

RESEARCH INTERESTS

My research interests are grounded in health equity and currently focus on elucidating how the community-ome (the interactive elements encompassing our individual and aggregate community experiences) impact cancer outcomes for minoritized populations (e.g., racial, ethnic, sexual, gender and geographic). Some of my presently funded work examines the influence of the microbiome on HPV-related cancer outcome racial disparities. Another funded project uses quality improvement tools to identify and address systemic, race-related barriers to cancer screening in primary care settings. More broadly, I am interested in applying innovative methodologies (i.e. machine learning and other artificial intelligence methods) to the study of cancer outcome disparities, to inform strategic research agendas, and elicit community integration into such agendas, driving inclusive research questions, encouraging diverse clinical trial participation, and expediting progress towards cancer health equity.

EDUCATION

University of Illinois at Chicago	Ph.D.	August 2018	Epidemiology
University of Michigan	M.S.	May 1999	Microbiology
University of Puerto Rico	B.S.	May 1997	Biology

RELEVANT PROFESSIONAL EXPERIENCE

3/2020 – Present	Assistant Professor, Health Behavior and Policy, School of Medicine, Virginia Commonwealth University
3/2020 – Present	Assistant Professor, Epidemiology Division, Department of Family Medicine, School of Medicine, Virginia Commonwealth University
3/2020 – Present	Director, Office of Catchment Area Data Access and Alignment, Massey Cancer Center, Virginia Commonwealth University
5/2019 – Present	Research Assistant Professor, Epidemiology and Biostatistics, School of Public Health University Of Illinois at Chicago, IL
6/2018 – Present	Director, Office of Catchment Area Research and Data Sciences Director, Office of Community Engaged Research, and Implementation Science
5/2016 – Present	Director, Office of Global Assets and International Alliances, and Data Surveillance University Of Illinois Cancer Center, Chicago, IL
5/2015 – 5/2016	Senior National Program Manager, Clinical Quality Data American Hospital Association, Health Research and Educational Trust, Chicago, IL
3/2013 – 5/2016	Associate Director, Breast Cancer Quality Consortium Metropolitan Chicago Breast Cancer Task Force, Chicago, IL
1/2011 – 3/2013	Senior Program Manager, Statewide Cancer Screening Initiatives American Cancer Society - Illinois, Chicago, IL
3/2000 – 8/2009	Project Manager, 2004-2009 Remediation Scientist, 2003-2004 Infectious Disease Scientist, 2000-2003 Abbott Laboratories - Molecular Diagnostics Division, Des Plaines, IL
3/1999 – 3/2000	Senior Research Technician, 1999 – 2000 University Of Chicago Cytogenetics Laboratory, Chicago, IL

PEER-REVIEWED MANUSCRIPTS (RECENT)

FIRST AUTHOR

1. **Tossas, KY**, Reitzel S, Schifano K, Garrett C, Hurt K, Rosado M, Winn RA, Thomson MD. Project COALESCE – An example of academic institutions as conveners of community-clinic partnerships to improve cancer screening access. *International Journal of Environmental Research and Public Health*. Submitted 11/30/21.
2. **Tossas, KY**, Winn RA, Seewaldt VL. Mammographic Density Laws and Inclusion—Time for Change. *JAMA Oncol*. Published online November 24, 2021. doi:10.1001/jamaoncol.2021.6196
3. **Tossas, KY**; Sutton, AL, Thomson M, Mosavel M, LaRose, JG, Prom-Wormley, E; Robertson T, Sheppard, VB; Haynes, RM; Gray, TF; Winn, RA. Facts and Faith Fridays – An example of faith community and cancer center's revival against COVID-19 misinformation. *Voices from Within: A Public Health Perspective on the Response to COVID-19 Educational Book*. Accepted. September 2021.
4. **Tossas, KY**, K. S. Watson, G. A. Colditz, C. R. Thomas, J. H. Stewart, and R. A. Winn. "Advocating for a "Community to bench model" in the 21st century." *EBioMedicine, The Lancet* 53 (2020).

5. **Tossas-Milligan, KY**, Shalabi S; Jones V; Keely PJ; Conklin MW; Eliceiri, KW; Winn, RA; Sistrunk, C; Gerardts, J; Miranda-Carboni GA; Dietze, EC; Yee, LD; Seewaldt VL. "Mammographic density: intersection of advocacy, science, and clinical practice." *Current breast cancer reports* 11, no. 3 (2019): 100-110.
6. **Tossas-Milligan, KY**. "The Influence of Mammographic Density on Breast Cancer Risk." PhD diss., University of Illinois at Chicago, (2018). Advisor: Dr. Garth H. Rauscher
7. **Tossas-Milligan, KY**, Hunter-Mellado, R. F., Mayor, A. M., Fernández-Santos, D. M., & Dworkin, M. S. (2016). Late HIV Testing in a Cohort of HIV-Infected Patients in Puerto Rico. *P R Health Sci J*, 35(2), 113-121.

CO-AUTHOR

8. Giaquinto, A. N., Miller, K. D., **Tossas, K.Y.**, Winn, R. A., Jemal, A., & Siegel, R. L. (2022). Cancer statistics for African American/Black People 2022. *CA: A Cancer Journal for Clinicians*.
9. Thomson, M.D., Williams, A.R., Sutton, A.L., **Tossas, K.Y.**, Garrett, C. and Sheppard, V.B., 2021. Engaging rural communities in cancer prevention and control research: Development and preliminary insights from a community-based research registry. *Cancer Medicine*.
10. Rauscher GH, Murphy AM, Qiu Q, Dolecek TA, **Tossas K**, Liu Y, Alsheik NH. The "Sweet Spot" Revisited: Optimal Recall Rates for Cancer Detection With 2D and 3D Digital Screening Mammography in the Metro Chicago Breast Cancer Registry. *AJR Am J Roentgenol*. (2021) Feb 10;:1-9. doi: 10.2214/AJR.19.22429. [Epub ahead of print] PubMed PMID: 33566635.
11. Bissell, M. C., Kerlikowske, K., Sprague, B. L., Tice, J. A., Gard, C. C., **Tossas, K. Y.**, ... & Keegan, T. H. (2020). Breast Cancer Population Attributable Risk Proportions Associated with Body Mass Index and Breast Density by Race/Ethnicity and Menopausal Status. *Cancer Epidemiology and Prevention Biomarkers*, 29(10), 2048-2056.
12. Rauscher, G. H., **Tossas-Milligan, K.**, Macarol, T., Grabler, P. M., & Murphy, A. M. (2020). Trends in Attaining Mammography Quality Benchmarks With Repeated Participation in a Quality Measurement Program: Going Beyond the Mammography Quality Standards Act to Address Breast Cancer Disparities. *Journal of the American College of Radiology*.
13. Henderson, V., **Tossas-Milligan, K.**, Martinez, E., Williams, B., Torres, P., Mannan, N., Green, L., Thompson, B., Winn, R. and Watson, K.S., (2020). Implementation of an integrated framework for a breast cancer screening and navigation program for women from underresourced communities. *Cancer*, 126, pp.2481-2493. Longino, A., Montano, M.A., Sanchez, H., Bayer, A., Sanchez, J., **Tossas-Milligan, K.**, Duerr, A. and Molina, Y., (2020). Increasing PrEP uptake and adherence among MSM and TW sex workers in Lima, Perú: what and whom do different patients trust? *AIDS care*, 32(2), pp.255-260.
14. Kreymer, E.L., **Tossas-Milligan, K.**, Shalabi, S., Jones, V., Seewaldt, V., Peled, O., Silber, J., Sadeh, T., Porath, Y., Kleinmann, N. and Matin, S., (2019). Gluons and Constancy of Proton Mass in a Four-Dimensional Euclidean Space with Real Time. *Russian Physics Journal*, 62(4), pp.729-731.
15. Noel, L., Phillips, F., **Tossas-Milligan, K.**, Spear, K., Vanderford, N.L., Winn, R.A., Vanderpool, R.C. and Eckhardt, S.G., (2019). Community-Academic Partnerships: Approaches to Engagement. *American Society of Clinical Oncology Educational Book*, 39, pp.88-95.
16. Tice, J.A., Bissell, M.C., Miglioretti, D.L., Gard, C.C., Rauscher, G.H., Dabbous, F.M. and Kerlikowske, K., [including **Tossas-Milligan, K.**] (2019). Validation of the breast cancer surveillance consortium model of breast cancer risk. *Breast cancer research and treatment*, 175(2), pp.519-523.
17. Dabbous, F., Dolecek, T. A., Friedewald, S. M., **Tossas-Milligan, K. Y.**, Macarol, T., Summerfelt, W. T., & Rauscher, G. H. (2018). Performance characteristics of digital vs film screen mammography in community practice. *The breast journal*, 24(3), 369-372.
18. Braithwaite, D., Miglioretti, D. L., Zhu, W., Demb, J., Trentham-Dietz, A., Sprague, B., . . . K., Buist, D. S. [including **Tossas-Milligan, K.**] (2018). Family History and Breast Cancer Risk Among Older Women in the 20Breast Cancer Surveillance Consortium Cohort. *JAMA internal medicine*, 178(4), 494-501.
19. Rauscher, G. H., Dabbous, F., Dolecek, T. A., Friedewald, S. M., **Tossas-Milligan, K.**, Macarol, T., & Summerfelt, W. T. (2017). Absence of an anticipated racial disparity in interval breast cancer within a large health care organization. *Annals of epidemiology*, 27(10), 654-658.
20. Freeman, V. L., Boylan, E. E., Pugach, O., Mclafferty, S. L., **Tossas-Milligan, K. Y.**, Watson, K. S., & Winn, R. A. (2017). A geographic information system-based method for estimating cancer rates in non-census defined geographical areas. *Cancer Causes & Control*, 28(10), 1095-1104.

Complete List of Published Work in [NCBI](#) or [Google Scholar](#) profiles

CURRENT RESEARCH SUPPORT AND/OR SCHOLASTIC PERFORMANCE

Quality Improvement Grant (Tossas, PI) 12/7/2020-12/31/2022 Contract# 63713541 **0.6 calendar**
Pfizer Inc. and American Cancer Society **\$400,000**
 COALESCE - Clinics & COMMUNITIES TACKLING RACIAL DISPARITIES IN (COLON AND CERVICAL CANCER SCREENING) - Project
 COALESCE will facilitate the development and execution of quality improvement initiatives (QI) that address

systemic barriers to colorectal (CRC) and cervical (CCa) cancer screening and diagnostic followup, prioritizing those that disproportionately impact Black populations. Role: PI

Global Omics and Viromics Initiative on Pregnancy; Diversity Supplement: (Tossas, PI; Buck, R01 PI)
01/21/2021-07/31/2022 9 calendar 3R01HD092415-04S1 (Buck, PI)
NIH \$142,427

The Influence of HPV on Preterm Birth via Immunomodulation of the Microbiome - This diversity supplement relates to aims 2 and 3 of the parent grant and proposes to examine the influence of (high and low) Human Papilloma Virus (HPV) on the risk of preterm births (PTB) and the possible immune-modulatory role of the vaginal microbiome on such relationship, considering (Black or White) race as a moderator.

TRACER (Translational Research Center in Lung Cancer Disparities) (Tossas, Community Engagement Core Co-Investigator)

P20CA252717 (Winn, Seewaldt, Hughes-Halbert, MPI) 7/01/2021 – 6/30/2024 0.24 calendar
 NIH/NCI \$1,008,846

The proposed study will involve the participation of multiple academic institutions to build upon and integrate efforts to advance cancer health equity by establishing a Translational Research Center in Lung Cancer Disparities (TRACER) program that will conduct novel translational research in racial disparities in lung cancer prevention and early detection to support the development of a full Cancer Health Disparities SPORE.

Center for Clinical & Translational Research (Tossas, Co-Investigator: Informatics and Community Engagement)

5UL1TR002649-03 (Moeller, PI) 05/08/2018-04/30/2023 1.8 calendar
 NCATS/NIH \$2,388,632

The overall CCTR strategic goal is to catalyze CTR through programs and processes that enhance quality and efficiency, integrate research and clinical practice, and provide training to develop the CTR workforce.

Southeastern Consortium for Lung Cancer Health Equity (Tossas, Early-Stage Investigator)

Stand Up to Cancer (Winn, PI) 11/01/2021 – 10/31/2025 \$1,000,000 2.4 calendar

The objective of this application is to conduct a multi-level navigation intervention for lung cancer screening and to create a multi-institutional biorepository largely populated with specimens from Black/African Americans.

PENDING RESEARCH SUPPORT

Massey Cancer Research Pilot (Tossas, PI) 5/2022 – 4/2023 0 calendar
VCU Massey Cancer Center \$75,000

Use bioinformatics and epidemiological approaches to determine whether genetic changes in HPV types correlate to VMB differences, and if this explains excess risk of cervical lesions among nL-Blacks versus nL-whites.

Jeffress Trust Award Programs in Research Advancing Health Equity 6/30/2022 – 6/29/2024 0.6 calendar
Thomas F. and Kate Miller Jeffress Memorial Trust \$150,000

The Chickahominy TRUTH (Trust, Research Understand Tell and Heal) Project, will build a community-academic partnership between VCU Massey and the Chickahominy Indian Tribe to interrogate cancer health inequities across private, public, and tribal spaces, building research and health policy advocacy capacity, and acknowledging the power and knowledge of a historically underserved community and building the foundation for a longitudinal partnership to inform future research questions.

PAST RESEARCH SUPPORT

ACS Institutional Research Grant (Tossas, PI) 2/22/2021-2/21/2022 0 calendar
ACS/VCU Massey Cancer Center \$30,000

The role of the vaginal microbiome (VMB) in precancerous cervical lesions and potential implications for cervical cancer racial disparities - The overarching goal of this proposal is to examine the impact of the vaginal microbiome (VMB) on the development of cervical intraepithelial neoplasia (CIN) among high-risk HPV+ (hrHPV+) women. Additionally, we will explore whether the VMB, the hrHPV viral load and self-reported race work in concert to precipitate CIN development..

Administrative Supplements for the NCI P30 Cancer Center Support Grants to support community outreach and engagement (COE) activities across the translational research continuum (Tossas, Co-Investigator)

5P30CA016059-39S3 (Winn, PI) 5/1/2020-4/30/2021 0.6 calendar
 NIH/NCI \$96,595

The supplement project is designed to enhance the on-going and strong community partnerships of the Community Outreach and Engagement (COE) program within the Virginia Commonwealth University (VCU) Massey Cancer Center (MCC) to address the challenge of “inreach” – the knowledge transfer and feedback among and between basic scientists and the community.

Pfizer LivingWith Spanish Adaptation of a Support System Application for Cancer Survivors

Winn (Contact PI) 01/01/2019-12/31/2019. Given that there is limited information about the utilization of

mobile applications as a support service among Latinx cancer survivors, particularly Spanish speakers, Pfizer partnered with The University of Illinois at Chicago to collaborate on a project that will create an adaptation of their existing *LivingWith* application friendly to survivors who communicate in Spanish (i.e., speak, read, and write) and their network of social support. **Role: Co-PI**

Bristol Myers Squibbs Public Private Partnership to Address Cancer Disparities on the South and West Side of Chicago. Watson (Contact PI) 06/01/2019-05/31/2022. To address the elevated rates of cervical cancer and lower rates of cervical cancer screening and prevention in two Chicago West Side communities, Austin and Humboldt Park among African American and Latino populations and to address the elevated rates of colorectal cancer and lower rates of colorectal cancer screening on the South Side of Chicago with a focus on the South Shore community and sexual and gender minorities. **Role: Co-I**

U54 CA202997- Administrative Supplement Winn (Contact PI) 09/01/2017-08/31/2019 NIH/NCI. The Chicago Collaborative to Promote and Advance Cancer Health Equity (CCPACHE) CCPACHE will build on several cross-institutional grants and partnerships, including an NCI P20, to create the cross-institutional infrastructure and cohesive network necessary to catalyze the complementary strengths of UIC, NEIU, and RHLCCC-NU toward cancer health equity. The Administrative Supplement proposal supports the aim of the parent U54 cooperative agreement by increasing the pipeline of U.S. cancer disparities researchers to work with diverse populations. The supplement focused on Lung Cancer Screening. **Role: Pilot Project PI**

W.J. Kellogg Foundation Winn (PI) 03/01/2016-12/31/2018 Partnership Building Grant: The purpose of this grant is to build international capacity building project with Cuban Ministry of Health to develop a cross-cultural training program with Cuban Health Care Providers to assist in addressing health disparities in maternal and child health in US FQHC. **Role: Co-PI**

MENTORSHIP/PRECEPTORSHIP (RECENT)

2021-Present	Shreya Raman , Medical Student
2021-Present	Kira Randolph , MPH, Epidemiology
2021-Present	Angelicia Courteau , BS, Psychology
2021-Present	Kiersten Stokes , BS, Chemistry
2021-Present	Savannah Rietzel , PhD, Social and Behavioral Sciences
2021-Present	Michael O'Grady , PhD, Public Policy and Administration
2019-2021	Niyati Sudhalkar , MPH, Epidemiology
2019-2021	Rinki Pandya , MPH Epidemiology. "The Impact of Rurality and Cancer Stage at Diagnosis
2018-2019	Shengxi Sun , MPH, Epidemiology. "Ecological Study on the Impact of NCI Designated Grants Dollars on Cancer Mortality Rate Across the United States, 2010-2015"
2018-2019	Sinan Almukhtar , MPH, Epidemiology. "Ecological study of the impact of smoking and violence/crime on lung cancer incidence across Illinois counties"
2016-2021	Alpana Kaushiva , PhD, Epidemiology

PROFESSIONAL DEVELOPMENT/ACCOMPLISHMENTS

Journal reviewer:	2019-Present	Journal for Healthcare of the Poor and Underserved
	2019-Present	JAMA Network
	2020-Present	The BMJ
	2021-Present	Cancer Epidemiology, Biomarkers and Prevention

Current National Professional Memberships: American Academy for Cancer Research, American College of Epidemiology, American Society for Clinical Oncology, American Society for Preventive Oncology, American Public Health Association, Society for Behavioral Medicine, Society for Epidemiological Research

Recent Awards: **2022** American Association for Cancer Research NextGen Star; **2021** American Association for Cancer Research Minority Faculty Scholar Award; **2020** Harrison Endowed Scholarship in Cancer Research; **2019** Society for Behavioral Medicine Leadership Institute Fellowship; **2018** Egretha STEM Award; **2013** Komen Graduate Training in Disparities Research Fellow; **2012** Millennial Health Disparity Leader, Centers for Disease Control and Prevention

Languages: Spanish – Fluent (Native) speaking/reading/writing; French - Beginner speaking/reading/writing