

# Brett R. Bayles

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## EDUCATION & TRAINING

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- 2015-16 **Postdoctoral Research Fellow**, Department of Entomology  
University of California-Riverside
- 2012-14 **Postdoctoral Research Fellow**, Institute on the Environment  
University of Minnesota-Twin Cities
- 2012 **Ph.D.** in Public Health Studies, School of Public Health  
Saint Louis University
- 2010 **M.P.H.** in Biosecurity, School of Public Health  
Saint Louis University
- 2007 **B.A.** in Biological Anthropology  
University of California-San Diego

## PROFESSIONAL EXPERIENCE

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- 2016- **Assistant Professor of Global Public Health**, School of Health and Natural Sciences  
Dominican University of California
- 2017-19 **Co-Director**, Global Public Health Program, School of Health and Natural Sciences  
Dominican University of California
- 2017 **Co-Founder**, Global Public Health Program  
School of Health and Natural Sciences, Dominican University of California
- 2016-17 **Director**, Health Sciences Program, School of Health and Natural Sciences  
Dominican University of California
- 2015-16 **Postdoctoral Research Fellow**, Department of Entomology  
University of California-Riverside
- 2015-16 **Research Consultant**, The Nature Conservancy
- 2014-16 **Adjunct Faculty**, College of Health Sciences  
California State University-Northridge
- 2014 **Adjunct Faculty**, George Warren Brown School of Social Work  
Washington University in St. Louis
- 2012-14 **Postdoctoral Research Fellow**, Institute on the Environment  
University of Minnesota-Twin Cities
- 2010-12 **Graduate Research Assistant**, Department of Environmental Health  
Saint Louis University School of Public Health
- 2010-11 **Research Assistant**, Midwest Regional Center of Excellence for Biodefense and Emerging  
Infectious Diseases Research  
Washington University in St. Louis
- 2008-09 **Program Coordinator**, Military International Health Training Program  
Department of Defense HIV/AIDS Prevention Program

## PUBLICATIONS (Denotes mentored undergraduate student\*)

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### Refereed Journal and Conference Publications:

- [9] **Bayles BR**, Rusk AE, Christofferson RC, Agar G\*, Alvarez Pineda M\*, Chen B\*, Dagy K\*, Hummel T\*, Kelly ES\*, Martin S\*, Murrer AJ\*, Faerron Guzmán C. Spatiotemporal dynamics of vector-borne disease risk varies across human land-use gradients: Examining the role of agriculture, indigenous territories, and protected areas in Costa Rica. **The Lancet Global Health**. In Press.
- [8] Schartel TE, **Bayles BR**, Cooper ML, Simmons G, Thomas SM, Varela LG, Daugherty MP (2019) Reconstructing the European Grapevine Moth (Lepidoptera: Tortricidae), Invasion in California: Insights From a Successful Eradication. [Annals of the Entomological Society of America](#), 112: 107-117.
- [7] Keesing F, Ostfeld RS, Okanga S, Hockett S, **Bayles BR**, Chaplin-Kramer R, Fredericks P, Hedlund T, Kowal V, Tallis H, Warui C, Wood S, Allan BF (2018) Consequences of integrating livestock and wildlife in an African savanna. [Nature Sustainability](#), 1: 566-573. [Cover article]
- [6] Coelho VR, Fenner D, Caruso C, **Bayles BR**, Huang Y, Birkeland CE (2017) Shading as a mitigation tool for coral bleaching in three common Indo-Pacific species. [Journal of Experimental Marine Biology and Ecology](#), 497: 152-163.
- [5] **Bayles BR**, Thomas SM, Simmons GS, Grafton-Cardwell EE, Daugherty M (2017) Spatiotemporal dynamics of the Southern California Asian citrus psyllid (*Diaphorina citri*) invasion. [PLOS ONE](#), e0173226.
- [4] **Bayles BR**, Brauman KA, Adkins JN, Allan BF, Ellis AM, Goldberg TL, Golden CD, Grigsby-Toussaint DS, Myers SS, Osofsky SA, Ricketts TH, Ristaino J (2016) Ecosystem services connect environmental change to human health outcomes. [EcoHealth](#), 13: 443-449.
- [3] **Bayles BR**, Allan BF (2014) Social-ecological factors determine spatial variation in human incidence of tick-borne ehrlichiosis. [Epidemiology and Infection](#), 142: 1911-24.
- [2] **Bayles BR**, Evans G, Allan BF (2013) Knowledge and prevention of tick-borne diseases vary across an urban-to-rural human land-use gradient. [Ticks and Tick-borne Diseases](#), 4: 352-8.
- [1] Schwartz RD, **Bayles BR** (2012) US university response to H1N1: a study of access to online preparedness and response information. [American Journal of Infection Control](#), 40: 170-4.

### Manuscripts in Review and Revision:

**Bayles BR**, Thomas SM, Simmons GS, Daugherty M. Quantifying spillover of an urban invasive vector of plant disease: Asian citrus psyllid in California citrus groves. In review: *Ecosphere*.

**Bayles BR**, Rusk AE, Alvarez Pineda M\*, Chen B\*, Dagy K\*, Hummel T\*, Kuwada K\*, Martin S\*, Faerron Guzmán C. Spatiotemporal trends of cutaneous leishmaniasis in Costa Rica. In review: *Transactions of The Royal Society of Tropical Medicine and Hygiene*.

Kancharla P, Dodean RA, Li Y, Pou S, Pybus B, Melendez V, Read L, Bane CE, Vesely B, Kreishman-Deitrick M, Black C, Li Q, Sciotti RJ, Olmeda Raul, Luong T-L, Gaona H, Potter B, Sousa J, Marcsisin S, Caridha D, Xie L, Vuong C, Zeng Q, Zhang J, Zhang P, Lin H, Butler K, Roncal N, Gaynor-Ohnstad L, Leed SE, Nolan C, Ceja FG, Mu J, **Bayles BR**, Cooper RA, Reynolds KA, Smilkstein MJ, Riscoe MK, Kelly JX. Lead Optimization of Second-Generation Acridones as Broad-Spectrum Antimalarials. In review: *Journal of Medicinal Chemistry*.

### Manuscripts in Preparation:

**Bayles BR**, Christofferson RC, Rusk AE, Agar G\*, Dagy K\*, Kelly ES\*, Kuwada K\*, Murrer AJ\*, Hummel T\*, Faerron Guzmán C. Anthropogenic landscapes and the spatial dynamics of Flavivirus emergence in a biodiversity hotspot: Dengue and Zika virus in Costa Rica.

**Bayles BR**<sup>†</sup>, Dagy K<sup>†\*</sup>, Christofferson R, Rusk AE, Faerron Guzmán C. Hotspots of Dengue fever in Costa Rica.

**Bayles BR**<sup>†</sup>, Kelly E<sup>†\*</sup>, Cooper RA, Rusk AE, Faerron Guzmán C. Geographic distribution of persistent malaria hotspots in Costa Rica.

Katairo T, Tumwebaze PK, Byaruhanga O, Okitwi M, Orena S, Nankabirwa J, Blasco B, Leroy D, Nsohya SL, Rosenthal PJ, **Bayles BR**, Cooper RA. Correlations of ex vivo anti-malarial drug sensitivity in Eastern Uganda.

Namugenyi C, **Bayles BR**. Spatial analysis of malaria risk in Uganda.

**Bayles BR**, Christofferson R, George M, Judin E, McCormack S, McGrath A, Snyder R. Emerging Hotspots of West Nile Virus risk in California.

## **PRESENTATIONS** (Denotes mentored undergraduate student\*)

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### **Professional Meeting Abstracts:**

- [16] Thermal stress resistance of wild and aquacultured *Orbicella faveolata* corals, and their response to shade as a mitigation strategy during cumulative heating. Coelho V, Vaughan D, **Bayles BR**. *International Coral Reef Symposium*. Bremen, Germany. July 2021.
- [15] **Bayles BR**, Rusk AE, Christofferson RC, Agar G\*, Alvarez Pineda M\*, Chen B\*, Dagy K\*, Hummel T\*, Kelly ES\*, Martin S\*, Murrer AJ\*, Faerron Guzmán C. (2020). *Spatiotemporal dynamics of vector-borne disease risk varies across human land-use gradients: Examining the role of agriculture, indigenous territories, and protected areas in Costa Rica*. Consortium of Universities for Global Health Annual Conference, Washington DC, USA. (Conference canceled)
- [14] Kreutzfeld O, Rasmussen SA, Tumwebaze PK, Conrad MD, Byaruhanga O, Katairo T, Okitwi M, Nsohya SL, Orena S, Chelebieva S, Legac J, Adyemir O, Bailey J, Zahn W, Zhang H, Lin G, Kirkman L, Duffey M, **Bayles BR**, Rosenthal PJ, Roland A. Cooper. Mechanisms of varied susceptibility of Ugandan *P. falciparum* isolates to lead antimalarials. [Poster presentation] *Molecular Approaches to Malaria Conference*. 2020.
- [13] Spatial dynamics of vector-borne disease risk in Costa Rica: Examining the role of anthropogenic landscapes, indigenous territories, and protected areas in a biodiversity hotspot. **Bayles BR**, Maria Alvarez Pineda\*, Keira Dagy\*, Emma S. Kelly\*, Serena Martin\*, Carlos Faerron Guzmán. [Poster presentation] *American Geophysical Union Annual Conference*. San Francisco, CA. December, 2019.
- [12] Anthropogenic landscapes and the spatial dynamics of vector-borne disease emergence in Costa Rica. **Bayles BR**, Faerron Guzmán C, Christofferson RC, Agar G\*, Chen B\*, Dagy K\*, Hummel T\*, Kelly E\*, Kuwada K\*, Murrer A\*, Rusk AE. [Poster presentation] *The American Society of Tropical Medicine and Hygiene Annual Conference*. National Harbor, MD, November, 2019.
- [11] Changes in antimalarial drug sensitivity over time in eastern Uganda. Tumwebaze PK, Duvalsaint M, Asua V, Byaruhanga O, Katairo T, Okitwi M, Orena S, Legac J, **Bayles BR**, Conrad M, Cooper RA, Rosenthal PJ. *The American Society of Tropical Medicine and Hygiene Annual Conference*. National Harbor, MD, November, 2019.
- [10] Correlations of ex vivo antimalarial drug sensitivities between standard and new antimalarial compounds in Tororo, Uganda. Thomas K, Tumwebaze PK, Byaruhanga O, Kitwe M, Nsohya S, **Bayles BR**, Rosenthal PJ, Cooper RA. *The American Society of Tropical Medicine and Hygiene Annual Conference*. National Harbor, MD, November, 2019.
- [9] Characterization of ex vivo Sensitivity of Proteasome Inhibitors in Ugandan *Plasmodium falciparum* isolates. Chelebieva S, Tumwebaze PK, Byaruhanga O, Okitwi M, Orena S, Rasmussen SA, Guiang LF, Mota DJ, Scales RM, Okoro JI, Nsohya S, Conrad MD, Aydemir O, Bailey J, Zahn W, Lin G, **Bayles BR**,

Kirkman LA, Rosenthal PJ, Cooper RA. *The American Society of Tropical Medicine and Hygiene Annual Conference*. National Harbor, MD, November, 2019.

- [8] Varied sensitivities to PfATP4 inhibitors and associations with genotypes in Ugandan *P. falciparum* isolates. Kreutzfeld O, Rasmussen SA, Tumwebaze P, Byaruhanga O, Katairo T, Okitwi M, Orena S, Legac J, Conrad M, Nsobya S, Aydemir O, Bailey J, Duffey M, **Bayles BR**, Cooper RA, Rosenthal PJ. *The American Society of Tropical Medicine and Hygiene Annual Conference*. National Harbor, MD, November, 2019.
- [7] Developing an undergraduate degree program in global public health: a case study. Rusk AE, **Bayles BR**. 2019 Association of Schools and Programs of Public Health Annual Meeting. Arlington, VA, USA.
- [6] Integration of cross-cutting principles for planetary health education through innovative global learning approaches: Perspectives from Costa Rica. **Bayles BR**, Faerron Guzmán C. *Planetary Health Conference* [Poster presentation] Palo Alto, CA, USA. 2019.
- [5] Developing an undergraduate degree program in global public health: a case study. **Bayles BR**, Rusk AE. *Teaching Global Health: Summer Institute for Undergraduate Curriculum and Course Design* [Poster presentation] Meadville, PA. 2017.
- [4] Land-use change and the persistence of West Nile virus hotspots in the United States. **Bayles BR**, Fogel J\*. *Impact of Environmental Change on Infectious Diseases Conference* [Poster presentation] 2017, Trieste, Italy.
- [3] Spatiotemporal dynamics of the Southern California Asian citrus psyllid invasion. **Bayles BR**, Thomas SM, Simmons GS, Daugherty MP. *Entomological Society of America Annual Meeting* [Oral presentation] 2015, Minneapolis, MN.
- [2] Healthy ecosystems, healthy people: Using ecosystem services to link ecosystem processes to human health impacts. **Bayles BR**, Brauman KA. *Ecological Society of America Annual Meeting* [Oral presentation] 2013, Minneapolis, MN.
- [1] SOFA score variability by influenza season and ICU type. **Bayles BR**, Lawrence SJ. *Infectious Disease Society of America Annual Meeting* [Poster presentation] 2011, Boston, MA.

#### Abstracts in Preparation/Review:

Spatiotemporal dynamics of emerging hotspots of West Nile Virus risk in California. McCormack S, George M, Judin M, McGrath A, **Bayles BR**. American Public Health Association Annual Meeting. San Francisco, CA. 2020.

#### Invited Talks:

- 2020 "Spatial dynamics of emerging infectious diseases on a changing planet". Dominican University of California School of Health and Natural Sciences science seminar series. San Rafael, CA.
- "Understanding and Preparing for COVID-19 Coronavirus". Dominican University of California
- 2019 "Planetary health and the global emergence of infectious diseases". Physician assistant studies program. School of Health and Natural Sciences, Dominican University of California. San Rafael, CA.
- 2018 "Patients, populations and planetary health: public health for the 21st century". Rho Alpha Chapter of Sigma Theta Tau International Nursing Honor Society. San Rafael, CA.

#### GRANTS & AWARDS

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- 2019 Dominican Research Collective faculty development award: \$500.

- 2019 School of Health and Natural Sciences Summer Competitive Research Grant: "Spatial analysis of vector-borne disease risk across indigenous lands in Costa Rica": \$4,000.
- 2019 School of Health and Natural Sciences Curricular Innovation Grant: "Proposal to develop a minor in Planetary Health": \$1,000.
- 2018 School of Health and Natural Sciences Summer Competitive Research Grant: "Investigating the role of rainforest loss and vector-borne disease emergence in a biodiversity hotspot": \$5,000.
- 2016 Dominican Research Collective faculty development award: \$500.

## **TEACHING EXPERIENCE**

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### **Undergraduate Courses:**

- 2020 Global Health in Film, Dominican University of California
- 2016-present Epidemiology, Dominican University of California
- 2016-present Epidemiology Lab, Dominican University of California
- 2016-present Global Public Health Capstone, Dominican University of California
- 2018-present Global Environmental Health, Dominican University of California
- 2018 Applied Biostatistics, Dominican University of California
- 2018 Planetary Health Perspectives from Costa Rica, Dominican University of California
- 2015-2016 Epidemiology: the Study of Disease, California State University-Northridge

### **Graduate Courses:**

- 2014 Applied Linear Modeling, Washington University in St. Louis
- 2014 Introduction to Biostatistics, Washington University in St. Louis
- 2012 Graduate Teaching Assistant, General Linear Modeling, Saint Louis University

## **SERVICE**

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### **Working Groups:**

- 2019- Taskforce Member, Planetary Health Competency Framework Project, Planetary Health Alliance
- 2012-14 Healthy People, Healthy Ecosystems. National Academies Keck Futures Initiative

### **Peer Reviewer for Scientific Journals:**

Cambridge Medicine Journal; Diversity and Distributions; Philosophical Transactions of the Royal Society B; PLoS ONE; Ticks and Tick-Borne Diseases

### **Curriculum Development:**

- 2020 Founder: Minor in Planetary Health, Dominican University of California
- 2017 Co-Founder: Bachelor of Science in Global Public Health, Dominican University of California

### **University Service:**

- 2020 Founder, Planetary Health minor, Dominican University of California
- 2019- Co-Chair, Global Learning Committee, Dominican University of California

- 2019- Board member, Institute for Leadership Studies, Dominican University of California
- 2018- Taskforce Member, Digital Curriculum Task Force, Dominican University of California
- 2017-19 School of Health and Natural Sciences Faculty Representative, Curriculum and Educational Policy Committee (CEPC), Dominican University of California
- 2016- Member, Dominican Research Collective, Dominican University of California
- 2017 Co-founder, Global Public Health program, Dominican University of California

## **PUBLIC OUTREACH**

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### **Science Communication:**

- 2019- Creator and Host, Viral Load podcast

### **Press:**

- 2020 [North Bay university turns coronavirus into a teachable moment on global public health.](#)  
KTVU FOX 2.

## **TECHNICAL SKILLS**

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Statistical Analysis: R; SAS; SPSS

Geographic Information Systems: ArcGIS; Q-GIS; FRAGSTATS; GeoDa; SaTScan

Software: Microsoft Office products (Access, Excel, Power Point, Word)