

Talking Data Equity
The Spatial (And Temporal) Statistical Operationalization of Structural Racism: Understanding
Its Impact on Cardiovascular Health Inequities

August 28, 2026

Loni Philip Tabb, PhD

loni@drexel.edu

REFERENCES

1. Bailey, Z. D., Krieger, N., Agénor, M., Graves, J., Linos, N., & Bassett, M. T. (2017). Structural racism and health inequities in the USA: evidence and interventions. *The Lancet*, 389(10077), 1453-1463.
2. Massey, D. S., & Denton, N. A. (1988). The dimensions of residential segregation. *Social forces*, 67(2), 281-315.
3. Kawachi, I., & Berkman, L. F. (Eds.). (2003). *Neighborhoods and health*. Oxford University Press.
4. Groos, M., Wallace, M., Hardeman, R., & Theall, K. P. (2018). Measuring inequity: a systematic review of methods used to quantify structural racism. *Journal of Health Disparities Research and Practice*, 11(2), 13.
5. Bailey, Z. D., Krieger, N., Agénor, M., Graves, J., Linos, N., & Bassett, M. T. (2017). Structural racism and health inequities in the USA: evidence and interventions. *The lancet*, 389(10077), 1453-1463.
6. Rothstein, R. (2017). *The color of law: A forgotten history of how our government segregated America*. Liveright Publishing.
7. Metzger, M. W., & Webber, H. S. (Eds.). (2018). *Facing segregation: Housing policy solutions for a stronger society*. Oxford University Press.
8. Jacoby, S. F., Dong, B., Beard, J. H., Wiebe, D. J., & Morrison, C. N. (2018). The enduring impact of historical and structural racism on urban violence in Philadelphia. *Social Science & Medicine*, 199, 87-95.
9. Trangenstein, P. J., Gray, C., Rossheim, M. E., Sadler, R., & Jernigan, D. H. (2020). Alcohol outlet clusters and population disparities. *Journal of urban health*, 97(1), 123-136.
10. McClure, E., Feinstein, L., Cordoba, E., Douglas, C., Emch, M., Robinson, W., ... & Aiello, A. E. (2019). The legacy of redlining in the effect of foreclosures on Detroit residents' self-rated health. *Health & place*, 55, 9-19.
11. Li, M., & Yuan, F. (2022). Historical redlining and resident exposure to COVID-19: a study of New York City. *Race and Social Problems*, 14(2), 85-100.
12. Krieger, N., Van Wye, G., Huynh, M., Waterman, P. D., Maduro, G., Li, W., ... & Bassett, M. T. (2020). Structural racism, historical redlining, and risk of preterm birth in New York City, 2013–2017. *American journal of public health*, 110(7), 1046-1053.
13. Nardone, A. L., Casey, J. A., Rudolph, K. E., Karasek, D., Mujahid, M., & Morello-Frosch, R. (2020). Associations between historical redlining and birth outcomes from 2006 through 2015 in California. *PloS one*, 15(8), e0237241.
14. Krieger, N., Wright, E., Chen, J. T., Waterman, P. D., Huntley, E. R., & Arcaya, M. (2020). Cancer stage at diagnosis, historical redlining, and current neighborhood characteristics: Breast, cervical, lung, and colorectal cancers, Massachusetts, 2001–2015. *American journal of epidemiology*, 189(10), 1065-1075.

15. Nardone, A., Casey, J. A., Morello-Frosch, R., Mujahid, M., Balmes, J. R., & Thakur, N. (2020). Associations between historical residential redlining and current age-adjusted rates of emergency department visits due to asthma across eight cities in California: an ecological study. *The Lancet Planetary Health*, 4(1), e24-e31.
16. Subramanian, S. V., Acevedo-Garcia, D., & Osypuk, T. L. (2005). Racial residential segregation and geographic heterogeneity in black/white disparity in poor self-rated health in the US: a multilevel statistical analysis. *Social science & medicine*, 60(8), 1667-1679
17. Robert, S. A., & Ruel, E. (2006). Racial segregation and health disparities between black and white older adults. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 61(4), S203-S211.
18. Ahmad Kiadaliri, A., Najafi, B., & Haghparast-Bidgoli, H. (2011). Geographic distribution of need and access to health care in rural population: an ecological study in Iran. *International journal for equity in health*, 10(1), 1-7.
19. Richardson, L. D., & Norris, M. (2010). Access to health and health care: how race and ethnicity matter. *Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine: A Journal of Translational and Personalized Medicine*, 77(2), 166-177.
20. Vaughan Sarrazin, M. S., Campbell, M. E., Richardson, K. K., & Rosenthal, G. E. (2009). Racial segregation and disparities in health care delivery: conceptual model and empirical assessment. *Health services research*, 44(4), 1424-1444.
21. Austin, A. M., Carmichael, D. Q., Bynum, J. P., & Skinner, J. S. (2019). Measuring racial segregation in health system networks using the dissimilarity index. *Social science & medicine*, 240, 112570.
22. Williams, A. D., Wallace, M., Nobles, C., & Mendola, P. (2018). Racial residential segregation and racial disparities in stillbirth in the United States. *Health & place*, 51, 208-216.
23. Asabor, E. N., Warren, J. L., & Cohen, T. (2022). Racial/Ethnic Segregation and Access to COVID-19 Testing: Spatial Distribution of COVID-19 Testing Sites in the Four Largest Highly Segregated Cities in the United States. *American Journal of Public Health*, 112(3), 518-526.
24. Massey, D. S. (1996). The age of extremes: Concentrated affluence and poverty in the twenty-first century. *Demography*, 33(4), 395-412
25. Chambers, B. D., Baer, R. J., McLemore, M. R., & Jelliffe-Pawlowski, L. L. (2019). Using index of concentration at the extremes as indicators of structural racism to evaluate the association with preterm birth and infant mortality—California, 2011–2012. *Journal of urban health*, 96(2), 159-170.
26. Dalsania, A. K., Fastiggi, M. J., Kahlam, A., Shah, R., Patel, K., Shiau, S., ... & DallaPiazza, M. (2022). The relationship between social determinants of health and racial disparities in COVID-19 mortality. *Journal of racial and ethnic health disparities*, 9(1), 288-295.
27. Chen, J. T., & Krieger, N. (2021). Revealing the unequal burden of COVID-19 by income, race/ethnicity, and household crowding: US county versus zip code analyses. *Journal of Public Health Management and Practice*, 27(1), S43-S56.
28. Krieger N, Feldman JM, Kim R, Waterman PD. Cancer incidence and multilevel measures of residential economic and racial segregation for cancer registries. *JNCI Cancer Spectrum*. 2018;2(1):pky009. pmid:31360840.
29. Krieger N, Singh N, Waterman PD. Metrics for monitoring cancer inequities: residential segregation, the Index of Concentration at the Extremes (ICE), and breast cancer estrogen receptor status (USA, 1992–2012). *Cancer Causes & Control*. 2016;27(9):1139–51. pmid:27503397.

30. Westrick AC, Bailey ZD, Schlumbrecht M, Hlaing WM, Kobetz EE, Feaster DJ, et al. Residential segregation and overall survival of women with epithelial ovarian cancer. *Cancer* 2020;126(16):3698–707. pmid:32484923.
31. Wiese D, Stroup AM, Crosbie A, Lynch SM, Henry KA. The impact of neighborhood economic and racial inequalities on the spatial variation of breast cancer survival in New Jersey. *Cancer Epidemiology and Prevention Biomarkers*. 2019;28(12):1958–67. pmid:31649136
32. Krieger N, Waterman PD, Gryparis A, Coull BA. Black carbon exposure, socioeconomic and racial/ethnic spatial polarization, and the Index of Concentration at the Extremes (ICE). *Health & Place*. 2015;34:215–28.
33. Oronce, C. I. A., Scannell, C. A., Kawachi, I., & Tsugawa, Y. (2020). Association between state-level income inequality and COVID-19 cases and mortality in the USA. *Journal of general internal medicine*, 35, 2791-2793.
34. Cifuentes, M., Sembajwe, G., Tak, S., Gore, R., Kriebel, D., & Punnett, L. (2008). The association of major depressive episodes with income inequality and the human development index. *Social science & medicine*, 67(4), 529-539.
35. Wells, J. C., Marphatia, A. A., Cole, T. J., & McCoy, D. (2012). Associations of economic and gender inequality with global obesity prevalence: understanding the female excess. *Social science & medicine*, 75(3), 482-490.
36. Charafeddine, R., & Boden, L. I. (2008). Does income inequality modify the association between air pollution and health?. *Environmental research*, 106(1), 81-88.