

# ELISABETH DOWLING ROOT

Department of Geography, College of Arts and Sciences  
Division of Epidemiology, College of Public Health  
The Ohio State University  
1036 Derby Hall  
154 North Oval Mall  
Columbus, OH USA 43210

Phone: 614-292-1882  
Fax: 614-292-6213  
[root.145@osu.edu](mailto:root.145@osu.edu)  
[u.osu.edu/root.145](http://u.osu.edu/root.145)

## EDUCATION

---

- 2009**      **University of North Carolina**, Chapel Hill, NC  
Ph.D. in Geography (Health/Medical Geography & Spatial Epidemiology)
- 2003**      **University of Maryland**, College Park, MD  
M.A. in Geography
- 1999**      **Pomona College**, Claremont, CA  
B.A. *cum laude* in Anthropology and Public Policy Analysis

## TEACHING EXPERIENCE

---

- 2020-**      **The Ohio State University**  
*Professor*, Department of Geography, College of Arts and Sciences  
*Professor*, Division of Epidemiology, College of Public Health  
*Faculty Affiliate*, Translational Data Analytics Institute & Institute for Population Research
- 2015-2020**      **The Ohio State University**  
*Associate Professor*, Department of Geography, College of Arts and Sciences  
*Associate Professor*, Division of Epidemiology, College of Public Health  
*Faculty Affiliate*, Translational Data Analytics Institute & Institute for Population Research
- 2009-2015**      **University of Colorado at Boulder**  
*Assistant Professor*, Department of Geography  
*Faculty Research Associate*, Institute of Behavioral Science

## PROFESSIONAL AND RESEARCH EXPERIENCE

---

- 2007-2009**      **Carolina Population Center**, Chapel Hill, NC, *Graduate Research Assistant*
- 2003-2007**      **RTI, International**, Research Triangle Park, NC, *Research Health Analyst*
- 2002**      **U.S. Census Bureau**, Suitland, MD, *Population Division Intern*
- 1999-2002**      **The Lewin Group**, Falls Church, VA, *Research Analyst*

## AWARDS AND FELLOWSHIPS

---

- 2020**      ASC Mid-Career Faculty Excellence Award, Ohio State University
- 2015**      Emerging Scholar Award, Health and Medical Geography Specialty Group, AAG
- 2009**      Robert Wood Johnson Health and Society Scholar Post-doctoral Fellowship, University of Michigan (Declined)
- 2007-2009**      NSF IGERT Fellowship, Carolina Population Center
- 2007**      University of North Carolina Smith Research Award

## RESEARCH RECORD

---

### Books

Emch, M., **Root, E.D.**, and Carrel, M. 2017. *Health and Medical Geography*. The Guilford Press: New York. ISBN 978-1-4625-2006-0. 512 pages.

### Peer Reviewed Publications

#### *Journal Articles:*

---

† Undergraduate student co-author.

\* Graduate student co-author.

‡ Post-doctoral student co-author.

**Root, E.D.**, A. Zarychta, B. Bermudez Tapia\*, T. Grillos‡, K. Andersson, J. Menken. 2020. Organizations Matter in Local Governance: Evidence from Health Sector Decentralization in Honduras. *Health Policy and Planning*. (doi: 10.1093/heapol/czaa084).

Chisolm, D.J., C. Jones\*, **E.D. Root**, M. Dolce, K.J. Kelleher. 2020. A Community Development Program and Reduction in High-Cost Healthcare Use. *Pediatrics*. (doi: 10.1542/2020-000123).

**Root, E.D.**, E. Bailey\*, T. Gorham\*, C. Song, C. Browning, P. Salsberry. 2020. Geovisualization and Spatial Analysis of Infant Mortality and Preterm Birth in Ohio, 2008-2015: Opportunities to Enhance Spatial Thinking. *Public Health Reports* 135(4): 472-482. (doi: 10.1177/0033354920927854).

Gorham, T.J.\* , **E.D. Root**, Y. Jai, C.K. Shum, J. Lee. 2020. Relationship Between Cyanobacterial Bloom Impacted Drinking Water Sources and Hepatocellular Carcinoma Incidence Rates. *Harmful Algae*, 95: 101801. (doi: 10.1016/j.hal.2020.101801).

Lindstrom, M.\* , C. Hebert, H. Miller, **E.D. Root**. 2020. Network Analysis of Intra-Hospital transfers and Hospital-Onset Clostridium Difficile Infection. *Health Information and Libraries Journal*, 37(1): 26-34. (doi: 10.1111/hir.12274).

Humphrey, J.L.‡, K. Barton, M. McHaney, P.M. Shrestha, E.J. Carlton, L. Newman, **E.D. Root**, J. Adgate, S. Miller. 2020. Air Infiltration in low-income, urban homes and its relationship to lung function. *Journal of Exposure Science and Environmental Epidemiology* 30(2): 262-270. (doi:10.1038/s41370-019-0184-8).

Shrestha, P. M., J.L. Humphrey‡, E.J. Carlton, J.L. Adgate, K.E. Barton, **E.D. Root**, S.L. Miller. 2019. Impact of Outdoor Air Pollution on Indoor Air Quality in Low-Income Homes during Wildfire Seasons. *International Journal of Environmental Research and Public Health*, 16(19): 3535. (doi: 10.3390/ijerph16193535).

Hiance-Steelesmith\*, D.L., C.A. Fontanella, J.V. Campo, J.A. Bridge, K. Warren and **E.D. Root**. 2019. Contextual Factors Associated with County-Level Suicide Rates in the United States, 2000 to 2014. *JAMA Network Open* 2(9): e1910936. (doi:10.1001/jamanetworkopen.2019.10936)

Jai, P., J. Lakerveld, J. Wu, A. Stein, **E.D. Root**, C. Sabel,...,P. James. 2019. Top 10 research priorities in Spatial Lifecourse Epidemiology. *Environmental Health Perspectives* 27(7). (doi: 10.1289/EHP4868).

Zarychta, A., K. Andersson, **E. Root**, J. Menken, T. Grillos. 2019. Assessing the impacts of governance reforms on health services delivery: a quasi-experimental, multi-method, and participatory

- approach. *Health Services & Outcomes Research* 19(4): 241-258. (doi: 10.1007/s10742-019-00201-8).
- Shrestha, P.M., J.L. Humphrey‡, K. Barton, E.J., Carlton, J.L. Adgate, **E.D. Root**, S.L. Miller. 2019. Impact of Low-Income Home Energy Efficiency Retrofits on Building Air Tightness and Healthy Home Indicators. *Sustainability* 11(9): 2667. (doi: 10.3390/su11092667).
- Humphrey, J.L.‡, M. McHaney\*, K. Barton, S. Miller, **E.D. Root**. 2019. Social and Environmental Neighborhood Typologies and Lung Function in a Low-Income Population. *International Journal of Environmental Research and Public Health* 6(17): 1133. (doi: 10.3390/ijerph16071133).
- Carlton, E. K.E. Barton, P.M. Shrestha, J. Humphrey‡, L.S. Newman, J.L. Adgate, **E. Root**, S. Miller. 2019. Relationships between home ventilation rates and respiratory health in the Colorado Home Energy Efficiency and Respiratory Health (CHEER). *Environmental Research* 169: 297-307. (doi: 10.1016/j.envres.2018.11.019).
- Lindstrom, M.\* , C. Hebert, J. Flaherty, S. Moffet-Bruce, **E.D. Root**. 2018. Analysis of Intra-hospital Transfers and Hospital-onset Clostridium difficile Infection. *Journal of Hospital Infection*. (doi: 10.1016/j.jhin.2018.08.016).
- DalGLISH, S., J. Vogel, G. Begkoyian, L. Huicho, L. Mason, J. Quinley, **E.D. Root**, J. Schellenberg, A. Seifu, R. Ved, C. Victora. 2018. Future directions for reducing inequity and maximizing impact of child health strategies: Findings from the Strategic Review. *BMJ* 362: k2684. (doi: 10.1136/bmj.k2684).
- Mollborn, S., E. Lawrence, **E.D. Root**. 2018. Residential Mobility across Early Childhood and Children's Kindergarten Readiness. *Demography* 55(2): 485-510. (doi: 10.1007/s13524-018-0652-0).
- Fontanelle, C.A., D.M. Saman, J.V. Campo, D. Hiance-Steelesmith\*, J. Bridge, H.A. Sweeney, **E.D. Root**. 2018. Mapping suicide mortality in Ohio: A spatial epidemiological analysis of suicide clusters and area-level correlates. *Preventive Medicine* 106: 177-184. (doi: 10.1016/j.ypmed.2017.10.033).
- Root, E.D.**, K. Silbernagel and J. Litt. 2017. Unpacking healthy landscapes: An empirical assessment of neighborhood aesthetic ratings in an urban setting. *Landscape and Urban Planning* 168:38-47. (doi: 10.1016/j.landurbplan.2017.09.028).
- Root, E.D.**, B. Graney, S. Baird, T. Charney, K. Rier, M. Korn, M. McCormick, D. Sprunger, T. Vierzba, F. Wamboldt, J.J. Swigris. 2017. Physical activity and activity space in patients with pulmonary fibrosis now prescribed supplemental oxygen. *BMC Pulmonary Medicine* 17: 154. (doi: 10.1186/s12890-017-0495-2).
- Root, E.D.**, D. Augustine\*, C. Kartasmita, T.M. Uyeki, E.A.S. Simoes. 2017. Demographic and Ecological Risk Factors for Human Influenza A Infections in Rural Indonesia. *Influenza and Other Respiratory Viruses Journal* 11(5): 425-433. (doi: 10.1111/irv.12468).
- Humphrey, J.L.\* and **E.D. Root**. 2017. Spatio-temporal neighborhood impacts on internalizing and externalizing behaviors in U.S. elementary school children: Effect modification by child and family socio-demographics. *Social Science & Medicine* 180: 52-61. (doi: 10.1016/j.socscimed.2017.03.014).

- Schwartzbaum, J., M. Wang, **E. Root**, M. Pietrzak, G.A. Rempala, R-P. Huang, T. Borge Johannesen, T.K. Grimstrand. 2017. A nested case-control study of 277 prediagnostic serum cytokines and glioma. *PLoS ONE* 12(6): e0178705. (doi: 10.1371/journal.pone.0178705)
- Root, E.D.**, M. Lucero, H. Nohynek, R. Stubbs†, V. Tallo, S.P. Lupisan, D.M. Sanvictores, L.T. Nillos, G. Williams, E.A.S. Simoes, ARIVAC Consortium. 2017. Distance to health services modifies the effect of an 11-valent pneumococcal vaccine (PCV) on pneumonia risk among children less than 2 years of age in Bohol, Philippines. *International Journal of Epidemiology* 46(2): 706-716. (doi: 10.1093/ije/dyw217)
- Jochem, W.C.\* , A. Razzaque, **E.D. Root**. 2016. Effects of health intervention programs and arsenic exposure on child mortality from acute lower respiratory infections in rural Bangladesh. *International Journal of Health Geographics* 15(1): 32. (doi: 10.1186/s12942-016-0061-9).
- Lawrence, E., **E.D. Root**, S. Mollborn. 2015. Residential mobility in early childhood: Household and neighborhood characteristics of movers and non-movers. *Demographic Research* 33(32): 939-950. (doi: 10.4054/DemRes.2015.33.32).
- Thomas, D.S.K., P. Anthamatten, **E.D. Root**, M. Lucero, H. Nohynek, V. Tallo, G. Williams, E.A.S. Simões, ARIVAC Consortium. 2015. Disease mapping for informing targeted health interventions: Childhood pneumonia in Bohol, Philippines. *Tropical Medicine and International Health* 20(11): 1525-1533. (doi: 10.1111/tmi.12561).
- Nassel, A.F., **E.D. Root**, J.S. Haukoos, K. McVane, C. Colwell, J. Robinson, B. Eigel, D.J. Magid, C. Sasson. 2014. Multiple cluster analysis for the identification of high-risk census tracts for out of hospital cardiac arrest (OHCA) in Denver, Colorado. *Resuscitation* 85: 1167-1173. (doi: 10.1016/j.resuscitation.2014.08.029)
- Root, E.D.** and J.L. Humphrey\*. 2014. Neighborhood Racial Composition and Trajectories of Child Self-Rated Health: An Application of Longitudinal Propensity Scores. *Social Science & Medicine* 120: 31-39. (doi:10.1016/j.socscimed.2014.09.006)
- Root, E.D.**, D.S.K. Thomas, E.J. Campagna, E.H. Morrato. 2014. Adjusting for Geographic Variation in Observational Comparative Effectiveness Studies: A Case Study of Antipsychotics Using State Medicaid Data. *BMC Health Services Research* 14:355. (doi:10.1186/1472-6963-14-355)
- Mee, P., Collinson, M.A., Madhavan, S., **Root, E.D.**, Tollman, S.M., Byass, P., Kahn, K. 2014. Evidence for localised HIV micro-epidemics associated with the decentralized provision of antiretroviral treatment in rural South Africa: a spatial-temporal analysis of changing mortality patterns (2007 - 2010). *Journal of Global Health* 4(1): 010403. (doi:10.7189/jogh.04.010403)
- Root, E.D.**, M. Lucero, H. Nohynek, P. Anthamatten, D.S.K. Thomas, V. Tallo, A. Tanskanen, B. Quiambao, T. Puumalainen, S. Lupisan, P. Ruutu, E. Ladesma, G. Williams, I. Riley, E.A.S. Simoes, ARIVAC Consortium. 2014. Distance to health services affects local-level vaccine efficacy for pneumococcal conjugate vaccine (PVC) among rural Filipino children. *Proceedings of the National Academy of Sciences* 111(9): 3520-5. (doi:10.1073/pnas.1313748111)
- Root, E.D.** and J.L. Humphrey\*. 2014. The impact of childhood mobility on exposure to neighborhood socioeconomic context over time. *American Journal of Public Health* 104(1): 80-2. (doi:10.2105/AJPH.2013.301467)

- Sasson, C., H. Meischke, B.S. Abella, R.A. Berg, B.J. Bobrow, P.S. Chan, **E.D. Root**, M. Heisler, J.H. Levy, M. Link, F. Masoudi, M. Ong, J.S. Rumsfeld, M.R. Sayre, T.D. Rea; on behalf of the American Heart Association. 2013. Increasing cardiopulmonary resuscitation provision in communities with low bystander cardiopulmonary resuscitation rates: a science advisory from the American Heart Association for healthcare providers, policymakers, public health departments, and community leaders. *Circulation* 127: 1342-1350. (doi:10.1161/CIR.0b013e318288b4dd)
- Root, E.D.**, L. Gonzales, D.E. Persse, P.R. Hinchey, B. McNalley and C. Sasson. 2013. A tale of two cities: The role of neighborhood socioeconomic status in spatial clustering of bystander CPR in Austin and Houston. *Resuscitation* 84(6): 752-759. (doi:10.1016/j.resuscitation.2013.01.007)
- Root, E.D.**, J.R. Rodd\*, M. Yunus and M. Emch. 2013. The role of socioeconomic status in longitudinal trends of cholera in Matlab, Bangladesh, 1993-2007. *PLoS Neglected Tropical Diseases* 7(1): e1997. (doi: 10.1371/journal.pntd.0001997)
- Sasson, C., D.J. Magid, P. Chan, **E.D. Root**, B.F. McNally, A.L. Kellermann, J.S. Haukoos. 2012. Association Between Neighborhood Race/Ethnicity and Income and Bystander CPR for Out-of-Hospital Cardiac Arrest. *The New England Journal of Medicine* 367(17): 1607-15. (doi:10.1016/j.resuscitation.2013.01.007)
- Root, E.D.** 2012. Moving Neighborhood and Health Research Forward: Using Geographic Methods to Examine how Spatial Scale and Mobility Affect Neighborhood Effects on Health. *The Annals of the Association of American Geographers* 102(5): 986-995. (doi:10.1080/00045608.2012.659621)
- Emch, M., **E.D. Root**, S. Giebultowicz, M. Ali and M. Yunus. 2012. Integration of Spatial and Social Network Analysis in Disease Transmission. *The Annals of the Association of American Geographers* 102(5): 1004-1015. (doi:10.1080/00045608.2012.671129)
- Root, E.D.**, S. Giebultowicz, M. Ali, M. Yunus and M. Emch. 2011. The role of vaccine coverage among social networks in cholera vaccine efficacy. *PLoS ONE* 6(7): e22971. (doi:10.1371/journal.pone.0022971)
- Root, E.D.**, R. Meyer and M. Emch. 2011. Socioeconomic Context and Gastroschisis: Exploring Associations at Various Geographic Scales. *Social Science and Medicine* 72(4): 625-633. (doi:10.1016/j.socscimed.2010.11.025)
- Root, E.D.** and M. Emch. 2010. Tracing drinking water to its source: an ecological study of the relationship between textile mills and gastroschisis in North Carolina. *Health & Place*, 16(5): 794-802. (doi:10.1016/j.healthplace.2010.04.004)
- Root, E.D.**, R. Meyer and M. Emch. 2009. Evidence of Localized Clustering of Gastroschisis in North Carolina, 1999-2004. *Social Science and Medicine*, 68(8): 1361-1367. (doi:10.1016/j.socscimed.2009.01.034)
- Emch, M., M. Ali, **E.D. Root** and M. Yunus. 2009. Spatial and Environmental Connectivity Analysis in a Cholera Vaccine Trial. *Social Science and Medicine*, 68(4): 631-637. (doi:10.1016/j.socscimed.2008.11.025)
- Mobley, L.R., **E.D. Root**, E.A. Finkelstein, O.A. Khavjou, R. Farris, and J. Will. 2006. The Built Environment, Obesity, and Cardiovascular Disease Risk in Low-Income Women. *American Journal of Preventive Medicine*, 30(4): 327-332.

Mobley, L.R., **E.D. Root**, L. Anselin, N.L. Gracia, and J. Koschinsky. 2006. Spatial Analysis of Elderly Access to Primary Care Services. *International Journal of Health Geographics*, 5(19).

Greenwald, L.M., J. Cromwell, K. Adamache, S.L. Bernard, E.M. Drozd, **E.D. Root**, and K. Devers. 2006. Specialty vs. Community Hospitals: Referrals, Quality, and Community Benefits. *Health Affairs*, 25(1):106-118.

#### *Proceedings and Book Chapters*

---

Hebert, C. and **E.D. Root**. 2019. Repurposing Geographic Information Systems for routine hospital infection control. In *Advances in Health Care Management*, Volume 18. Emerald Publishing Limited. ISBN: 978-1838670856.

**Root, E.D.**, J. Gaensbauer, H. Nohynek, M. Lucero, A. Tanskanen, L. Nillos, V.Tallo, E.A.F. Simões, ARIVAC Consortium. 2012. Evolution of Respiratory Syncytial Virus (RSV) Over Space and Time in Rural Filipino Children. *Proceedings of the ACM SIGSPATIAL HealthGIS Conference, November 6, 2012. Redondo Beach, CA.*

**Root, E.D.** and M. Emch. 2012. The Ecology of Injuries in Matlab, Bangladesh in *Ecologies and Politics of Health*. B. King and K. Crews (eds). New York: Routledge Press.

### **Non-Peer Reviewed Publications**

#### *Book Chapters*

---

**Root, E.D.** and M. Emch. 2011. Regional Environmental Patterns of Diarrheal Disease in Bangladesh: A Spatial Analytical and Multilevel Approach in *Geospatial Analysis of Environmental Health*. S. McLafferty and J. Maantay (eds). New York: Springer-Verlag.

Emch, M. and **E.D. Root**. 2010. Emerging and Remerging Diseases in *A Companion to Health & Medical Geography*. T. Brown, S. Curtis and G. Moon (eds). Oxford: Blackwell Publishing.

Savitz, L.A, R. Lavin and **E.D. Root**. 2007. Geographic Information Systems: a Strategic Tool for Better Planning, Response and Recovery. *National Security Issues in Science, Law and Technology*, T.A. Johnson (ed). Boca Raton: CRC Press.

#### *Invited Reviews*

---

**Root, E.D.** 2013. Commentary on the paper “Modelling determinants, impact and space-time risk of age-specific mortality in rural South Africa: integrating methods to enhance policy relevance”. *Global Health Action* 6:1-2.

**Root, E.D.** 2011. A Review of “A Companion to Health and Medical Geography”. *Annals of the Association of American Geographers* 101(2): 456-458.

### **Papers in Revise & Resubmit Status or Under Review**

**Root, E.D.**, M. Lindstrom, A. Xie, J. Mangino, S. Moffatt-Bruce, C. Hebert. Hospital room features increase risk for *Clostridioides difficile* infection in the acute care setting. Submitted to *Journal of Infection Control & Hospital Epidemiology*.

Ha, H.J.\* , B. Hanlon, **E.D. Root**. The Rise of Black Suburban Poverty and Its Relationship to Gentrification in the City. Revise and Resubmit to *Cities*.

## Grants

- Seiber, E. (co-PI); **Root, E.D.** (co-PI); Norris Turner, A (co-I); Rayo, M. (co-I); Kline, D. (co-I); Norris, A. (co-I); Gallo, M. (co-I); Clark, S. (co-I); Hyder, A. (co-I); Lemeshow, S. (co-I). COVID Monitoring Team, Economic Analysis and Ohio COVID-19 Assessment of Prevalence (OCAP). Ohio Department of Health. \$619,444, 2020-2021.
- **E.D. Root** (P.I.); C. Hebert (co-P.I.); M. Rayo; J. Odei; M. Gregory. GeoHAI: A novel geographic tool for Hospital Acquired Infection visualization and assessment. Agency for Healthcare Research and Quality/NIH. \$2,470,297, 2019-2024.
- Jackson, R. (mP.I.); T. Winhusen (mP.I.); T. Huerta (co-P.I.); S. Fernandez (co-P.I.); B. Freisthler (co-P.I.); **E.D. Root** (co-P.I.); E. Sieber (co-P.I.). Optimizing HEALing in Ohio Communities (OHIO). Substance Abuse and Mental Health Agency/National Institute for Drug Abuse (NIH), \$65,900,000, 2019-2023.
- Casterline, J (P.I.); M. Gallo; S. Hayford; **E.D. Root**. The Ohio State University Institute for Population Research. National Institutes of Health, NICHD, \$2,808,725, 2019-2024.
- **E.D. Root** (P.I.). The Ohio Opportunity Index. Ohio Department of Medicaid, \$35,743, 2019-2020.
- **E.D. Root** (P.I.). The Ohio Opioid Analytics Project, Ohio Department of Medicaid/Ohio Department of Higher Education, \$74,374, 2018-2019.
- Fontanella, C. (P.I.); J.V. Campo (co-I); **E.D. Root** (co-I); Camille; G. Brock. Identifying Periods of High Risk and Predictors of Suicide for Youth in Public Child Serving Systems. National Institutes of Health, National Institute for Mental Health, \$889,898, 2018-2023.
- **Root, E.D.** (P.I.); C. Browning (co-I); P. Salsberry (co-I). Spatial Analysis of Infant Mortality in Ohio: Tools to Support Evaluation and Program Development, Phase II. \$619,131, 2017-2019.
- **Root, E.D.** (P.I.); C. Browning (co-I); Catherine Calder (co-I). Characterizing Communities Vulnerable to Opioid Abuse. The Ohio State University Institute for Population Research, \$41,234, 2017-2018.
- **Root, E.D.** (P.I.); C. Hebert. Leveraging electronic medical records, hospital design characteristics, and geospatial modeling for outbreak prediction and prevention of Clostridium difficile infection (CDI) in a hospital setting. The Center for Clinical and Translational Science, The Ohio State University Wexner Medical Center, \$25,000, 2017-2018.
- **Root, E.D.** (P.I.); C. Browning (co-I); P. Salsberry (co-I). Spatial Analysis of Infant Mortality in Ohio: Tools to Support Evaluation and Program Development, \$326,720, 2016-2017.
- Simoes, E.A.F (P.I.); **E.D. Root** (co-I). PCV Impact on Cognitive Development. Bill and Melinda Gates Foundation, \$89,000-OSU portion, 2016-2019.
- Raiz, L. (P.I.); **E.D. Root** (co-I); W. Hayes (co-I). Health Status and Access to Health Care in Ohio: A Determinants of Health Perspective. Ohio Colleges of Medicine Government Resource Center, \$99,985, 2015-2016.
- **Root, E.D.**, (P.I.); W.C. Jochem (co-P.I.). Doctoral Dissertation Research: Social and Spatio-temporal Patterns of Arsenic Exposure and Effects in Bangladesh. NSF/Geography and Spatial Sciences, \$15,763, 2015-2016.

- Miller, S. (P.I.); **E.D. Root** (co-P.I.). Climate Change Mitigation in Low-Income Communities in Colorado: Home Weatherization Impacts on Respiratory Health and Indoor Air Quality During Wildfires. Environmental Protection Agency, \$998,999, 2014-2018.
- Anderson, K. (P.I.); **E.D. Root** (co-P.I.); J. Menken (co-P.I.); T. Bossert. Understanding the Dynamics of Local Health Systems in Developing Countries: Decentralization and Polycentric Governance Theory. NSF Interdisciplinary Behavioral and Social Science (IBSS) Research Competition, \$996,000, 2013-2017.
- Hunter, L. (P.I.); **E.D. Root** (co-I); F. Riosmena (co-I). CUPC Climate Change, Migration and Health Conference. National Institutes of Health, National Institute of Child Health & Human Development, \$6,000, 2014-2015.
- **Root, E.D.**, (P.I.); J. Humphrey (co-P.I.). After the School Bell: The Effects of Neighborhood Social Processes on Behavioral and Educational Trajectories of Children and Early Adolescents. AERA Graduate Dissertation Grant, \$20,000, 2014-2015.
- Litt, J. (P.I.); **E.D. Root** (co-I). Planning for Healthy Communities: Understanding the role of the social and the built environments on perceptions of neighborhood quality. University of Colorado at Boulder, Innovative SEED Grant, \$40,000, 2013-2014.
- **Root, E.D.**, (P.I.); J. Rodd (co-P.I.). Doctoral Dissertation Research: Sociopolitical Interaction and Health Outcomes in Refugee-Hosting Communities. NSF/Geography and Spatial Sciences, \$15,842, 2013-2014.
- Menken, J. (P.I.); R. Kuhn (co-P.I.); A. Razzaque (co-P.I.); A. Bhuiya (co-P.I.); **E.D. Root** (co-I); T. Barham (co-I). Long-term Effects of Health and Development Interventions in Rural Bangladesh, National Institutes of Health, National Institute on Aging, \$3,240,691, 2010-2015.
- Riosmena, F. (P.I.); **E.D. Root** (co-I). The role of local context on the Hispanic Health Paradox and immigrant health adaptation processes. Stanford Center for Poverty and Inequality and University of Colorado Population Center Grant, \$25,000, 2013.
- **Root, E.D.** (P.I.). Temporal Dimensions of Neighborhood Effects on Childhood Health and Well-Being. University of Colorado Population Center Grant, \$11,720, 2012-2013.
- **Root, E.D.** (P.I.); S. Mollborn. Children on the move? Childhood residential mobility and the effects of neighborhood on child well-being. University of Colorado at Boulder, Innovative SEED Grant, \$40,000, 2010-2012.
- Emch, M.E. (P.I. – UNC); **E.D. Root** (P.I. – CU); P. Bearman; M. Ali; J. Clemens. Spatial and Social Network Analysis in Vaccine Trials. National Science Foundation, BCS Program, \$299,999-total grant, \$44,702-CU portion, 2009-2013.

#### *Submitted and Pending Support*

---

- Berrian, A.M. (PI); **Root, E.D.** (Co-I); Pesapane, R. (co-I); Berger-Wolf, T. (co-I); Gebreyes, W. (co-I); Malloy, S. (co-I); Hoet, A. (co-I); Wilson, R. (co-I); Bruskotter, J. (co-I); Pomeroy, L. (co-I); Garabed, R. (co-I); Wittum, T. (co-I); Bowman, A. (co-I). Strategies To Prevent (STOP) Spillover. DAI GLOBAL, LLC (USAID), \$3,930,966, 2020-2025.



## Declined

---

- Strassels, S. (P.I.); **E.D. Root** (co-I). Characterizing the Burden of Injected-Drug-Abuse Related Surgical Disease. National Institute for Drug Abuse (NIH), \$156,000, 2020-2022.
- Berrian, A. (P.I.), **E.D. Root** (co-P.I.). Community One Health Capacity Building in the Kruger to Canyons Biosphere Region, South Africa. Ohio State University Connect and Collaborate Grant, \$50,000, 2019-2020.
- Root, E.D. (PI); S. Quiring (co-I); C.K. Shum (co-I). An early warning system for the respiratory impacts of Harmful Algal Blooms (HABs). NASA Earth Science Division, \$938,971, 2018-2021.

## Remunerated Consulting

- **Root, E.D.** (co-P.I.), Simoes, E.A.F. (co-P.I.). Disease Mapping to Support IMCI/iCCM Programming. World Health Organization.
- Simoes, E.A.F. (P.I.), Verghese, V.P. (co-I), Satav, A. (co-I), Baveja, S. (co-I), Panigrahi, P. (co-I). Burden of Lower Respiratory Tract Infection (LRI) Caused by Respiratory Syncytial Virus (RSV) In Infants In India: A Multicenter Population Based Study. Bill and Melinda Gates Foundation.
- Swigris, J. (P.I.). (P4f) Patient Participation Program for Pulmonary Fibrosis: Assessing the Effects of Supplemental Oxygen. Patient-Centered Outcomes Research Institute (PCORI) (non-profit organization).
- Simoes, E.A.F. (P.I.) and C.B. Kartasasmita (P.I.). US-Indonesia Influenza Collaborative Study. USAID (non-profit government organization).
- Morrato, E. (P.I.). Effectiveness of Invega Sustenna® in a Medicaid Population. Ortho-McNeil Janssen Scientific Affairs, LLC (for-profit company).
- Thomas, D. (P.I.). Utilizing GIS for the study of physical activity: individual and environmental mechanisms of PA change. Kaiser Permanente (non-profit organization).

## Academic Presentations

### Invited Individual Talks

---

*Spatial Distribution of Maternal Opioid Addiction, Related Birth Outcomes and Community-level Correlates. Invited Colloquium at the Department of Geography, Virginia Polytechnic Institute and State University (Blacksburg, VA, September 2019).*

*Mapping Hospital Acquired Infections: Patient Safety and Spatial Science. Invited Seminar Series at Sydney Technical University (Sydney, Australia, June 2019).*

*Constructing a Longitudinal Dataset to Examine the Health Impacts of Harmful Algal Blooms (HABs) Across the Lifecourse. Invited Speaker at the 1<sup>st</sup> International Symposium on Lifecourse Epidemiology and Spatial Science (ISLES) (Leiden, Netherlands, July 2018).*

*Evaluating Geographic Patterns of Infant Mortality and Preterm Birth: Novel Methods for Using Big Data to Evaluate Population-level Impacts of Public Health Interventions. Invited Lecture at the University of Auckland (Auckland, NZ, May 2018).*

*Regional Geographic Factors Influence the Effectiveness of Health Systems Decentralization: A look at child Health in Rural Honduras.* Invited Lecture at the EOH Research Seminar, Drexel University (Philadelphia, PA, April 2018).

*Women's status, education and access to health care: evidence from 20 years of change in Matlab, Bangladesh.* Michael M. Davis Invited Lecture at the Center for Health Administration Studies, University of Chicago (Chicago, IL, October 2017).

*Spatial Analysis of Infant Mortality in Ohio.* Invited Lecture at the Center for Family & Demographic Research, Bowling Green State University (Bowling Green, OH, September 2017).

*Local Context and the Effectiveness of Health Systems Decentralization in Rural Honduras: Evidence for Improved Child Health?* Invited Lecture at the Demography Brown Bag Seminar Series, University of California Berkeley (Berkeley, CA, February 2017).

*Has Cholera Met It's Match? Geographic Science and the Fight Against a Global Killer.* Invited Lecture at Science Sundays, The Ohio State University (Columbus, OH, December, 2016).

*Health Systems Decentralization in Rural Honduras: A Preliminary Look at Child Health.* Invited Seminar at the Carolina Population Center, University of North Carolina (Chapel Hill, NC, September, 2016).

*Assessing the local context of disease: politics, economics and data driven strategies for pneumococcal vaccination.* Invited IPR Seminar, The Ohio State University (Columbus, OH, January, 2016).

*Geographic methods and health research: politics, economics and science driven strategies for pneumococcal vaccination.* Keynote address at the No)Boundaries Conference, The Pennsylvania State University (State College, PA, April 2015).

*Diarrheal Disease Ecology: Remote Sensing, GIS, and the Complex Dynamics of Disease.* Presented at the National Center for Atmospheric Research Seminar Series. (Boulder, CO, February 2015).

*After John Snow: New Frontiers in Medical Geography.* Presented at the Honors College Plenary Lecture Series. University of Vermont (Burlington, VT, October 2013).

#### ***Presentations at Conference and Meetings***

---

**E.D. Root**, J. Menken, K. Anderson, A. Zarychta, B.B. Tapia, T. Grillos. *Does Decentralization of Health Systems Improve Maternal and Child Health? Evidence From Rural Honduras.* Presented at the Population Association of America Annual Meeting (Austin, TX, April 2019).

**E.D. Root**, K. Lang, P. Salsberry. *Building Communities for Healthy Moms and Healthy Babies: The Protective Effect of Urban Black Communities.* Presented at the American Association of Geographers Annual Conference (Washington, DC, April 2019).

**H.J. Ha**, E.D. Root. *Poverty pockets in the suburbs: A new way to understand school inequality.* Presented at the American Association of Geographers Annual Conference (Washington, DC, April 2019).

**E.D. Root**, T. Gorham, E. Bailey. *Evaluating the Ohio Equity Institute initiative to reduce infant mortality using spatial analysis.* Presented at the American Association of Geographers Annual Conference (New Orleans, LA, April 2018).

- J.L. Humphrey, M. McHaney, K. Barton, S. Miller, **E.D. Root**. *Social and Environmental Neighborhood Profiles and Lung Function in Low-Income U.S. Children and Adults*. Poster presented at the Population Association of America Annual Meeting (Denver, CO, April 2018).
- J. Menken, **E.D. Root**, B.B. Tapia, E. Bailey, K. Anderson, A. Zarychta, T. Grillos. *Effects of Decentralization of Health Services on Access to Reproductive Health Care and on Fertility: Evidence From Rural Honduras*. Presented at the Population Association of America Annual Meeting (Denver, CO, April 2018).
- E.D. Root**, W.C. Jochem, G. Kagy, J. Menken. *Access to health services, development, and gender: A longitudinal study in Matlab, Bangladesh*. Presented at the 17<sup>th</sup> International Medical Geography Symposium (Angers, France, July 2017).
- E.D. Root**. *Health Systems Decentralization in Rural Honduras: Evidence for Improved Child Health?* Presented at the American Association of Geographers Annual Conference (Boston, MA, April 2017).
- E.D. Root**. *Spatio-temporal dynamics of viral group circulation among children with acute respiratory infection*. Presented at the American Association of Geographers Annual Conference (San Francisco, CA, April 2016).
- E.D. Root**, M.G. Lucero, H. Nohynek, V. Tallo, R. Stubbs, E.A.F. Simões and ARIVAC Consortium. *Distance to health services modifies the effect of an 11-valent pneumococcal vaccine (PCV) on pneumonia risk among children less than 2 years of age in Bohol, Philippines*. Poster presented at ID Week 2015 (San Diego, CA, October 2015).
- E.D. Root**. *Disease environment and access to care: childhood pneumonia risk in the Philippines*. Presented at the International Medical Geography Symposium (Vancouver, Canada, July 2015).
- E.D. Root**, K. Albright, F.S. Wamboldt, J.J. Swigris. *Does Supplemental Oxygen Expand ILD Patients' Worlds? Assessment by Global Positioning System (GPS) and Accelerometry*. Presented at the American Thoracic Society International Conference (Denver, CO, May 2015).
- E.D. Root**. *Geospatial Analysis of RSV Infection Among Children Vaccinated for Pneumococcal Pneumonia: Evidence for Cross-Protection?* Presented at the American Association of Geographers Annual Conference (Chicago, IL, April 2015).
- E.D. Root**, D.S.K. Thomas, P. Anthamattan, EAF Simoes. *Geographic distance, vaccination and disease environment*. Presented at the American Association of Geographers Annual Conference (Tampa, FL, April 2014).
- E.D. Root** and J.L. Humphrey. *Child Self-Rated Health: The effect of longitudinal measures of neighborhood racial composition*. Presented at the XXVII IUSSP International Population Conference (Busan, South Korea, August 2013).
- E.D. Root**, J. Gaensbauer, E.A.F. Simoes, ARIVAC Consortium. *Evolution of Respiratory Syncytial Virus (RSV) Over Space and Time in Rural Filipino Children*. Presented at the International Medical Geography Symposium (East Lansing, MI, July 2013).
- E.D. Root**, H. Nohynek, M. Lucero, A. Tanskanen, L. Nillos, V. Tallo, E.A.F. Simoes, ARIVAC Consortium. *The Effect of Distance on the Efficacy of an 11-Valent Pneumococcal Conjugate Vaccine in the Philippines*. Presented at the American Association of Geographers Annual Conference (Los Angeles, CA, April 2013).

- E.D. Root**, D. Thomas, E.J. Campagna, J.W. Newcomer, J. Parks, E.H. Morrato. *Geospatial Variation in Drug Utilization and the Potential for Confounding by Geography*. Poster presentation at the 28<sup>th</sup> International Conference on Pharmacoepidemiology and Therapeutic Risk Management (Barcelona, Spain, August 2012).
- Sasson, C., D. Magid, P. Chan, **E.D. Root**, B. McNally, A. Kellermann, J. Haukoos. *All Cardiac Arrests Are Not Created Equal: How Neighborhoods Impact the Likelihood of Having an Automated External Defibrillator Used*. Poster Presentation at the Society of Academic Emergency Medicine (Chicago, IL, May 2012).
- E.D. Root**. *Does cholera risk depend on social or spatial proximity? Results from a longitudinal analysis in Matlab, Bangladesh*. Presented at the International Symposium on Medical Geography (Durham, UK, July 2011).
- E.D. Root**. *Regional Environmental Patterns of Diarrheal Disease in Bangladesh: A Spatial Analytical and Multilevel Approach*. Presented at the American Association of Geographers Annual Conference (Seattle, WA, April 2011).
- E.D. Root** and M. Emch. *Tracing drinking water to its source: an ecological study of the relationship between textile mills and gastrochisis in North Carolina*. Presented at the American Association of Geographers Annual Conference (Washington, D.C., March 2010)
- E.D. Root**, R. Meyer and M. Emch. *Evidence of localized clustering of gastrochisis births in North Carolina, 1999-2004*. Presented at the XXVI IUSSP International Population Conference (Marrakech, Morocco, September 2010).
- Giebultowicz, S., **E.D. Root**, and M. Emch. *Examining the Role of Social Networks and Herd Immunity in a Cholera Vaccine Trial in Bangladesh*. Presented at the Population Association of America (Detroit, MI, May 2009).
- E.D. Root**. *Evidence for neighborhood effects on health: the case of gastrochisis in North Carolina*. Presented at the American Association of Geographers Annual Conference (Las Vegas, NV, April 2009).
- E.D. Root** and M.A. Carrel. *Exploring the effects of spousal education and employment on female age at first birth using international census microdata*. Presented at the European Population Conference (Barcelona, Spain, July 2008).
- E.D. Root**. *Spatio-temporal clustering of birth defects in North Carolina*. Presented at the American Association of Geographers Annual Conference (Boston, MA, April 2008).

## TEACHING RECORD

---

### Courses Taught

- Introductory Seminar for Epidemiology (EPI 8899.03), OSU, Fall 2019
- Advanced Spatial Data Analysis (GEOG 8102), OSU, Spring 2018
- Seminar in Spatial Methods (GEOG 8104), OSU, Fall 2015, 2016, 2017
- Spatial Data Analysis (GEOG 5100), OSU, Fall 2017
- Life and Death Geographies (GEOG 3702), OSU, Spring 2016, 2019
- GIS & Public Health (GEOG 5229), OSU, Fall 2016
- Introduction to Global Public Health (GEOG 4100), CU Boulder, Spring 2015

- Medical Geography (GEOG 4852/5852), CU Boulder, Spring 2011, 2012, 2014
- Population Geography (GEOG 4732/5732), CU Boulder, Fall 2012, Spring 2014
- Quantitative Methods (GEOG 4023/5023), CU Boulder, Spring 2010, 2011, 2012
- Statistics for Geography (GEOG 3023), CU Boulder, Fall 2013, 2014
- Human Geographies (GEOG 1992), CU Boulder, Fall 2014

## Workshops and Short Courses Taught

Instructor for ICPSR Summer Short Course on Spatial Regression. ICPSR (Yearly, 2014-2019)

Instructor for Center for Public Health Practice Summer Program on GIS and Public Health. OSU College of Public Health (Columbus, OH, June, 2017)

Co-instructor for course on Spatial Demography. CU Population Center (Boulder, CO, June 2012)

Co-instructor for course on Environmental Demography. CU Population Center (Boulder, CO, June 2013)

## Students Advised

*Note: ABD indicates the student has passed comprehensive exams and proposal defense and advanced to candidacy. A date indicates the student graduated and received his/her degree.*

### Primary Advisor:

- Anisa Klein, PhD. (OSU Geography)
- Yun Ye, Ph.D. (OSU Epidemiology)
- Megan Lindstrom, M.A. (OSU Geography, 2018), Ph.D. (OSU Geography, ABD)
- Hailey Borrasca, M.P.H. (OSU Epidemiology)
- Katherine Wright, M.P.H. (OSU Epidemiology, 2020)
- Claire Jones, M.A. (OSU Geography, 2019)
- Emelie Bailey, M.A. (OSU Geography, 2016)
- Tyler Gorham, Ph.D. – co-Advisor with Jiyoung Lee (OSU Environmental Health Sciences, 2017), Dissertation Topic: *Investigation of cyanobacterial blooms as an environmental risk factor for various cancer types*
- Joshua Rodd, Ph.D. – co-Advisor with John O’Loughlin (CU Geography, 2016), Dissertation Topic: *Politics, Health and Space: The Cases of Two Refugee Communities and their Neighboring Communities in Uganda*
- Jamie Humphrey, Ph.D. (CU Geography, 2015), Dissertation Topic: *Local contextual effects on mental and behavioral disorders during elementary and middle school: A life course perspective*
- Chris Jochem, M.A. (CU Geography, 2012), Ph.D. (CU Geography, 2016), Dissertation Topic: *Social and Spatio-Temporal Patterns of Arsenic Exposure and Respiratory Effects in Bangladesh.*

**Dissertation Committees:** Sara Hellmuth Paull (Ecology & Evolutionary Biology, 2012); Jochen Wendel, (Geography, 2013); Tyler Roberts (Geography, 2014); Dwi Augustinian (Epidemiology, Colorado School of Public Health, 2014); Sarah Hart (Geography, 2014); Katie Richgels (Ecology & Evolutionary Biology, 2014); Comilla Sasson (Epidemiology, Colorado School of Public Health, 2014); Chris Hartman (Geography, 2016); Erin Martinez (Epidemiology, Colorado School of Public Health, 2017); Lauren Porter (EHE, 2017); Danielle Steelesmith (EHE, 2018); Katie Swidarski (HBHP, 2018); Tom Albani (Epidemiology, ABD); Jinhyung Lee (Geography); Young Jaegal (Geography, ABD); Hui Ha (City and Regional Planning, ABD); Gilsu Pae (City and Regional Planning, ABD); Vanessa Apodaca (Epidemiology,

ABD); Zachary Leasor (Geography, ABD); Brittney Keller-Hamilton (Epidemiology, ABD), Emilio Mateo (Geography); Arianna Hall-Reinhard (Geography, Yuchen Li (Geography)

**Master's Thesis Committees:** Connor Sheehan (Geography, 2011); Morgan Zeilff (Geography, 2013); Li Xu (Geography, 2013); Andrew Stauffer (Geography, 2013); Ahn Lee (Geography, 2014); Nancy Lubuye (Clinical Science, Colorado School of Public Health, 2015); Elizabeth Brochu (Veterinary Public Health, 2017); Stephen Shields (Geography); Brooks Hammock (Geography, 2019); Jared Schenkel (Geography, 2019); Yuxiao Zhao (Geography);

**MPH Capstone Committees:** Brynn Presser (Epidemiology, 2017); Aimee Hahm (Epidemiology, 2018); Mary Kaeding (Epidemiology, 2019)

**Undergraduate Thesis Committee Member:** Nathan Zick-Smith (Geography, 2015); Madison Musgrave (Geography, 2014); Tracy Pihl (Geography, 2012); Alicia Beaman (International Affairs, 2012); Colleen Smith (Geography, 2012); Ashley Armstrong (International Affairs, 2011); Emily Scolaro (Geography, 2016)

## SERVICE RECORD

---

### Service to Department and University

- Member, Executive Committee, Department of Geography, OSU, 2019-present
- Member, Graduate Studies Committee, Department of Geography, OSU, 2018-present
- Member, Curriculum Committee, Division of Epidemiology, OSU, 2018-present
- Member, Geography Chair Search Committee, 2019
- Member, GIS Faculty Search Committee, Geography, OSU, 2017-2018
- Member, Search committee (ASC representative) for Sr. VP of Research, OSU, 2016-2017
- Member, Search committee for Dean of the College of Public Health, OSU, 2018-2019
- Member, Critical Difference for Women Scholarship Committee, OSU, 2017-present
- Board member for Women in Data Science Summer Camp (TDAI initiative at OSU), 2018-present

### Service to Professional Organizations

- Member, Geographic Sciences Committee of the National Academies of Science and Engineering (2020-2022)
- NSF Geography and Spatial Sciences CAREER award panelist (2019)
- Member of Health Policy Institute of Ohio's (HPIO) Health Equity Advisory Group (2018)
- Board member, Health and Medical Geography Specialty Group, Association of American Geographers (2010-2013)
- Chair, Jacques May Dissertation Prize Competition, Health and Medical Geography Specialty Group, Association of American Geographers (2012, 2013)
- Invited participant, American Heart Association Scientific Committee on "Improving Access to Bystander Cardiopulmonary Resuscitation" (2012-2013)
- Invited participant, NSF Emerging Infectious Disease Workshop, The Ohio State University (2012)
- Invited participant, NIH-Wide Geospatial Infrastructure Symposium, Bethesda, MD (2011)

### Review Service for Academic Journals and Other Organizations

- Ad hoc manuscript reviewer for: *Health & Place*, *Social Science & Medicine*, *BMC Public Health*, *BMC Infectious Diseases*, *BMC Health Services Research*, *Annals of the AAG*, *Transactions in GIS*,

*Public Health Reports, Applied Geography, Southeastern Geographer, Canadian Journal on Aging, GeoJournal, Annals of Epidemiology, Journal of Family Theory & Review, Maternal and Child Health Journal, International Journal of Epidemiology, American Journal of Epidemiology*

- Invited Study Section Participant NIH/NIAID – International Collaborations in Infectious Disease Research (2014)
- Ad-hoc grant reviewer for the Wellcome Trust (2014, 2017, 2019)
- Grant Proposal Reviewer for the National Science Foundation (NSF) Geography and Regional Science Division (2010, 2011, 2012, 2013, 2015, 2017, 2018)
- Reviewer, Jacques May Dissertation Award, Health and Medical Geography Specialty Group, Association of American Geographers (2010, 2011, 2013, 2015, 2017, 2018, 2019)