

**Ian D. Buller, Ph.D., M.A.**

DLH Corporation  
 Public Health & Scientific Research  
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**EDUCATION**

- 2019 Ph.D., Environmental Health Sciences, Emory University  
 Dissertation: *On estimating the spatial distribution of enzootic Yersinia pestis in the United States using a wide-ranging sentinel species and spatial statistics with sampling considerations*
- 2013 B.A./M.A., Ecology and Evolutionary Biology, University of Colorado – Boulder  
 Thesis: *Nationwide distributional determinants for a wildlife and human parasite*

**PROFESSIONAL EXPERIENCE**

- 2022-Pres. Epidemiologist, Public Health & Scientific Research, DLH Corporation (formerly Social & Scientific Systems, Inc.), Bethesda, MD
- 2019-2022 Cancer Prevention Fellow, Cancer Prevention Fellowship Program (CPFP), Division of Cancer Prevention (DCP), National Cancer Institute (NCI), National Institutes of Health (NIH), Rockville, MD working in the Occupational and Environmental Epidemiology Branch, Division of Cancer Epidemiology and Genetics (DCEG), NCI, NIH
- 2013-2019 Predoctoral Trainee, National Science Foundation (NSF) Graduate Research Fellow, Emory University, Atlanta, GA
- 2013 Visiting Research Assistant, Instituto Leônidas e Maria Deane – Fiocruz Amazônia, Manaus, Brazil
- 2012-2013 Research Assistant, Wedge Communications L.L.C., Golden, CO
- 2008-2013 Student Assistant (I & II), University of Colorado – Boulder (CU-Boulder), Boulder, CO

**OTHER TRAINING**

- 2021 The Brothers Bayes' Boisterous Bootcamp. Epidemiology in Occupational Health Workshop. (virtual)
- 2020 Creating Plots, Graphs, and Maps Using R, Foundation for Advanced Education in the Sciences (FAES) at NIH. (virtual)
- 2020 Linux for Biomedical Researchers, FAES at NIH. (virtual)
- 2019 Molecular Cancer Prevention course, NCI, Rockville, MD.
- 2019 Principles and Practice of Cancer Prevention and Control course, NCI, Rockville, MD.
- 2017 Graduate Workshop on Environmental Data Analytics, National Center for Atmospheric Research, Boulder, CO.
- 2012 Graduate Summer Session in Epidemiology, University of Michigan, Ann Arbor, MI.
- 2017 Bayesian and INLA Disease Mapping Curriculum, Medical University of South Carolina, Charleston, SC.
- 2015 Adult Mosquito Identification Certification, East Georgia State College, Swainsboro, GA.

**SOFTWARE SKILLS**

R, Git, markdown, LaTeX, Shell, SAS, ArcGIS, MS Office Suite

**COMPETITIVE RESEARCH FUNDING**

- 2022 Career Development Award  
**Agency:** NCI Director's Intramural Innovation Award Program, NCI  
**Amount:** \$15,000  
**Duration:** 1 year (2022-2023)  
**Role:** Principal Investigator (PI)  
**Title:** A new paradigm for environmental exposure assessment involving multiple chemicals: incorporating spatial components into mixture models for investigations of associated cancer risks
- 2021 Trans-Fellowship Research Award Supplement  
**Agency:** CFPF, DCP, NCI  
**Amount:** \$17,000  
**Duration:** 1 year (2021-2022)  
**Role:** Co-PI with Dr. Derek Brown  
**Title:** Improvements to Spatial Power: advanced features for usability and visualization
- 2020 William G. Coleman Jr., Ph.D., Minority and Health Disparities Research Innovation Award  
**Agency:** National Institute of Minority Health and Health Disparities  
**Amount:** \$15,000  
**Duration:** 1 year (2020-2021)  
**Role:** Co-PI with Drs. Jacqueline Vo, Naoise Synnott, and Derek Brown  
**Title:** HDoCS in PLCO: Health Disparities of Cancer Survivors in the Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial
- 2020 DCEG Informatics Tool Challenge Award  
**Agency:** DCEG, NCI  
**Amount:** \$20,000  
**Duration:** 1 year (2020-2021)  
**Role:** Co-PI with Dr. Derek Brown  
**Title:** sparrowR: A flexible R package and webtool to estimate statistical power of a spatial cluster detection technique
- 2017 Graduate Research Internship  
**Agency:** Graduate Research Internship Program, NSF  
**Amount:** \$5,000  
**Duration:** 1 year (2017-2018)  
**Role:** PI  
**Location:** U.S. Department of Agriculture, Animal and Plant Health Inspection Service, National Wildlife Disease Program  
**Award Number:** DGE-1444932
- 2014 Graduate Research Fellowship  
**Agency:** Graduate Research Fellowship Program, National Science Foundation  
**Amount:** \$135,000  
**Duration:** 5 years (2014-2019)  
**Role:** PI  
**Title:** Modeling vector occurrence under imperfect detection: an improved analytical framework  
**Award Number:** DGE-1444932 (same as above)

**AWARDS, SCHOLARSHIPS, HONORS**

2022	NCI Director's Award for Service, Office of the Director, NCI (shared with 2021-2022 CPFP Peer Mentoring Program, DCP, NCI)
2021	NCI Director's Award for Emerging Leader, Office of the Director, NCI (shared with 2020-2021 CPFP Fellows Advisory Board, DCP, NCI)
2021	CPFP Merit Award, DCP, NCI
2020	DCEG Fellows Award for Research Excellence, DCEG, NCI
2018	Young Investigator Award, American Society of Tropical Medicine and Hygiene (first-tier mention)
2018	Student Section Travel Award, Ecological Society of America Annual Meeting
2017	New Thinkers/New Leaders Award, Emory University
2014	Student Photography Contest, Emory Global Health Institute (honorable mention)
2013	Graduate Research Fellowship Program, NSF (honorable mention)
2011	Barry M. Goldwater Scholarship, Barry M. Goldwater Scholarship and Excellence in Education Foundation
2010	Alvin G. Flanagan/Walker Family Scholarship, CU-Boulder
2008-2013	Presidential Leadership Class, CU-Boulder
2008	Summer Undergraduate Research Experience, CU-Boulder
2006	Eagle Scout Rank, Boy Scouts of America

**ACADEMIC APPOINTMENTS/ MENTORING EXPERIENCE**

2022	NIH Summer Research Program, NIH (Inam Ghulamhussain, Master of Public Health Student at George Washington University Milken Institute School of Public Health Department of Epidemiology)
2020-2022	Peer Mentor, CPFP, DCP, NCI (Drs. Kimberley Clevenger and Percy Guzman)
2017-2018	Symposium Research Mentor, Undergraduate Research Program, Emory University
2017-2018	Laboratory Instructor, College of Arts and Sciences, Emory University
2014-2017	Teaching Assistant, Rollins School of Public Health, Emory University
2011-2013	Academic Affairs Fellow, Presidents Leadership Class, CU-Boulder
2011	Undergraduate Teaching Assistant, Ecology and Evolutionary Biology, CU-Boulder
2010-2011	First Year Class Advisor, Presidents Leadership Class, CU-Boulder

**PROFESSIONAL CONTRIBUTIONS AND AFFILIATIONS****Professional Societies and Memberships**

2020-Pres	International Society for Environmental Epidemiology (ISEE)
2020-2021	American Association of Geographers (AAG)
2019-2023	National Postdoctoral Association (Affiliate member)
2019-2023	American Association for Cancer Research (Affiliate member)
2018-2022	American Statistical Association

2018-2020	American Society of Tropical Medicine and Hygiene (ASTMH)
2017-2018	American Public Health Association (APHA)
2016-2017	Georgia Public Health Association
2013-Pres	Society for Epidemiologic Research (SER)
2011-2018	Ecological Society of America (ESA)
2011	Phi Beta Kappa
2010-2013	American Society of Parasitologists (ASP)

### **Committees, Review Panels, and Editorial Boards**

2022	Reviewer, Abstracts for the 2022 SER Annual Meeting
2021-2022	Invited Member, National Institutes of Environmental Health Sciences (NIEHS) Environmental Health Language Use Case Event
2020-2022	Co-Editor-in-Chief, DCEG Fellows Editorial Board, DCEG, NCI
2020-2021	Co-Chair, Method and Training Committee, Fellows Advisory Board, DCP, NCI
2018-2019	Judge, American Statistical Society DataFest at Emory University, Emory University
2015-2018	Co-Founder, President, and Treasurer, Public Health Doctoral Students in Environmental Health, Emory University
2017-2018	Judge, Undergraduate Research Symposium, Emory University
2017	Judge, Science Fair, Fernbank Elementary School, Decatur, GA
2016-2018	Team Lead, Emory Climate Analysis and Solutions Team, Emory University

### **Reviewer for Refereed Journals**

<i>Annals of Epidemiology</i>	<i>Cancer Epidemiology, Biomarkers &amp; Prevention</i>
<i>Cancer Causes &amp; Control</i>	<i>International Journal of Environmental Research and Public Health</i>
<i>Methods in Ecology and Evolution</i>	<i>International Journal of Health Geographics</i>
<i>PLoS – Neglected Tropical Diseases</i>	<i>Scientific Reports</i>

### **MEETINGS AND PRESENTATIONS (presenting or senior author only)**

#### **Oral Presentations**

2021	Roadway Proximity and Lung Cancer in NIH-AARP Diet and Health Study Participants. ISEE Annual Meeting, New York, New York. (virtual)
2021	Geographic variation in the oral microbiome of NIH-AARP Diet and Health Study participants. NIEHS Microbiome Workshop entitled “Impact of Environmental Exposures on the Microbiome and Human Health”. (virtual)
2015	A solution to the problem of separation in site-occupancy models. ESA Annual Meeting, Baltimore, MD.
2012	Factors related to the distribution and abundance of the four-host trematode parasite <i>Alaria</i> spp. in amphibians in the San Francisco Bay Area. ESA Annual Meeting, Portland, OR.
2011	Parasite communities of juvenile Western Toads ( <i>Anaxyrus boreas</i> ) from California and Oregon, USA. Rocky Mountain Conference of Parasitologists Annual Meeting, Ogallala, NE.
2010	A loaded toad: parasite communities of juvenile Western Toads ( <i>Anaxyrus boreas</i> ) from California and Oregon. ASP Annual Meeting, Colorado Springs, CO.

**Scientific Workshops**

- 2024 Git'n up to speed on versioning control. SER Annual Meeting, Austin, TX.
- 2023 leaRn – R workshop series with DLH. Epidemiology Branch, NIEHS, Research Triangle Park, NC. (virtual)

**Invited Presentations**

- 2023 Accessible geospatial socio-economic metrics. Multi-Cancer Detection Working Group, DCP, NCI, Rockville, MD. (virtual)
- 2022 Accessible geospatial socio-economic metrics, DCP, NCI, Rockville, MD. (virtual)
- 2022 Estimating effects of environmental mixtures in a geospatial context, Mixtures Working Group, NIEHS, Raleigh, NC. (virtual)
- 2022 Roadway Exposure and Lung Cancer Risk in NIH-AARP Diet and Health Study Participants, DCEG Geographic Analysis Working Group (GAWG), NCI, Rockville, MD. (virtual)
- 2022 Putting cancer and environmental exposures in (geo)spatial perspective, Center for Science and Technology, Radiation Protection Division, Office of Air and Radiation, U.S. Environmental Protection Agency, Washington, DC. (virtual)
- 2021 Spatial epidemiology of noncommunicable diseases (cancer), guest lecture for a course entitled “Epidemiology of Disease”, Oregon Health Sciences University – Portland State University School of Public Health, Portland, OR. (virtual)
- 2021 Putting cancer into (geo)spatial context, DCP, NCI, Rockville, MD. (virtual)
- 2021 Estimating environmental mixtures in a geospatial context, symposium entitled “Implementing geolocation-based exposure assessments”, SER Annual Meeting, San Diego, CA. (virtual)
- 2021 Spatial Power: a new webtool to calculate power for spatial cluster detection techniques, DCEG GAWG, NCI, Rockville, MD. (virtual)
- 2020 Introduction to R. DCP, NCI, Rockville, MD. (virtual)
- 2020 A place for spatial analysis in the Cancer Control Continuum, DCP, NCI, Rockville, MD. (virtual)
- 2020 Zoonotic surveillance of plague via point processes in geographic and principal component space, Department of Biostatistics and Bioinformatics Seminar, Emory University, Atlanta, GA.
- 2019 The geographic distribution of *Yersinia pestis* in California: a spatial analysis of carnivore-based spatial disease surveillance, Vector-Borne Disease Section, California Department of Public Health, Sacramento, CA.
- 2019 On examining spatial patterns in principal component space to identify suitable habitat for *Yersinia pestis* transmission in the western United States, Geospatial Interest Group, Federal Committee on Statistical Methods, Washington, DC.
- 2019 On examining spatial patterns in principal component space to identify suitable habitat for *Yersinia pestis* transmission in the western United States, DCEG GAWG, NCI, Rockville, MD.
- 2018 Climate and the plague. The Emory Climate Analysis and Solutions Team, Climate@Emory, Emory University, Atlanta, GA.
- 2018 Spatial distribution of *Yersinia pestis* found in a sentinel species across the United States while accounting for sampling uncertainty, Lancaster University, Lancaster, United Kingdom.
- 2018 Spatial distribution of *Yersinia pestis* found in *Canis latrans* across North America, United States Department of Agriculture, Animal & Plant Health Inspection Services, Wildlife Disease Program, Fort Collins, CO.

- 2017 Panelist, Dean's council meeting: climate and health, Emory University, Rollins School of Public Health, Atlanta, GA.

### **Poster Presentations**

- 2022 Evaluating the impact of concentrated animal feeding operations on *Campylobacter jejuni* infections in rural agricultural communities. ISEE Annual Meeting, Athens, Greece. (virtual)
- 2022 Ambient air pollution exposure and risk of incident non-Hodgkin's lymphoma in a large U.S.-based cohort. NIH Virtual Poster Day & DCEG End of Summer Poster Event. (virtual)
- 2021 Geographic variation in the oral microbiome of NIH-AARP Diet and Health Study participants. FDA-NIH-NIST-USDA Joint Agency Microbiome Symposium. (virtual)
- 2020 Geographic variation in the oral microbiome of NIH-AARP Diet and Health Study participants. ISEE Annual Meeting, Washington, DC. (virtual)
- 2020 Geographic variation in the oral microbiome of Agricultural Health Study applicators. SER Annual Meeting, Boston, MA. (virtual)
- 2020 Geographic variation in the oral microbiome of Agricultural Health Study applicators. AAG Annual Meeting, Denver, CO. (accepted but cancelled due to SARS-CoV-2 pandemic)
- 2018 Spatial distribution of *Yersinia pestis* found in a sentinel species across the United States while accounting for sampling uncertainty. ASTMH Annual Meeting, New Orleans, LA.
- 2018 Spatial distribution of *Yersinia pestis* found in a sentinel species across the United States while accounting for sampling uncertainty. ESA Annual Meeting, New Orleans, LA.
- 2018 Spatial distribution of *Yersinia pestis* found in a sentinel species across the United States while accounting for sampling uncertainty. Ecology and Evolution of Infectious Disease Annual Meeting, Glasgow, United Kingdom.
- 2017 Assessing public health co-benefits of the City of Atlanta's Climate Action Plan. APHA Annual Meeting, Atlanta, GA.
- 2017 Spatial distribution of *Yersinia pestis* in wildlife in California while accounting for sampling effort. Ecology and Evolution of Infectious Disease Annual Meeting, Santa Barbara, CA.
- 2013 Nationwide distributional determinants of an amphibian and human parasite. ESA Annual Meeting, Minneapolis, MN.

### **BIBLIOGRAPHY**

#### **Peer-reviewed Publications**

1. Johnson PTJ, **Buller ID**. Parasite competition hidden by correlated coinfection: Using surveys and experiments to understand parasite interactions. *Ecology* 92(3): 535-541; 2011. PMID:21608460
2. Fisher JA, Spaur M (co-first), **Buller ID**, Flory AR, Beane-Freeman LE, Hofmann JN, Giangrande M, Jones RR, Ward MH. Spatial heterogeneity in positional errors: a comparison of two residential geocoding efforts in the Agricultural Health Study. *Int. J. Environ. Res. Public Health* 18(4): 1687; 2021. PMID:33572119
3. **Buller ID**, Brown DW (co-first), Myers TA, Jones RR, Machiela MJ. sparrpowR: a flexible R package to estimate statistical power to identify spatial clustering of two groups. *Int. J. Health Geogr.* 20(1): 13; 2021. PMID:33736677
4. **Buller ID**, Patel DM, Weyer PJ, Prizment A, Jones RR, Ward MH. Ingestion of nitrate and nitrite and risk of stomach and other digestive system cancers in the Iowa Women's Health Study. *Int. J. Environ. Res. Public Health* 18(13):6822; 2021. PMID:34202037

5. DelNero PF, **Buller ID** (co-first), Jones RR, Tatalovich ZP, Vanderpool RC, Ciolino HP, Croyle RT. A National Map of NCI-Designated Cancer Center Catchment Areas on the 50th Anniversary of the Cancer Centers Program. *Cancer Epidemiol. Biomark. Prev.* 31(5): 965-971; 2022. PMID:35101903
6. Etemadi A, **Buller ID**, Hashemian M, Roshandel G, Poustchi H, Blount B, Keshavarzi B, Flory AR, Nasser-Moghaddam S, Dawsey SM, Freedman ND, Abnet CC, Malekzadeh R, Ward MH. Urinary nitrate and sodium in a high-risk area for upper gastrointestinal cancers: Golestan Cohort Study. *Environ. Res.* 214(20):113906; 2022. PMID:35863453
7. Shreves AH, **Buller ID**, Chase E, Creutzfeld H, Fisher JA, Graubard BI, Hoover RN, Silverman DT, Devesa SS, Jones RR. Geographic Patterns in U.S. Lung Cancer Mortality and Cigarette Smoking. *Cancer Epidemiol. Biomark. Prev.* 32(2):193-201; 2023. PMID:36413442
8. Broen K, Dickens J, Trangucci R, Ogwang MD, Tenge CN, Masalu N, Reynolds SJ, Kawira E, Kerchan P, Were PA, Kuremu RT, Wekesa WN, Kinyera T, Otim I, Legason ID, **Buller ID**, Ayers LW, Bhatia K, Biggar RJ, Goedert JJ, Wilson ML, Mbulaiteye SM, Zelner J. Burkitt Lymphoma risk shows geographic and temporal associations with Plasmodium falciparum infections in Uganda, Tanzania, and Kenya. *Proc. Natl. Acad. Sci. U. S. A.* 120(2):e2211055120; 2023. PMID:36595676
9. Jones RR, Fisher JA, Medgyesi DN, **Buller ID**, Liao LM, Gierach GL, Ward MH, Silverman DT. Ethylene oxide emissions and risk of breast cancer and non-Hodgkin lymphoma in a large U.S. cohort. *J. Natl. Cancer Inst.* 115(4):405-412; 2023. PMID:36633307
10. Conroy B, Waller LA, **Buller ID**, Hacker G, Novak M, Tucker J. A shared latent process model to correct for preferential sampling in disease surveillance. *J. Agric. Biol. Environ. Stat.* 28:483-501; 2023. DOI:10.1007/s13253-023-00535-4
11. Deng X, Launer LJ, Lawrence KG, Werder EJ, **Buller ID**, Jackson WB, Sandler DP. Association between solar radiation and mood disorders among Gulf Coast residents. *J. Expo. Sci. Environ. Epidemiol.* [Online Ahead of Print]; 2024. PMID:38831020
12. Werder EJ, Lawrence KG, Deng X, Jackson WB, Christenbury K, **Buller ID**, Engel LS, Sandler DP. Independent and joint effects of residential air pollution and greenspace on adverse mental health outcomes in the U.S. Gulf Long-term Follow-up Study. *Sci. Total Environ.* 946:174434; 2024. PMID:38960154

#### **Commentaries, Letter, and Non-Peer Reviewed Publication(s)**

13. **Buller ID**, Jones RR. Invited Commentary: Predicting incidence rates of rare cancers: adding epidemiologic and spatial contexts. *Am. J. Epidemiol.* 191(3):499-502; 2022. PMID:34875003

#### **Software Packages (Authorship)**

14. **Buller ID**, Brown DW. sparrpowR: Power Analysis to Detect Spatial Relative Clusters. R package initial version 0.1.3; 2020. DOI:10.5281/zenodo.5347998. <https://CRAN.R-project.org/package=sparrpowR>
15. **Buller ID**. gateR: Flow/Mass Cytometry Gating via Spatial Kernel Density Estimation. R package initial version 0.1.2; 2020. DOI:10.5281/zenodo.5347893. <https://CRAN.R-project.org/package=gateR>
16. **Buller ID**. envi: Environmental Interpolation using Spatial Kernel Density Estimation. R package initial version 0.1.3; 2020. DOI:10.5281/zenodo.5347827. <https://CRAN.R-project.org/package=envi>
17. **Buller ID**. ndi: Neighborhood Deprivation Indices. R package initial version 0.10; 2022. DOI: 10.5281/zenodo.6989031. <https://CRAN.R-project.org/package=ndi>

#### **Web Applications**

18. **Buller ID**, Brown DW. Spatial Power. Division of Cancer Epidemiology and Genetics at the National Cancer Institute; 2021. <https://analysis-tools.cancer.gov/spatial-power>

19. **Buller ID**, DeNero PF (co-first), Vanderpool RC, Tatalovich ZP. Catchment Areas of NCI-Designated Cancer Centers. GIS Portal for Cancer Research at the National Cancer Institute; 2022. <https://gis.cancer.gov/ncicatchment>