

Annual Report 2020



Rural and Minority Health Research Center

Arnold School of Public Health

CONTACT

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A Message from our Leadership Team

This year has been unprecedented on so many levels. COVID-19 has ravaged through rural and minority communities throughout the U.S. putting long-standing disparities in health and healthcare in the spotlight. Rural communities, persons of color, and Indigenous persons face a disproportionate risk of COVID-19 infection and death on top of greater socioeconomic burden, higher unemployment and lack of insurance, and often inadequate access to healthcare. These health and social inequities have become even more apparent this year layered with rising racial injustice and political unrest.

In this time, we are humbled and called to act, to turn data into evidence, and evidence into policy. Since the Center was first developed and funded in 2000, the Rural and Minority Health Research Center (RMHRC) at the University of South Carolina (UofSC) in the Arnold School of Public Health has committed to investigating persistent inequities experienced by underserved rural populations, particularly inequities that can be traced back to modifiable factors such as access to healthcare, socioeconomic conditions, aspects of the built environment, structural racism and discrimination, and policy environments at the state and federal level. Our focus has, and continues to be, understanding the intersection of rural residence and racial/ethnic minority status in the United States with the larger goal of informing key policies and programs to uplift underserved communities.

This year, we have engaged in numerous studies examining the intersection of rural residence and racial/minority status (see Publications & Presentations section). We were also proud to receive another four years of Center funding through the Federal Office of Rural Health Policy Rural Health Research Grant Program allowing us to continue turning data into evidence that promotes health equity. Faculty currently affiliated with the Center come from multiple departments within the Arnold School of Public Health and units across campus including the College of Nursing and School of Medicine. We are excited for you to read about how the Center is making a difference at UofSC, in South Carolina, and across the nation in this 2020 Annual Report. Thank you for supporting the work of the Rural and Minority Health Research Center.



Jan M. Eberth, Ph.D.
Associate Professor of
Epidemiology
Director, Rural and Minority
Health Research Center



Elizabeth Crouch, Ph.D.
Assistant Professor Health Services,
Policy and Management
Deputy Director, Rural and Minority
Health Research Center



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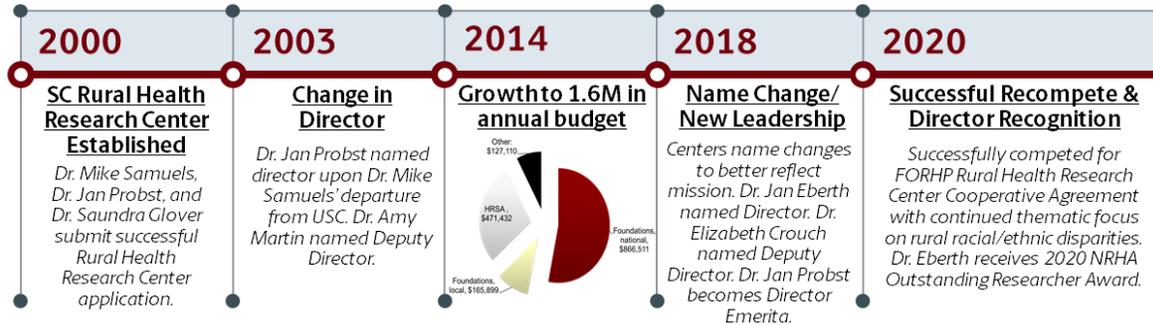


History of the Center

History

Timeline of the Center's History

Illuminating and addressing health and social inequity in rural and minority populations



The Rural & Minority Health Research Center at the University of South Carolina has a long and very intentional history. In 1993, Michael Samuels (now deceased) and Jan Probst began our focus on rural research using funding from the Agency for Healthcare Research and Quality to explore the economic consequences of rural hospital closures. Subsequently, Drs. Samuels and Probst obtained a small grant from the Federal Office of Rural Health Policy (FORHP) to study African American health disparities in rural South Carolina. With this research completed, the team, joined by Dr. Saundra Glover, competed successfully in 2000 for a FORHP-funded Rural Health Research Center.

Across the 20 years since the Center was founded, its goals have remained largely the same: to illuminate and address the health and social inequities experienced by rural and minority populations to promote the health of all. As the Center has grown, we have added research to test solutions to rural problems to our overall portfolio. We work with multiple partners across the state of South Carolina and nationally to improve lives in rural America across programs that range from early child home visiting through implementation of evidence-based interventions to increase cancer screening in Rural Health Clinics. Over the 20 years of our existence, the Center has completed 68 FORHP-funded projects with an additional seven in progress at the end of 2020. Our scientific work has generated hundreds of scientific papers, presentations at scientific conferences, and policy briefs and reports. As we have grown, the Rural and Minority Health Research Center has also steadily expanded its portfolio of funding partners, leveraging what started out as a \$500,000 per year FORHP core grant into our current funding level of over \$1.5 million per year.

Research Focus



Our Team

Current members of the RMHRC
(starting in the top left and moving down each column):
Jan Eberth, Sylvia Shi, Bankole Olatosi, Janie Godbold, Nathaniel Bell, Demetrius Abshire, Pam Gillam, Christina Andrews, Gabriel Benavidez, Elizabeth Crouch, Janice Probst, Swann Arp Adams, Alexander McLain, Allie Silverman, Nick Yell, Peiyin Hung, Allyson Malbouf, Lauren Workman, Sayward Harrison, Melinda Merrell, Kevin Bennett, Cynthia Calef, Whitney Zahnd, Shaun Owens, Stella Self, Jihong Liu, Radhika Ranganathan, Nabil Natafji, Anja Zgodic, Myriam Torres, Cathryn Murphy, Andrew Kaczynski, Jennifer Browder, Monique Brown-Smith

Our Mission

The Rural and Minority Health Research Center's mission is to illuminate and address the health and social inequities experienced by rural and minority populations to promote the health of all through policy-relevant research and advocacy.





Our Goals

Conduct methodically rigorous and policy-relevant research to provide a clear picture of health status, health care needs, and health services utilization among rural and minority populations

Investigate policies aimed at improving health and reducing barriers to care among rural and minority populations, especially persons experiencing poverty

Assess the resources available to, and barriers experienced by, rural and safety net health care providers

Promote the professional development of researchers and health care professionals to promote health equity

Facilitate cross-disciplinary collaborations between researchers and community partners wishing to bridge research and practice

Provide expert advice to national, state, and local government and to rural and minority constituency groups to empower policy development and advocacy



**Rural and Minority
Health Research Center**

Arnold School of Public Health

Meet Our Advisory Board

The RMHRC's external advisory board is made up of nationally recognized leaders that believe in our Center's mission of promoting the health of all individuals through policy-relevant research and advocacy. These members provide advice and council on various Center-related topics and support the Center in the achievement of our strategic goals.



Marcia K. Brand, Ph.D.
Senior Advisor

DentaQuest Partnership for Oral Health Advancement

Dr. Brand is a Senior Advisor with the DentaQuest Partnership for Oral Health Advancement and has served as Executive Director of the National Interprofessional Initiative on Oral Health and as Director of HRSA's Office of Rural Health Policy.



Amy L. Elizondo, MPH
Vice President, Program Services
National Rural Health Administration

Ms. Elizondo is the Program Services Vice President for the National Rural Health Association. Prior to joining NRHA, she worked for the Centers for Medicare and Medicaid Services' Office of Legislation and the Health Resources and Services Administration's Office of Rural Health Policy.



Ronny A. Bell, Ph.D.
Professor, Department of Social Sciences and Health Policy
Wake Forest University School of Medicine

Dr. Bell is Professor of Social Sciences and Health Policy in the Division of Public Health Sciences at the Wake Forest School of Medicine and also the Director of the Office of Cancer Health Equity at the Wake Forest Baptist Comprehensive Cancer Center.



Joseph Telfair, DrPH, MSW, MPH
Professor and Associate Dean for Public Health Practice and Research
Georgia Southern University

Dr. Telfair is Professor and Associate Dean of Public Health Practice and Research at Georgia Southern University in the Jiann-Ping Hsu College of Public Health as well as a Fellow in the Royal Society of Public Health and Past President of the American Public Health Association.



Yamile Molina, MS, MPH, Ph.D.
Assistant Professor, School of Public Health
University of Illinois Chicago

Dr. Molina is an Assistant Professor of Community Health Sciences and Faculty Affiliate for the Center for Research on Women & Gender and member of the Cancer Center at the University of Illinois at Chicago.

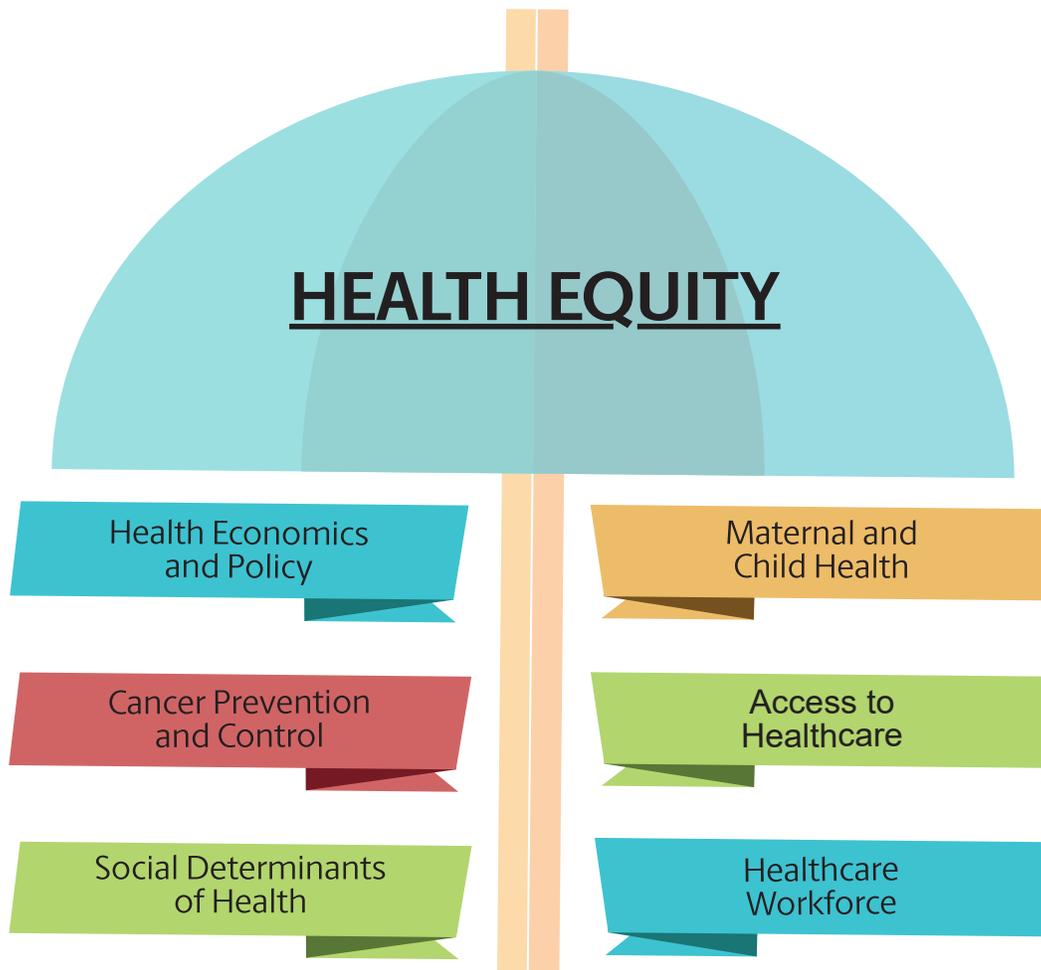


Graham Adams, Ph.D.
Chief Executive Officer, South Carolina Office of Rural Health

Dr. Adams is CEO of the South Carolina Office of Rural Health, a statewide non-profit organization striving to improve access to care, quality of life and health outcomes in rural and under-served communities.



Our Research Focus

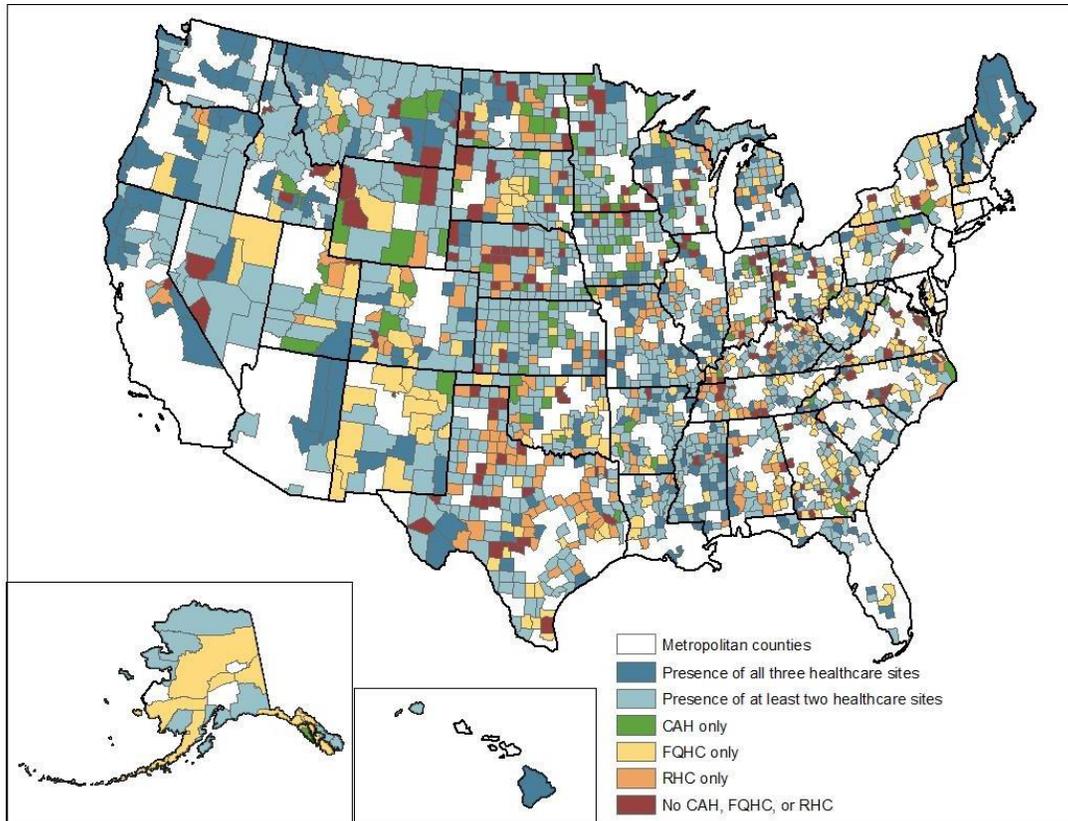


Health equity is the driving force behind all the work we do at the Rural and Minority Health Research Center. We believe that everyone should be able to achieve health and well-being to the fullest potential, regardless of race, place of residence, social position or circumstances. Health inequities can be measured in many ways including length and quality of life, rate and severity of disease, and access to treatment.

Under the umbrella of health equity, our work generally falls into one of six research domains: health economics and policy, cancer prevention and control, social determinants of health, maternal and child health, access to healthcare, and healthcare workforce. Ultimately, our goal is to identify policy- and systems-level solutions to health and healthcare disparities to help make health equity a reality.

Supported Research Areas

Access to Healthcare



Map shows the distribution of safety net healthcare providers in rural counties

Access to care is multifactorial and reflects the needs and expectations of healthcare providers and their patients. For example, it's important to consider where healthcare providers are located, how they operate and are structured, and whether the services they provide meet patients' needs. Faculty at the Rural and Minority Health Research Center are engaged in projects to measure differences in access to care across geographic regions, communities, and populations in the United States, as well as whether poor access to care translates to negative health outcomes for rural residents. For example, Center Director, Dr. Jan M. Eberth and Dr. Whitney Zahnd have been studying the locations and types of colonoscopy providers across the U.S., supported by Dr. Eberth's American Cancer Society Mentored Research Scholar Grant. Recent work, led by Dr. Peiyin Hung, also measured differences in access to cancer care; nearly 1 in 5 rural Americans lives more than 60 miles from a medical oncologist, and the majority of rural residents live more than 60 miles from a cancer surgeon. Access to care may also be facilitated by community supports that direct patients to healthcare services such as maternal and child health home visiting programs. In 2020, Dr. Melinda A. Merrell facilitated the South Carolina Home Visiting Statewide Needs Assessment, which found that while all 46 counties in South Carolina had access to home visiting services, rural families were still hard to reach for many programs.

Supported Research Areas

Maternal and Child Health

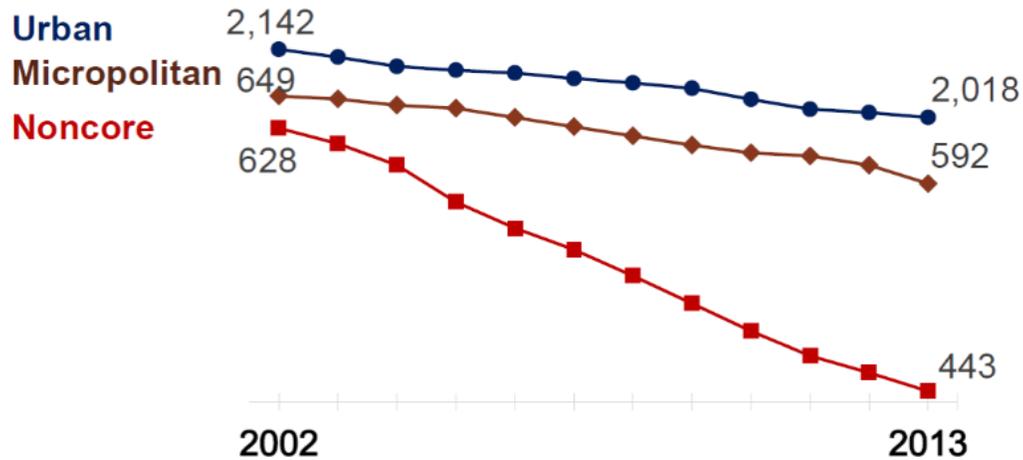


Figure depicts the number of hospital-based obstetrics units by rurality.

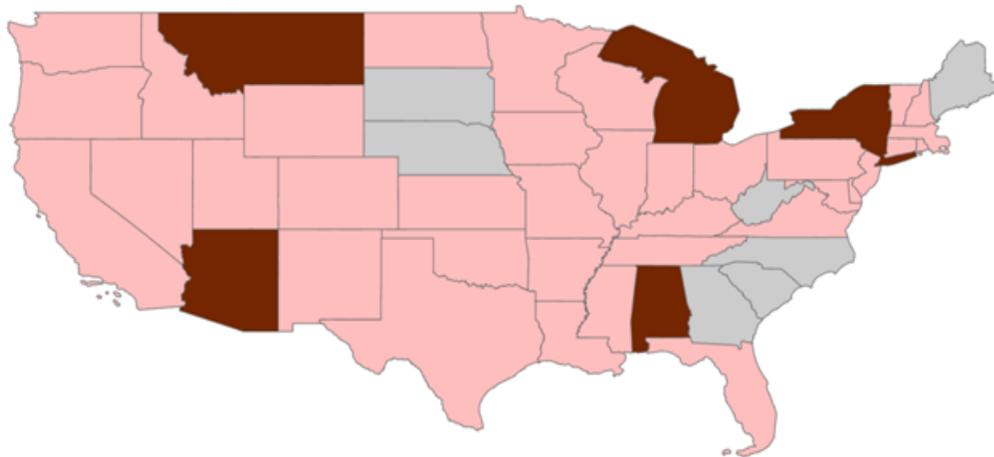
One of the research foci of the Rural and Minority Health Research Center (RMRHC) is maternal and child health (MCH). This section of the RMRHC's portfolio has developed a particular specialty in children's health and interventions that can affect childhood experiences. Childhood experiences, both positive and adverse, can affect the healthy development of children into adulthood. RMRHC faculty including Dr. Elizabeth Crouch and Dr. Peiyin Hung have become nationally known for research focused on adverse childhood experiences, positive childhood experiences, home visiting workforce retention, adolescent pregnancy, and maternal obstetric outcomes. Dr. Elizabeth Crouch is principal investigator for the evaluation of the Maternal Infant Early Childhood Home Visiting Programs in South Carolina and works closely with community and state partners, such as The Children's Trust of South Carolina, to prevent child abuse and neglect. The MCH section of the RMRHC has received substantial funding from numerous private foundations and federal agencies including the Centers for Disease Control and Prevention, the Association of Maternal and Child Health Programs (AMCHP), the Federal Office of Adolescent Health, and the Blue Cross Blue Shield Foundation of South Carolina. Our work has also been cited in key federal reports, such as the US Department of Health and Human Services' Rural Action Plan, released in September 2020.

Supported Research Areas

Health Economics and Policy

States with a rural exemption for an 1115 and/or 1915(b) Medicaid waiver

- States with rural exemption status
- States without or undetermined rural exemption status
- States without Medicaid Waiver



The Rural and Minority Health Research Center (RMHRC) strives to inform rural health policy via insightful research and community collaborations. Using local perspectives, RMHRC faculty evaluate rural health programs and policies in the context of access, outcomes, and welfare of patients. For example, Drs. Elizabeth Crouch and Melinda Merrell study home visiting programs to understand program cost effectiveness and the program impacts on the adequacy of preventive services. Dr. Janice Probst's prior work on disparities in enrollment in the State Children's Health Insurance Program among rural minority children also shed light on the need to improve access to health insurance coverage for vulnerable children. RMHRC faculty also assist community, state, and federal agencies in identifying effective policy interventions for rural health equity. Dr. Peiyin Hung's ongoing work on implementing augmented transportation interventions for people not engaged in HIV care also bridges research and practice with subsequent impacts on patient outcomes. These projects align with the RMHRC's mission to promote the health of all through policy-relevant research and advocacy.

Supported Research Areas

Cancer Prevention and Control

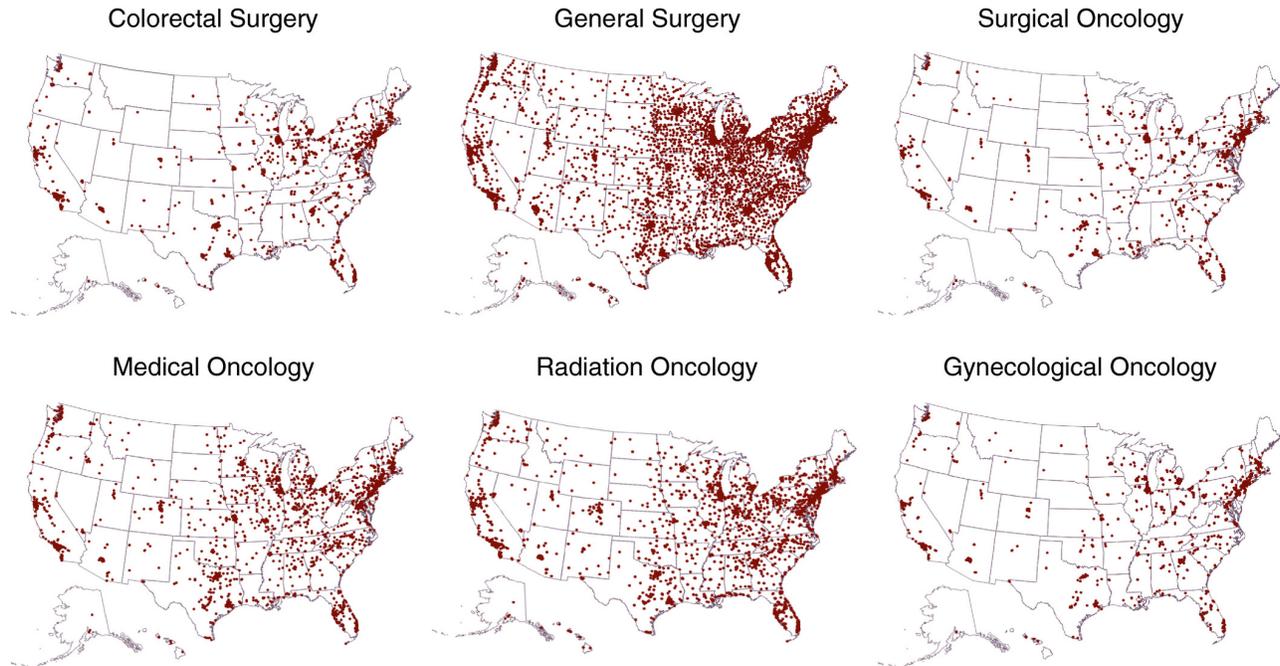


Figure depicts the geographic distribution of cancer care providers by specialty in 2018. Each dot signifies at least one physician practicing in a ZIP code by cancer care specialty

Cancer prevention and control occurs along a continuum from primary prevention (e.g., smoking prevention, HPV vaccination) through cancer survivorship and can be addressed through analysis of cancer registry data, population-based surveys, and clinical interventions. Rural populations, particularly those who are of racial/ethnic minority groups, experience cancer disparities. Faculty at the Rural and Minority Health Research Center lead and collaborate on research to describe, elucidate, and address these disparities. For example, through interagency funding from the Health Resources and Services Administration (HRSA) and the National Cancer Institute (NCI), the Center conducted an environmental scan of colorectal and cervical cancer in South Carolina that utilized a wide range of qualitative, statistical, and spatial methods. Additionally, led by Center Director, Dr. Jan Eberth, the Center is piloting a colorectal cancer screening intervention in Rural Health Clinics with funding from the NCI and the South Carolina Center for Rural and Primary Healthcare. Drs. Eberth and Zahnd also participate in the Cancer Prevention and Control Research Network (CPCRN), a CDC-funded national network of academic institutions, federal agencies, and other stakeholders focused on reducing the burden of cancer particularly among underserved populations. Dr. Jan Eberth co-leads the CPCRN's rural cancer workgroup, which is engaged in projects around financial toxicity among rural cancer patients and how rural stakeholders are engaged in state, territorial, and tribal comprehensive cancer control planning.

Supported Research Areas

Social Determinants of Health

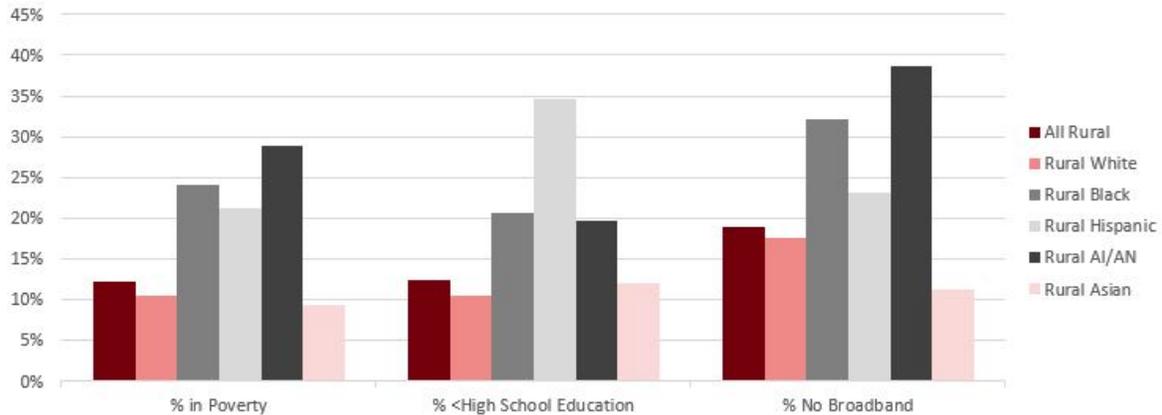


Figure depicts how the social determinants of health vary within rural communities by racial/ethnic status. Data obtained from the 2016 American Community Survey.

The social determinants of health are commonly defined by the World Health Organization and others as “the conditions in which people are born, grow, live, work, and age.” This includes conditions such as household income, educational attainment, access to health care, affordable and safe housing, and access to healthy foods. These conditions contribute to approximately 80% of an individual’s health outcomes and are, therefore, incredibly critical to address. The work of the RMHRC supports greater awareness of the existence and consequences of disparities in the social determinants of health among rural and minority populations. Several policy briefs authored by Dr. Jan Probst and funded by the Federal Office of Rural Health Policy explored social determinants such as poverty and broadband access among different racial/ethnic minority groups across rural America. Additionally, Center faculty have been invited speakers on social determinants among rural populations for a variety of national audiences. RMHRC Deputy Director Dr. Elizabeth Crouch’s research in Adverse Childhood Experiences among rural and racial/ethnic minority children has provided important insights into the fact that social determinants experienced at an early age—particularly economic hardship—have lifelong consequences. In 2020, RMHRC faculty member Dr. Melinda Merrell led a research project funded by the Sisters of Charity Foundation of South Carolina to examine the factors that lead to, reinforce, and exacerbate poverty in the state of South Carolina. Finally, Dr. Whitney Zahnd is doing innovative research on spatial access to broadband services across rural areas of the U.S. with funding from the UofSC Big Data Health Science Center.

Supported Research Areas

Healthcare Workforce

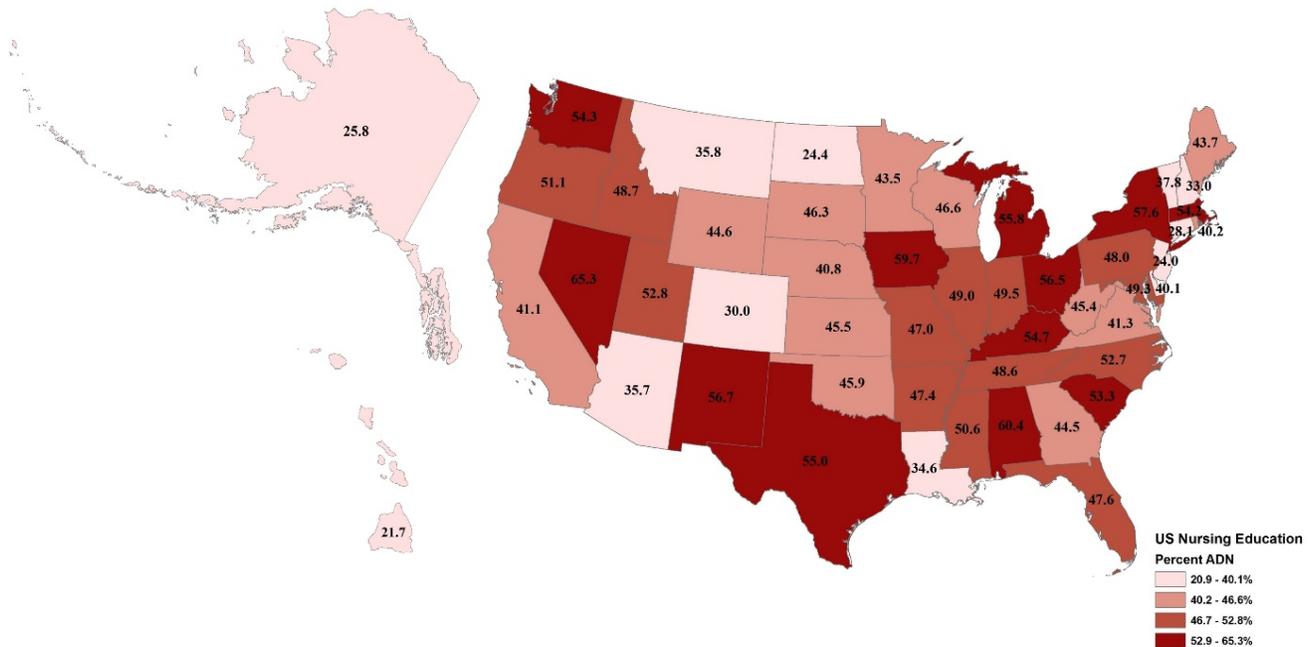


Figure depicts the proportion of registered nurses with an Associate of Nursing Degree, by state, in quartiles. Data obtained from the 2011-2015 American Community Survey.

Healthcare workforce is a critical component of healthy rural populations. It allows patients to have access to needed, high-quality healthcare and ensures the efficient operation of healthcare facilities. The healthcare workforce is comprised of physicians, advanced practice nurses, physician's assistants, nurses, allied health professionals (e.g., pharmacists, social workers), and clinical and administrative staff. Faculty at the Rural and Minority Health Research Center are engaged in research that assesses the geographic distribution of the healthcare workforce, evaluates the educational resources needed to maintain this workforce, and examines the barriers and facilitators that provide care in rural healthcare settings. For example, through funding from the Federal Office of Rural Health Policy, our Center has examined how RN-to-BSN programs are reaching rural students, the geographic distribution of BSN prepared nurses, and the factors associated with perceived preparedness among registered nurses. This area of our work dovetails with another focus—access to care. Thus, there is a considerable and important overlap between understanding if and how rural populations have access to healthcare services, as well as, how to best train and utilize health care providers across provider types and healthcare settings.

Our Work

Selected Current Projects

Assessing Cancer Care Coordination in Rural Health Clinics During a Pandemic

Lead Investigator: Jan Eberth, Ph.D.

Granting Agency: Federal Office of Rural Health Policy

This project aims to understand how Rural Health Clinics perceive and implement evidence-based cancer screening and treatment and related intervention strategies before and during the COVID-19 pandemic.

Availability of Physical Health Infrastructure in Areas with a High Proportion of Historically Disadvantaged Minority Residents

Lead Investigator: Jan Eberth, Ph.D.

Granting Agency: Federal Office of Rural Health Policy

This analysis compares the likelihood that selected healthcare infrastructure elements are available within rural and urban ZIP Code Tabulation Areas that contain versus do not contain a high proportion of historically disadvantaged minority residents.

Rural-Urban Differences in Adverse and Positive Childhood Experiences: Results from the National Survey of Children's Health

Lead Investigator: Elizabeth Crouch, Ph.D.

Granting Agency: Federal Office of Rural Health Policy

Using the 2016-2018 National Survey of Children's Health, the prevalence of adverse childhood experiences (ACEs) and positive childhood experiences (PCEs) exposure in all 50 states and the District of Columbia will be examined and whether ACE and PCE exposure differs between rural and urban residents, by type, count, and by racial/ethnic group.

Maternal, Infant, and Early Childhood Home Visiting Program Client Survey

Lead Investigator: Elizabeth Crouch, Ph.D.

Granting Agency: Children's Trust of South Carolina/ Health Resources & Services Administration

This client satisfaction and engagement survey closes the circle of data collection with the SC Maternal Infant Early Childhood Home Visiting Program (MIECHV). This project will inform our understanding of the workforce and program from the perspective of currently enrolled clients, and describes challenges they face to remain engaged in the program. Findings from this study should provide the SC MIECHV program with new opportunities for quality improvement in the workforce and for promoting family engagement, which is useful both at the state and local levels.

2019 Medicaid Analysis of Sexually Transmitted Diseases

Lead Investigator: Elizabeth Crouch, Ph.D.

Granting Agency: National Foundation for the Centers for Disease and Control and Prevention, Inc.

The goal of this project is to use a retrospective chart review to provide the Sexually Transmitted Disease (STD) program with information as to how STDs are diagnosed, treated, and managed in an emergency care setting. This information will provide a better understanding of STD diagnosis and treatment practices outside of STD clinics and help refine current STD health systems.



Highlights of the Year

Impact

59

peer-reviewed publications

4

research briefs

33

months trainees spend with RMHRC

11

Institutions where RMHRC grads work



In addition to tracking recognitions, the RMHRC measures its reach by identifying linkages between our research products and broader impacts. In 2020, current work by the RMHRC in collaboration with Dr. Shobha Srinivasan (Senior Advisor for Health Disparities) from the National Cancer Institute helped shape their grant opportunity “Improving the Reach and Quality of Cancer Care in Rural Populations” for which Dr. Jan Eberth served as a reviewer. Further, the RMHRC is committed to disseminating its research to diverse stakeholder groups through research briefs and peer-reviewed publications. In 2020, our faculty, staff, and students published 59 peer-review publications and 4 research briefs focused on rural health and health disparities. Seven of these manuscripts are highlighted in this report.

RMHRC's broader impact is also represented in mentoring students. On average, our trainees spend 33 months with our Center providing an opportunity for them to be immersed in understanding the needs and assets of rural and minority populations as well as the ability to contribute to various research products and publications. Graduates that spent time at the RMHRC are now represented at 11 institutions throughout the U.S. and internationally, serving not only in academic roles but also in policy-making and governmental positions. In addition, the majority of our trainees matriculating in the past 5 years have come from traditionally underrepresented groups. Our ability to shape future generations of rural health researchers and practitioners is of high value to our Center.



**Rural and Minority
Health Research Center**

Arnold School of Public Health

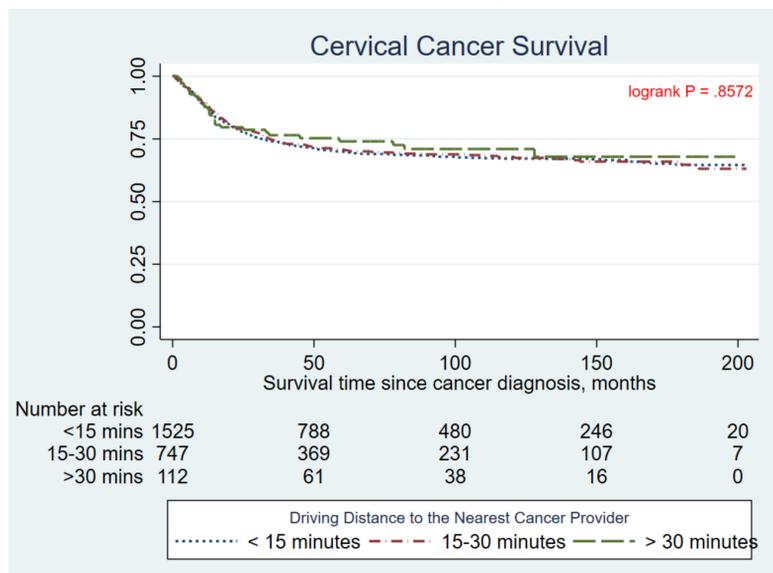
2020 Peer Reviewed Publications

In 2020, the RMHRC published fifty-nine manuscripts in peer reviewed journals. Seven of these manuscripts are highlighted in this report.

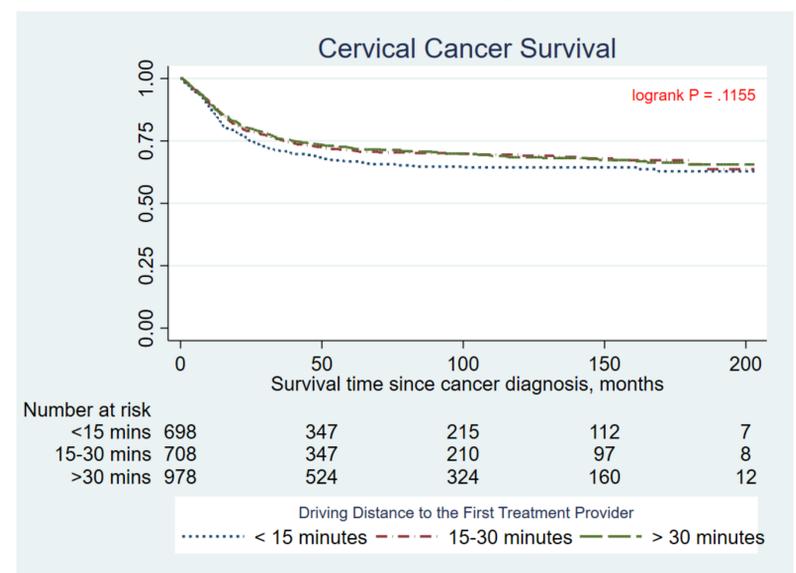
1. Cervical cancer treatment initiation and survival: The role of residential proximity to cancer care. This study looked at the role drive time to cancer care facilities played on cancer treatment initiation and survival for cervical cancer patients. [View Journal Article Details](#)

Cancer-specific survival

Driving time to the nearest cancer facility

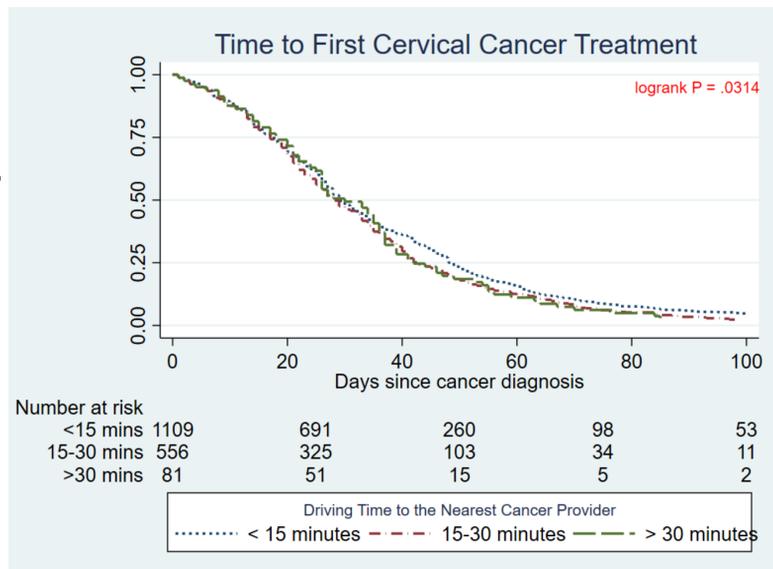


Driving time to the treating cancer facility

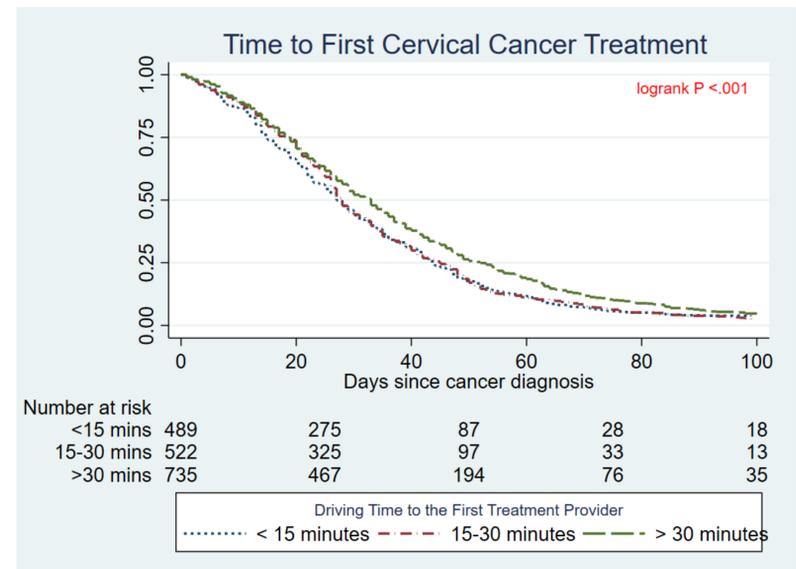


Any cancer treatment

Time to First Cervical Cancer Treatment



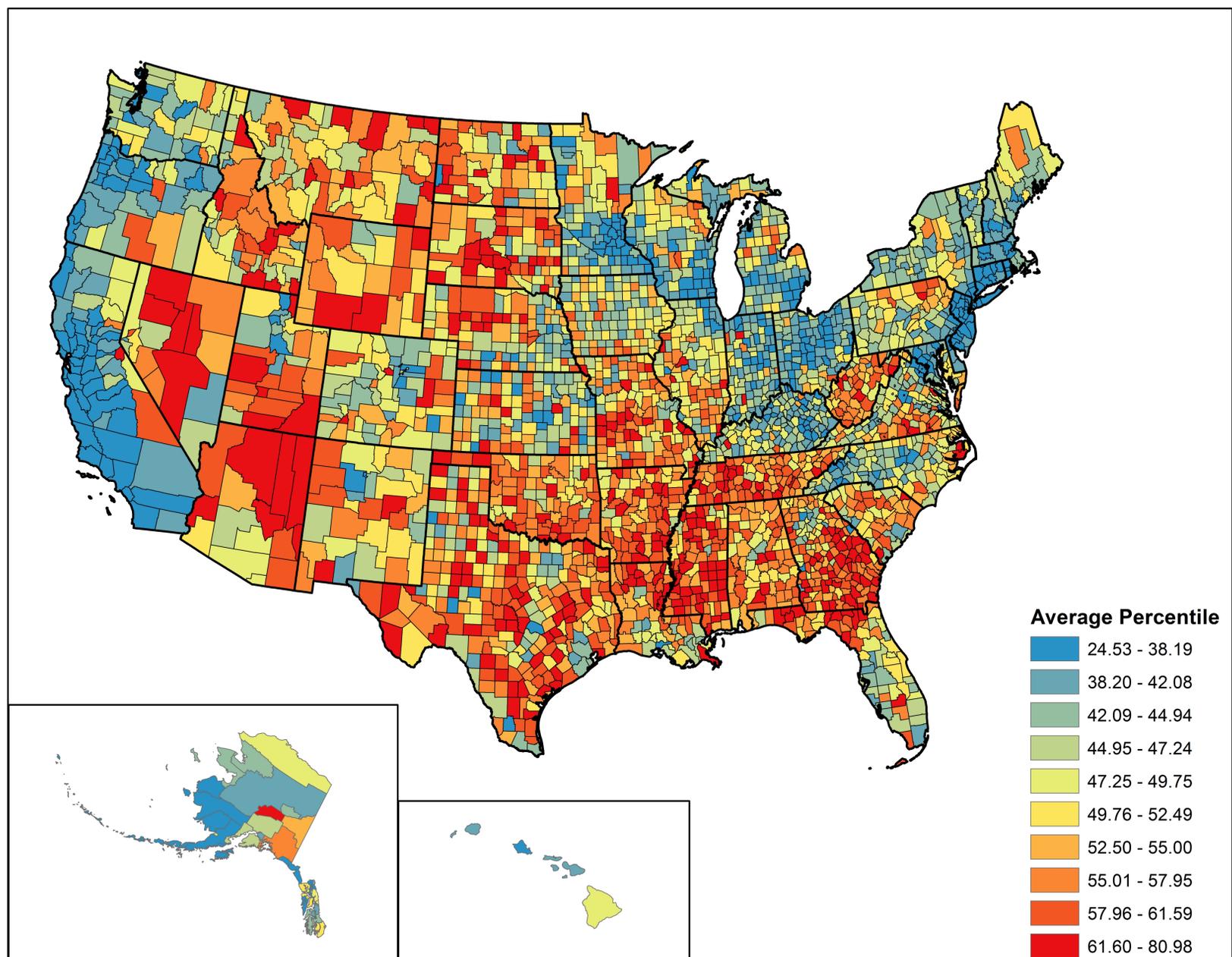
Time to First Cervical Cancer Treatment



2020 Peer Reviewed Publications

2. Development of a national childhood obesogenic environment index in the United States: differences by region and rurality. This study developed a novel childhood obesogenic environment index and highlighted important regional and rurality differences across U.S. counties. [View Journal Article Details](#)

Average Childhood Obesogenic Environment Index Scores Across US Countries (N=3,142)



2020 Peer Reviewed Publications cont.

3. A National Survey of RN-to-BSN Programs: Are They Reaching Rural Students?

This study used a national survey of RN-to-BSN programs to better understand their potential role in addressing disparities in BSN-prepared nurses in rural and urban areas. The results are needed to inform policymakers and stakeholders who are responsible for addressing the status and needs of nursing education. [View Journal Article Details](#)

Barriers to Student Recruitment for RN-to-BSN Programs, Any Student

Potential Barrier*	All Programs (n = 237)
Family obligations of prospective students	73.0%
Work obligations of prospective students	72.2%
Cost of tuition	56.5%
Required non-nursing courses	46.0%
Lack of tuition reimbursement by employers	42.2%
Lack of student loan forgiveness programs	36.3%
Length of time to degree completion	22.4%
Lack of preferential hiring of BSN-prepared nurses	21.1%
Distance prospective students must travel	12.2%
Lack of capacity (e.g. shortage of nurse faculty or clinical sites for training)	6.3%
Other	11.0%
*Multiple response option	

2020 Peer Reviewed Publications cont.

4. Rural-Urban Differences in Adverse Childhood Experiences Across a National Sample of Children The purpose of this study was to examine the prevalence of adverse childhood experiences (ACEs) exposure in 34 states and the District of Columbia, and whether exposure differs between rural and urban residents. [View Journal Article Details](#)

Types and Numbers of ACEs Reported by Respondents to the 2016 National Survey of Children's Health, n=25,977, 34 States and the District of Columbia

ACE exposure	Total Sample Weighted %	Rural	Urban	P value
<i>ACE Summary Score (economic hardship not included)</i>				< .0001
Zero	65.5	59.9	66.1	
One to three	30.4	33.3	30.1	
Four or more	4.2	6.9	3.8	
<i>ACE Types^a</i>				
Parental separation/divorce	24.1	30.6	23.4	< .0001
Parental death	3.3	5.0	3.1	.0038
Household incarceration	7.9	13.3	7.4	< .0001
Witness household violence	5.4	8.0	5.1	< .0001
Witness neighborhood violence	3.7	4.5	3.6	.1818
Household mental illness	7.6	9.4	7.4	.0016
Household substance use	8.8	12.3	8.4	< .0001
Racial/ethnic mistreatment	3.8	2.7	3.9	.0033
Economic hardship	25.4	30.2	25.0	.0002

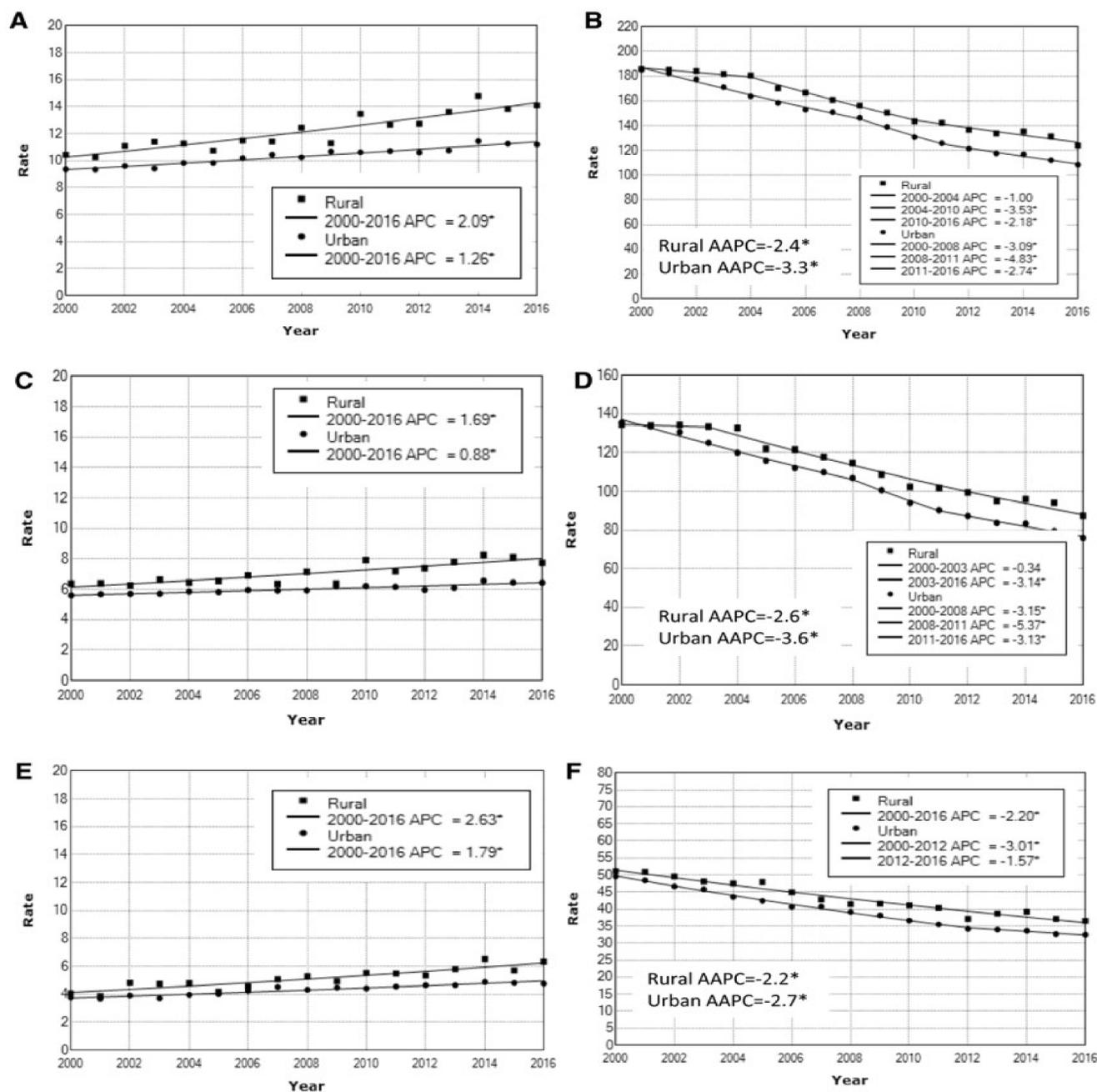
^a*Precise questionnaire language: To the best of your knowledge, has this child experienced any of the following?*

1. Parent or guardian divorced or separated?
2. Parent or guardian died
3. Parent or guardian served time in jail?
4. Saw or heard parents or adults slap, hit, kick, punch one another in the home?
5. Was a victim of violence or witnessed violence in the neighborhood?
6. Lived with anyone who was mentally ill, suicidal, or severely depressed?
7. Lived with anyone who had a problem with alcohol or drugs?
8. Treated or judged unfairly because of his or her race or ethnic group?
9. Hard to get by on family's income—hard to cover basics like food or housing?

2020 Peer Reviewed Publications cont.

5. Rural Urban and Racial/Ethnic Trends and Disparities in Early-Onset and Average-Onset Colorectal Cancer The study's objective was to examine joint rural-urban differences in early onset colorectal cancer and average onset colorectal cancer incidence rates across racial/ethnic groups in the U.S. [View Journal Article Details5.](#)

Rural-Urban Early- and Average-Onset Colorectal Cancer Incidence Trends by Subsite, 2000-2016



(A) Early-Onset Colorectal Cancer, (B) Average-Onset Colorectal Cancer, (C) Early-Onset Colon Cancer, (D) Average-Onset Colon Cancer, (E) Early-Onset Rectal Cancer, and (F) Average-Onset Rectal Cancer. Abbreviations: APC=annual percent change; AAPC=annual average percent change; *indicates a statistically significant trend at $p < 0.05$; NOTE: If no AAPC is noted on the graph, this indicates that a single trend line was identified and the APC and AAPC are identical. All rates are age-adjusted and expressed per 100,000 population.

2020 Peer Reviewed Publications cont.

6. Rural-Urban Mortality Disparities: Variations Across Causes of Death and Race/Ethnicity, 2013–2017

The purpose of this study was to examine rural-urban disparities in overall mortality and leading causes of death across Hispanic (any race) and non-Hispanic White, Black, American Indian/Alaska Native (AI/AN), and Asian/Pacific Islander populations. [View Journal Article Details](#)

Age-Adjusted Mortality per 100,000 US Residents, All-Cause Mortality, and Selected Leading Causes of Death, by Residence and Race/Ethnicity: 2013-2017

Cause of Death	Age-Adjusted Rate (95% CI)		Rural Disparity ^a (% Difference)
	Rural	Urban	
All-cause mortality			
AI/AN	970.0 (960.5, 979.5)	684.5 (677.9, 691.1)	+42
API	466.5 (458.1, 474.9)	394.3 (392.9, 395.7)	+18
Black	981.3 (976.7, 985.9)	867.3 (865.8, 868.8)	+13
Hispanic ^b	580.7 (576.1, 585.3)	522.7 (521.5, 523.9)	+11
White	837.7 (836.5, 838.8)	728.8 (728.3, 729.3)	+15
Cancer			
AI/AN	164.7 (160.9, 168.6)	123.4 (120.6, 126.2)	+33
API	107.7 (103.7, 111.7)	101.0 (100.3, 101.7)	+7
Black	203.1 (201.1, 205.2)	188.3 (187.7, 189.0)	+8
Hispanic ^b	112.0 (110.0, 114.0)	113.7 (113.2, 114.3)	-1
White	181.0 (180.5, 181.5)	164.6 (164.4, 164.9)	+10
Cardiovascular disease			
AI/AN	180.3 (176.1, 184.5)	135.1 (132.0, 138.1)	+33
API	105.6 (101.6, 109.6)	86.6 (85.9, 87.3)	+22
Black	240.0 (237.7, 242.3)	207.6 (206.9, 208.4)	+16
Hispanic ^b	126.6 (124.4, 128.9)	115.9 (115.3, 116.5)	+9
White	193.7 (193.2, 194.3)	164.7 (164.5, 165.0)	+18
Unintentional injury			

2020 Peer Reviewed Publications cont.

Age-Adjusted Rate (95% CI)

Cause of Death	Rural	Urban	Rural Disparity ^a (% Difference)
AI/AN	101.9 (99.0, 104.8)	63.6 (61.7, 65.4)	+60
API	22.7 (21.0, 24.5)	15.8 (15.5, 16.0)	+44
Black	47.1 (46.1, 48.1)	39.1 (38.8, 39.4)	+20
Hispanic ^b	40.7 (39.7, 41.8)	28.5 (28.3, 28.8)	+43
White	58.6 (58.3, 59.0)	47.9 (47.7, 48.0)	+22
Chronic lower respiratory disease			
AI/AN	44.9 (42.8, 47.0)	36.0 (34.5, 37.6)	+25
API	13.5 (12.0, 15.0)	12.3 (12.0, 12.5)	+10
Black	33.0 (32.2, 33.8)	29.4 (29.2, 29.7)	+12
Hispanic ^b	20.3 (19.4, 21.2)	17.4 (17.2, 17.6)	+17
White	56.8 (56.6, 57.1)	43.8 (43.6, 43.9)	+30
Stroke			
AI/AN	36.6 (34.7, 38.5)	29.1 (27.7, 30.5)	+26
API	36.8 (34.4, 39.2)	29.7 (29.4, 30.1)	+24
Black	60.1 (58.9, 61.2)	50.6 (50.3, 51.0)	+19
Hispanic ^{b,c}	31.3 (30.2, 32.4)	31.3 (31.0, 31.6)	0
White	40.1 (39.9, 40.4)	34.8 (34.7, 34.9)	+15

Note. AI/AN = American Indian/Alaska Native; API = Asian/Pacific Islander; CI = confidence interval.

^aRural disparity is calculated by dividing the rural mortality rate for each line by the urban mortality rate.

^bHispanic includes persons identified on the death certificate as Hispanic, regardless of race. All other race categories include only individuals recorded as non-Hispanic.

^cRural-urban rates for stroke among Hispanic residents are not significantly different: All other rural-urban comparisons are significant at $P < .001$.

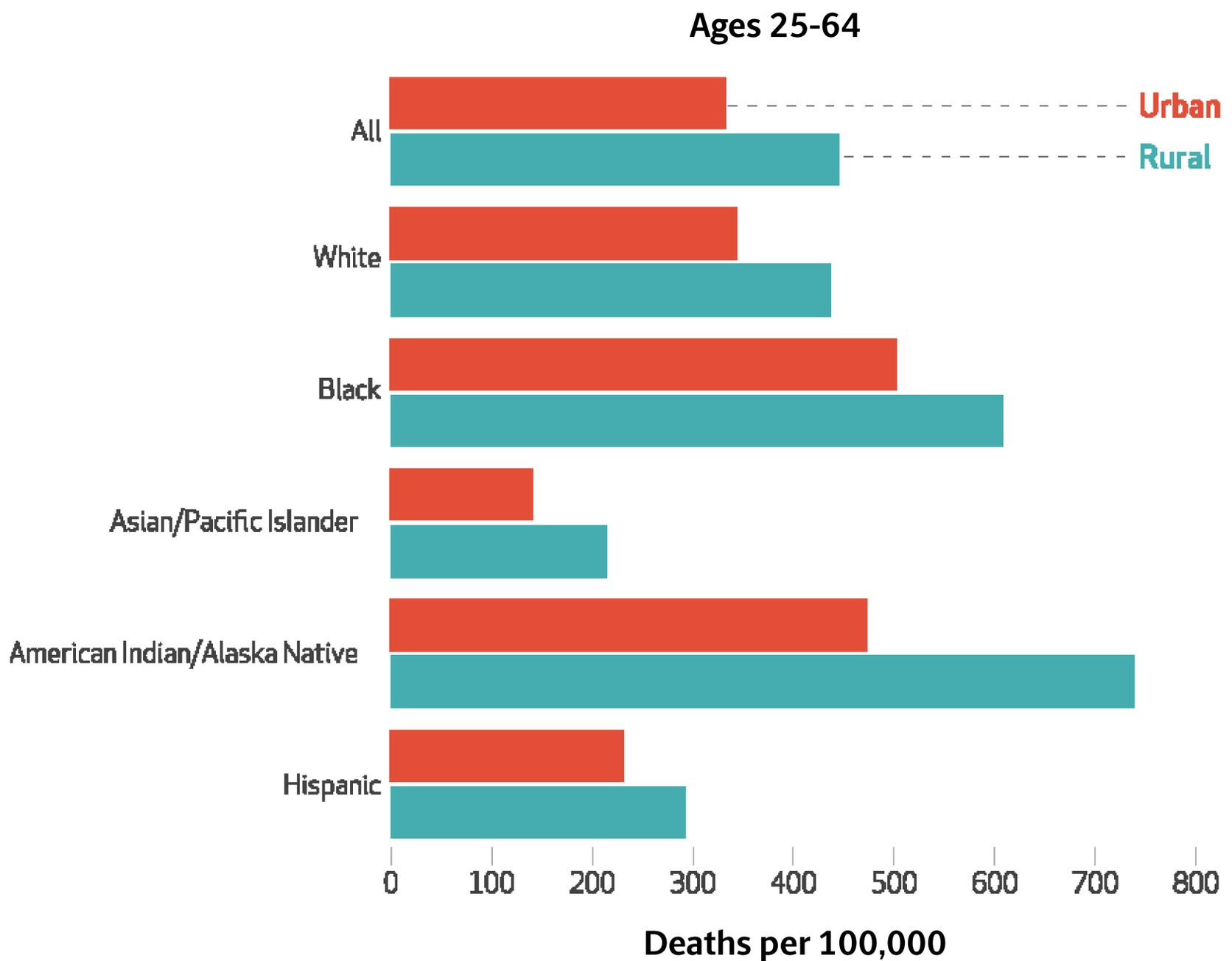
2020 Peer Reviewed Publications cont.

7. Structural Urbanism Contributes To Poorer Health Outcomes For Rural America

Health disparities are due in part to declining health care provider availability and accessibility in rural communities. Rural challenges are exacerbated by “structural urbanism”—elements of the current public health and health care systems that disadvantage rural communities. We suggest that biases in current models of health care funding, which treat health care as a service for an individual rather than as infrastructure for a population, are innately biased in favor of large populations.

[View Journal Article Details](#)

Age-Adjusted Death Rates per 100,000 Population Among Adults Ages 25-64, by Rurality of County of Residence and Race/Ethnicity, 2017



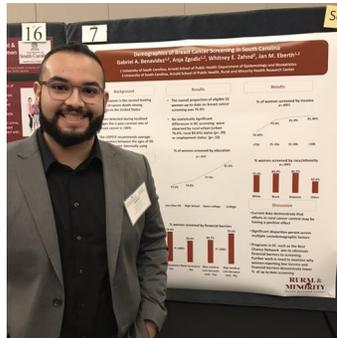
Recognition

Honors and Awards

The Federal Office of Rural Health Policy's Rural Health Research Center Program as a whole is designed to "provide information that will be applied in ways that improve health care access and population health." Accordingly, part of the work of the RMRHC necessitates obtaining recognition of both our research itself and the researchers (both faculty and students), who conduct this work. In doing this, we provide information to the general public that drives health and health care conversations nationally around health disparities for rural and minority populations.

In 2020, RMRHC research products were highlighted across multiple arenas, including three articles that were published for a special rural health issue of *Health Affairs*, which also included a briefing at the National Press Club led by Director Emerita Dr. Janice Probst, and over 35 invited interviews, webinars, and academic presentations for audiences (American Association for Cancer Research, the American College of Epidemiology, the American Public Health Association, the Centers for Disease Control and Prevention, the Health Resources and Services Administration, the National Academies of Science, the National Advisory Committee on Rural Health and Human Services, the National Cancer Institute, and the National Rural Health Association). Center faculty also presented on two national webinars hosted by the Rural Health Research Gateway and had three of the five most accessed briefs on the Gateway for the year.

Our faculty and students were also recognized in 2020 for various achievements. Dr. Jan Eberth was honored with the National Rural Health Association's Outstanding Researcher Award. Dr. Peiyin Hung was recognized via her contributions to the National Rural Action Plan and was selected to Co-Chair of the CMS Alliance to Modernize Healthcare Committee. Drs. Melinda Merrell and Whitney Zahnd were both selected as Rural Health Fellows of the National Rural Health Association. Graduate students, Ms. Radhika Ranganathan was chosen as for an American Association of Cancer Research Scholar-in-Training Award, and Mr. Gabriel Benavidez was selected to participate in the Robert Wood Johnson Foundation's Health Policy Scholars Program.



Researchers in the News

UofSC Breakthrough Stars



Elizabeth Crouch, Ph.D.



Bankole Olatosi, Ph.D.

In January of 2021, the University of South Carolina's Office of the Vice President for Research announced its awardees for the highly competitive Breakthrough Star Award. Among the 12 faculty awardees chosen across the entire University of South Carolina campus were RMHRC members Dr. Elizabeth Crouch and Dr. Bankole Olatosi. This highly prestigious honor is awarded to exemplary faculty members based on early career achievements for outstanding contributions to their respective fields of study. Congratulations to Drs. Crouch and Olatosi!

Podcasts

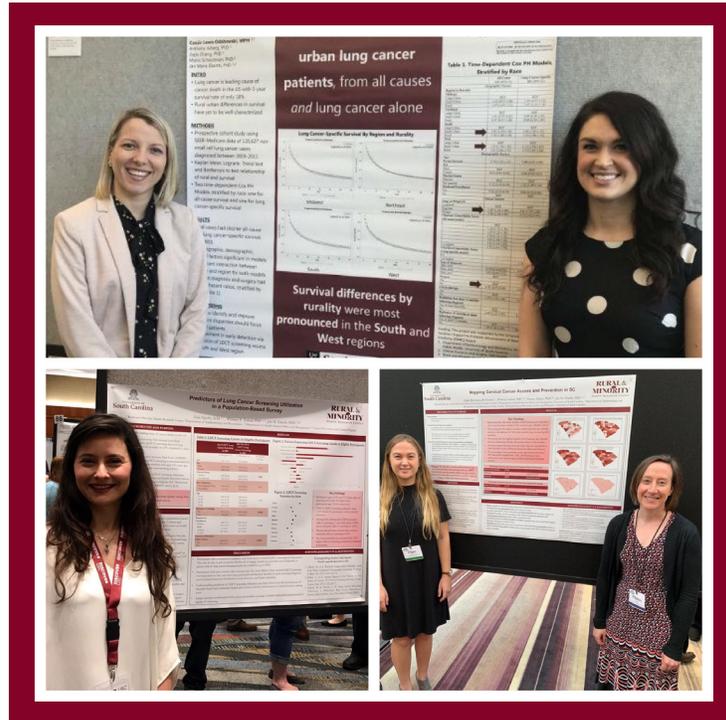


Dr. Janice Probst was a guest on Season 1, Episode 3 of the Growing Rural Podcast hosted by Dr. Kevin Bennett. Dr. Probst spoke about social determinants of health in rural South Carolina.



Dr. Jan Eberth was a guest on Season 1, Episode 12 of the Growing Rural Podcast where she spoke about rural and minority health research in South Carolina with podcast host, Dr. Kevin Bennett.

Presentations



The RMHRC presented more than thirty-five research products over the course of 2020. These included interviews, webinars, as well as, oral and poster presentations.

(Select list shown below)

HIV/Rural Interview, Center for AIDS Intervention Research at the Medical College of Wisconsin, Dr. Olatosi, December 2020

Special Interest Session: A Call to Action in Health Equity: An Interactive Session on Health Disparities and Health Equity in Radiology, Oral Presentation to the Radiology Society of North America, Dr. Eberth, November 2020

Understanding the Ground: Social Determinants of Health in Rural Populations, Webinar to the Rural Health Research Gateway, Dr. Probst, November and December 2020

Promoting Better Maternal Health Outcomes by Closing the Medicaid Postpartum Coverage Gap, Oral Presentation to the The Century Foundation, Dr. Hung, November 2020

Disproportionate Burden Of Cervical Cancer Survival By Race And Rurality In South Carolina, 2001 – 2016, American Association for Cancer Research, R. Ranganathan, October 2020

Rural urban and racial disparities in colorectal cancer survival among the residents of South Carolina, 2001 – 2016, American Association for Cancer Research, R. Ranganathan, October 2020

Presentations cont.

Cancer Surveillance and Access to Care in Rural America, Webinar with CDC Cancer Control Coalitions, Dr. Eberth, October 2020

South Carolina MIECHV Program: 2019 Client Satisfaction and Engagement Survey Findings, Oral Presentation to Children's Trust of SC All Sites Assembly, Dr. Merrell, October 2020

Defining Home Visiting Deserts in South Carolina, Oral Presentation at American Public Health Association Annual Meeting, Dr. Merrell, October 2020

The importance of examining the intersection of rural-urban status and race/ethnicity in cancer surveillance research: an early-onset colorectal cancer example, Webinar to North American Association of Central Cancer Registries, Dr. Zahnd, October 2020

Urban-rural health disparities: an overview of the field and methods oral presentation, 2020 American College of Epidemiology Virtual Meeting, Dr. Eberth – Moderator and Dr. Zahnd - Presenter, September 2020

Adverse Childhood Experiences in Rural Communities. NOSORH Regions C & D Meeting Virtual Oral Presentations, Dr. Merrell, July and August 2020

Specialty Mental Health Programs in Rural America. Oral Presentation at National Rural Health Association Health Annual Conference, Dr. Hung, June 2020

Factors associated with lung cancer screening in urban vs. rural individuals at risk for lung cancer, Oral Presentation at the National Rural Health Association Conference, A. Zgodic, June 2020

Rural-Urban Differences in factors for successful aging among LGBT individuals, National Rural Health Association Health Equity Conference, Dr. Crouch, June 2020

Rural Minority Disparities across the Life Span, National Rural Health Association Health Equity Conference, Drs. Zahnd, Hung, Crouch and Eberth, June 2020

Structural Urbanism: Current Funding Mechanisms Systematically Disadvantage Rural Populations, Invited Presentation for the National Academies of Science, Engineering and Medicine, Dr. Probst, June 2020

Do Rural Racial Disparities Get Lost in the Larger Discussion on Rural and Urban Disparities? Invited Presentation for the National Academies of Sciences, Engineering, and Medicine, Dr. Eberth, June 2020

Identification of High-Need Rural Counties to Assist in Resource Location Planning, Presentation to the HRSA Rural Health Workgroup, Dr. Eberth, March 2020

National Advisory Committee on Rural Health and Human Services, Presentation on Rural Maternal Health Care and Hospital Administration, Dr. Hung, March 2020

Cancer surveillance and access to care in rural America, Webinar for the Rural Health Research Gateway, Drs. Eberth, Hung and Zahnd, February 2020

Funding Sources

Rural and Minority Health Research Center 2020 Funding and Support

American Cancer Society

Advanced Support for Innovative Research Excellence (ASPIRE)
Office of the Vice President of Research/University of South Carolina

Big Data Health Science Center
University of South Carolina

Children's Trust of South Carolina

COVID-19 Research Initiative
Office of the Vice President of Research/University of South Carolina

Federal Office of Rural Health Policy
Health Resources & Services Administration/Department of Health and Human Services

Greenville Health System

National Cancer Institute
Department of Health and Human Services

National Foundation for the Centers for Disease Control and Prevention

Prisma Health -Midlands

Sisters of Charity Foundation of South Carolina

South Carolina Campaign to Prevent Teen Pregnancy

South Carolina Center for Rural and Primary Healthcare
University of South Carolina School of Medicine

Support for Minority Advancement in Research Training (SMART)
Office of the Vice President of Research/University of South Carolina

Rural Health Research Gateway

The Rural Health Research Gateway funded by the Federal Office of Rural Health Policy provides access to research conducted by all Rural Health Research Centers. The Gateway website serves as a portal for policy makers, educators, public health employees, hospital staff and all others interested in rural health research.

<https://www.ruralhealthresearch.org/>

