

**Kacey C. Ernst**

Curriculum Vitae

Epidemiology and Biostatistics  
Mel and Enid Zuckerman College of Public Health  
University of Arizona  
1295 N. Martin  
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**CHRONOLOGY OF EDUCATION**

- 1997** B.A., Chemistry and Interdisciplinary Science, Lawrence University, Appleton, WI
- 2001** M.P.H., Epidemiology, University of Michigan, Ann Arbor
- 2006** Ph.D., Epidemiology, University of Michigan, Ann Arbor  
Advisor: Mark L. Wilson, Sc. D.  
Dissertation: "Malaria in the highlands of western Kenya: Epidemiology of environmental influences, spatial patterns and disease risk."

**CHRONOLOGY OF EMPLOYMENT**

- 2000** *Summer Research Fellow*, U.S. Walter Reed Army Institute of Research (WRAIR) Unit, Kisian, Kenya
- 2000-2006** **University of Michigan, Ann Arbor, MI**
- 2000-2001 *Research Technician*, Department of Health Education and Health Behavior, School of Public Health
- 2001-2002 *Graduate Student Instructor*, Department of Epidemiology, School of Public Health
- 2003-2005 *Graduate Research Assistant*, Department of Epidemiology, School of Public Health, University of Michigan, Ann Arbor, Michigan (based in Kenya)
- 2005 *Graduate Student Instructor*, Introductory Epidemiology, University of Michigan, Ann Arbor, Michigan

- 2003**      *Bioterrorism Preparedness Coordinator*, Milwaukee County/ Waukesha County Consortium, Wauwatosa, Wisconsin
- 2007-2008**      *Influenza Epidemiologist*, Office of Infectious Disease Services, Arizona Department of Health Services, Phoenix, Arizona
- 2008-present**      **University of Arizona, Tucson, AZ**
- 2008-present      *Assistant Professor*, Division of Epidemiology and Biostatistics College of Public Health
- 2008-present      *Affiliated Faculty*, Arid Lands Studies, Graduate Interdisciplinary Program
- 2012-present      *Affiliated Faculty*, Global Change, Graduate Interdisciplinary Program
- 2012-present      *Affiliated Faculty*, Entomology and Insect Science, Graduate Interdisciplinary Program
- 2013-present      *Assistant Professor*, School of Animal and Comparative Biomedical Sciences (NTE)
- 2015-present      *Associate Professor*, School of Geography and Development (NTE)

## **HONORS AND AWARDS**

### At previous rank:

- 1993-1997**      *Kansas Regent Scholar*, Kansas Board of Education
- 1993-1997**      *Dow Chemical Fellowship*, Lawrence University, Appleton, WI
- 1993-1997**      *Trustee Fellowship*, Lawrence University, Appleton, WI
- 1999-2001**      *Dean's Award*, University of Michigan
- 1999-2001**      *Klare Memorial Scholar*, University of Michigan
- 2001**      *Global Transformations Seminar Scholar*, University of Michigan
- 2005**      *Travel Scholarship*, Department of Epidemiology, University of Michigan

### At current rank:

- 2010**      *Conference Travel Award*, Division of Epidemiology and Biostatistics, University of Arizona
- 2011**      *Workshop Colloquium Award*, 2011 NCAR/CDC Colloquium on Climate and Health, National Center for Atmospheric Research

- 2012**      *Visiting Researcher Award*, Research Applications Laboratory, National Center for Atmospheric Research
- 2013**      *Visiting Researcher Award*, Research Applications Laboratory, National Center for Atmospheric Research
- 2013**      *Hot Shot Award*, The Arizona Partnership for Immunization annual award for advancing immunization in Arizona
- 2013**      *Award for Excellence in Research*, Mel and Enid Zuckerman College of Public Health, University of Arizona
- 2013**      *Tucson Woman of the Year*, Arizona Daily Star (newspaper) and Tucson Hispanic Chamber of Commerce

**SERVICE/OUTREACH** (limited to period in rank)

Local/State Outreach

*Community Activities*

- 2008**      *Facilitator*, State-wide Pandemic Influenza Exercise; Arizona Department of Health Services
- 2009**      *Trainer*, Santa Cruz County Preparedness Training
- 2009**      *Member*, EWIDS grant work team to develop online training modules for ADHS epidemiology staff
- 2009-present** *SWAT team member*, Pima County Health Department and Community Partners working to implement vector control in Pima County
- 2010**      *Speaker*, Green Valley Community Education, “H1N1 control and vaccination priorities.”
- 2010**      *Developer*, Drafted and coordinated signed Memorandum of Agreement between University of Arizona College of Public Health and Arizona Department of Health Services for data exchange
- 2011**      *Speaker*, College of Public Health Community Forum, Vaccine Safety Facts and Myths: “How Vaccines Work?”
- 2011**      *Coordinator*, College of Public Health Public Awareness Booth, One Health Booth, National Geographic BioBlitz, Saguaro National Park
- 2013**      *Presenter*, San Miguel High School, Life Choices Forum

- 2013**      *Presenter*, Borton Elementary School, “How does science make people healthier?”
- 2013**      *Panelist*, Physicians for Social Responsibility, Climate Smart Southwest Public Forum, Panel for Cross Cultural and Cross Border Issues Related to Health and Climate Change
- 2013**      *Coordinator*, College of Public Health Public Awareness Booth, Vector-borne and Zoonotic disease risks in Tucson, Chinese Health Day
- 2014**      *Speaker*, Women Impacting Tucson seminar, “Are Your Neighbors’ Kids Vaccinated? Why Should You Care?”
- 2014**      *Speaker*, Vida!: Clinical Care Grand Rounds: “How Climate Change Affects Our Health”

*Local Media Interviews:*

- 2009**      Article in *Arizona Daily Star*, written by Tom Beal, “City breeds ideal climate for virus-carrying pests”, May 3, 2009
- 2010**      Interviewed with radio station *KJZZ* about response to Arizona Health Status Report; emphasis vaccinations, September 17, 2010
- 2011**      Appeared on *Arizona Illustrated* to discuss E. coli outbreak, June 10, 2011
- 2011**      Appeared on *KUAT Arizona Illustrated* August 23, 2011, *KMSB* August 12, 2011, *KVOA* August 12, 2011, *KGUN* August 12, 2011, *KJZZ* August 13, 2011 to discuss Personal Belief Exemptions for School-entry vaccination requirements
- 2011**      Article in *Arizona Daily Star*, written by Stephanie Innes, “On vaccinations, some parents fear 'wrong things'”, August 07, 2011
- 2011**      Article in *Arizona Daily Star*, written by Stephanie Innes, “Arizona: Don't allow study to influence flu-shot decision”, October 27, 2011
- 2012**      Article *UA News*, written by Shelley Littin, “Kacey Ernst receives \$2.3 million to track dengue transmission”, September 26, 2012
- 2012**      Interviewed with *AZ News Radio*, vaccine preventable diseases, December 17, 2012
- 2012**      Article in *Arizona Daily Star*, written by Stephanie Innes “Adults need vaccinations, too - but few get them”, August 12, 2012
- 2013**      Article in *Arizona Daily Star*, written by Veronica Cruz, “UA prof gets grant to study how to halt spread of malaria”, January 13, 2013

**2013** Featured in *Arizona Daily Star*, 40 Under 40's man and woman of the year, October 2<sup>nd</sup> 2013

**2013** Interviewed with *KVOA*, dengue transmission in the Arizona-Sonora Desert region, July 15, 2013

National/ International Outreach

*Capacity building activities:*

**2010-2012** *Developer*, Memorandum of Agreement with University of Gondar (Ethiopia) and furthering collaborative ties with faculty at that University

**2011-present** *Instructor*, University of West Indies MSc Epidemiology Program; One-week module on infectious disease epidemiology; Kingston, Jamaica

*External Grant Reviewer:*

**2012** National Institute of Health, R15 grant, Section ZRG1 IDM S 92

**2013** National Institute of Health, R15 grant, Section ZRG1 IDM S 81

**2014** National Institute of Health, U01, International Collaborations in Infectious Diseases Research grant

*Peer Reviewer for following journals:*

**2009** Human Parasitic Diseases

**2009** International Journal of Environmental Research and Public Health

**2010-present** Tropical Medicine and International Health

**2010-present** Malaria Journal

**2011** Climate Research

**2012-present** Vaccine

**2012-present** International Health

**2012** Yonsei Medical Journal

**2012-present** Transactions of the Royal Society of Tropical Medicine and Hygiene

**2013-present** Public Health Reports

**2014** PLOS One

*Peer reviewer other*

**2010** Methods in Field Epidemiology; Textbook, Jones and Bartlett

**2013** Abstract reviewer, International Journal of Epidemiology, IEA World Congress of Epidemiology,

*National/ International Media Interviews*

**2011** Article in the Associated Press, written by Mike Stobbe, “More in US skipping child shots”, November 28, 2011

**2013** Featured in Association for School of Public Health newsletter, “Arizona’s Ernst Awarded NIH Grant for Malaria Prevention Study in Kenya”, February 8, 2013

**2013** Article in Science Daily, written by Burness Communications, “Dengue fever mystery in two US cities: Both exposed to risk”, November 14, 2013

**2013** Article in The Verge, written by Amar Toor, “Dengue fever outbreaks in the US leave scientists looking for answers”, November 14, 2013

**2013** Article in MIT News, written by Denise Brehm, “Study shows projected climate change in West Africa unlikely to worsen malaria” September 16, 2013

*Professional Memberships*

**2008-present** International Society of Infectious Disease

**2009-present** American Society of Tropical Medicine and Hygiene

**2010-present** Global Health Council

Division of Epidemiology and Biostatistics

**2008-present** *Member*, Epidemiology MPH Admissions Committee

**2008-present** *Member*, Epidemiology MS/PhD Admissions Committee  
2008 Adhoc Committee lead – Creating a PhD graduation checklist

**2009-2010** *Member*, Epidemiology Qualifying Exam Review Committee

**2009-2010** *Work group member*, Public Health Informatics, Division of Epidemiology and Biostatistics, MEZCOPH

- 2009-2010**     *Member, Annual Performance Review Committee*
- 2011**             *Member, Faculty Search Committee*
- 2013**             *Member, subcommittee for development of undergraduate track*

Mel and Enid Zuckerman College of Public Health

- 2008**             *Subcommittee member, MEZCOPH college-wide retreat, creating a Collective Vision*
- 2008-present** *Member, Community Engaged Practice and Service Committee (CEPAS), College*
- 2008-2010**     *Judge, M.P.H. Internship Conference (8 terms), MEZCOPH*
- 2009**             *Subcommittee member, CEPAS Committee, MEZCOPH college-wide retreat, collaborations across the college*
- 2009**             *Subcommittee member, CEPAS Committee, Community Engaged Practice and Service Award Subcommittee*
- 2009**             *Subcommittee member, CEPAS Committee, Staff Training Public Health 101 training*
- 2010-present** *Member, Global Health and Community Development Integration Committee, Global Health Institute, MEZCOPH*
- 2010-present** *Subcommittee member, CEPAS, Service Learning Institute*
- 2010-present** *Subcommittee member, CEPAS, Promotion and Tenure orientation to Community Based Participatory Research*
- 2012-present** *Member, Inclusion and Diversity Committee*
- 2012-present** *Member, Research Advisory Committee Scientific Review IRB*

University of Arizona

- 2008-2010**     *Member, Development Committee, Pandemic Influenza Intercollegiate Exercise between COM, CON, MEZCOPH, COP and COL*
- 2008-2011**     *Member, International Affairs Committee, University*
- 2009-2012**     *Member, Africa Forum, University*

- 2012** *Grant Reviewer*, Vice President of Research SEED grant awards
- 2013** *Grant Reviewer*, Global Change Graduate Interdisciplinary Committee (GIDP) DIG grants, University of Arizona.
- 2013** *Member*, Progress Review Committee Entomology and Insect science GIDP progress report committee.
- 2013-present** *Member*, Biomedical Research Abroad: Vistas Open! (BRAVO), student research grant review committee
- 2014** *Member*, Executive Committee Arid Lands Studies GIDP
- 2014** *Member*, Executive Committee Global Change GIDP
- 2014** *Member*, Admissions Committee, Entomology and Insect Science GIDP

## **PUBLICATIONS/CREATIVE ACTIVITY**

### *Book Chapters*

- 2014** Ernst K.C., Morin, C., Brown, H., “Extreme weather events and the risk of vector-borne diseases.” Book chapter for *Handbook of public health in natural disasters*. (In Press).

### *Peer Reviewed Journal Articles*

- 2003** Center for Disease Control and Prevention. “Multistate outbreak of monkeypox – Illinois, Indiana and Wisconsin.” *Morbidity and Mortality Weekly*, 52: 537-540.
- 2008** \*Ernst, K.C., Adoka, S.O., Kowuor, D.O., Wilson, M.L., John, C.C. “Malaria hotspot areas in a highland Kenya site are consistent in epidemic and non-epidemic years and are associated with ecological factors.” *Malaria Journal*, 13(5):78. PMID:16970824.
- 2008** Cohen, J.M., Ernst, K.C., Lindblade, K.A., Vulule, J.M., John, C.C., Wilson, M.L. “Topography, land-cover, and elevation predict areas at risk for malaria within communities in a highland region of western Kenya.” *Malaria Journal*, 17:40. PMID: 18312633.
- 2008** Menge, D.M., Ernst, K.C., Vulule, J.M., , P.A., Guo, H., John, C.C. “Microscopy underestimates the frequency of *Plasmodium falciparum* infection in symptomatic individuals in a low transmission highland area.” *American Journal of Tropical Medicine and Hygiene*, 79 (2):173-7. {co-first author} PMID: 18689620.



- 2009** \*Ernst, K.C., Lindblade, K.A., Koech, D., Sumba, P.O., Kuwuor, D., John, C.C., Wilson, M.L. “Environmental, socio-demographic and behavioral determinants of malaria risk in the western Kenyan highlands: a case-control study.” *Tropical Medicine and International Health*, 4(10): 1258-1265. PMID: 19772547.
- 2010** Cohen, J.M., Ernst, K.C., Lindblade, K.A., Vulule, J.M., John, C.C., Wilson, M.L. “Local topographic wetness indices predict household malaria risk better than land-use and land-cover in the western Kenya highlands.” *Malaria Journal*, 16(9): 328-332. PMID: 21080943.
- 2010** Robinson, K.\*\* , Ernst, K.C., Johnson, B., Rosales, C. “The Health Status of Southern Arizona Border Counties: A Healthy Border 2010 Midterm Review.” *Revista Panamanian Salud Publica*, 28(5). PMID: 21308179.
- 2011** Ernst, K.C., Pogreba-Brown, K.\*\* , Rasmussen, L., Erhart, L. “The Effect of Policy Changes on Hepatitis A Vaccine Uptake in Arizona Children (1995-2008).” *Public Health Reports*, 126: S2. PMID: 21812173.
- 2011** Taren, D., Tecele, S.\*\* , Almony, C.\*\* , Navarrete, L., Ernst, K., Menard, S., Diop, M., Wele, A-H. “Growth of Children Receiving a Dehydrated Potato-Soy Protein Blend. *African Journal of Food Agriculture Nutrition and Development*.” 11(4).
- 2012** Ernst, K.C., Arora, M.\*\* , Munga, S. “Ownership and disuse of bed nets in Kenyan children under five years of age.” *Malaria Reports*, 2 (1).
- 2012** Ernst, K.C., Dinerman, M. “A Malaria Vaccine: Promising Results, But Not There Yet.” *American Academy of Pediatrics Grand Rounds*, 27(3): 26. Peer-reviewed solicited review.
- 2012** Pogreba-Brown, K\*\* , Ernst, K., Harris, R. “Teaching epidemiology concepts experientially: a "real" foodborne outbreak in the classroom.” *Public Health Reports*, 127(5):549-55. PMID: 22942476.
- 2012** Erhart, L.M., Ernst, K.C. “The changing epidemiology of hepatitis A in Arizona following intensive immunization programs (1988-2007).” *Vaccine*, 14(42):6103-10. {co-first author} PMID:22835739.
- 2012** Rolfes, M.\*\* , McCarra, M., Magak, N.G., Ernst, K.C., Dent, A.E., Lindblade, K.A., John, C.C. “Development of clinical and biological immunity to malaria in highland areas of very low and unstable transmission.” *American Journal of Tropical Medicine and Hygiene*, 87(5):806-12. PMID: 22987652.
- 2012** Joy, T.K.\*\* , Jeffrey Gutierrez, E.H.\*\* , Ernst, K., Walker, K.R., Carriere, Y., Torabi, M., Riehle, M.A. “Aging Field Collected *Aedes aegypti* to Determine Their Capacity for Dengue Transmission in the Southwestern United States.” *PLoS One*, 7(10). PMID: 23077536.

- 2012** Birnbaum, M.S.\*\*, Jacobs, E.T., Ralston-King, J., Ernst, K.C. “Correlates of high vaccination exemption rates among kindergartens.” *Vaccine*, 21;31(5):750-6. PMID: 23246263.
- 2013** Mugoya, G.\*\*, Ernst, K.C. “Gender differences in HIV-related stigma in Kenya.” *AIDS Care*, 26(2):206-13. PMID 23795954.
- 2013** Morin, C.W.\*\*, Comrie, A.C., Ernst, K. “Climate and Dengue Transmission: Evidence and Implications.” *Environmental Health Perspectives*. 121(11-12):1264-72. PMID: 24058050.
- 2013** Delgado, S.\*\*, Ernst, K.C., Hanco Pumahuanca, M.L., Yool, S.R., Comrie, A.C., Sterling, C.R., Gilman, R.H., Náquira, C., Levy, M.Z. “A country bug moves to the city: urban infestation by the Chagas disease vector *Triatoma infestans* in Arequipa, Peru.” *International Journal of Health Geographics*, 12:48. PMID: 24171704.
- 2014** Ernst, K.C., Erhart, L.M. “The role of ethnicity and travel on Hepatitis A vaccination coverage and disease incidence in Arizona at the United States-Mexico Border.” *Human Vaccines Immunotherapies*, 10 (5), PMID: 24603091.
- 2014** Ernst, K.C. “Measles surveillance in Nigeria: enough information for policy making?.” *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 108(6):311-2. PMID: 24778206. Solicited Peer-Reviewed Commentary.
- 2014** Haenchen, S.D.\*\*, Jacobs, E.T., Bratton, K.N.\*\*, Carman, A.S.\*\*, Oren, E., Pottinger, H.E.\*\*, Regan, J.A.\*\*, Ernst, K.C. “Perceptions of Personal Belief Vaccine Exemption Policy: A Survey of Arizona Vaccine Providers.” *Vaccine*, [Epub ahead of print]. PMID: 24814551.
- 2014** Mugoya, G., Ernst, K.C., Witte T. Socio-Cultural and Victimization Factors That Impact Attitudes toward Intimate Partner Violence among Kenyan Women. Accepted for Publication May 14, 2014. *Journal of Interpersonal Violence*.
- 2014** Ernst, K.C., Haenchen, S., Dickinson K., Doyle, M., Monaghan, A., Walker, K., Hayden, M. Community awareness and preliminary support of the controversial release of OX513A *Ae. aegypti* in Key West, FL. *Emerging Infectious Disease* (In Press).
- 2014** Pogreba-Brown, K., Ernst, K.C., Harris, RB., Case-Case Methods for Foodborne Outbreaks - A Review and Approach for Standardization. *OA Epidemiology*. (In Press).
- 2014** Alkoshi, S., Ernst, K., Maimaiti, N., Dahlui, M., Rotaviral Infection: A Significant Disease Burden to Libya. *Iranian Journal of Public Health*. (In Press).

- 2014** Pogreba-Brown, K., Baker, A., Ernst, K.C., J Stewart, J., Harris, R.B., Weiss, J. “Assessing Risk Factors of Sporadic Campylobacter Infection: A Case-Control Study in Arizona.” *Epidemiology and Infection* (In Press).

\* Indicates articles from dissertation

\*\*Indicates student authors

Invited Publications – not peer-reviewed

- 2012** Ernst, K.C., Jacobs, E.T. Implications of philosophical and personal belief exemptions on re-emergence of vaccine-preventable disease: The role of spatial clustering in under-vaccination. *Human Vaccines and Immunotherapy*.1;8(6). PMID: 22508414
- 2013** Ernst, K.C., Phillips, B.\*\* , Duncan, B. “Slums are not places for children to live: vulnerabilities, health outcomes, and possible interventions.” *Advances in Pediatrics*, 60(1):53-87. PMID: 24007840.

Technical Reports

- 2008** Siri, J.G., Ernst, K.C. Needs Assessment for Communicable Disease Surveillance for the Tohono O’odham Nation. Presented to Tohono O’odham Nation.
- 2009** Ernst, K.C., Rosales, C., Granillo, B., McDonald, M., de Zapien, J., Staten, L. Operation Streamline: An Infectious Disease Assessment. Presented to the US Public Defenders’ Office.
- 2011** Ernst, K.C., Krone, T.\*\* , Harris, R. Child Health in Maricopa County Schools: The Role of the School Nurse. Presented to Maricopa County Health Department.
- 2012** Ernst, K.C., Haenchen, S.D.\*\* , Pinyerd, H.L.\*\* , Jacobs, E.T. Understanding the Determinants and Acceptance of Personal Belief Exemptions for Childhood Vaccinations in Arizona. Presented to Arizona Department of Health Services.

\*\*Indicates student authors

Refereed Published Abstracts

*At previous rank:*

- 2001** Dunton, R.F., Ernst, K. “Malaria transmission in western Kenya: the importance of *Anopheles funestus* Giles.” *American Journal of Tropical Medicine and Hygiene*, 65(3S):308-09.
- 2005** Ernst, K.C., McHugh, M., Sumba, P.O., Wilson, M.L., John, C.C. “Multiplicity of *Plasmodium falciparum* infection and malaria incidence in an epidemic-prone

- area of the western Kenyan highlands.” American Journal of Tropical Medicine and Hygiene, 73(6S):278-278.
- 2005** Cohen, J.M., Ernst, K.C., Sumba, P.O., John, C.C., Wilson, M.L. “Multi-level modeling of factors associated with highland malaria risk in two Kenyan towns exhibiting different patterns of incidence.” American Journal of Tropical Medicine and Hygiene, 73(6S):277-278.
- 2006** Ernst, K.C., John, C.C., Kuwuor, D., Wilson, M.L. “Environmental, social and behavioral risk factors associated with highland malaria in western Kenya: A case-control study.” American Journal of Tropical Medicine and Hygiene, 75(5S):254-254.
- 2006** Menge, D.M., Vulule, J., Ernst, K.C., John, C.C. “Characterization of Plasmodium falciparum populations from epidemic prone sites with varying transmission patterns in a western Kenya highland.” American Journal of Tropical Medicine and Hygiene, 75(5S):256-256.
- 2006** Cohen, J.M., Ernst, K.C., Lindblade, K.A., Vulule, J.M., John, C.C., Wilson, M.L. “Topography, land-cover, and elevation predict areas at risk for malaria within communities in a highland region of Western Kenya.” American Journal of Tropical Medicine and Hygiene, 75(5S):10-11.
- 2007** Menge, D.M., Ernst, K.C., Vulule, J., Zimmerman, P.A., John, C.C. “Comparison of blood smear microscopy and PCR based methods in the detection of Plasmodium falciparum in active surveillance for highland malaria in Western Kenya.” American Journal of Tropical Medicine and Hygiene, 77(5S):234-234.

*At current rank:*

- 2009** Menge, D.M., Ernst, K.C., Vulule, J.M., John, C.C. “Genetic diversity of Plasmodium falciparum from western Kenya highland areas prone to malaria epidemics.” American Journal of Tropical Medicine and Hygiene, 81(5S):261-261.
- 2009** Riedesel, M.A., McCarra, M., Magak, N.G., Ernst, K.C., John, C.C. “Biological and clinical immunity to malaria increase with age in Kenyan highland areas with unstable transmission.” American Journal of Tropical Medicine and Hygiene, 81(5S):297-297.
- 2012** Hiller, K., Edwards, C., Stolz, U. Ernst, K., Pierce, D., Kerrigan, J. ”The Emergency Department Pharmacist as Immunization Officer.” Annals of Emergency Medicine, 60 (4S): S84-S84.
- 2012** Joy, T., Jeffrey E.H., Ernst, K.C., Walker, K.R., Carriere Y., Toradbi, M., Riehle, M.R. “*Aedes aegypti* longevity and its implications for climate change and

mosquito-borne disease.” American Journal of Tropical Medicine and Hygiene, 87(5): 215.

## WORK IN PROGRESS

### *Pending:*

Morin, C., Monaghan, A., Ernst, K.C., “Developing complimentary *Ae. aegypti* mosquito models for predicting dengue transmission.” Submitted to PLOS NTD December 2014.

Hayden, M.H., Cavanaugh, J., Tittel, C., Butterworth, M., Haenchen, S., Dickinson, K., Monaghan, A., Ernst, K.C. “Stakeholder Perceptions of Dengue Preparedness and Response in Key West, Florida.” Submitted to Public Health November 2014.

### *In progress:*

Ernst, K.C., Haenchen, S., Reyes-Castro, P., Jeffrey, E., Diaz, E., Hayden, M., “Mosquito avoidance associated with annoyance not disease risk in Tucson, AZ and Key West, FL.” In preparation for submission to American Journal of Public Health.

Ernst, K.C., Munga, S., Agawo M., Hayden M., “Factors associated with bednet use and ownership differ between high and low transmission areas in western Kenya”. In preparation for submission to Malaria Journal.

Ernst, K.C., Cavanaugh, J., Munga, S., Agawo M., Hayden M., “Using focus groups in the highlands and lowlands of western Kenya to explore reasons behind owning and using bednets to control malaria”. In preparation for submission to Malaria Journal.

Castro, L., Arreleno-Gaves, C., Caravantes, R., Hayden, M., Reyes-Castro, P., Ernst, K.C., “Meanings and beliefs about the spread of dengue fever and its relationship prevention practices: a discourse with women in Hermosillo, Sonora.” In preparation for submission to Social Science and Medicine.

Riehle, M., Carriere, Y., Jeffrey, E., Joy, T., Walker, K.R., Ramberg, F., Ernst, K.C., “Spatial heterogeneity in *Ae. aegypti* density and age across Tucson, AZ, implications for risk of emergence” In preparation for PLOS NTD.

## CONFERENCES AND SCHOLARLY ACTIVITIES

### *Extramural Invited Scholarly Presentations*

**2011** Ernst, K.C. “Impacts of Climate Change on Infectious Disease Outcomes.” Presented at University of the West Indies, February 2011, Kingston, Jamaica.

**2012** Ernst, K.C. “Factors associated with differential emergence of dengue in the southern United States.” Presented at National Center for Atmospheric Research, May 2012, Boulder, CO.

- 2012** Ernst, K.C., Birnbaum, M.S.\*\*, Jacobs, E.T. “Trends in Philosophical belief exemptions in Arizona.” Presented at Arizona Department of Health Services Infectious Disease Epidemiology Conference, July 2012, Phoenix, AZ.
- 2013** Ernst, K.C. “Identifying community-based strategies to improve insecticide treated bednet use.” Presented Centers for Disease Control and Prevention. June 2012, Kisian Research Station, Kenya.
- 2013** Ernst, K.C. “Understanding personal belief exemptions for school-entry vaccinations in Arizona.” Arizona Department of Health Services. Vaccine conference, April 2013, Phoenix, AZ.
- 2013** Ernst, K.C., Reyes-Castro, P.,\*\* Hayden, M.H., Walker, K.R. “Dengue in the Arizona-Sonora Border Region.” U.S. Public Health Service Scientific and Training Symposium. Phoenix, AZ. May 2013.
- 2013** Ernst, K.C. “On the Edge: Climatic influences on *Ae. aegypti* dynamics in the border region.” The Center for Research on North America (CISAN) from the National Autonomus of Mexico (UNAM), Assessment of Strategic Health Issues on the US-Mexico Border conference, November 21, 2013.
- 2014** Ernst, K.C., Hayden, M.H., Walker, K.R., Castro, L., Caravantes, R., Castro-Reyes, P., Monaghan, A., Haenchen, S., Riehle, M., “*Aedes aegypti* indices in the Arizona-Sonora border region” Presented at Arizona Department of Health Services Infectious Disease Epidemiology Conference, July 2014, Phoenix, AZ.

*Intramural Invited Scholarly Presentations*

- 2009** Ernst, K.C. “Determinants of malaria transmission in the highlands of western Kenya.” Presented at Entomology Seminar Series, University of Arizona.
- 2010** Ernst, K.C. ““Vector-borne Disease Dynamics: Influence of Environment and Social Factors on the Geographic Distribution of Malaria and Dengue.” NSF ADVANCE Data Blitz, University of Arizona.
- 2010** Baneras, K.\*\* , Ernst, K.C. “Human behavioral and household determinants of dengue vector breeding and mosquito abatement along the Arizona U.S./ Sonora, MX border.” AHSC Frontiers in Biomedical Research Poster Forum, University of Arizona.
- 2011** Ernst, K.C. “Factors influencing the use of insecticide-treated nets to prevent malaria in Kenyan children.” Presented at Maternal and Child Health Seminar, University of Arizona.
- 2012** Ernst, K.C. “The use of insecticide treated bednets in western Kenya.”, Southwest Area Mosquito meeting, College of Agriculture.

- 2012** Pottinger, H.L.\*\*, Haenchen, S.D.\*\*, Jacobs, E.T., Gast, P.B., Ernst, K.C. “Parental attitudes toward childhood immunization(s) in Arizona elementary schools.” Presented at AHSC Frontiers in Biomedical Research Poster Forum, University of Arizona.
- 2013** Ernst, K.C., “Well-established, established and establishing: Collaborations for international vector-borne disease research.” Presented at International Research Forum, University of Arizona.
- 2013** Ernst, K.C., “Human-mosquito interactions: From emergence to control.” Presented at Environmental and Occupational Health Seminar, University of Arizona.
- 2013** Ernst, K.C. “Implications of climate change on diseases at the human-animal interface.” Presented at the Animal and Comparative Biomedical Sciences seminar series, University of Arizona.

*Submitted Refereed Abstracts and Presentations*

*Previous Rank:*

- 2004** Ernst, K.C., Adoka, S.O., Kowuor, D.O., Wilson, M.L., John, C.C. “Consistent spatial clustering of malaria cases in a highland area of western Kenya, 2001 – 2003.” Presented at American Society of Tropical Medicine and Hygiene conference, November 2004, Miami, FL.
- 2005** Ernst, K.C., McHugh, M., Kowuor, D.O., Wilson, M.L., John, C.C. “MSP-1 and MSP-2 allelic family diversity of *Plasmodium falciparum* infection in a malaria epidemic-prone area of the western Kenyan highlands.” Presented at American Society of Tropical Medicine and Hygiene conference, December 2005, Washington, D.C.
- 2006** Menge, D.M., Ernst, K.C., Vulule, J.M., John, C.C. “Characterization of *Plasmodium falciparum* populations from epidemic prone sites with varying transmission patterns in a western Kenya highland.” Presented at American Society of Tropical Medicine and Hygiene conference, November 2006, Atlanta, GA.
- 2006** Ernst, K.C., Lindblade, K.A., John, C.C., Kuwuor, D.O., Wilson, M.L. “Environmental, social, behavioral risk factors associated with highland malaria in western Kenya: A case-control study.” Presented at American Society of Tropical Medicine and Hygiene conference, November 2006, Atlanta, GA.
- 2007** Ernst, K.C., Erhart, L. “Spatial clustering and determinants of hospitalized influenza cases.” Presented at ESRI Health conference, October 2007, Phoenix, AZ.

*At current rank:*

- 2009** Taren, D., Almony, C.\*\* , Teclé, S.\*\* , Navarrete, L.\*\* , Ernst, K., Menard, S., Diop, M., Wele, A-H. “Food habits of Senegalese families receiving humanitarian food assistance.” Presented at International Congress of Nutrition, November, 2009, Bangkok, Thailand.
- 2009** Taren, D., Teclé, S.\*\* , Almony, C.\*\* , Navarrete, L.\*\* , Ernst, K., Menard, S., Diop, M., Wele, A-H. “Growth of children receiving a dehydrated potato-soy protein blend or a corn –soy blend as part of a food aid program.” Presented at International Congress of Nutrition, November, 2009, Bangkok, Thailand.
- 2010** Ernst, K.C., Arora, M.\*\* “Who’s under the net? Determinants of intra-household use of bednets for high risk groups in Kenya.” Late-breaker, presented at American Society of Tropical Medicine and Hygiene conference, November 2010. Atlanta, GA.
- 2010** Weaver, T., Greenberg, J., Ernst, K.C., Reinschmidt, K., Honeyman, D.\*\* “A Binational study of tuberculosis among migrant workers in Arizona and Sonora.” Presented at Society for Applied Anthropology Conference, March 2010, Merida, MX.
- 2011** Ernst, K.C., Reinschmidt, K., Alvarez, G. “The etiology and epidemiology of tuberculosis in the Arizona/ Sonora border region.” Presented at Society for Applied Anthropology, March 2011, Seattle, WA.
- 2011** Ernst, K.C., Arora, M.\*\* “Determining distribution and use of bednets in Kenya.” Presented at the American Association of Geography, April 2011, Seattle, WA.
- 2012** Erhart, L.M., Ernst, K.C. “Changing epidemiology of hepatitis A in Arizona following intensive immunization programs (1988-2007).” Council of State and Territorial Epidemiologists Annual Conference, June 2012, Omaha, NE.
- 2012** Hiller, K., Edwards, C., Stolz, U., Ernst, K.C., Kerrigan, J., Pierce, D. “The Emergency Department pharmacist as immunization officer.” Presented at 2012 American College of Emergency Providers meeting, October 2012, Denver, CO.
- 2012** Golenko, C.\*\* , McCotter, O., Ernst, K.C., Jacobs, E.T., Erhart, L.M. “Enhancing respiratory infection surveillance on the Arizona-Sonora Border—BIDS Program sentinel surveillance data.” Border Binational Disease Conference, May 2012, Austin, TX.
- 2012** Phillips, B.\*\* , Ernst, K.C. “Seeing the obscured: A social epidemiological assessment of malaria’s reemergence in deforested regions.” Presented at American Public Health Association meeting, November, 2012, San Francisco, CA.



- 2012** Birnbaum, M.S\*\*, Jacobs, E.T., Ralston-King, J., Ernst, K.C. Identifying clusters of high vaccination exemption rates among schools and their determinants. Presented at American Public Health Association conference. San Francisco, CA. November, 2012.
- 2012** Ernst, K.C., Hayden, M., Dickinson, K., Walker, K.R., Doyle, M., Tittel, C. Understanding the knowledge, attitudes and surrounding mosquito control and dengue in emergent areas in the southern United States. Presented at the Third Pan-American Dengue Research Network Meeting, September 2012, Cartagena, Colombia.
- 2012** McCotter, O., Vanskike, F.\*\*, Ernst, K., Komatsu, K., Margolis, H., Waterman, S., Tippit, L.\*\*, Tomashek, K., Montiel, S., Golenko, C., Hunsperger, E. “Enhancing surveillance for arboviral infections in the Arizona Border region.” Presented at International Society of Disease Surveillance conference, December 2012, San Diego, CA.
- 2012** Joy, T.K., Jeffrey, E., Walker, K., Carriere, Y., Ernst, K., Riehle, M. *Aedes aegypti* longevity and its implications for climate change and mosquito-borne disease. Presented at American Society of Tropical Medicine and Hygiene meeting, November 2012, Atlanta, GA.
- 2013** Ernst, K.C., Haenchen, S., Tittel, C., Walker, K.R., Hayden, M.H., “Comparing Social and Behavioral Factors Related to Dengue Transmission in Two U.S. Communities: One With and One Without a Recent Transmission.” Presented at American Society of Tropical Medicine and Hygiene meeting, November 2013 Washington D.C.
- 2013** Ernst, K.C., Hayden, M.H., Agawo, M., Munga, S., “Attitudes towards indoor residual spray - A comparison of areas with endemic and unstable transmission.” Presented at American Society of Tropical Medicine and Hygiene meeting, November 2013, Washington D.C.
- 2013** Haenchen, S.D., Dickinson, K., Hayden, M.H., Ernst, K.C. ”Knowledge and attitudes towards dengue and their effect on mosquito breeding-site prevention practices in Key West, FL.” Presented at Society for Vector Ecology, 6th International Congress, September 2013, La Quinta, California.
- 2014** Ernst, K.C., Hayden, M.H., Walker, K.R., Castro, L., Caravantes, R., Castro-Reyes, P., Monaghan, A., Haenchen, S., Riehle, M., “Differential Emergence of Dengue in the Arizona-Sonora Desert Region: Understanding the Role of Social and Environmental Factors.” Presented at International Society for Environmental Epidemiology, August 2014, Seattle, Washington.
- 2014** Reyes-Castro, P., Ernst, K.C., “Social and Environmental Factors of Dengue Fever in the Sonoran Desert of Mexico, 2006-2011.” Presented at American Public Health Association, 142nd APHA Annual Meeting and Exposition, November 2013, New Orleans, LA.

- 2014** Monaghan, A., Hayden, M.H., Steinhoff, D.F., Rodriguez, D.W., Ernst, K.C., Eisen, L., Lozano Fuentes, S., Bieringer, P., “Disease Vector Mapping Via Environmental, Climatological and Sociological Factors.” Presented at International Society for Environmental Epidemiology, August 2014, Seattle, Washington.
- 2014** Ernst, K.C., Haenchen, S., Dickinson, K., Doyle, M., Hayden, M.H., “Community awareness and support of the controversial release of OX513A *Aedes aegypti* in Key West, FL.” Presented at Fourth Pan-American Dengue Network Meeting. October 2014, Belém, Brazil.
- 2014** Ernst, K.C., Beamer, P. “Relationship of mosquito density and particle loading from cooking fires in Kenya.” Presented at International Society of Exposure Science Annual Meeting. October, 2014., Cincinnati, USA.
- 2014** Ernst, K.C., Hayden, M.H., Walker, K.R., Castro, L., Caravantes, R., Castro-Reyes, P., Monaghan, A., Haenchen, S., Riehle, M. “Diferencias en el riesgo del dengue a través del norte de México”, Presented at El Colegio de Sonora Prevención de riesgos para la salud de las poblaciones vulnerables. November 2014., Hermosillo, SN.
- 2015** Dickenson, K.L, Hayden, M., Haenchen, A., Ernst, K.C., “Willingness to Pay for Control of Dengue-transmitting Mosquitoes in Key West, Florida, and Tucson, Arizona.” Accepted for presentation at The American Meteorological Society’s 6th Conference on Environment and Health, January 2015. Phoenix, AZ.
- 2015** Morin C.W., Monaghan A.J., Crosson W.L., Quattrochi D.A., Hayden M.H., and Ernst, K.C., “Assessing Disparities of Dengue Virus Transmission Risk across the US-Mexican Border Using a Climate Driven Vector-Epidemiological Model.” The American Meteorological Society’s 6th Conference on Environment and Health, January 2015. Phoenix, AZ.
- 2015** Ugwu, C., Ezeanolue, E., Ehiri, J., Ernst, K.C., “Feasibility of using world health organization standard verbal autopsy to assess causes of neonatal and post-neonatal death in Enugu, Nigeria.” CUGH Global Health Conference, "Mobilizing Research for Global Health", March 2015, Boston, Massachusetts (accepted).
- 2015** Bauman, A., Ernst, K.C., Taren, D. Assessing community health: innovation in anthropometric tool for measuring height and length CUGH Global Health Conference, "Mobilizing Research for Global Health", March 2015, Boston, Massachusetts (accepted).

## GRANTS AND CONTRACTS:

### Federal:

- 2003-2005** *Environmental determinants of malaria in the western highland of Kenya.* NIH/ NIAID. R03 AI056184. Total Award: \$152,000 Role: Project Director (50% effort). Principal Investigator: Mark Wilson.
- 2011** *Bednet use in Kenya.* Maternal and Child Health Training Grant T76 MC04925. Role: Trainee for manuscript preparation (5% effort). Principal Investigator: Lynn Gerald.
- 2010-2012** *Women's Health Initiative.* Role: Junior investigator (10% effort). Principal Investigator: Cyndi Thomson.
- 2011-2012** *On the Edge: Aedes aegypti dynamics on the boundary of its natural range.* NIH/NIAID 1R56 AI091843. Total Award: \$442,000. Role: Principal Investigator (25% effort).
- 2012-present** *Identifying Community-based strategies to improve insecticide-treated bednet use in western Kenya.* NIH/NIAID R15 AI100118-01. Total Award: \$376,000. Role: Principal Investigator (20% effort).
- 2012-present** *On the Edge: Dengue and Climate.* NIH/NIAID R01 AI091843-02. Total Award: \$2,378,000. Role: Principal Investigator (30% effort).

### State and Local:

- 2009-2010** *Aedes aegypti longevity at the edge of its range: implications for climate change and mosquito-borne disease.* Center for Insect Science, University of Arizona. Total Award: \$10,000. Role: Principal Investigator.
- 2011-2012** *The role of school nurses in improving student health in Maricopa County.* Contract Maricopa County Health Department. Total Award: \$137,000. Role: Principal Investigator (25% effort).
- 2011-2012** *Insecticide-treated-net use in Kenya: highland and lowland case studies.* University of Arizona Vice President Research Seed Grant. Total Award: \$8900. Role: Principal Investigator.
- 2012** *Determining factors related to vaccination exemptions in Arizona.* Contract Arizona Department of Health Services. Total Award: \$65,000. Role: Principal Investigator (10% effort).
- 2012-present** *Dengue surveillance in the Arizona border region.* Contract Arizona

Department of Health Services Border Infectious Disease Surveillance contract. Total Award: \$65,000. Role: Principal Investigator.

Private:

**2008-2010** *Medical, Socio-cultural and Environmental Factors Related to Tuberculosis in the Mixtec Migrant Communities of Sonora and Arizona: A Bi-national Case Study.* Programa de Investigacion de Migracion de Salud (PIMSA). Total Award: \$45,000. Role: Co-investigator.

**2011-2012** *Designing a standard survey for investigation of outbreaks in swimming pools.* National Swimming Pool Foundation. Total Award: \$65,549. Role: Co-Investigator (10% effort).

**TEACHING:**

**Formal Courses taught:**

- 2008 -** CPH 660 Infectious Disease Epidemiology
- 2009-** CPH 606 Changing Global Health Policy through Cultural Understanding and Epidemiological Analysis
- 2012** CPH 534 Infectious Disease and Development
- 2013** CPH 796A Epidemiology Doctoral Seminar