

Katharine A. Owers, Ph.D.  
*Curriculum vitae*

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## CURRENT POSITION

2018-Present **Postdoctoral Fellow** with Colleen Webb, Colorado State University and the USDA Center for Epidemiology and Animal Health (Fort Collins, CO)

## EDUCATION

2013-2018 **Ph.D.** in Epidemiology of Microbial Disease, Yale University (New Haven, CT)  
Dissertation: "Spatiotemporal dynamics and determinants of leptospirosis infection"

2010-2012 **M.Sc.** in Evolutionary Biology, Uppsala University (Uppsala, Sweden) & Université Montpellier II (Montpellier, France)

2004-2008 **B.S.** in Biology, University of Georgia (Athens, GA)  
*Highest Honors, Summa Cum Laude, Phi Beta Kappa*

## RESEARCH EXPERIENCE

2013-present **Doctoral Research** with Albert Ko, Yale School of Public Health, Department of Epidemiology of Microbial Disease

- Designed and implemented a study using GPS tracking to quantify slum resident movement and resulting exposure to environmental sources of leptospirosis
- Characterized leptospiral transmission patterns and infection determinants in Northeastern Thailand during an epidemic to endemic transition
- Modeled the titer decay dynamics of the gold standard leptospiral diagnostic test
- Determined the robustness of leptospiral risk factor analysis to titer decay and misclassification in serodiagnostics

2012 **Master's Research** with Mattias Jakobsson, Uppsala University (Sweden), Department of Evolutionary Biology

- Used population genetic methods to search genomes of indigenous southern African populations for signals of adaptation to selective pressure from introduced infectious diseases

2011-2012 **Master's Research** with Vincent Herbreteau, Institut de recherche pour le développement, UMR ESPACE-DEV

- Analyzed the spatial epidemiology of leptospirosis in Thailand from 2000 to 2009, identifying associations with environmental and socioeconomic variables

2011 **Master's Research** with Serge Morand, Université Montpellier II, Institut des Sciences de l'Evolution

- Examined global and regional patterns of human pathogen richness and outbreaks and their associations with physical, social, and climatic variables

2006-2008 **Undergraduate Research** with Daniel Promislow, University of Georgia, Department of Genetics

- Examined the effects of behavioral fever and heat shock proteins on outcome of bacterial infection in *Drosophila melanogaster*

## RELATED WORK EXPERIENCE

2013 **Health Geographer** with Hanitra Randrianaivo, Centre Hospitalier Universitaire Saint Pierre, Registre des Malformations Congénitales, Reunion Island

- Performed spatial and statistical analyses on a registry of birth defects.
- Managed collaboration between the hospital-based research unit and remote sensing agency that provided environmental data for analyses.
- Developed and taught software courses for colleagues.

2008-2010 **Internship**, Georgia Department of Natural Resources, Nongame Conservation Section

- Designed a new method to remotely monitor river corridors development.
- Designed and implemented field surveys for fish and mussels.

## FELLOWSHIPS

2017-2018 Doctoral Dissertation Improvement Grant, Yale Institute for Biospheric Studies

2015-2016 Doctoral Pilot Grant, Yale Institute for Biospheric Studies

2014 Summer Travel Grant, Yale University Center for Latin American and Iberian Studies

2014 Downs International Health Student Travel Fellowship, Yale School of Public Health

2012 Undergraduate Travel & Mentoring Award, Society for Molecular Biology and Evolution

2010-2012 Erasmus Mundus Scholarship, European Union

## AWARDS AND HONORS

2015 Best Doctoral Student Presentation, Departmental Retreat

2012 Best Undergraduate Poster, Society for Molecular Biology and Evolution Conference

2012 AAAS/Science Program for Excellence in Science

2008 Center for Undergraduate Research Opportunities Scholar Distinction Award

2007 Goldwater Scholarship Honorable Mention

## TEACHING EXPERIENCE

### Courses Developed and Taught

2013 R software (in French)

2013 QGIS software (in French)

2013 ArcGIS software (in French)

### Teaching Assistant

2017 Introduction to Public Health Surveillance (Enrollment: 10 students)

- 2015 Principles of Epidemiology (Enrollment: 150 students, 25 in my discussion sections)  
2014 Principles of Infectious Disease (Enrollment: 40 Students)

#### Guest Lectures

- 2017 *Big and electronic data for surveillance*, Introduction to Public Health Surveillance  
2016 *Random Error and Precision*, Principles of Epidemiology  
2014 *Staphylococcus aureus*, Principles of Infectious Disease

#### **SUPERVISORY AND MENTORING EXPERIENCE**

- 2013-present Mentored numerous graduate and undergraduate women in STEM through Women in Science at Yale, the Office of Graduate Student Development and Diversity, and the Department of Epidemiology of Microbial Disease  
2015 Mentoring a visiting medical student scholar in epidemiological analytical methods

#### **ACADEMIC SERVICE**

- 2015-2018 Doctoral student representative, Yale School of Public Health Sustainability Committee  
2015-2018 Organizer, Yale Departmental Student's Speaker Series  
2013-2018 Co-founder and leader, Health and Environment at Yale, a cross-campus student interest group on the interaction between health and the environment.  
2011-2013 Organizer, English language conversation practice sessions for French colleagues  
2011-2012 Student Representative, Erasmus Mundus Master Programme in Evolutionary Biology

#### **AD HOC PEER REVIEW**

American Society for Tropical Medicine and Hygiene  
PLoS Neglected Tropical Diseases  
Environmental Monitoring and Assessment

#### **PROFESSIONAL SOCIETY MEMBERSHIPS**

American Association for the Advancement of Science  
American Public Health Association  
American Society for Tropical Medicine and Hygiene

#### **RESEARCH SKILLS**

Programming: Advanced R, QGIS, ArcGIS, Excel, Access, Basic Linux, MatLab, & SAS  
Languages: Fluent French, conversational Portuguese, basic Spanish

#### **CONFERENCE PRESENTATIONS**

**Owers, K.A.**, Hinjoy S., Childs, J.E., Herbreteau, V., Diggle, P.J., and Ko, A.I. "Spatiotemporal dynamics and determinants of leptospirosis in northeastern Thailand, 2000-2014" American Society for Tropical Medicine and Hygiene, Baltimore (2017). Oral presentation.

**Owers, K.A.**, Hinjoy S., Childs, J.E., Herbreteau, V., Diggle, P.J., and Ko, A.I. “Spatiotemporal heterogeneity in leptospirosis transmission in northeastern Thailand” Geomed, Porto, Portugal (2017). Oral presentation.

**Owers, K.A.**, Odetunde, J., de Matos, R.B., Sacramento, G., Carvalho, M., Júnior, N.N., Costa, F., Reis, M.G., Begon, M., Childs, J.E., Hagan, J.E., Diggle, P.J., Ko, A.I. “Fine-scale GPS tracking to quantify human movement patterns and exposure to leptospirosis in the urban slum environment” American Society for Tropical Medicine and Hygiene, Atlanta (2016). Oral presentation.

**Owers, K.A.**, Sjödin, P., Schlebusch, C., Skoglund, P., Soodyall, H., and Jakobsson, M. “The genetic impact of infectious disease on indigenous southern African populations.” Society for Molecular Biology and Evolution, Dublin (2012). Poster presentation.

## **PUBLICATIONS**

**Owers, K.A.**, Odetunde, J., de Matos R.B., Sacramento G., Carvalho M., Nery N. Jr, Costa, F., Reis, M.G., Childs, J.E., Hagan, J.E., Diggle, P.J, and Ko, A.I. (2018) Fine-scale GPS tracking to quantify human movement patterns and exposure to leptospires in the urban slum environment. *PLoS Negl Trop Dis.* 12(8): e0006752.

**Owers K.A.**, Sjödin P., Schlebusch C.M., Skoglund P., Soodyall H., and Jakobsson M. (2017) “Adaptation to disease exposure in indigenous southern African populations” *Proc. R. Soc. B.* 284(1852):20170226.

Nsoesie, E.O., Ricketts, R.P., Brown, H.E., Fish, D., Durham, D., Ndeffo-Mbah M.L., Ahmed, S., Marcellin, C., Shelly, E., **Owers, K.A.**, Wenzel, N., Galvani, A., and Brownstein, J. (2015) “Spatial and Temporal Clustering of Chikungunya Virus Transmission in Dominica.” *PLoS Negl Trop Dis.* 9(8): e0003977.

Morand, S., **Owers, K.A.**, and Bordes, F. (2014) “Biodiversity and Emerging Diseases.” In *Confronting Emerging Zoonoses* (pp. 27-41). Springer Japan.

Morand, S., **Owers, K.A.**, Waret-Szkuta, A., McIntyre, K.M., and Baylis, M. (2013) “Climate variability and outbreaks of infectious diseases in Europe” *Scientific Reports* 3: 1774; DOI:10.1038/srep01774.

**Owers, K.A.**, Albanese, B., and Litts, T. (2012) “Using aerial photography to estimate riparian zone impacts in a rapidly developing river corridor” *Environmental Management* 49(3): 543-552.

Albanese, B., **Owers, K.A.**, Weiler, D.A, and Pruitt, W. (2011) “Estimating occupancy of rare fishes using visual surveys, with a comparison to backpack electrofishing.” *Southeastern Naturalist* 10(3): 423-442.

Linder, J.E., **Owers, K.A.**, and Promislow, D.E.L. (2008) “The Effects of Temperature on Host-Pathogen Interactions in *D. melanogaster*: Who Benefits?” *Journal of Insect Physiology* 54(1): 297-308.