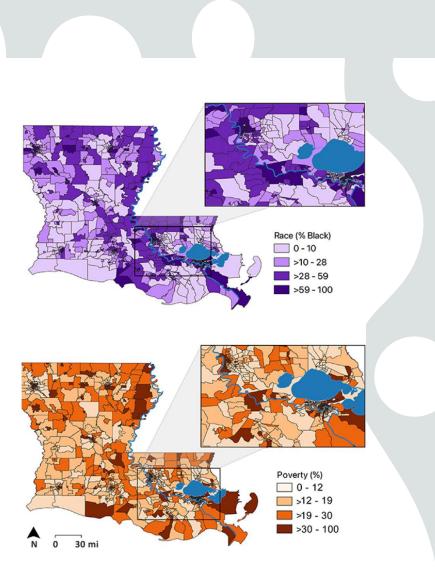
Age-Adjusted Incidence Rates by Cancer Sites	Louisiana Rate	USA Rate
All Cancer Sites	482.4	448.6
Bladder	18.0	19.7
Brain & ONS	5.9	6.5
Breast (Female)	127.4	126.8
Lung & Bronchus	64.6	57.3
Oral Cavity & Pharynx	13.2	11.9
Prostate (Male)	134.7	106.2
Kidney & Renal Pelvis	22.2	17.1



Age-adjusted incident rates by cancer sites in Louisiana's compared to National (2014-2018)



- (Top) U.S. Census Bureau American Community Survey data on the estimated percentage of Black residents between 2011 and 2015.
- (Bottom) U.S. Census Bureau American Community Survey data on the estimated percentage of families living below the US federal poverty threshold between 2011 and 2015.



Health Rankings in Louisiana

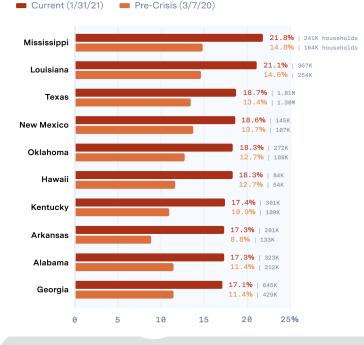
- Nationally, Louisiana ranks second (after pandemic) in food insecurity, ninth in hungerfilled households and one of top ten states in obesity. Young children under the age of 12 and elderly are hard hit.
- Louisiana has the 7th highest cancer rate in the nation.

> **Rank #48** in:

- Adults eating less than one serving of fruit per day: 47.2%
- Adults eating less than one serving of vegetables per day: 25.6%
- High school students eating less than one serving of fruit per day: 53.1%
- High school students eating less than one serving of vegetables per day: 55.1%

Top 10 States: Food Insecurity

% of households that are food insecure





Other Factors

- Racial discrimination
- > Obesity
- > Hunger
- Heath illiteracy
- ➢ Food desert
- Lack of access to cancer screening
- Medical insurance
- Lack of screening for food insecurity
- Cancer Alley, between Baton Rouge and New Orleans/Environmental
- Smoking and drinking





Possible Solutions

- Screening for food insecurity by medical professionals
- Human Rights approach for providing sustainable healthy foods
- Decreasing Food Waste especially fruits and vegetables
- Support capacity building for communities to achieve their own food and nutrition security
- University community partnerships (including the sharing of resources)
- Align university resources and structures for conducting research strategies that cross many disciplinary boundaries to create a holistic approach
- Educate a new generation of students to be transdisciplinary problem solvers





Center of Excellence for Nutrition, Health, Wellness and Quality of Life

Mission:

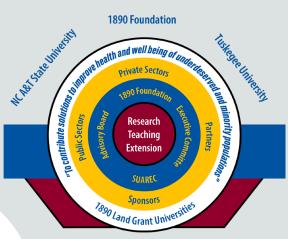
The 1890 Center of Excellence for Nutrition, Health, Wellness and Quality of Life (NHWQL) seeks to support the triple land-grant's mission of research, teaching and extension to contribute solutions to improve the health and well-being of underserved and minority populations.

Objectives:

1) **Research**: To enhance the research capacity at 1890 institutions focusing on food intake and nutritional/health outcomes.

2) **Teaching:** To strengthen and advance innovative food and nutrition educational and instructional strategies for students at 1890 institutions.

3) **Extension:** To provide training and education to underrepresented communities through multi-state food and innovative nutrition outreach programs.



Southern University and A&M College



Educational Programs

- Sister's Together Program; Eat Better, Move More/nutrition education, cooking demonstration and physical activities and other nutrition programs
- Working closely with small/underserved farmers from 64 parishes in Louisiana
- > The Greater Baton Rouge Food Bank/to provide more produce
- Baton Rouge Together Health Equity Action team, has established a Health Equity District benefitting the medically underserved areas in city-parish
- > Mayors Healthy BR/ Community gardens
- Raised bed and backyard gardens for the community
- Hydroponic and Aquaponic (vertical gardening) to have indoor garden so have more produce
- Using Technology (LLENA/AI) to engage community members more in keeping track of their produce consumption and monitor and purchase their foods with healthier options
- To develop and modify recipes to incorporate more fruit and vegetables and making it culturally acceptable

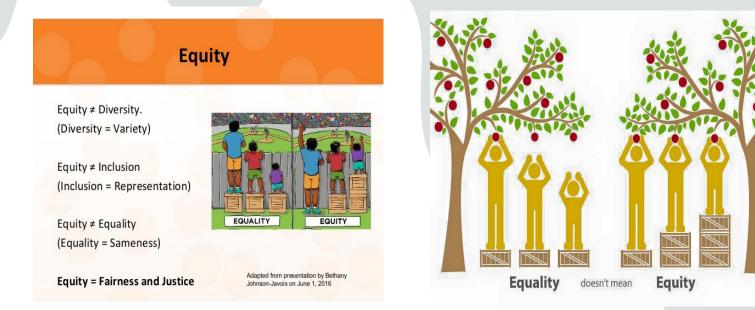








Equality vs Equity (Fairness)



"Equity is the floor beneath which no one should fall" --Maya Wiley

> Shorlette Ammons Committee on Racial Equity (CORE)





Thank you!

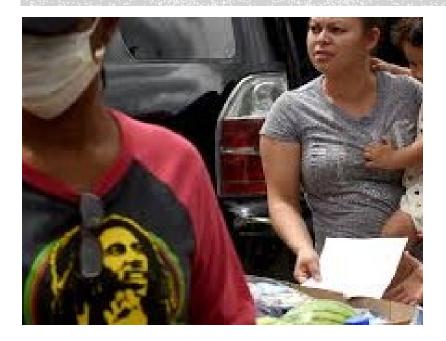


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Dr. Angela **Odoms-Young** Director Food and Nutrition Education in Communities Program **Cornell University**

CANCER MOONSHOT CANCER PREVENTION DAY OF ACTION: IMPLICATIONS FOR IMPROVING FOOD AND NUTRITION SECURITY



Angela Odoms-Young, PhD Associate Professor Director, Food and Nutrition Education in Communities Program & NYS EFNEP Division of Nutritional Science Cornell University





- Poor diet and related dietary risks (such as food insecurity, limited healthy food access)
- Current recommendations have had limited impact on the health and dietary habits of the population (Ordovás, 2018)
- Increased health care costs based on the rise of chronic diseases, including cancer, as well as cardiovascular disease, and diabetes.
- Most population strategies to improve dietary behaviors have used 'one size fits all' public health recommendations (Rodgers and Collins, 2020)



HOW CAN WE IMPROVE FOOD AND NUTRITION SECURITY?

- Long standing evidence about the link between diet and cancer.
- Improving cancer risk factors including food and nutrition security
- Neighborhood and context matters
- Implementation science
 - Not a one size fits all for recommendations but also intervention (Precision Public Health)
- Knowledgeable and diverse workforce
- Equity at the center
 - Although more than 75% of the global population is of Asian or African ancestry, many studies use existing genomic databases largely comprised of individuals of European ancestry
- Ongoing stakeholder engagement: Importance of the lived experience
- Be adaptable and flexible











Non-Discrimination Statement

https://www.usda.gov/non-discrimination-statement

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Thank You!

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