

JENNIFER KATE PETERSON

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EDUCATION

- 2011-2015 Ph.D in Ecology & Evolutionary Biology (focus: disease ecology)
Princeton University
"Life history consequences of infection with Chagas disease agent Trypanosoma cruzi for its invertebrate host Rhodnius prolixus"
- 2009-2011 M.A. in Ecology & Evolutionary Biology
Princeton University
- 2006-2008 Post-baccalaureate certification, Ecology, Evolution and Environmental Biology
Columbia University
- 1997-2001 BFA in Theater Arts; Rutgers University

EMPLOYMENT

- 2022 Adjunct Assistant Professor
College of Arts & Sciences
Lewis and Clark College
- 2019-2021 Adjunct Assistant Professor of Natural Sciences
University Honors College
Portland State University
- 2018-present Research Affiliate
Center for Clinical Epidemiology & Biostatistics
University of Pennsylvania
- 2017-18 Post-doctoral Researcher
Center for Clinical Epidemiology & Biostatistics
University of Pennsylvania
- 2016 Lecturer
Department of Ecology and Evolutionary Biology
Princeton University
- 2015-2016 Post-doctoral Researcher
Department of Ecology and Evolutionary Biology
Princeton University

2009-2015 Graduate Assistant in Instruction
Department of Ecology and Evolutionary Biology
Princeton University

2008-2009 Research Assistant
Sackler Institute for Comparative Genomics
American Museum of Natural History, New York

PUBLICATIONS IN REFEREED JOURNALS (ORCID ID: 0000-0002-0274-6143)

*DENOTES STUDENTS MENTORED BY JK PETERSON

22. Arevalo-Nieto C, Sheen J, Condori-Luna GF, Shinnick J, **Peterson JK**, Castillo-Neyra R, Levy MZ. (2022). Incentivizing Multiple Objectives in Evidence-based, Active Surveillance for Urban Disease Vectors. *Under Review*: PLoS Global Public health. MedRxiv doi: <https://doi.org/10.1101/2021.01.21.21250245>
21. Varian CP, Saldaña A, Calzada JE, Abad-Franch F, Kieran TJ, Padukone A, **Peterson JK**, Gottdenker NL. (2022). Community structure and microenvironment are associated with Chagas disease vector infection and abundance in a rural landscape. *Submitted*: Ecosphere.
20. Hutton RL*, Triana O, Dobson AP, **Peterson JK**. (2022). Disease vector knowledge and healthcare seeking behavior in an endemic urban landscape. *In prep*. Target journal: Parasites and vectors.
19. **Peterson JK**, Dobson AP, Triana O, Graham AL. (2022). Infection event characteristics that influence *Rhodnius prolixus* survival. *In prep*. Target journal: Ecol entomol.
18. **Peterson JK**, Bazuka J, Standley CJ. (2021). One Health and Neglected Tropical Diseases - Multisectoral solutions to endemic challenges. *Trop. Med. Inf. Dis.*: 6(1): 4. <https://doi.org/10.3390/tropicalmed6010004>.
17. Billig Rose E, Roy JA, Castillo-Neyra R, Ross ME, Condori-Pino C, **Peterson JK**, Naquira-Velarde C, Levy MZ. (2020). A real-time search strategy for finding urban disease vector infestations. *Epidemiologic Methods*: 9(1) <https://doi.org/10.1515/em-2020-0001>.
16. Hylton A*, Fitzpatrick DM, Suepaul R*, Dobson AP, Charles RA, **Peterson JK**. (2020). Preliminary characterization of triatomine bug blood meals on the island of Trinidad reveals opportunistic feeding behavior on both human and animal hosts. *Trop. Med. Inf. Dis.*: 5(4): 166. <https://doi.org/10.3390/tropicalmed5040166>. *Paper resulting from A. Hylton undergraduate senior thesis, supervised by JK Peterson.
15. **Peterson JK**, Yoshioka K, Hashimoto K, Caranci A, Gottdenker N, Dorn P, Monroy C, Rodriguez S, Saldaña A, Zuniga C. (2019). Epidemiology of Chagas disease in Central America: An Update. *Curr Trop Med Rep*: <https://doi.org/10.1007/s40475-019-00176-z>.
14. **Peterson JK**, Hashimoto K, Yoshioka K, Dorn P, Gottdenker N, Caranci A, Stevens L, Zúniga C, Saldaña A, Rodriguez S, Monroy C. (2019). Chagas disease in Central America: Recent findings and current

challenges in vector ecology and control. *Curr Trop Med Rep*: <https://doi.org/10.1007/s40475-019-00175-0>.

13. Gutfraind A[^], **Peterson JK**[^], Billig Rose E, Arevalo-Nieto C, Sheen J, Condori-Luna GF, Tankasala N, Castillo-Neyra R, Condori-Pino C, Anand P, Naquira-Velarde C, Levy MZ. (2018). Integrating evidence, models, and maps to enhance Chagas disease vector surveillance. *PLoS Negl Trop Dis*: 12(11): e0006883. <https://doi.org/10.1371/journal.pntd.0006883>. **^Both authors contributed equally to this work.**
12. **Peterson JK**[^], Salazar R[^], Castillo-Neyra R, Borrini K, Condori C, Bartow-McKenney C, Tracy D, Naquira C, Levy, MZ. (2018). *Trypanosoma cruzi* infection does not decrease survival or reproduction of the common bed bug, *Cimex lectularius*. *Am J Trop Med Hyg*: Mar; 98(3): 724-734. doi: 10.4269/ajtmh.17-0593. Epub 2018 Jan 18. **^Both authors contributed equally to this work.**
11. Cucunubá ZM, Nouvellet P, **Peterson JK**, Bartsch SM, Lee BY, Dobson AP, Basañez MG. (2018). Complementary Paths to Chagas Disease Elimination: The Impact of Combining Vector Control with Aetiological Treatment. *Clin Infect Dis*: 66(suppl_4): S293–S300, <https://doi.org/10.1093/cid/ciy006>.
10. Bartsch SM, **Peterson JK**, Hertenstein DL, Skrip L, Ndeffo-Mbah M, Galvani A, Dobson AP, Lee BY. (2017). Comparison and validation of two computational models of Chagas disease: a thirty year perspective from Venezuela. *Epidemics*: March 18:81-91. <http://dx.doi.org/10.1016/j.epidem.2017.02.004>.
9. **Peterson JK**, Graham AL, Elliott RJ*, Dobson AP, Triana Chávez O. (2016). *Trypanosoma cruzi* - *Trypanosoma rangeli* co-infection ameliorates negative effects of single trypanosome infections in experimentally infected *Rhodnius prolixus*. *Parasitology*. Aug; 143(9): 1157-67. Epub 2016 May 13. doi: 10.1017/S0031182016000615.
8. **Peterson JK**, Graham AL. (2016). What are the 'true' effects of *T. rangeli* on its triatomine bug vector? *J. Vector Ecol*: 41(1):27-33. doi: <http://dx.doi.org/10.1111/jvec.12190>.
7. Gottdenker NL, Chávez LF, Calzada JE, **Peterson JK**, Santamaría A, Pineda V, Saldaña A. (2016). *Trypanosoma cruzi* and *Trypanosoma rangeli* co-infection patterns in insect vectors vary across habitat types in a fragmented forest landscape. *Parasitology Open*: 2. doi: 10.1017/pao.2016.9
6. **Peterson JK**, Bartsch SM, Lee BY, Dobson, AP. (2015). Broad patterns in domestic vector-borne *Trypanosoma cruzi* transmission dynamics: synanthropic animals and vector control. *Parasites & Vectors*: 8:537. doi:10.1186/s13071-015-1146-1.
5. **Peterson JK**, Graham AL, Dobson AP, Triana Chavez, O. (2015). *Rhodnius prolixus* life history outcomes differ when infected with different *Trypanosoma cruzi* I strains. *Am J Trop Med Hyg*. Sep 2;93(3):564-72. doi: 10.4269/ajtmh.15-0218. Epub 2015 Jun 15.
4. Hollingsworth TD, Adams ER, Anderson RM, [and 43 others, including, **Peterson JK**]. (2015). Quantitative analyses and modeling to support achievement of the 2020 goals for nine neglected tropical diseases. *Parasites & Vectors*: 8:630. doi:10.1186/s13071-015-1235-1.

3. Castro LA*[^], **Peterson JK**[^], Saldaña A, Peirrerera MY, Calzada JE, Pineda V, Dobson AP, Gottdenker NL. (2014). Use of a tethered flight mill to measure flight behavior and performance of *Rhodnius pallescens*. *J. Med Entomol* 51(5): 1010-1018. **^Both authors contributed equally to this work.**
2. Echeverry-Galvis MA, **Peterson JK**, Sulo R. (2014). The Social Network: Tree Structure Determines Nest Placement in Kenyan Weaver Bird Colonies. *PLoS ONE* 9(2): e88761. doi:10.1371/journal.pone.0088761.
1. Dias IMG, Amato G, Cunha HM, DeSalle R, Paglia AP, **Peterson JK**, Fonseca CG. (2009). Isolation, characterization, and cross-species amplification of new microsatellite markers for three opossum species of the Didelphidae family. *ConservGenetResour*1,1: 405-410.

IN THE MEDIA

- “Parasites and Vectors: The original renegades” in *Bugbitten*, May 2021
<https://blogs.biomedcentral.com/bugbitten/2021/05/28/parasites-and-vectors-the-original-renegades/>
- “Spreading like wildfire? Parasites in a pyrophilic world” in *Bugbitten*, September 2020.
<https://blogs.biomedcentral.com/bugbitten/2020/09/25/spreading-like-wildfire-parasites-in-a-pyrophilic-world/>
- “What the Heck is Chikungunya?” in *Medellin Living*, July 2015.
<https://medellinliving.com/chikungunya/>
- “DIY Insect Displays: Kissing Bug edition” in *Popular Science*, June 2014.
<https://www.popsci.com/blog-network/our-modern-plagues/diy-insect-displays-kissing-bug-edition>
- “Patologías: Explosión Cambrica” in *Clickeros*, Canal U, Medellín, Colombia, November 2013.
http://jennipeterson.com/in-the-media/#mg_id_192
- “Enfermedad de Chagas” on *Conexión Antioquia* Radio, November 2013.
Unfortunately, this program is not available online.

PRESENTATIONS AT INTERNATIONAL CONFERENCES & INVITED LECTURES

- 2021 University of the West Indies, St. Augustine, Trinidad
Invited lecture
- 2021 Ecology and Evolution of Infectious Diseases (EEID); *virtual*
Poster
- 2021 Instituto Costarricense de Investigación y Enseñanza en Nutrición y Salud (INCIENSAS)
Invited lecture (presented in Spanish)
- 2020 American Society of Tropical Medicine and Hygiene Meeting; *virtual*
Poster
- 2019 Ecology and Evolution of Infectious Diseases (EEID); *Princeton, NJ*
Poster
- 2017 American Society of Tropical Medicine and Hygiene Meeting; *Baltimore, MD.*
Speaker
- 2017 Ecology and Evolution of Infectious Diseases (EEID); *Santa Barbara, CA*
Poster
- 2017 VI International Conference on Infectious Tropical Diseases; *Iquitos, Perú.*
Invited speaker (presented in Spanish)
- 2016 22nd Meeting of the Intergovernmental Commission for the Subregional Southern Cone Initiative

for the Elimination of *Triatoma infestans* and the Interruption of Transfusional Transmission of American Trypanosomiasis (INCOSUR/Chagas); *Asunción, Paraguay*.

Invited speaker (presented in Spanish)

2016 American Society of Tropical Medicine and Hygiene Meeting; *Atlanta, GA*.

Session chair

2016 XIX International Congress for Tropical Medicine and Malaria; *Brisbane, Australia*.

Speaker

2015 American Society of Tropical Medicine and Hygiene Meeting; *New Orleans, LA*.

Invited Session chair & Speaker

2014 Entomological Society of America, 62nd Annual Meeting; *Portland, OR*.

Session creator, organizer & chair

2014 American Society of Tropical Medicine and Hygiene Meeting; *Philadelphia, PA*.

Speaker.

2014 13th International Congress of Parasitology (ICOPA); *Mexico City, Mexico*.

Poster

2013 Centro Internacional de Entrenamiento e Investigaciones Medicas (CIDEM); *Cali, Colombia*

Invited lecture

2013 XXI Congreso Latinoamericano de Parasitología; *Guayaquil, Ecuador*.

Speaker (presented in Spanish)

2012 XVIII International Congress for Tropical Medicine and Malaria; *Rio de Janeiro, Brazil*.

Poster

2011 Congreso Latinoamericano de Parasitología; *Bogotá, Colombia*.

Poster

HONORS AND AWARDS

2021 Ecological Society of America Opportunity Fund Registration Grant

2020 PSUFA Faculty Development Grant

2017 Co-investigator, Global Research Collaboration Grant, University of Georgia (PI: NL Gottdenker)

2014 Crafted Chagas disease-specific content for successful Bill & Melinda Gates Foundation / Task Force for Global Health Award

2014 Princeton Emerging Alumni Scholars Award

2013 Princeton Program for Latin American Studies Summer Graduate Research Grant

2013 Princeton Institute for International and Regional Studies Research Grant

2012 Princeton Program for Latin American Studies Summer Graduate Research Grant

2011 Health Grand Challenges/ Princeton Center for Health and Wellbeing Graduate Research Award

PARTICIPATION IN THE SCIENTIFIC COMMUNITY

- Editorial board member, PLoS Global Public Health
- Section editor, "Emerging vector-borne diseases in the United States," *Current Tropical Medicine Reports*
- Guest editor, special issue, "One health and Neglected Tropical Diseases," *Tropical Medicine and Infectious Disease*
- Guest blogger, BMC's 'Bugbitten' blog
- Grant reviewer for The National Science Foundation
- Manuscript reviewer for:

American Journal of Tropical Medicine and Hygiene
BMC Infectious Diseases
Infectious Diseases of Poverty
Insects
International Journal for Parasitology
Journal of Medical Entomology
Lancet Global Health
Medical and Veterinary Entomology

Parasites & Vectors
Parasitology International
Peer J
PLoS Neglected Tropical Diseases
Scientific Reports
Trends in Parasitology
Veterinary Parasitology
Zoonoses and Public Health

• Member of:

Ecological Society of America (2021-present)
American Society of Tropical Medicine and Hygiene (2012- present)
Society for Advancement of Chicano/Hispanics and Native Americans in Science (2015- present)
Entomological Society of America (2013-2014)
Society of Vector Ecology (2013-2014)

TEACHING AND MENTORING

2021

Instructor

Thesis Prospectus (HON 403)

University Honors College
Portland State University

- Delivered an online, synchronous, required all-majors course to support students in initiation of advisor-student working relationship and completion of Honors Senior Thesis prospectus
- Conducted course in online environment (D2L), using tools such as discussion forums, assignment boards, announcements, and Google apps.
- Designed written materials intended to guide students in finding a thesis advisor, conducting productive meetings, and staying on top of strict work deadlines
- Mentored students in best practices in written communication with faculty members
- Conducted periodic one on one meetings with students to review progress and outline next steps
- Developed original peer review assignments aimed to spur critical discourse and analysis between interdisciplinary students
- Served as a sounding board for students transitioning from classroom learners of pre-specified information to independent scholars making individual choices

2020-2021

Instructor

Thesis Continuation (HON 403C)

University Honors College
Portland State University

- Delivered an online, asynchronous required course meant to support students in the completion of their undergraduate senior research theses.
- Conducted course in online environment (D2L), using tools such as discussion forums, assignment boards, announcements, and Google apps.
- Guided students in setting deadlines and making realistic goals for thesis progress.
- Required periodic advisor reports to ensure students communicated with their advisors
- Provided resources for thesis completion including writing tools and reference management software.

- Worked individually with students to resolve a variety of problems related to their theses, including communication with advisors, computing software issues, and emotional issues.
- Created peer-review groups based on feedback from students, and provided opportunities and guidance on conducting peer-review.

2019-2020

Instructor

Urban ecology (HON 203; in-person and online courses)

University Honors College

Portland State University

- Delivered an all-majors required course in which natural science methods are taught through an Urban Ecology framework
- Conceived of original assignments (papers, labs, presentations, worksheets, games) aimed to develop critical thinking skills, improve formal writing skills, focus students on attention to detail, and develop subject matter expertise for students with a wide range of experience in the sciences
- Developed each lesson with a clear learning objective, which was shared with students
- Selected textbook and readings to complement learning objectives of each lesson
- Presented lesson topics ranging from conceptual (e.g. evolution via natural selection) to technical (e.g., experimental design) to quantitative (e.g., biostatistics)
- Taught students how to extract key information from academic literature
- Worked rigorously with each student to improve their writing, with evident marked improvements in many students at course completion
- Guided students through a term-long field project for which students collected data for an international wildlife network, and subsequently analyzed the data, reported findings, and interpreted their meaning
- Incorporated frequent group discussion, group activities, and field trips into course
- Graded all student work using detailed rubrics and extensive written feedback
- Concluded course with student presentations and written reports on a research topic of the students' choice formatted as a formal research proposal
- Provided timely feedback through email, in-person meetings, and weekly office hours

2016

Instructor

Ecology and Epidemiology of Parasites and Infectious Diseases (EEB 328)

Princeton University

- Designed syllabi, managed and delivered a field course integrating classroom and field activities in Gamboa, Panamá
- Lectured on topics ranging from parasitology to mathematical modeling of disease transmission
- Organized field trips and lectures at other scientific institutions in Panama to provide exposure to all facets of tropical biological research (Gorgas National Health Institute, Smithsonian Tropical Research Institute, and Barro Colorado Island)

2010-2016

Mentor and occasional lecturer

Ecology and Evolutionary Biology

Princeton University

- Supervised and mentored students, as detailed on the following pages
- Lectured in undergraduate courses

- 2012-2015 Assistant in Instruction
Ecology and Epidemiology of Parasites and Infectious Diseases (EEB 328)
 Princeton University & Smithsonian Tropical Research Institute
- Designed and managed new field course, incorporating lectures with field experiences
 - Supervised students in design of experiments and analysis of data
 - Constructed and evaluated quizzes, presentations, and research papers
- 2014-2015 Assistant in Instruction
Immune Systems: From Molecules to Populations (EEB/MOL 327)
 Princeton University
- Developed student skills in science writing by providing detailed feedback on draft papers
 - Provided unlimited one-on-one meetings and feedback during office hours and by appt.
 - Constructed grading rubric and evaluated midterm and final papers
- 2013 Assistant in Instruction
Biology of Coral Reefs (EEB345)
 Princeton University
- Supervised field research projects (i.e., study design, data collection, analysis & interpretation) in field course carried out in Bocas del Toro and Isla de Coiba, Panamá
 - Evaluated write-ups and assisted students in achieving defined scientific competencies
 - Managed logistical challenges of a field course that took place primarily in the water
- 2012-2013 Instructor
Ecology and Evolutionary Biology
 Senior thesis writing group
 Princeton University
- Conducted weekly meetings to guide undergraduate seniors in the development of their theses
 - Designed and led activities aimed at improving student skills in scientific writing
 - Helped in data analysis and the construction of each thesis chapter
 - Gave individual feedback over email and in one on one meetings
- 2009-2010 Assistant in Instruction
Evolutionary Biology (EEB 309)
 Princeton University
- Taught students how to read a scientific paper, and extract the key points
 - Evaluated write-ups and assisted students in achieving defined scientific competencies
 - Gave individual feedback during office hours

SUPERVISION AND MENTORING OF GRADUATE CANDIDATES

- 2021-present Doctoral thesis supervisor
Rod Suepaul, Department of Environmental Biology, University of the West Indies,
 Trinidad and Tobago
 Thesis: Currently untitled study of Chagas disease in Trinidad
- 2017-present Doctoral thesis committee member
Kaylee Arnold, PhD Student, Interdisciplinary Disease Ecology Across Scales (IDEAS),
 Odum School of Ecology, University of Georgia
 Thesis: *Rhodnius pallescens microbiome in T. cruzi-infected bugs across different landscapes in Panama.*
- 2015 Summer research project supervisor
Hannelore MacDonald, MPH student, Mailman School of Public Health, Columbia
 University
 Project: *“The role of non-human reservoirs in sustaining T. cruzi transmission across different transmission scenarios.”* Masters summer research project for MPH program.

SUPERVISION AND MENTORING OF UNDERGRADUATE SENIOR THESES

- 2012-2018 **Princeton University, Department of Ecology & Evolutionary Biology (EEB)**
Francisca Bermudez (2017-18)
 Thesis: *Applying Next-Generation Sequencing to the Genetics and Ecology of Rhodnius pallescens, A Vector of Chagas Disease*
Alexandra Hylton (Eakes) (2016-17)
 Thesis: *“Chagas disease ecology on the islands of Trinidad and Grenada: distribution, blood meal sources and Trypanosoma cruzi infection prevalence in triatomine bugs”**
 *Cannon Prize for best presentation of a senior Thesis. Work published in Hylton, et al., 2020 (see publication list above).
Adriana Stephenson (2016-17)
 Thesis: *“Trypanosoma cruzi infection in non-human hosts: state of the art after 106 years of research”*
Kathleen Mulligan, (2016-17)
 Thesis: *“Effect of temperature and local variation in mosquito vectors on the transmissibility of Dengue fever in Machala, Ecuador”*
Anchal Padukone, (2015-16)
 Thesis: *“Relationships between Microhabitat Characteristics and the Abundance of a Chagas Disease Vector, Rhodnius pallescens, in Central Panama.”*
Thomas Yetter (2015-16)
 Thesis: *“Attraction of Chagas disease vector Rhodnius pallescens to artificial light sources.”*
Roberta Hutton (2015-16)
 Thesis: *“Vector control and health care-seeking behavior: Chagas disease and dengue fever in Medellín, Colombia”*
Ryan Elliott (2014-15)
 Thesis: *“Triatomine and Trypanosomes: Fitness Impacts of Trypanosoma cruzi and Trypanosoma rangeli Mono- and Co-infections in the Triatomine Vector Rhodnius prolixus”**
 *Department prize for best laboratory thesis poster; a portion of this work is published in Peterson et al 2016, Parasitology, with Mr. Elliott as co-author.

Lauren Castro (2012-13)

Thesis: *“Flight performance and trypanosome infection of the Chagas disease vector Rhodnius Pallescens: implications for the spatio-temporal spread of Trypanosoma cruzi in rural landscapes.”*
Work published in Castro et al (in publication list above).