NICK GRAETZ

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EDUCATION

2021   Ph.D., Demography and Sociology, University of Pennsylvania (expected May 2021).

- Dissertation: "The relational role of place in the production of racial stratification"
- Committee: Profs. Irma Elo, Courtney Boen, Xi Song, Tukufu Zuberi, Daniel Cohen

2017   A.M., Demography, University of Pennsylvania.

2016   M.P.H., Health Metrics and Evaluation, University of Washington.

2013   B.S., Psychology (Honors) and Political Science, University of Wisconsin-Madison.

RESEARCH AND TEACHING INTERESTS

Structural racism, housing policy, causal mediation analysis, population health, political economy, stratification, life-course modeling, Bayesian small area estimation, data visualization

SELECT PEER REVIEWED PUBLICATIONS

Graetz, N. et al. (2020). Mapping persistent local disparity in educational attainment across low- and middle-income countries. *Nature* 577: 235-238.

Graetz, N., Preston, S.H., Peele, M., Elo, I.T. (2020). Ecological factors associated with suicide mortality among non-Hispanic whites. *BMC Public Health* 20(1339).

Friedman, J., York, H., **Graetz, N.** et al. (2020). Measuring and forecasting progress towards the education-related SDG targets. *Nature* 580: 636-639.

Graetz, N. et al. (2018). Mapping local variation in education across Africa, 2000-2015. *Nature* 555: 48-53.

Reiner, R. C., **Graetz, N.**, et al. (2018). Variation in childhood diarrheal morbidity and mortality in Africa, 2000-2015. *New England Journal of Medicine* 379: 1128-1138.

Friedman, J., **Graetz, N.**, Gakidou, E. (2018). Improving the estimation of educational attainment: New methods for assessing average years of schooling from binned data. *PLoS ONE* 13(11).

Haagsma, J., **Graetz, N.**, et al. (2015). The global burden of injury: Incidence, mortality, disability-adjusted life years and time trends from the Global Burden of Disease Study 2013. *Injury Prevention* 22(1): 3-18.

MANUSCRIPTS UNDER REVIEW

Graetz, N., Ummel, K., Cohen, D.A. (2020). Small-area analyses using public American Community Survey data: A tree-based spatial microsimulation technique. *Revise and resubmit at Sociological Methodology.*

Boen, C., Keister, L.A., **Graetz, N.** (2020). Household wealth and child health inequality: Patterns and intervening mechanisms. *Revise and resubmit at Russell Sage Foundation.*

Graetz, N., Boen, C., Esposito, M.H. (2020). Structural racism and quantitative causal inference: A life-course mediation framework for decomposing racial health disparities. *Under review at Journal of Health and Social Behavior.*

Graetz, N. (2020). Mechanisms connecting neighborhood disadvantage to child development: A life-course mediation analysis. *Under review at Social Science Research.*

Bollyky, T., **Graetz, N.**, et al. (2020). Growing up and moving out: Migration and the demographic transition in low-income nations. *Under review at World Development.*

MANUSCRIPTS IN PREPARATION

Graetz, N. (2020). Historical mechanisms connecting home values over three generations to contemporary Black-white disparities in health and wealth.

Graetz, N. (2020). Mechanisms maintaining Black-white trends and disparities in life-course wealth accumulation.

Graetz, N. (2020). The production of racialized vulnerability to premature death: A causal mediation analysis of New Deal housing policy and period life expectancy.

Graetz, N. & Song, X. (2020). Causal mediation analyses with high-dimensional and time-varying treatments, mediators, and confounders.

Boen, C., **Graetz, N.**, et al. (2020). Early life patterns of criminal justice involvement: Inequalities by race-ethnicity, gender, and socioeconomic status.

Boen, C., **Graetz, N.**, Venkataramani, A., Peele, M., Ortiz, R. (2020). The roles of state and local immigration policy in shaping population patterns of health inequality.

OTHER PEER-REVIEWED PUBLICATIONS

Friedman, J. et al. (2019). Structural vulnerability to narcotics-driven firearm violence: An ethnographic and epidemiological study of Philadelphia's Puerto Rican inner-city. *PLoS ONE* 14(11).

Burstein, R. et al. (2019). Mapping 123 million neonatal, infant and child deaths between 2000 and 2017. *Nature* 574: 353-358.

Reiner, R., et al. (2019). Identifying residual hotspots and mapping lower respiratory infection morbidity and mortality in Africa children from 2000 to 2017. *Nature Microbiology* 4: 2310-2318.

Mosser, J., Gagne-Maynard, W., Rao, P., Osgood-Zimmerman, A., Fullman, N., **Graetz, N.**, et al. (2019). Mapping diphtheria-pertussis-tetanus vaccine coverage in Africa, 2000-2017: A spatial and temporal modelling study. *The Lancet* 393: 1843-1855.

Osgood-Zimmerman, A., Millear, R., Stubbs, R., Shields, C., Pickering, B., Earl, L., **Graetz, N.**, et al. (2018). Mapping child growth failure in Africa between 2000 and 2015. *Nature* 555: 41-47.

Golding, N., Burstein, R. et al. (2017). Mapping under-5 and neonatal mortality in Africa, 2000–15: A baseline analysis for the Sustainable Development Goals. *The Lancet* 390: 2171-2182.

Gakidou, E. et al. (2017). Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990-2016: A systematic analysis for the Global Burden of Disease Study 2016. *The Lancet* 390: 1345-1422.

Hay, S.I., et al. (2017). Global, regional, and national disability-adjusted life-years (DALYs) for 333 diseases and injuries and health life expectancy (HALE) for 195 countries and territories, 1990-2016: A systematic analysis for the Global Burden of Disease Study 2016. *The Lancet* 390: 1260-1344.

Wang, H., et al. (2017). Global, regional, and national under-5 mortality, adult mortality, age-specific mortality, and life expectancy, 1970–2016: A systematic analysis for the Global Burden of Disease Study 2016. *The Lancet* 390, 1084-1150.

Barber, R., et al. (2017). Healthcare access and quality index based on mortality from causes amenable to personal health care in 195 countries and territories, 1990-2015: A novel analysis from the Global Burden of Disease Study 2015. *The Lancet* 390, 231-266.

Vos, T. et al. (2016). Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990-2015: A systematic analysis for the Global Burden of Disease Study 2015. *The Lancet* 388: 1545-1602.

Kassebaum, N. et al. (2016). Global, regional, and national levels of maternal mortality, 1990-2015: A systematic analysis for the Global Burden of Disease Study 2015. *The Lancet* 388: 1775-1812.

Kassebaum, N. et al. (2016). Global, regional, and national disability-adjusted life-years (DALYs) for 315 diseases and injuries and health life expectancy (HALE), 1990-2015: A systematic analysis for the Global Burden of Disease Study 2015. *The Lancet* 388: 1603-1658.

Lim, S. et al. (2016). Measuring the health-related Sustainable Development Goals in 188 countries: A baseline analysis from the Global Burden of Disease Study 2015. *The Lancet* 388: 1813-1850.

Morris, J., et al. (2016). Health metrics priorities in the SDG era and beyond: A perspective from young researchers. *The Lancet* 388: 2353-2354.

Murray, C., Ortblad, K., Guinovart, C., Lim, S., Wolock, T., Roberts, A., Dansereau, E., **Graetz, N.**, et al. (2014). Global, regional, and national incidence and mortality for HIV, tuberculosis, and malaria during 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet* 384: 1005-1070.

Ng, M., Fleming, T., Robinson, M., Thomson, B., **Graetz, N.**, et al. (2014). Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet* 384: 766-781.

Naghavi, M. et al. (2015). Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet* 385: 117-171.

Vos, T. et al. (2015). Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet* 386: 743-800.

Murray, C. et al. (2015). Global, regional, and national disability-adjusted life years (DALYs) for 306 diseases and injuries and healthy life expectancy (HALE) for 188 countries, 1990-2013: Quantifying the epidemiological transition. *The Lancet* 386: 2145-2191.

Hmwe, K. et al. (2016). Global and national burden of diseases and injuries among children and adolescents between 1990-2013: Findings from the Global Burden of Disease 2013 Study. *JAMA Pediatrics* 170: 267-287.

Forscher, P.S., Cox, W.T., **Graetz, N.**, Devine, P.G. (2015). The motivation to express prejudice. *Journal of Personality and Social Psychology*. 109: 791-812.

CONFERENCE PRESENTATIONS (* = presenter)

PAA (Population Association of America) Annual Meeting

Graetz, N.* (2021). Historical mechanisms connecting home values over three generations to contemporary Black-white disparities in wealth and health. *Session 610: Intergenerational Transmission of Poverty and Human Capital.*

Graetz, N.*, Song, X. (2021). G-computation for decomposing population health disparities: 3-way effect decomposition with a new R package multmed. *Session 506-2: Debate and Innovation in Global Population and Health Methods and Metrics.*

Boen, C.*, **Graetz, N.**, et al. (2021). The roles of state and local immigration policy in shaping spatial and age patterns of health inequality. *Session 1206: Immigrant and Immigration Policy: Changes and Effects.*

Boen, C.*, **Graetz, N.**, et al. (2021). Early life patterns of criminal justice involvement: Inequalities by race-ethnicity, gender, and socioeconomic status. *Session 1404-2: The Collateral Consequences of Punishment.*

Graetz, N.* (2019). The direct and indirect psychosocial consequences of neighborhood disadvantage on cognitive development: A novel application of the parametric g-formula. *Session 307: Neighborhood Influences on Children and Youth.*

Graetz, N.*, Elo, I. (2019). The role of changing socioeconomic conditions, healthcare, and health behaviors in U.S. county-level mortality trends, 2000-2015. *Session 410: Spatial Distribution of Diseases and Deaths.*

Graetz, N., Woyczynski, L.* (2019). Local variation in educational attainment in low- and middle-income countries, 2000-2017. *Session 725: Education Outcomes in Low- and Middle-Income Countries.*

Friedman, J.*, **Graetz, N.**, et al. (2018). Measuring the distribution of education: Global trends, forecasts, and inequality metrics. *Session 12: Global Trends in Educational Stratification.*

Graetz, N.*, et al. (2017). Measuring the geographic distribution of maternal education in Africa. *Session 154: Sustainable Development Goals and Demography.*

ASA (American Sociological Association) Annual Meeting

Graetz, N.*, Boen, C. (2020). Racism and causal inference: Identifying the life course determinants of racial disparities in adult cardiometabolic risk. *Session: Expanding Diversity of Biosocial Research: Opportunities and Challenges.*

Graetz, N.*, Elo, I. (2019). The role of changing socioeconomic conditions, healthcare, and health behaviors in U.S. county-level mortality trends, 2000-2015. *Session: Mortality and Morbidity.*

IAPHS (Interdisciplinary Association of Population Health Science) Annual Conference

Boen, C.*, **Graetz, N.,** Venkataramani, A., Peele, M., Ortiz, R. (2020). The roles of state and local immigration policy in shaping population patterns of health inequality.

PHS (Population Health Sciences) Annual Workshop

Graetz, N.* (2019). Identifying early-life leverage points for change: A longitudinal decomposition of Black-White adult health disparities using the parametric g-formula.

RESEARCH SUPPORT

NICHD Training Grant T32 HD-007242-36A1. Graduate Student, Sept 2017 to present.

National Institute on Aging R01 AG060115. *Causes of Geographic Divergence in American Mortality Between 1990 and 2015: Health Behaviors, Health Care Access, and Migration.* Irma Elo (PI). Research Assistant, Sept 2017 to present.

Penn Institute on Aging Pilot Awards P30 020-0225-4-672038. *Psychosocial Stress Exposure, Biological Functioning, and Cognitive Change across the Life Course*. Irma Elo (Co-PI), Courtney Boen (Co-PI). Research Assistant, Sept 2018 to present.

REPORTS AND POLICY BRIEFS

Socio-Spatial Climate Collaborative (2020). *COVID-19 in Philadelphia*. Author.

Data for Progress (2020). *A Green New Deal for City and Suburban Transportation*. Co-author.

National Academy of Sciences (2020). *Rising Midlife Mortality Rates and Socioeconomic Disparities*. Research Assistant.

Data for Progress (2019). *A Green New Deal for New York City Housing Authority (NYCHA) Communities*. Co-author.

Data for Progress (2019). *Public Housing at Risk: Adaptation Through a Green New Deal.* Co-author.

Data for Progress (2019). *A Green New Deal for American Public Housing Communities*. Co-author.

GAVI The Vaccine Alliance (2015). *The Vaccine Alliance Progress Report 2015*. Research Assistant.

PROFESSIONAL EXPERIENCE

2019-Present	Junior Research Fellow*, Data for Progress*, New York City, NY.
2018-Present	Technical Consultant, *Council on Foreign Relations*. Washington, D.C.
2016-2019	Researcher, *Institute for Health Metrics and Evaluation (IHME),* Seattle, WA.
2015-2015	Visiting Research Fellow, *University of Zambia*, Lusaka, Zambia.
2013-2016	Post-Bachelor Fellow, *Institute for Health Metrics and Evaluation (IHME).*

TEACHING

Courses

Panel Data Analysis. Fall 2020 (Teaching Assistant). Graduate course in sociology covering statistical principles and methods in R for longitudinal data analysis, including random- and fixed-effects models, multilevel models, difference-in-difference models, covariance pattern models, survival analysis, and event history analysis.

Workshops

Introduction to G-Methods for Observational Causal Inference. Feb 2020. Two-part workshop given at the Penn Population Studies Center focused on methods for counterfactual causal inference in the presence of time-varying confounding (marginal structural models, parametric g-formula).

Introduction to R. June 2019. Two-part workshop given at the Penn Population Studies Center focused on basics of the R programming language: data management (manipulation, cleaning), control flow, functions, generalized linear models, and visualization.

Data visualization in R. 2015-2017. Ongoing workshop for data analysts, researchers, and post-docs at the Institute for Health Metrics and Evaluation focused on *ggplot*, *leaflet*, and interactive applications in R-Shiny.

Spatial statistics in R. 2015-2017. Ongoing workshop for data analysts, researchers, and post-docs at the Institute for Health Metrics and Evaluation focused on residual analysis, spatial autocorrelation and space-time modelling using R-INLA.

Introduction to R. 2015-2017. Ongoing workshop for new data analysts, researchers, and post-docs at the Institute for Health Metrics and Evaluation focused on basics of the R programming language: data management (manipulation, cleaning), control flow, functions, generalized linear models, and visualization.

PROFESSIONAL SERVICE AND AFFILIATIONS

Reviewer

Social Science & Medicine: Population Health

BioMed Central: Public Health

Research on Social Stratification and Mobility

Affiliations

Population Association of America, 2016-Present.

American Sociological Association, 2018-Present.

Interdisciplinary Association of Population Health Science, 2020-Present.

Special Sworn Status, US Census Bureau, 2019-Present.

TRAC Fellow, 2020-Present.

AWARDS AND FELLOWSHIPS

Institute for Health Metrics and Evaluation (IHME) Post-Bachelor Fellowship, 2013-2016.

University of Wisconsin – Madison Summer Internship Scholarship, 2012.