

# Tomás Martín León, PhD – Postdoctoral Researcher & Lecturer

School of Public Health, University of California, Berkeley

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## Education

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**Ph.D. in Environmental Health Sciences, University of California, Berkeley** 2018

Designated Emphasis in Development Engineering

**Dissertation:** Elucidating Liver Fluke Transmission Dynamics: Synthesizing Lab, Field, & Modeling Methods

**M.S. in Global Health and Environment, University of California, Berkeley** 2014

**Thesis:** Environmental Factors Impacting Liver Fluke Transmission in Natural Waters and Aquaculture Systems

**B.S. in Environmental Engineering, Georgia Institute of Technology** 2012

Minor in Sociology

## Academic Positions

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**Lecturer**, Online MPH Program, UC-Berkeley 2019–Present

**Postdoctoral Researcher**, School of Public Health, UC-Berkeley 2018–Present

## Awards and Fellowships

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Presidential Management Fellowship (declined) 2018

National Science Foundation Graduate Research Fellowship 2012–2017

Foreign Language and Area Studies Fellowship 2015–2016

Fulbright Student Research Scholarship (Thailand) 2014–2015

CDC ORISE Fellowship 2011–2012

Georgia Tech President's Scholarship 2008–2012

Outstanding Senior in CEE (Georgia Tech) 2011

## Peer-Reviewed Publications

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**T.M. León**, A. Cornel, K.K. Brisco, J.M. Marshall (2020, in prep). Maximum likelihood method for analyzing mark-release-recapture data of *Aedes aegypti* using environmental and landscape data. Invited submission in *Ecology Letters*.

**T.M. León**, V. Plermkamon, K. Kuntiyawichai, B. Sriipa, R.C. Spear (2019, submitted). Hydrology-informed metapopulation modeling of liver fluke transmission in the Lawa Lake complex of northeast Thailand. Preprint available on bioRxiv: <https://www.biorxiv.org/content/biorxiv/early/2019/03/06/569913.full.pdf>

J.M. Marshall, R. Raban, N.P. Kandul, J.R. Edula, **T.M. León**, O. Akbari (2019). Winning the tug-of-war between effector gene design and pathogen evolution in vector population replacement strategies. *Frontiers in Genetics*.

J.C. Utazirubanda, **T.M. León**, P. Ngom (2019). Variable selection via Group LASSO Approach: Application to the Cox Regression and frailty model. *Communication in Statistics: Simulation and Computation*.

**T.M. León**, T.C. Porco, C.S. Kim, S. Kaewkes, W. Kaewkes, B. Sriipa, R.C. Spear (2018). Modeling liver fluke transmission in northeast Thailand: impacts of development, hydrology, and control. *Acta Tropica*.

P. Echaubard, **T.M. León**, K. Suwanatrai, J. Chaiyos, C.S. Kim, F.F. Mallory, S. Kaewkes, R.C. Spear, B. Sripa (2017). Experimental and Modeling Investigations of *Opisthorchis viverrini* Miracidium Transmission Over Time and Across Temperatures: Implications for Control. *International Journal for Parasitology* 47(5): 257-270.

X. Li, X. Chen, X. Yuan, G. Zeng, **T.M. León**, J. Liang, G. Chen, X. Yuan (2017). Characteristics of Particulate Pollution (PM<sub>2.5</sub> and PM<sub>10</sub>) and Their Spacescale-Dependent Relationships with Meteorological Elements in China. *Sustainability* 9(12): 2330.

X. Li, W. Liu, Z. Chen, G. Zeng, C. Hu, **T.M. León**, J. Liang et al. (2015). The application of semicircular-buffer-based land use regression models incorporating wind direction in predicting quarterly NO<sub>2</sub> and PM<sub>10</sub> concentrations. *Atmospheric Environment* 103: 18-24.

W. Liu, X. Li, Z. Chen, G. Zeng, **T.M. León**, J. Liang, G. Huang et al. (2015). Land use regression models coupled with meteorology to model spatial and temporal variability of NO<sub>2</sub> and PM<sub>10</sub> in Changsha, China. *Atmospheric Environment* 116: 272-280.

## Recent Presentations

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**T.M. León**. Flight of the mosquito: modeling the influence of landscapes on movement. Forthcoming presentation at Virtual Asilomar 2021 [American Society of Naturalists].

**T.M. León**, H.M. Sánchez C., Y. Lee, J.M. Marshall. New methods for modeling *Anopheles gambiae s.l.* movement with environmental and genetic data. Forthcoming presentation at 2020 Annual Meeting of American Society of Tropical Medicine and Hygiene (virtual).

**T.M. León**, H.M. Sánchez C., J.M. Marshall. Mosquitoes in paradise, but can malaria be driven out? Talk given at Bay Area EEID 2020, Berkeley, CA.

**T.M. León**, J.B. Bennett, A.J. Cornel, J.M. Marshall. Incorporating environmental variables into mosquito gene drive modelling: fine-scale dispersal, temperature, and landscape-dependent connectivity. Poster presentation given at Epidemics7 International Conference on Infectious Disease Dynamics (2019), Charleston, SC.

**T.M. León**, A. Cornel, K.K. Brisco, J.M. Marshall. Maximum likelihood method for analyzing mark-release-recapture data of *Aedes aegypti* using environmental and landscape data. Contributed talk given at 2019 Ecological Society of America Annual Meeting, Louisville, KY.

**T.M. León**, V. Plermkamon, K. Kuntiyawichai, B. Sripa, R.C. Spear. Liver fluke transmission in northeast Thailand: rain, reinfection, and reservoir hosts. Poster presentations given at Bay Area EEID 2019, Palo Alto, CA, and 11<sup>th</sup> Annual CEND Symposium (2019), Berkeley, CA.

## Teaching

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### University of California, Berkeley

Introduction to GIS for Public Health – instructor of record and lecturer (2020, 2021)

Environmental and Occupational Epidemiology – guest lecture, “WaSH and Helminth Disease Epidemiology” (2019, 2020)

CRISPR Genome Editing: From Biology to Technology – guest lecture, “Gene Drives” (2020)

Infectious Disease Modeling – guest lecture, “Introduction to Stochastic Modeling” (2019)

Intro to Environmental Health Sciences (for MPH students) – graduate student instructor (2017)  
Intervention Trial Design – graduate student instructor and guest lectures (2016)  
Intro to Environmental Health Sciences (for MPH students) – guest lecture, “Environmental Pathways for Infectious Disease” (2015)

### **Mount Tamalpais College/Patten University**

Public Health – curriculum designer and lead instructor (2019)  
Environmental Justice Workshop – research assistant and guest lecturer (2019)  
Elementary Algebra – co-instructor (2017), study group coordinator (2014)  
Developmental Math 50B – lead instructor (2016), co-instructor (2013, 2015)  
Developmental Math 50A – co-instructor (2013)

## **Advising**

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### **Students Supervised**

Darpa Anireddy, BA(c), Public Health, UC-Berkeley	2020–
Daniel Lopez, BA(c), Molecular & Cell Biology, UC-Berkeley	2020–
Thien-An Ha, MPH, Epidemiology & Biostatistics, School of Public Health, UC-Berkeley	2019–2020
Cheyenne Butcher, MS, Environmental Health Sciences, School of Public Health, UC-Berkeley	2017–2018

### **Thesis Committees**

Luis Rodrigo Careaga Sotomayor, MS Computer Science, Tecnológico de Monterrey, México	2019
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## **Skills**

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**Languages:** English – native; Spanish – conversational; Thai – conversational

**Programming/Software:** R, QGIS – advanced; Git – intermediate; Python, MATLAB, C++, Julia – basic

**Hobbies:** Hiking, puzzling, volunteering, world percussion