

CURRICULUM VITAE

Heidi E. Brown, Ph.D., M.P.H.

Contact Information

Department of Epidemiology and Biostatistics
Mel & Enid Zuckerman College of Public Health
University of Arizona
1295 N Martin
Tucson, AZ 85724-5211
P.O. Box 245211
Phone: (520) 626-2262
Fax: (520) 626-2767
E-mail: heidibrown@email.arizona.edu

Chronology of Education

- 1995 B.S., Department of Psychology, Virginia Polytechnic Institute & State University,
Major: Psychology, Minor: Biology
- 1999 M.P.H., Division of Global Health, School of Public Health, George Washington
University, Major: International Health Promotion
- Rabies in Fairfax County, VA, USA*
Advisor: Gilbert Kombe
- 2006 M.Phil., Division of Epidemiology of Microbial Diseases, Department of Epidemiology,
Yale University
- 2007 Ph.D., Division of Epidemiology of Microbial Diseases, Department of Epidemiology,
Yale University
- Into the Environment of Mosquito-Borne Disease: Spatial Analysis of Vector
Distribution Using Traditional and Remotely Sensed Methods*
Advisor: Durland Fish

Chronology of Employment

- 2007 – 2008 Postdoctoral Research Assistant, Spatial Ecology and Epidemiology Research Group,
Department of Zoology, Oxford, UK
- 2008 – 2009 Oak Ridge Institute for Science and Education (ORISE) Post-Doctoral Fellow, Division of
Vector-borne Zoonotic Diseases, Bacterial Diseases Branch, Centers for Disease Control
and Prevention, Fort Collins, CO
- 2009 – 2010 Senior Service Fellow, Division of Vector-borne Zoonotic Diseases, Bacterial Diseases
Branch, Centers for Disease Control and Prevention, Fort Collins, CO
- 2010 – 2011 Visiting Scientist, Texas Biomedical Research Institute, San Antonio, TX
- 2010 – 2013 Postdoctoral Research Associate, Applied Climate for Environment and Society
Laboratory, School of Geography and Development, University of Arizona, Tucson, AZ

- 2013 – 2019 Assistant Professor, Epidemiology and Biostatistics, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ
- 2013 – Affiliate Professor, Graduate Interdisciplinary Program – Entomology and Insect Science, University of Arizona, Tucson, AZ
- 2015 – Affiliate Professor, School of Geography and Development, University of Arizona, Tucson, AZ
- 2015 – Affiliate Professor, Graduate Interdisciplinary Program – Remote Sensing and Spatial Analysis, University of Arizona, Tucson, AZ
- 2019 – Associate Professor, Epidemiology and Biostatistics, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ

Selected Honors and Awards

- 2015 Defense Advanced Research Projects Agency (DARPA) Forecasting Chikungunya Challenge Top Solver (with Joceline Lega, UA Mathematics)
- 2018 Excellence in Teaching Award, MEZCOPH
- 2019 Fulbright-CAPES Award, Oswaldo Cruz Foundation (FIOCRUZ), Rio De Janeiro, Brazil to study *Climate effects on differential mosquito-borne disease transmission in two endemic areas*

Courses Taught

- 2013 – Introduction to Epidemiology (EPID 309). I teach this large undergraduate course in spring semesters at the University of Arizona. The course introduces students to basic principles and methods used in epidemiology. The course includes basic research designs, estimating outcome measures, and establishing cause and effect and effectiveness of interventions to prevent and cure disease. (as of 2023: 1370 students reached)
- 2014 – Spatial Epidemiology (EPID 676). This course at the University of Arizona is offered odd years and familiarizes students with spatial analysis emphasizing epidemiologic and public health applications. Students learn methodological approaches to analysis of spatial data at a level of understanding sufficient to articulate when and how to apply each method. (as of 2023: 49 students reached)
- 2019 "Public Health Adaptation for Climate Extremes" translated to "Aquecimento global e extremos climáticos e as respostas do campo da saúde pública" co taught with Dr Paul Luz at Fiocruz, Rio de Janeiro, Brazil. This course focused on how public health can influence how we talk about climate and climate adaptation. The students created infographics on deforestation and Ebola and the heavy rain warning system for Rio, among others. (2019: 4 students reached)
- 2020 – Health Data Analysis and Communication Methods (BIOS 452) co-taught with Dr Paul Hsu at the University of Arizona. This course is offered in the spring semester. The course bridges concepts in introduction to epidemiology and biostatistics to identify and implement the appropriate statistical methods to answer public health and biomedical research questions based on study and sampling designs. Students learn how to

present their results graphically to communicate findings to scientific and lay audiences. (as of 2023: 43 students reached)

- 2021 – Introduction to Mapping for Public Health (HPS 401). This course at the University of Arizona is offered as an intense (5 week) summer course intended to introduce student so mapping skills and concepts. This skill-based class has student build maps and content using Google Maps and ArcGIS products. (as of 2022: 73 students reached)
- 2013 – Guest lecturer, CPH 575 Environmental Occupational Health (twice, 47 students reached); EIS 457 Medical Veterinary Entomology (8 times, 246 students reached); CPH 660 Infectious Disease Epidemiology (once, 30 students); CPH 479 Infections and Epidemics (4 times, 143 students reached); CPH 200 Introduction to Public Health (twice, 445 students reached); CPH 309 Introduction to Epidemiology (4 times, 827 students reached); INFO 420/520 Applied Concepts in Cyberinfrastructure (once, 16 students); EPID 615 Cancer Epidemiology (twice, 36 students reached); EPID 679 One Health (once 8 students); RNR 496 Climate Assessment: Explor. Decision Support (once, 6 students); EPID 670 Chronic Disease Epidemiology (once, 13 students reached); Johns Hopkins U One Health Seminar (once, 19 students); UA Med School CPR (twice, 240 students).

Publications

Refereed Journal Articles (*denotes dissertation work; °denotes student mentored)

1. Helmbrecht, G.D., Farhat, M.Y., Lochbaum, L., **Brown, H.E.**, Yadgarova, K.T., Eglinton G.S., and Ramwell, P.W. "L-Arginine reverses the adverse pregnancy changes induced by Nitric Oxide Synthase inhibition in the rat." *Am J Obstetrics Gynecol.* 1996, 175 (4pt1):800-805.
2. Eden, G.F., Joseph, J.E., **Brown, H.E.**, Brown, C.P., and Zeffiro, T.A. "Utilizing hemodynamic delay and dispersion to detect fMRI signal change without auditory interference: the BIG technique." *Magnetic Resonance Med.* 1999, 41(1):13-20.
3. *Diuk-Wasser, M.A., **Brown, H.E.**, Andreadis, T.G., and Fish, D. "Modeling the spatial distribution of mosquito vectors for West Nile virus in Connecticut, USA." *Vector-Borne Zoonotic Diseases.* 2006, 6(3):283-95.
4. ***Brown, H.**, Diuk-Wasser, M.A., Guan, Y., Caskey, S., and Fish, D. "Comparison of three satellite sensors at three spatial scales to predict larval mosquito presence in CT Wetlands." *Remote Sensing of the Environ.* 2008, 112(5): 2301-2308.
5. ***Brown, H.E.**, Diuk-Wasser, M.A., Andreadis, T.G., and Fish, D. "Remotely-Sensed Vegetation Indices Identify Mosquito Clusters of West Nile Virus Vectors in an Urban Landscape in the Northeastern United States." *Vector-borne Zoonotic Diseases.* 2008, 8(2): 197-206.
6. ***Brown, H.E.**, Paladini, M., Kline, D., Barnard, D., and Fish, D. "Effectiveness of mosquito traps in measuring species abundance and composition." *J Med Entomol.* 2008, 45(3): 517-521.
7. ***Brown, H.E.**, Childs, J.E., Diuk-Wasser, M.A., and Fish, D. "Ecological factors associated with West Nile virus transmission, northeastern United States." *Emerging Infect Dis.* 2008, 14(10): 1539-1545.
8. Purse, B.V., **Brown, H.E.**, Harrup, L., PPC Mertens, and Rogers D.J., "Invasion of bluetongue and other orbivirus infections into Europe: the role of biological and climatic processes." *Revue scientifique et technique.* 2008, 27(2): 427-442.
9. Hartemink, N., Purse, B.V., Meiswinkel, R., **Brown, H.E.**, de Koeijer, A., Elbers, A.R., Jan Boender, G., Rogers, D.J., and Heesterbeek, H. "Mapping the basic reproduction number (R_0) for vector-borne diseases: A case study on bluetongue virus." *Epidemics.* 2009, 3(1): 153-161.
10. **Brown, H.E.**, Etestad, P., Reynolds, P., Brown, T., Hatton, E., Holmes, J., Glass, G., Gage, K., and Eisen, R. "Climatic predictors of the intra- and inter-annual distributions of plague cases in New Mexico based on 29 years of animal-based surveillance data." *Am J Tropical Med Hygiene.* 2010, 82(1): 95-102.

11. **Brown, H.E.**, Yates, K., Dietrich, G., MacMillan, K., Graham, C.B., Reese, S.M., Helterbrand, W.S., Nicholson, W.L., Blount, K., Mead, P., Patrick, S.L., and Eisen, R.J. "An acarological survey and *Amblyomma americanum* distribution map with implications for tularemia risk in Missouri." *Am J Tropical Med Hygiene*. 2011, 84(3): 411-419.
12. Cox, J., **Brown, H.E.**, and Rico-Hesse, R. "Variation in vector competence for dengue viruses does not depend on mosquito midgut binding affinity." *PLoS Neglected Tropical Diseases*. 2011, 5(5): e1172.
13. **Brown, H.E.**, Doyle, M.S., Cox, J., Eisen, R.J., and Nasci, R.S. "The effect of spatial and temporal subsetting on *Culex tarsalis* abundance models - a design for the sensible reduction of vector surveillance." *J Am Mosquito Control Assoc*. 2011, 27(2): 120-128.
14. **Brown, H.E.**, Levy, C.E., Ensore, R.E., Schriefer, M.E., DeLiberto, T.J., Gage, K.L., and Eisen, R.J. "Annual seroprevalence of *Yersinia pestis* in coyotes as predictors of interannual variation in reports of human plague cases in Arizona, USA." *Vector-Borne Zoonotic Diseases*. 2011, 11(11): 1439-1446.
15. Borchert, J.N., Eisen, R.J., Holmes, J.L., Atiku, L.A., Mpanga, J.T., **Brown, H.E.**, Graham, C.B., Babi, N., Monteneri, J.A., Ensore, R.E., and Gage, K.L. "Evaluation and Modification of Off-Host Flea Collection Techniques Used in Northwest Uganda: Laboratory and Field Studies." *J Med Entomol*. 2012, 49(1): 210-214.
16. Sedda, L., **Brown, H.E.**, Purse, B.V., Burgin, L., Gloster, J., and Rogers, D.J. "A new algorithm quantifies the roles of wind and midge flight activity in the bluetongue epizootic in North-West Europe." *Proc Royal Society Biol*. 2012, 279: 787-793. doi:10.1098/rspb.2011.2555.
17. **Brown, H.E.**, Harrington, L.C., Kaufman, P.E., McKay, T., Bowman, D.D., Nelson, C.T., Wang, D., and Lund, R. "Key Factors Influencing Canine Heartworm, *Dirofilaria immitis*, in the United States." *Parasites Vectors*. 2012, 5:245. doi: 10.1186/1756-3305-5-245
18. Wang, D., Bowman, D.D., **Brown, H.**, Harrington, L.C., Kaufman, P.E., McKay, T., Nelson, C.T., Sharp, J.L., and Lund, R. "Factors Influencing U.S. Canine Heartworm (*Dirofilaria immitis*) Prevalence." *Parasites Vectors*. 2014, 7(264). doi:10.1186/1756-3305-7-264.
19. Sedda, L., Morley, D., and **Brown, H.E.** "Characteristics of wind-infective farms of the 2006 Bluetongue Serotype 8 epidemic in Northern Europe" *EcoHealth*. 2015, 12(3): 461-7. doi: 10.1007/s10393-014-1008-x.
20. °Clark, R., Taylor, A., Garcia, F., Krone, T. and **Brown, H.E.** "Recognizing the role of skunks in human and animal rabies exposures" *Vector-Borne Zoonotic Diseases*. 2015, 15(8): 494-501. doi: 10.1089/vbz.2014.1719.
21. Nsoesie, E.O., Ricketts, P., **Brown, H.E.**, Fish, D., Durham, D.P., Mbah, M.L.N., Trudy, C., Ahmed, S., Marcellin, C., °Shelly, E., Owers, K., Wenzel, N., Galvani, A.P., and Brownstein, J.S. "Spatial and Temporal Clustering of Chikungunya Virus Transmission in Dominica" *PLoS Neglected Trop Dis*. 2015, 9(8):e0003977. doi:10.1371/journal.pntd.0003977
22. **Brown, H.E.**, Young, A., Lega, J., Andreadis, T.G., Schurich, J., and Comrie, A. "Projection of climate change influences on U.S. West Nile virus vectors" *Earth Interact*. 2015, 19:1-18. doi: [EI-D-15-0008.1](https://doi.org/10.1371/journal.pntd.0003977)
23. °Shelly, E., Ernst, K., Sterling, C., Acuna-Sota, R., and **Brown, H.E.** "A critical assessment of officially reported Chagas disease surveillance data in Mexico" *Public Health Rep*. 2016, 131(1):59-66.
24. °Bui, D., **Brown, H.**, Harris, R., and Oren, E. "Serologic evidence for fecal-oral transmission of *Helicobacter pylori*" *Am J Tropical Med Hygiene*. 2016, 94(1): 82-8. doi:10.4269/ajtmh.15-0297
25. °Haenchen, S., Hayden, M., Dickinson, K., Walker, K., Jacobs, E., **Brown, H.E.**, Gunn, J., Kohler, L., Ernst, K. "Mosquito avoidance practices and knowledge of arboviral diseases in cities with differing recent history of disease" *Am J Tropical Med Hygiene*. 2016. 15:0732. doi:10.4269/ajtmh.15-0732
26. Lega, J. and **Brown, H.E.** "Data-driven outbreak forecasting with a simple nonlinear growth model." *Epidemics*. 2016, 17:19-26.

27. **Brown, H.E.**, °Smith, C., °Lashway, S. "Influence of the length of storage on *Aedes aegypti* (Diptera: Culicidae) egg viability" *J Med Entomol.* 2016, 54(2):489-491 [10.1093/jme/tjw186](https://doi.org/10.1093/jme/tjw186)
28. °Hansen, V., Oren, E., Dennis, L., **Brown, H.E.** "Infectious Disease Mortality Trends in the United States, 1980-2014" *J Am Med Assoc.* 2016. 316(20):2149 doi:10.1001/jama.2016.12423.
29. °Reyes-Castro, P., Harris, R.B., **Brown, H.E.**, Christopherson, G. Ernst, K.C., "Spatio-temporal and neighborhood characteristics of two dengue outbreaks in two arid cities of Mexico" *Acta Tropica.* 2017, 167:174-182; [doi:10.1016/j.actatropica.2017.01.001](https://doi.org/10.1016/j.actatropica.2017.01.001)
30. °Langston, M.E., Dennis, L.K. Lynch, C.F., Roe, D.J., **Brown, H.E.** "Temporal trends in satellite-derived erythematous UVB and implications for ambient sun exposure assessment" *Intern J Environ Res Public Health.* 2017, 14(2):E176. [10.3390/ijerph14020176](https://doi.org/10.3390/ijerph14020176)
31. **Brown, H.E.**, Barrera, R. Comrie, A.C., Lega, J. "Effect of temperature thresholds on modeled *Aedes aegypti* population dynamics" *J Med Entomol.* 2017, 54(4):869-877. [doi:10.1093/jme/tjx041](https://doi.org/10.1093/jme/tjx041)
32. Lega, J., **Brown, H.E.**, Barrera, R. "*Aedes aegypti* abundance model improved with relative humidity and precipitation-driven egg hatching" *J Med Entomol.* 2017, 54(5):1375-1384. [doi:10.1093/jme/tjx077](https://doi.org/10.1093/jme/tjx077)
33. **Brown, H.E.**, Cox, J., Comrie, A.C., Barrera, R. "Habitat and density of oviposition opportunity influences *Aedes aegypti* (Diptera: Culicidae) flight distance" *J Med Entomol.* 2017, 54(5):1385-1389. [doi: 10.1093/jme/tjx083](https://doi.org/10.1093/jme/tjx083)
34. °Murakami, T., °Scranton, R. **Brown, H.E.**, Harris, R.B., Chen, Z., Musuku, S., and Oren, E. "Management of *Helicobacter pylori* in the United States: Results from a national survey of gastroenterology physicians" *Prevent Med.* 2017, 100:216-222. [doi:10.1016/j.yjmed.2017.04.021](https://doi.org/10.1016/j.yjmed.2017.04.021)
35. °Driscoll, L.J., **Brown, H.E.**, Harris, R.B., Oren, E. "Population knowledge, attitude and practice regarding *H. pylori* transmission and outcomes: A literature review" *Frontiers Public Health.* 2017, 5(144)1-6. doi.org/10.3389/fpubh.2017.00144.
36. **Brown, H.E.**, °Mu, W., Khan, M., Tsang, C., Liu, J., Tong, D. "Spatial scale in environmental risk mapping: A Valley fever case study" *J Public Health Res.* 2017, 6(2):886. doi: 10.4081/jphr.2017.886
37. Luz, P.M., °Johnson, R.E., **Brown, H.E.** "Workplace availability, risk group and perceived barriers predictive of 2016-17 influenza vaccine uptake in the United States: a cross-sectional study" *Vaccine.* 2017, 35(43):5890-5896. doi.org/10.1016/j.vaccine.2017.08.078
38. Del Valle, S.Y., McMahon, B.H., Asher, J., Hatchett, R., Lega, J., **Brown, H.E.**, Leany, M., Pantazis, Y., Roberts, D.J., Moore, S., Peterson, A.T., Escobar, L.E., Quio, H., Hengartner, N.W., Mukundan, H. "Summary results of the 2014-2015 DARPA Chikungunya Challenge" *BMC Infect Dis.* 2018, 18:245. [doi: 10.1186/s12879-018-3124-7](https://doi.org/10.1186/s12879-018-3124-7).
39. °Bui, D.P., Oren, E., Roe, D.J., **Brown, H.E.**, Harris, R.B., Knight, G., Gilman, R., Grandjean, L., "A Case Control Study to Identify Community Venues Associated with Genetically Clustered Multidrug Resistant Tuberculosis Disease in Lima, Peru." *Clinical Infect Dis.* 2018, ciy746, <https://doi.org/10.1093/cid/ciy746>.
40. Isoe, J., Koch, L.E., Isoe, Y.E., Rascon, A.A., **Brown, H.E.**, Massani, B.B., Miesfeld, R.L. "Identification and characterization of the mosquito-specific eggshell organizing factor in *Aedes aegypti* mosquitoes" *PLoS Biology.* 2019, 17(1): e3000068, <https://doi.org/10.1371/journal.pbio.3000068>
41. °Florea, A., **Brown, H.E.**, Harris, R.H., Oren, E. "Ethnic Disparities in Gastric Cancer Presentation and Screening Practice in US: Analysis of 1997-2010 SEER-Medicare Data" *Cancer Epidemiol, Biomarkers & Prevent.* 2019, 28(4):659-665. DOI: [10.1158/1055-9965.EPI-18-0471](https://doi.org/10.1158/1055-9965.EPI-18-0471)
42. Luz, P.M., **Brown, H.E.**, Struchiner, C.J. "Disgust as an emotional driver of vaccine attitudes and uptake? A mediation analysis" *Epidemiol Infect.* 2019, 147(e182):1-8, <https://doi.org/10.1017/S0950268819000517>
43. °Thompson, C., °Saxberg, K., Lega, J., Tong, D., **Brown, H.E.** "A cumulative gravity model for inter-urban spatial interaction at different scales" *J Transport Geography.* 2019, 79: Online. <https://doi.org/10.1016/j.jtrangeo.2019.102461>.

44. Dennis, L.K., **Brown, H.E.**, Farland, L.V. "DSM II Colorimeter for measuring skin color: its usefulness and reliability of its measurement of melanin" *J Dermatol Cosmetic Treatment*. 2019; 1(1):1-5.
45. **Brown, H.E.**, Dennis, L., °Lauro, P.L., Purva, J., °Pelley, E., Oren, E. "Emerging Evidence for Infectious Causes of Cancer in the United States" *Epidemiol Reviews*. 2019, 41(1): 82-96.
46. Smiley-Evans, T., Shi, Z., Boots, M., Wenjun, L., Olival, K., Xiao, X., VandeWoude, S., **Brown H.E.**, Chen, J.L., Civitello, D., Escobar, L.E., Grohn, Y.T., Li, H., Lips, K.R., Liu, Q., Liu J., Martinez Lopez, B., Shi., J., Shi., X., Xu, B., Lihong, Y.L., Zhu, Y., Getz, W.M. "Synergistic China-US Ecological Research is Essential for Global Emerging Infectious Disease Preparedness" *EcoHealth*, 2020, 17:160-173. <https://doi.org/10.1007/s10393-020-01471-2>.
47. Austhof, E., Berisha, V., McMahan, B., Owen, G., Keith, L., Roach, M., **Brown, H.E.** "Participation and Engagement of Public Health Stakeholders in Climate and Health Adaptation" *Atmosphere*. 2020, 11(265): 1-12. [DOI:10.3390/atmos11030265](https://doi.org/10.3390/atmos11030265).
48. Lega, J., **Brown, H.E.**, Barrera, R. "A 70 percent reduction in mosquito populations does not require removal of 70 percent of mosquitoes." *J Med Entomology*. 2020, 57(5):1668-1670. [doi: 10.1093/jme/tjaa066](https://doi.org/10.1093/jme/tjaa066)
49. °Cook, A. Harris, R., **Brown, H.E.**, Bedrick, E. Geospatial Characteristics of Non-Motor Vehicle and Assault-Related Trauma Events in Greater Phoenix, Arizona. *Injury Epidemiology*. 2020, 7:34. <https://rdcu.be/b4Ujg>
50. °Baum, C.E., **Brown, H.E.**, Seifeldin, I., Ramadan, M.E., Lott, B., Nguyen, A., Hablas, A., "Regional variation of pancreatic cancer incidence in the Nile delta region of Egypt over a twelve-year period." *J Cancer Epi*. 2020, 2020:6031708. doi.org/10.1155/2020/6031708
51. **Brown, H.E.** and Cox, J. "Toward an educated citizenry: benefits of instructional teams in undergraduate epidemiology." *Am J Epidemiol*. 2021, 190(2):305-312.
52. **Brown, H.E.**, Sedda, L., Sumner, C., Stefanakos, E., Ruberto, I., Roach, M. Understanding mosquito surveillance data for analytic efforts: A case study. *J Med Entomol*, 2021, 58(4): 1619-1625. doi.org/10.1093/jme/tjab018
53. °Bui, D.P., Oren, E., **Brown, H.E.**, Harris, R.B., Knight, G.M., Grandjean, L. "Community transmission of multidrug-resistant tuberculosis is associated with activity space overlap in Lima, Peru." *BMC Infectious Dis*, 2021, 21(275). doi.org/10.1186/s12879-021-05953-8
54. Austhof, E., **Brown, H.E.**, Flexibility and partnerships perceived as supportive of dual hazard response: COVID-19 and Heat Related Illness, Summer 2020. *J Clim Chang Health* 2021. 4:100068. [doi:10.1016/j.joclim.2021.100068](https://doi.org/10.1016/j.joclim.2021.100068)
55. °Tang, X., Sedda, L., **Brown, H.E.**, Predicting eastern equine encephalitis spread in North America: an ecological study. *Current Res Parasitol VBD*. 2021. 1:100064. doi.org/10.1016/j.crvpbd.2021.100064
56. Chakravarti, I. Miranda-Schaeubinger, M., Ruiz-Remigio, A., Briones-Garduño, C., Fernández-Figueroa, E.A., Villanueva-Cabello, C.C., Borge-Villareal, A., Bejar-Ramírez, Y., Pérez-González, A., Rivera-Benitez, C., Oren, E., **Brown, H.E.**, Becker, I, Gilman, R.H. Chagas disease in pregnant women from endemic regions attending the Hospital General de Mexico, Mexico City. *Trop Med Infect Dis*. 2022, 7(1), 8. doi.org/10.3390/tropicalmed7010008
57. Sheng, Z.Y., Li, M., Yang, R., Liu, Y.H., Yin, X.X., Mao, J. R., **Brown, H.E.**, Zhou, H.N., Wang, P.G., An, J. COVID-19 prevention measures reduce dengue spread in Yunnan Province, China, but do not reduce established outbreak, *Emerging Microbes & Infections*. 2022. 11(1): 240-249. DOI: [10.1080/22221751.2021.2022438](https://doi.org/10.1080/22221751.2021.2022438)
58. Harris, R.B., **Brown, H.E.**, °Begay, R., Sanderson, P., Chief, C. Monroy, F., Oren, E. *Helicobacter pylori* prevalence and associate risk factors in three rural Navajo communities of Northern Arizona: a cross-sectional study. *Int J Environ Res Public Health*. 2022, 19, 797. doi.org/10.3390/ijerph19020797
59. °Langston, M.E., **Brown, H.E.**, Lynch, C.F., Roe, D.J., Dennis, L.K., "Ambient UVR is a risk factor for cutaneous melanoma in Iowa." *Int J Environ Res Public Health*. 2022, 19,1742. [10.3390/ijerph19031742](https://doi.org/10.3390/ijerph19031742)

60. °Catalfamo, C.J., **Brown, H.E.**, Dennis, L.K. "Evaluating the strength of association of human papillomavirus infection with penile carcinoma: a meta-analysis." *J Sexually Transmitted Infections*. 2022, 49(5):368-376.
61. Monroy, F.P., **Brown, H.E.**, Sanderson, P.R., Jarrin, G., Mbegbu, M., Kyman, S., Harris, R.H. *Helicobacter pylori* in Native Americans in Northern Arizona. *Diseases*. 2022, 10(19). [10.3390/diseases10020019](https://doi.org/10.3390/diseases10020019)
62. **Brown, H.E.**, Keith L., °Madera-Garcia V., Taylor A., Ramirez N., Ogata, I. "Greening up for mosquitoes: A comparison of green stormwater infrastructure in a semi-arid region". *J Am Mosq Control Assoc* 2022, 38(2):109-112. <https://doi.org/10.2987/21-7055>
63. °Moore, T., **Brown, H.E.** Estimating *Aedes aegypti* (Diptera: Culicidae) flight distance: Meta-data analysis. *J Medical Entomol*. 2022, 59(4): 1165-1170. [10.1093/jme/tjac070](https://doi.org/10.1093/jme/tjac070)
64. °Austhof, E., **Brown, H.E.** Global Warming's Six MTurks: a secondary analysis of a US-based Online Crowdsourcing Market. *Int J Envi Research and Public Health*. 2022, 19(14): 8320. <https://www.mdpi.com/1660-4601/19/14/8320/pdf>
65. °Rowitt, J., **Brown, H.E.** Disaster event effects on cat and dog populations within United States animal care facility services: A cross sectional study, *PLoS Climate*. 2022, 1(8):e0000066. <https://doi.org/10.1371/journal.pclm.0000066>
66. Kamana E., Bai D., **Brown H.E.** & Zhao J. The malaria transmission in Anhui province China, *Infectious Disease Modelling*. 2023, 8(1):1-10. doi: <https://doi.org/10.1016/j.idm.2022.11.009>.
67. °Bailey, K.S., **Brown, H.E.**, Lekic, V., Kathi, P., Merchant, J.L., Harris, R.B. *Helicobacter pylori* treatment knowledge, access and barriers: a cross-sectional study, *Helicobacter*. 2023. e12954. Advance online publication. <https://doi.org/10.1111/hel.12954>
68. Dennis. L.K., **Brown, H.E.**, Arrington, A.K.K. Insights into Merkel Cell carcinoma and melanoma etiology: Comparison of characteristics for cutaneous malignant melanoma, Merkel cell carcinoma and mucosal melanoma rates. *Current Oncology*. 2023, 30:3974–3988.

Invited Commentary

69. **Brown, H.E.** and Cox, J. "Don't forget formative assessment." *Am J Epidemiology*. 2021, 190(2):317.

Textbooks

1. Oren, E., **Brown, H.E.**, *Infectious Disease Epidemiology: An Introduction*. Springer Publishing, 2022.

Chapters and Reports (+ denotes peer reviewed chapter; °denotes student mentored)

2. Hudspeth, W., Reisen, W.K., Barker, C.M., Kramer, V., Caian, M., Craciunescu, V., **Brown, H.E.**, Comrie, A.C., Zelicoff, A., Ward, T.G., Ragain, R.M., Simpson, G., Stanhope, W., Kass-Hout, T.A., Scharl, A., Sonricker, A.L., Brownstein, J.S. to "Chapter 10: Information Support Systems," *Environmental Tracking for Public Health Surveillance*. Morain, S.A. and Budge, A.M. (eds). 2012, London: Taylor & Francis Group.
3. ***Brown, H.E.**, Comrie, A., Drechsler, D., Barker, C.M., Basu, R., Brown, T., Gershunov, A., Kilpatrick, A.M., Reisen, W.K., and Ruddell, D. *Review Editor: English, P.* "Chapter 15: Health Effects of Climate Change in the Southwest," *Assessment of Climate Change in the Southwest United States: a Technical Report Prepared for the U.S. National Climate Assessment*. Garfin, G., Jardine, A., Merideth, R., Black, M., and Overpeck, J. (eds.) 2013, Tucson, AZ: Southwest Climate Alliance.
4. **Brown, H.E.**, Comrie, A.C., Tamerius, J., Khan, M., Tabor, J.A., Galgiani, J.N. "Climate, windstorms, and the risk of valley fever (Coccidioidomycosis)," *The Influence of Global Environmental Change on Infectious Disease Dynamics: Workshop Summary*. 2014, Washington, DC: The National Academies Press.
5. Ernst, K.C., Morin, C., **Brown, H.E.** "Extreme Weather Events and Vector-borne Diseases," *Public Health in Natural Disasters: Nutrition, Food, Remediation and Preparation* (Watson, R.R.,

- Tabor, J.A., Ehiri, J.E., and Preedy, V.R. (eds.) 2014, The Netherlands: Wageningen Academic Publishers.
6. *National Academies of Science, Engineering, and Medicine. *Review of the Draft Interagency Report on the Impacts of Climate Change on Human Health in the United States*. 2015. Washington, DC: National Academies Press.
 7. Roach, M., **Brown, H.E.**, Wilder, M., Smith, G. R., Chambers, S., Patten, I. E., °Rabby, Q. (2017) *Assessment of Climate and Health Impacts on Vector-Borne Diseases and Valley Fever in Arizona*. A report prepared for the Arizona Department of Health Services and the United States Centers for Disease Control and Prevention Climate-Ready States and Cities Initiative. <http://www.azdhs.gov/preparedness/epidemiology-disease-control/extreme-weather/index.php#news-publications>
 8. Roach, M., Barrett, E., **Brown, H.E.**, Dufour, B., Hondula, D.M., Putnam, H., Sosa, B. (2017) *Arizona's Climate and Health Adaptation Plan*. A report prepared for the United States Centers for Disease Control and Prevention Climate-Ready States and Cities Initiative. <http://www.azdhs.gov/preparedness/epidemiology-disease-control/extreme-weather/index.php#news-publications>
 9. Roach, M., **Brown, H.E.**, °Clark, R., Hondula, D., Lega, J., °Rabby, Q., °Schweers, N., Tabor, J. (2017) *Projections of Climate Impacts on Vector-Borne Diseases and Valley Fever in Arizona*. A report prepared for the Arizona Department of Health Services and the United States Centers for Disease Control and Prevention Climate-Ready States and Cities Initiative. <http://www.azdhs.gov/preparedness/epidemiology-disease-control/extreme-weather/index.php#news-publications>
 10. Gonzalez, P., Garfin, G.M., Breshears, D.D., Brooks, K.M., **Brown, H.E.**, Elias, E.H., Gunasekara, A., Huntly, N., Maldonado, J.K., Mantua, N.J., Margolis, H.G., McAfee, S., Middleton, B.R., and Udall, B.H. (2018). Southwest. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., Avery, C.W., Easterling, D.R., Kunkel, K.E., Lewis, K.L.M., Maycock, T.K., and Stewart, B.C. (eds.)]. U.S. Global Change Research Program, Washington, DC, USA. doi: [10.7930/NCA4.2018.CH25](https://doi.org/10.7930/NCA4.2018.CH25)
 11. Roach, M., Austhof, E., Berisha, V., **Brown, H.E.**, Carr, D., Harlow-Smith, L., Hondula, D., and Snyder, K. (2018). Addendum to the Arizona Climate and Health Adaptation Plan. A report prepared for the United States Centers for Disease Control and Prevention Climate-Ready States and Cities Initiative.
 12. **Brown, H.E.**, °Hess, G., Austhof, E. (2018) Scoping report on the geospatial display of vector surveillance data and vector-borne disease outcomes. A report prepared for the Arizona Department of Health Services.
 13. Austhof E.C., Anderson C.L., Berisha V., Gettel, A., Domky, I., Brown, A.F., Hondula, D.M., **Brown, H.E.** Nguyen, H. [Gap Analysis of Climate and Health Research in Arizona: A report by the Research Action Team of Bridging Climate Change and Public Health in cooperation with the Maricopa County Department of Public Health](#). September 4, 2020. maricopa.gov/climateandhealthworkgroup
 14. Dennis, L.K., Lynch, C.F., **Brown, H.E.**, Laukaitis, C., °Lashway, S., °Smith, E. Cancer In: Boulton ML, Wallace RB. eds. Maxcy-Rosenau-Last Public Health & Preventive Medicine, 16e. New York: McGraw Hill; 2022. <https://accessmedicine.mhmedical.com/book.aspx?bookID=3078#255959778>
 15. Chambers, S., **Brown, H.E.**, Keith, L., & °Austhof, E. 2022. Summary of Body Heat Storage Layer Development. 2022. A Report for the Arizona CDC Building Resilience Against Climate Effects (BRACE) project.
 16. °Von Ohlen, K., **Brown, H.E.**, Keith, L., °Austhof, E., Watkins, L., Chambers, S. 2022. Summary of Pima County Cooling Center Spatial Optimization. A Report for the Arizona CDC Building Resilience Against Climate Effects (BRACE) project.

1. Online mapping of cooling center locations for Pima County. Last update: 5/28/2022. Available <https://arcg.is/01zfLq0>; Re-posted on Pima Association of Governments [Resilience map](#). Last updated 2022
2. Co-production of free Continuing Medical Education module, Heat Related Illness available: <https://azclimatehealth.arizona.edu/cme>

Selected Conferences/Scholarly Presentations

- 2013 “Climate and the re-emergence of Eastern Equine Encephalitis in the northeastern US” Session 56 “Climate Change and Human Health” at The 5th International Conference on Medical Geology, Hilton Crystal City Hotel, Arlington, VA
- 2013 “Vector-borne disease invasions: what did West Nile virus teach us?” in the Mini-Symposium: *MS29. Recent advances on modeling study of vector-borne diseases* SIAM (Society for Industrial and Applied Mathematics) Conference on the Life Sciences. Tempe, AZ
- 2014 Co-Host and Organizer of the *H. pylori to stomach cancer and everything in-between* symposium, MEZCPH, University of Arizona, Tucson, AZ
- 2017 “The Changing Climate of Vector-borne Diseases” at Belmont University, College of Sciences & Mathematics, 12th Annual Environmental Science Lecture Series, Nashville, TN
- 2018 “Climate Effects on Mosquito-Borne Disease: Lessons from Arizona” Center for Health informatics, Computing and Statistics, Lancaster University Medical School, Bailrigg, Lancaster, UK
- 2018 “Climate influences on the distribution of mosquito vectors” in the MUVE Section Symposium: Predicting Vector-Borne Disease Spread in Changing Natural and Social Landscapes at the Entomological Society of America, Vancouver, Canada
- 2018 “Supporting Health Strategic Planning through Vector-Borne Disease Predictions” in the symposium, Developing Climate, Public Health, and Citizen Science Services to Predict and Prevent Climate-Sensitive Health Risks and Serve the Public Good at the 2018 Fall Meeting of the American Geophysical Union (AGU) in Washington DC
- 2018 Plenary and Panel Discussion: State of Practice, Public Health and Adaptation Issues in the SW, SW Adaptation Forum, Tucson, AZ
- 2019 Emerging Issues in Climate Change and Human Health, Meeting of Experts. “Facing the Future of Vector-Borne Disease” in Session 1: Disease Transmission in a Changing Climate. Hosted at National Academies of Science by National Academy of Medicine and Burroughs Wellcome, Washington, DC
- 2022 “Responding to the Health Effects of Climate Change”, in UA Psychology Department’s Psychological Science and the Climate Crisis: Thinking globally, Acting locally. Online, UA Psychology Department, Tucson, AZ
- 2022 “*Helicobacter pylori* Infection: A Woven Investigation of Prevalence and Risk Factors in Northern Arizona” with Harris, R., Monroy, F., and Sanderson, P.R. at the 15th Annual Tribal Collaborative on Cancer Speaker Series hosted by ADHS, Phoenix, AZ (Zoom)

2022 "Mitigating Climate Change through Public Health Strategies." Amrita University 5th International Public Health Conferences on *Climate Change: A Public Health Threat*. Kochi, Kerala, India (Zoom)

Active Grants and Contracts

Federal Government

2019 – 2024 Partnership for Native American Cancer Prevention, National Cancer Institute, (PI- Briehl) \$7,620,155

- *Helicobacter pylori* and stomach cancer among Native American Populations, (PI- Harris, R.B., Monroy, F., Merchant, J. & **Brown, H.E.**) \$654,290.53
- COVID-19 Pandemic Impact on Navajo Adults and Health Care Workers, (PI- Brown, H.E. and Sanderson, P.) \$166,201 [supplement]

2022 – 2027 The Climate Assessment for the Southwest (CLIMAS): Phase Five Cultivating Equitable Responses to Increased Aridity in the US Southwest: The Climate Assessment for the Southwest NOAA-OAR-CPO-2022-2007019 (PI: Ferguson, D. (Lead), **Brown, H.E.**, Crimmins, M.A., Dubois, D., Lane, T., Owen, G., McMahan, B., Meadow, A., Woodhouse, C.) \$5,174,808

2022 – 2027 *Southwest Urban Corridor Integrated Field Laboratory* (SW-IFL). DOE. (PI: Sailor, D. (ASU); Co-Is: Keith, L. (UArizona), Gurney K., (NAU), Lamer, K., (Brookhaven National Laboratory), New, J. (Oak Ridge National laboratory). \$25M

- *U Arizona's Resilient Solutions* (PI – Solis, P, Keith, L., Co-I's, **Brown, H.E.**, Currans, K., Garfin, G., Kear, M., Kokroko, K., Lim, C., Thomas-Hilburn, H., Stoker, P.) \$3.5M

State Government

2021 – 2025 Building Resilience Against Climate Effects: Implementation and Evaluation. Arizona Department of Health Services (**Contract PI: Brown, H.E.**) \$486,504

Private Foundation

2019 – 2024 *Helicobacter pylori Prevalence in Underserved Populations*. Art Chapa Foundation. (PI: Chen, Z. **Collaborators:** Harris, R., **Brown, H.E.**) \$42,000

2022 – 2023 Barriers to Treatment and Testing for *Helicobacter pylori* among Navajo. John Wayne Foundation. (PI- Robin Harris, **Co-I Heidi Brown**) \$9,885

University

2023 *From Africa to Europe and west to the US: creating operational research in vector-borne diseases*. University of Lancaster Global (PI: Sedda, L. **Co-I Heidi Brown**) £10,000