

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

Contact Information

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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

2004 – 2007 Graduate Student, Vector Ecology Laboratory, Department of Epidemiology of Microbial Diseases, Yale University, New Haven, CT

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 (Primary Appointment)
- 2013 – 2019 Assistant Professor, Graduate Interdisciplinary Program – Entomology and Insect Science, University of Arizona, Tucson, AZ (Joint Appointment)
- 2015 – 2019 Assistant Professor, School of Geography and Development, University of Arizona, Tucson, AZ (Joint Appointment)
- 2015 – 2019 Assistant Professor, Graduate Interdisciplinary Program – Remote Sensing and Spatial Analysis, University of Arizona, Tucson, AZ (Joint Appointment)
- 2019 – 2024 Associate Professor, Epidemiology and Biostatistics, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ (Primary Appointment)
- 2019 – 2024 Associate Professor, Graduate Interdisciplinary Program – Entomology and Insect Science, University of Arizona, Tucson, AZ (Joint Appointment)
- 2019 – 2024 Associate Professor, School of Geography and Development, University of Arizona, Tucson, AZ (Joint Appointment)
- 2019 – 2024 Associate Professor, Graduate Interdisciplinary Program – Remote Sensing and Spatial Analysis, University of Arizona, Tucson, AZ (Joint Appointment)
- 2023 – 2024 Associate Professor, Department of Medicine, University of Arizona, Tucson, AZ (Joint Appointment)
- 2024 – Program Director - Epidemiology, Department of Epidemiology and Biostatistics, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ
- 2024 – Professor, Epidemiology and Biostatistics, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ (Primary Appointment)
- 2024 – Professor, Graduate Interdisciplinary Program – Entomology and Insect Science, University of Arizona, Tucson, AZ (Joint Appointment)
- 2024 – Professor, School of Geography and Development, University of Arizona, Tucson, AZ (Joint Appointment)
- 2024 – Professor, Graduate Interdisciplinary Program – Remote Sensing and Spatial Analysis, University of Arizona, Tucson, AZ (Joint Appointment)
- 2024 – Professor, Department of Medicine, University of Arizona, Tucson, AZ (Joint Appointment)

Honors and Awards

- 2004 – 2007 McDougal Fellow for Academic and Student Life- Community Service, Career Services and Coordinating Fellow, Yale University, New Haven, CT
- 2005 Student Presentation Award, “Predicting mosquito species distribution using satellite imagery,” Society for Vector Ecology 37th Annual Conference, Anchorage, AK
- 2005 McColgan Grant-in-Aid, “Wetland Types: Hyperspectral Image Analysis and Mosquito Sampling,” Northeast Mosquito Control Association annual conference, Northhampton, MA
- 2005 Summer Travel Award, “Modeling of Vector-Borne Disease Epidemics,” Yale Council on Southeast Asia Studies, Yale University, New Haven, CT; Host: Institute for Research Development, Mahidol University, Bangkok Thailand
- 2015 Defense Advanced Research Projects Agency (DARPA) Forecasting Chikungunya Challenge Top Solver (with Joceline Lega, UArizona 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”

Service

Local/State Outreach (not limited to period in current rank)

- 2013 Volunteer, “Joy of Roaches” at the Insect Festival, Student Union, University of Arizona, Tucson, AZ
- 2013 Presenter, “Where’s Cocci? Valley Fever and the Weather” at the Valley Fever Center for Excellence’s free public forum *Learn About Valley Fever: Ask the Doctors*, UA Bio5 Institute, University of Arizona, Tucson, AZ
- 2013 Presenter, “Climate Change Related Health Vulnerabilities in AZ and the Southwest” at the Physicians for Social Responsibility sponsored conference *Climate Smart Southwest: Ready or Hot*, Tucson Convention Center, Tucson, AZ
- 2013 Presenter, “Eastern Equine Encephalitis – Is climate change to blame?” at the Pima County SWAT – Strategic Warriors Against Transmission’s monthly meeting, Abrams Building, Pima County Health Department, Tucson, AZ
- 2013 Presenter, “Climate Change and Health in the Southwest: An Urban Perspective” at the City of Tucson; Office of Conservation & Sustainable Development’s *Urban Heat Island Workshop*, Tucson, AZ
- 2013 Judge, Public Health Research Poster Forum, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ

- 2014 Presenter, "Climate Change and You(r Health, Arizona)" at the UA's *Environment Science Café*, Gentle Ben's Restaurant, Tucson, AZ
- 2014 Co-organizer, "Climate and Health" Workshop, CLIMAS (Climate Assessment for the Southwest), Marshall Building, University of Arizona, Tucson, AZ
- 2014 Presenter, "Valley Fever and Weather" at the National Weather Service's *AZ Dust Storm Workshop*, Casa Grande Public Safety Building, Casa Grande, AZ
- 2015 Presenter, "Simulation Modeling of Public Health Interventions on Dengue Vector Abundance" at the Biosphere-2 Interpretive Specialists Morning Meeting, Oracle, AZ
- 2015 Judge, Public Health Research Poster Forum, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ
- 2015 Presenter, "Simulation Modeling of Public Health Interventions on Dengue Vector Abundance" to Arizona Center for STEM Teachers, Biosphere-2, Oracle, AZ
- 2015 Panel Member, Undergraduate Research Opportunities Consortium (UROC) Graduate School Symposium, University of Arizona, Tucson, AZ
- 2016 Presenter, "Addressing mosquito-borne disease spread" to the Casas Adobes Rotary, La Paloma Country Club, Tucson, AZ
- 2021 Presenter, "*Health Implications of Urban Heat In Arid SW.*" in City of Tucson and Tucson Water's 12th Urban Heat Island Workshop: Urban Heat Island and Equity, Tucson, AZ
- 2022 Facilitator, Workshop, 6th Annual Arizona Extreme Heat Planning Workshop, UArizona, Arizona State University, Arizona Department of Health Services, National Oceanic and Atmospheric Administration (Zoom).
- 2022 Developer, Online / public map 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](#)
- 2024 Presenter, "Supporting Heat Resilience in Pima County" Making Action Possible (MAP) Webinar: Arizona's Heat-Related Health Impacts. www.mapazdashboard.arizona.edu. Panel: Slade Smith (MEZCOPH Applied Health Policy Institute), Heidi Brown, Jeremiah Dean (City of Tucson). 56 participants

National/International Outreach

- 2016 Guest facilitator, *Climate Adaptation Planning Workshop*, Tohono O'odham Recreation Center, Sells, Tohono O'odham Nation
- 2021 Building collaborative relationships with medical professionals in the Southwest. As part of ASAP {American Society of Adaptation Professionals} Private Sector Climate Service Providers Academy. Hosted by Adaptation International.

- 2021 Panelist, KTNN call-in about *Helicobacter pylori* and COVID on the Navajo Nation
- 2022 Developer, Continuing Medical Education course, *Heat Related Illness*.
<https://azclimatehealth.arizona.edu/cme>

Departmental Committees

- 2013 Department, MPH Selection Committee, Member
- 2013 Department, Student Handbook Review Committee, Member
- 2014 – EPID Program, PhD/MS Graduate Student Admissions Committee, Member
- 2016 EPIDBIOS Department, Annual Performance Review Committee, Member
- 2018 Epidemiology and Biostatistics, Faculty Search Committee, Member
- 2019 – EPID Program, MPH Graduate Student Admissions Committee, Member
- 2020 – 2021 One Health Program, MPH Graduate Student Admissions Committee, Member
- 2020 EPIDBIOS Department, Annual Performance Review Committee, Member
- 2020 EPIDBIOS Department, Promotion and Tenure Committee, Chair
- 2021 EPIDBIOS Department, Promotion and Tenure Committee, Member
- 2024 EPIDBIOS Department, Promotion and Tenure Committee, Member

MEZCOPH Committees

- 2015 Department Chair Five-Year Review Committee, Member
- 2016 – 2017 Research Advisory Committee, Member
- 2016 – Undergraduate Education Committee, Member

University Committee(s)

- 2013 Entomology and Insect Science, Chapman Prize for excellence in graduate research Selection Committee, Member
- 2014 – 2017 Institute of the Environment, Faculty Advisory Committee, Member
- 2015 – 2016 Undergraduate Biology Research Program (UBRP), Selection and Advisory Committee, Member
- 2016 Ecology and Evolutionary Biology Department, Integrative Evolutionary Biologist Search Committee, Member
- 2016 – 2019 Undergraduate Council, Curriculum & Policies Subcommittee, MEZCOPH Representative
- 2017 Senior Vice Provost, Academic Affairs Five Year Review Committee, Member

- 2017 Ecology and Evolutionary Biology Department, Integrative Evolutionary Biologist Search Committee, Member
- 2021 School of Natural Resources and Environment, Zoonotic disease/One Health Wildlife Search Committee, Member
- 2022 Southwest Environmental Health Center, Pilot Grant Review Committee, Ad Hoc member
- 2024 Undergraduate Biology Research Program (UBRP) Selection Committee

Other Committee(s) (not limited to period in current rank)

- 2016 CDC Review Panel CK17-005: “Vector-Borne Disease Regional Centers of Excellence”
- 2017 NSF Population and Community Ecology *ad hoc* reviewer
- 2018 NSF Mathematical Biology *ad hoc* reviewer
- 2019 Reviewer, Research Programs on Migration and Health (PiMSA), a UC Berkeley health initiative for the Americas
- 2020 Reviewer, Austrian Science Fund
- 2021 Reviewer, NIH The Infectious, Reproductive, Asthma and Pulmonary Conditions (IRAP) Study Section
- 2021 Reviewer, Université Catholique de Louvain, Brussels, Belgium
- 2022 Reviewer, NIH, F-18 Epidemiology and Population Sciences Fellowship
- 2023 Reviewer, National Academy of Sciences, Gulf Resilience Program

Editorial or Journal Reviewer

- 2019 – Reviewer: *Acta Tropica, American Journal of Tropical Medicine and Hygiene, EcoHealth, Emerging Infectious Diseases, Journal of the American Mosquito Control Association, Journal of Medical Entomology, One Health, PLoS Neglected Tropical Diseases, Remote Sensing of Environment, Vectorborne Zoonotic Diseases* among others
- 2022 – 2023 Editor *Viruses* with Maciel-De-Freitas, R., Sikulu-Lord, M.

Publications

Textbooks

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

Chapters (+ denotes peer review; °denotes student mentored)

- 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.

2. **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.
3. 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.
4. 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)
5. 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>

Technical Reports and Workshop Summaries (* denotes peer review; °denotes student mentored)

6. **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.
7. *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.
8. Roach, M., **Brown, H.E.**, Wilder, M., Smith, G. R., Chambers, S., Patten, I. E., °Rabby, Q. *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. 2017
<http://www.azdhs.gov/preparedness/epidemiology-disease-control/extreme-weather/index.php#news-publications>
9. Roach, M., Barrett, E., **Brown, H.E.**, Dufour, B., Hondula, D.M., Putnam, H., Sosa, B. *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. 2017
<http://www.azdhs.gov/preparedness/epidemiology-disease-control/extreme-weather/index.php#news-publications>
10. Roach, M., **Brown, H.E.**, °Clark, R., Hondula, D., Lega, J., °Rabby, Q., °Schweers, N., Tabor, J. *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. 2017
<http://www.azdhs.gov/preparedness/epidemiology-disease-control/extreme-weather/index.php#news-publications>
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. 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. 2018
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. Chambers, S., **Brown, H.E.**, Keith, L., & °Austhof, E. Summary of Body Heat Storage Layer Development. 2022. A Report for the Arizona CDC Building Resilience Against Climate Effects (BRACE) project. 2022.
15. °Von Ohlen, K., **Brown, H.E.**, Keith, L., °Austhof, E., Watkins, L., Chambers, S. Summary of Pima County Cooling Center Spatial Optimization. A Report for the Arizona CDC Building Resilience Against Climate Effects (BRACE) project. 2022
16. **Brown, H.E.**, Jernberg, J., Wishnie, J. Cooling Center Evaluation Pilot: A Summary Report. A Report for the Arizona CDC Building Resilience Against Climate Effects (BRACE) project. 2024

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.**, Ettestad, 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/10.1002/eat2.1008)
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

30. °Langston, M.E., Dennis, L.K. Lynch, C.F., Roe, D.J., **Brown, H.E.** “Temporal trends in satellite-derived erythral 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)
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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.
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81. °Moore, T.C., Tang, X., **Brown, H.E.** “Assessing the Relationship between Entomological Surveillance Indices and West Nile Virus Transmission, United States: Systematic Review.” *Vectorborne and Zoonotic Diseases*. 2025. In press
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Invited Commentary

83. **Brown, H.E.** and Cox, J. “Don’t forget formative assessment.” *Am J Epidemiology*. 2021, 190(2):317.

Media (not limited to period in current rank)

Expert Interviews

- 2013 Quoted in *UA News*, “UA undergraduate researcher Robert Clark, his public health mentor and Pima County officials collaborated on an investigation of rabies cases in Pima County.” Available <http://uanews.org/print/story/rabies-research-designed-for-prevention>
- 2013 Quoted in Press Release, “Climate change conference to address health, environmental impacts.” Pima County Communications Office, <http://webcms.pima.gov/cms/One.aspx?portalId=169&pageId=47904>
- 2013 Interviewed for “Climate Change Increases Risk to Human Health” blog <http://www.southwestclimatechange.org/blog/17449>.
- 2014 Quoted in *KVPR Radio* story “In California, Researchers Uncertain If Drought Will Increase Valley Fever Risk” <http://kvpr.org/post/california-researchers-uncertain-if-drought-will-increase-valley-fever-risk>.
- 2014 Quoted in *Arizona Public Media* story “Climate Change Impact Felt in SW with Rising Temps.”
- 2015 Quoted *Desert Leaf*, “The city of Tucson isn’t sweating a hotter, drier future: it’s planning ahead.” Available <http://trendmag2.trendoffset.com/publication/?i=250193>
- 2015 Live interview, KQTH’s Tucson’s *Morning News with Mike Rapp*
- 2015 Quoted in *PBS NewsHour* story “If you get chikungunya this summer, maybe blame El Niño” <http://www.pbs.org/newshour/updates/el-nino-tropical-disease-zika-chikungunya-dengue-plague/>

- 2016 Televised interview, *NBC Nightly News with Tom Costello*
http://www.nbcnews.com/news/weather/could-spread-zika-virus-be-linked-climate-change-n499156?cid=par-aff-nbc-wmaq_20160119
- 2016 Live Radio, *On Point with Tom Ashbrook*, “The Zika Virus Moves North” WBUR in Boston and syndicated to 290+ stations across the nation. <http://wbur.fm/23clrNL>
- 2016 Quoted in *Washington Post* story “How climate change could help the spread of Zika virus and other infectious diseases”. https://www.washingtonpost.com/news/energy-environment/wp/2016/01/21/how-climate-change-could-help-the-spread-of-zika-virus-and-other-infectious-diseases/?postshare=9931453433085442&tid=ss_mail
- 2016 Quoted in *Mother Jones* story “Is El Niño to Blame for the "Explosive" Zika Virus Outbreak?” <http://www.motherjones.com/environment/2016/01/climate-change-el-nino-zika-virus>
- 2016 Interview with Barbara Grijalva at KOLD-TV news, *Tucson News Now*, 1/19/2016 - <http://www.tucsonnewsnow.com/story/31005260/cdc-issues-travel-warning-for-pregnant-women-because-of-zika-virus>
- 2016 Quoted in *AZ Daily Star*, “Wet Tucson summer means mosquitoes are everywhere.” Available http://tucson.com/news/local/wet-tucson-summer-means-mosquitoes-are-everywhere/article_0290abfd-c559-52f1-8b5f-1cc736ec5118.html
- 2018 Quoted in *Scientific American* story “Mosquito-and Tick-Borne Diseases Are Rising in the U.S.” <https://www.scientificamerican.com/article/mosquito-and-tick-borne-diseases-are-rising-in-the-u-s/>
- 2020 Quoted in AZPM story “Feels like the end of the world’: Tucson grapples with record heat during pandemic.” By Alisa Reznick & Nick O’Gara. <https://news.azpm.org/p/coronavirus/2020/9/3/179724-feels-like-the-end-of-the-world-tucson-grapples-with-record-heat-during-pandemic/>
- 2021 Quoted Covid-19 Disrupts Years of Health Progress in U.S., By Jon Kamp, Brianna Abbott, Kara Dapena. <https://www.wsj.com/articles/covid-19-disrupts-years-of-health-progress-in-u-s-11621522803>
- 2021 Media Interview, Heidi Alagha, Evening Anchor/MMJ, *KGUN 9 On Your Side*, West Nile Virus and mosquitoes
- 2021 Interviewed, Voice of America – Russia. Liliya Anisimova, “Zika outbreak in India. Voice of America Russian Service platform: <https://fb.watch/9wCaqs1PIP/> YouTube: <https://youtu.be/DzHZ2ax5jWI>
- 2021 Presenter, Building collaborative relationships with medical professionals in the Southwest. As part of American Society of Adaptation Professionals (ASAP), Private Sector Climate Service Providers Academy. Hosted by Adaptation International.

- 2022 HealthDay Request by Denise Mann for comments on a heat related illness paper, “As Temperatures Rise, Workers in Southwest Face Health Issues.” <https://arizona.us10.list-manage.com/track/click?u=ed22ac697b2efc843f4127002&id=fe1c9b46e3&e=5c80044ac8>
- 2022 Media Interview, Melissa Mayer; Science Writer About Student’s paper: Estimating *Aedes aegypti* (Diptera: Culicidae) Flight Distance: Meta-Data Analysis.
- 2022 Quoted, Fort Worth Star-Telegram, a local paper in Fort Worth, Texas, Megan Cardona. How climate change can cause viruses like monkeypox <https://www.star-telegram.com/news/nation-world/article264566446.html>
- 2022 Quoted, Gizmodo, Angely Mercado, Pets Fill Animal Shelters Up to a Year After Climate Disasters. <https://gizmodo.com/pets-fill-animal-shelters-up-to-a-year-after-climate-di-1849424439>
- 2023 Quoted, PBS, Bella Isaacs-Thomas, Tips for staying safe in extreme heat. <https://www.pbs.org/newshour/health/tips-for-staying-safe-in-extreme-heat>
- 2023 Quoted, The Times-Picayune. Alex Lubben, Meet the man who keeps the north shore from being overrun by swarms of mosquitoes. https://www.nola.com/news/northshore/mosquito-abatement-tammany-marsh-airboat-fontainebleu/article_ac95b8f2-2d81-11ee-8478-c32b69cca38d.html
- 2024 Quoted, Arizona Daily Star, Mike Christy. “U of A to help develop heat fighting policies across US”. https://tucson.com/news/local/subscriber/tucson-university-of-arizona-heat-policy-center-for-heat-resilient-communities/article_8f30e9e8-1954-11ef-a261-57f412fbd67c.html
- 2024 Quoted, AZPM, Katya Mendoza. “Arizona researchers tackle urban heat with innovative weather data collection” <https://news.azpm.org/p/news-articles/2024/7/2/220847-arizona-researchers-tackle-urban-heat-with-innovative-weather-data-collection/>
- 2024 Press Conference, Heat Awareness Week Press Conference <https://1.azdhs.gov/heatnews2024>
- 2024 Quoted, NPR – All Things Considered, Alejandra Bourunda. “How climate change is affecting the spread of mosquito-borne illnesses. <https://www.npr.org/2024/09/09/nx-s1-5095192/how-climate-change-is-affecting-the-spread-of-mosquito-borne-illnesses>”
- 2024 Quoted, Grist: Food & Agriculture. Frida Garza. [An unlikely line of defense during heat waves: Food banks](https://grist.org/extreme-heat/an-unlikely-first-line-of-defense-during-heatwaves-food-banks/). Grist. The Counter. By Frida Garza. 9/6/2024. <https://grist.org/extreme-heat/an-unlikely-first-line-of-defense-during-heatwaves-food-banks/>
- 2024 Quoted, WTOL. Matt Willoughby, Meteorologist. “Warmer climate driving increase of mosquito-borne illnesses like West Nile virus, epidemiologist says” <https://www.wtol.com/article/weather/warmer-climate-increasing-mosquito-borne-illnesses-west-nile-virus-epidemiologist-says/512-7face8b2-d334-4192-97ce-879d20e26e9b>

Conferences/Scholarly Presentations (not limited to period in current rank)
Colloquia

- 2014 “Spatial Epidemiology with Applications to Vector-borne Diseases” Geography Colloquium, University of Arizona, Tucson, AZ
- 2019 “Water Harvesting as Maladaptation with Respect to Vector-borne Diseases” at the CLIMAS Colloquium Series Research in the Urban Environment, University of Arizona, Tucson, AZ
- 2019 “Supporting health strategic planning through mosquito-abundance predictions” at the PROCC [Programa de Computação Científica] colloquium series. Campus Manguinhos da Fiocruz/RJ
- Seminars*
- 2013 “A Southwest Perspective on Climate Change and Health” Climate Assessment in the Southwest (CLIMAS) Seminar, University of Arizona, Tucson, AZ
- 2014 “Climate Change and Health in the US Southwest” Community, Environment and Policy Seminar, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ
- 2015 “Modeling the spread of chikungunya in the Caribbean and central America” Co-Presentation with Joceline Lega, Immunobiology MicroLunch, University of Arizona, Tucson, AZ
- 2017 “Environmental Influences on Vector-Borne Disease Spread” Epi Seminar, University of Arizona, Mel and Enid Zuckerman College of Public Health, University of Arizona, Tucson, AZ
- 2017 “Automating Mosquito Abundance Dynamics” USA National Phenology Network, University of Arizona, Tucson, AZ
- 2019 “Climate influence on the distribution of *Aedes aegypti*” at the Friday Seminar for the Centro de Estudos, Campus Manguinhos da Fiocruz/RJ
- 2020 “Facing the Future of Vector-Borne Disease” presentation to the Climate Science Impacts Branch of the Environmental Protection Agency, Washington, DC (Zoom)
- 2021 “Co-infections and the progression to gastric cancer.” with Harris, R., Monroy, F., SPORE Planning Retreat Agenda Westin La Paloma, Tucson, AZ (Zoom)
- 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, Arizona Department of Health Services, Phoenix, AZ (Zoom)
- 2023 “*Helicobacter pylori* Infection: A Woven Investigation of Prevalence and Risk Factors in Northern Arizona” with Harris, R., Monroy, F., and Sanderson, P.R. UArizona Cancer Prevention Control seminar (Zoom)
- 2023 “Responding to Stakeholder Health Needs” Heidelberg Institute of Global Health (HIGH), Heidelberg University, Germany
- 2023 “Resilience Against Climate Sensitive Diseases in AZ”. Climate Sensitive Infectious Diseases Group at the Interdisciplinary Center for Scientific Computing, Heidelberg University, Germany

- 2024 “*Helicobacter pylori* and the Navajo Health Stomach Project: The story continues.” Co-presented with Robin Harris and Prescilla Sanderson at the UArizona Cancer Prevention and Control Seminar
- 2024 “Preventing another useless modelling task” at the 23rd European Society for Vector Ecology (Euro-SOVE) conferences in Montpellier, France
- Symposia*
- 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 “Habitat and Abundance Modeling of West Nile Virus Vector” in the Mini-Symposium: *MS65 Recent Advances in Ecosystems and Disease Models*. SIAM (Society for Industrial and Applied Mathematics) Conference on the Life Sciences. Charlotte, NC
- 2014 “Challenges and Spatial Modeling of Vector-borne disease surveillance data” on the Panel “Opportunities and Challenges in Nutrition and Global Public Health” in the *Symposium on Arid Lands, Food Security, and Health* at the Tucson Marriott University Park Hotel, Tucson, AZ
- 2014 Co-Host and Organizer of the *H. pylori to stomach cancer and everything in-between* symposium, MEZCPH, University of Arizona, Tucson, AZ
- 2016 “Health effects of climate: the US Southwest and Arizona” in the *Social Justice Symposium on Climate and Health*, University of Arizona, Tucson, AZ
- 2017 “Network-based modeling for chikungunya spread in Dominica” in a special session: *Recent Advances in Mathematical Biology*, Joint Mathematics Meeting, Atlanta, GA
- 2017 “Applying Vector-Borne Disease Projections for Climate and Health Strategic Planning in Arizona” co-presenter with Matt Roach, AZ Dept. Health Services, *Climate Sensitive Diseases and National Security: Predictions in Practice* webinar hosted by CDC, USGCRP- CCHHG, and Office of Science and Technology Policy’s PPFST
- 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
- 2020 “COVID-19 Pandemic Impact on Navajo Adults and Health Care Workers” in the University of Arizona Health Sciences Center COVID-19 Symposium, Tucson, AZ (Zoom)

2024 "Health: Motivation for Nature-Based Solutions?" NOAA Climate Adaptation Partnership (formerly RISA). Climate and Societal Interactions Division: Nature-Based Solutions Webinar Series (Panelist). Recorded Webinar.

Conferences – Invited Speaker

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

2014 Presenter, "Climate Change and Health," at the Wilderness Medical Society Annual Conference, Tucson, AZ

2016 "Bridging screening and cost-effectiveness" Oswaldo Cruz Foundation, National School of Public Health, Rio de Janeiro, Brazil

2017 "The Changing Climate of Vector-borne Diseases" at Belmont University, College of Sciences & Mathematics, 12th Annual Environmental Science Lecture Series, Nashville, TN

2017 "Southwest Climate Change Impact on Health" at the Wilderness Medical Society Desert Medicine Conference, Tucson, AZ

2017 "Transdisciplinary Network-Based Infectious Disease Modeling" 6th International Conference on Mathematical Modeling, Tucson, AZ

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. UA Psychology Department, Tucson, 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)

2023 "CPH Epi Student Association: H Brown." Great Plains Emerging Infectious Diseases Mini-Conference. University of Iowa (Zoom).
- Invited by former EPID 309 student and preceptor

2023 "Navajo Nation Healthy Stomach Project: Information about *H pylori* and stomach Cancer" Winslow Indian Health Care Center 2023 Nurses Conference. We-Ko-Pa Resort, Fort McDowell, AZ. Co-presented with Laura Pauli, RN

- 2024 “Avoiding another useless model” at Los Alamos National Labs’ *Forecasting Zoonotic Emergence Events Meeting*. Los Alamos, NM
- 2024 “Supporting Heat Resilience in Pima County” panel member for the MAP Talk Webinar: Arizona's Heat-Related Health Impacts, Tucson, AZ
- 2024 “Expanding our understanding of *H. pylori* and Gastric Cancer: The NHSP” UACC Annual Scientific Retreat: Optimizing Cancer Health in Southwest Populations, Tucson, AZ