Raquel A. Lima-Cordón
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EDUCATION

Postdoctoral fellow 2021-2023

Department of Immunology and Infectious Diseases, Harvard T.H. Chan School of Public Health.

Ph.D. in Biology, January 2021

Department Biology, University of Vermont, Burlington, VT, USA (UVM)
Dissertation Title: Much needed studies of the three players of Chagas disease in Central America: vertebrate blood meal sources and EcoHealth, a new vector species description, and key phylogenetic analysis of the trypanosome parasite

Licenciatura degree in Biology, January 2015.

Department Biology, Universidad de San Carlos, Guatemala City, Guatemala (USAC)
Thesis Title: "Estructuración genética de una variedad criolla de *Cucurbita pepo*, en Baja Verapaz, Guatemala."

AWARDS

- Annual Award for Most cited papers 2019 and 2021 (Zookeys)
- Outstanding Doctoral Dissertation Award (Notable Mention), Graduate College, UVM, 2020-2021
- Dr. Roberto Fabri Fialho Research Award, Graduate College, UVM, 2019-2020
- UVM National Science Foundation Grant (NSF) Research Traineeship (NRT) Trainee 2016-2021
- University of Vermont APLE Award (awarded to Cai McCann-Undergraduate Researcher) 2018

PEER REVIEWED PUBLICATIONS (* INDICATES RELATED TO THESIS/DISSERTATION WORK)

Lima-Cordon, R.A., Mohabir, J., Panchal, R., Tennessen, J. Zurita, A.M., Johnson, Z., Gobran, S., Shieh, M., Holmdahl, I., Early, A. M., Neafsey, D. 2025. High-throughput amplicon sequencing toolkit for entomological surveillance. Molecular Ecology Resources.

***Lima-Cordón, R.A.**, Stevens, L., Dorn, P., Justi, S., Rodas, A., Monroy, C. 2021. Insights from a comprehensive study of *Trypanosoma cruzi*: A new mitochondrial clade restricted to north and Central America and genetic structure of Tc I in the region. PLoS Negl Trop Dis. 15(12): e0010043.

Stevens, L., **Lima-Cordón, R.A.**, Cahan, S.H., Dorn, P., Monroy, C., Axen, H.J., Nguyen, A., Hernáiz-Hernández, Y., Rodas, A., Justi, S. 2021. Catch me if you can: Under-detection of *Trypanosoma cruzi* (Kinetoplastea: Trypanosomatida) infections in *Triatoma dimidiata* s.l. (Hemiptera: Reduviidae) from Central America. Acta Tropica, 224: 106130.

Soto López, J.D., Monroy, C., Dorn, P., Castellanos, S., **Lima, R.,** Rodas, A. 2019. Effect of community education in an integrate control for *Triatoma dimidiata* (Hemiptera: Reduviidae). Revista Cubana de Medicina Tropical 71 (3), 1-18.

Keller, J.I., **Lima-Cordón, R.**, Monroy, M.C., Schmoker, A.M., Zhang, F., Howard, A., Ballif, B.A., Stevens, L. 2019. Protein mass spectrometry detects multiple bloodmeals for enhanced Chagas disease vector ecology. Infection, Genetics and Evolution. https://doi.org/10.1016/j.meegid.2019.103998

***Lima-Cordón, R. A.**, Monroy, M.C., Stevens, L., Rodas, A., Rodas, G.A., Dorn, P.L., Justi, S.A. 2019. Description of *Triatoma huehuetenanguensis* sp. n. (Hemiptera, Reduviidae, Triatominae), a potential Chagas disease vector in Guatemala. Zookeys 28;(820):51-70. doi: 10.3897/zookeys.820.27258.

***Lima-Cordón, R.A.,** Stevens, L., Solórzano Ortíz, E., Rodas, G.A., Castellanos, S., Rodas, A., Abrego, V., Zúniga Valeriano, C., Monroy, M.C. 2018. Implementation science: Epidemiology and feeding profiles of the Chagas vector *Triatoma dimidiata* prior to Ecohealth intervention for three locations in Central America. Plos Neglected Tropical Diseases.

Dorn, P.L., Justi, S.A., Dale, C., Stevens, L., Galvão, C., **Lima-Cordón, R.**, Monroy, C. 2018. Description of *Triatoma mopan* sp. n. from a cave in Belize (Hemiptera, Reduviidae, Triatominae). ZooKeys 775: 69-95. https://doi.org/10.3897/zookeys.775.22553

Gallant, J.P., **Lima-Cordón, R.A.**, Justi, S.A., Monroy, M.C., Viola, T., Stevens, L. 2018. The role of natural selection in shaping genetic variation in a promising Chagas disease drug target: *Trypanosoma cruzi* trans-sialidase. Infection, Genetics and Evolution. Vol 62: 151-159. doi: 10.1016/j.meegid.2018.04.025.

Justi, S., Cahan, S., Stevens, L., Monroy, C., **Lima-Cordón, R.**, Dorn, P. 2018. Vectors of Diversity: Genome wide diversity across the geographic range of the Chagas disease vector *Triatoma dimidiata* s.l. (Hemiptera: Reduviidae). Molecular Phylogenetics and Evolution. Vol 120: 144-150.

Enríquez, E., Landaverde-Gonzalez, P., **Lima-Cordón, R.**, Solórzano, E., Tapia-López, R., Poulin, E., Núñez-Farfán, J. 2018. Population genetics of traditional landraces of *Cucurbita pepo* L., 1753 in the cloud forest in Baja Verapaz, Guatemala. Genetic Resources and Crop Evolution, 65: 979.

CORE SKILLS

I possess a robust skill set in molecular biology techniques and analysis. I have experience supervising undergraduate research projects and serving as a teaching assistant. I now also have experience teaching introductory biology, further enhancing my ability to communicate complex biological concepts effectively to diverse audiences. My technical skills encompass data collection and management, entomology collection and curation, DNA sequencing, PCR/qPCR analysis to DNA cloning. My analytical expertise ranges from experimental design to phylogenetics, bioinformatics, parasite evolution, population genetics, metagenomics, vector ecology, and translational science, with a focus on Ecohealth.

PROFESSIONAL EXPERIENCE

Lecturer in Introductory Biology: September 2025 - Present, University of Vermont. (Biology Department)
Teaching Undergraduate course: BIOL 1400.

Lecturer in BioCore Program: September 2023 - Present, University of Vermont. (Plant Biology Department)
Teaching Undergraduate course: BCOR 1400.

Postdoctoral Fellow, October 2021 – August 2023, Harvard T.H. Chan School of Public Health.
PI: Dr. Daniel Neafsey.
Focused on developing amplicon-based Illumina sequencing assays for genetic information of mosquito vectors in South America.

Postdoctoral Associate, March 2021 – September 2021, University of Vermont.
PI: Dr. Lori Stevens. Project: National Science Foundation Grant, Modeling disease transmission using spatial mapping of vector-parasite genetics and vector feeding patterns.
My work focuses on the study of ecology, genetics and evolution of infectious disease, Chagas. Additional duties include from managing the laboratory, processing samples for whole genome sequencing to develop the bioinformatics pipeline for data analysis and prepare results for publication.

Graduate Student Research Assistant, April 2015 – January 2021, University of Vermont
PI: Dr. Lori Stevens, Project: National Science Foundation Grant, Modeling disease transmission using spatial mapping of vector-parasite genetics and vector feeding patterns.
Field and laboratory work, data analysis, presentation and publication on an interdisciplinary project investigating Chagas disease transmission in Central America. Additional duties include managed the laboratory, maintained specimens and database for collection of over 1000 insect vectors, and participated in surveying and training during field trips to rural communities to work on an Ecohealth project including community engagement with indigenous people in Guatemala.

Undergraduate Research Assistant, January 2011- April 2015, USAC
PI: Dr. Carlota Monroy, Project: Ecohealth intervention for the prevention of Chagas disease in Central America. Conducted training and Knowledge, Attitudes and Practices (KAP) surveys in the field. The survey data were combined with laboratory analyses to identify risk to humans from practices and sources of bloodmeals of triatomine insect vectors of Chagas disease.

Research Assistant, June 2011 – June 2012, USAC
PI: Dr. Eunice Enriquez, Project: Erosion evaluation and genetic variability in one wild variety of *Cucurbita pepo* (squash) for possible introgression with commercial varieties in Baja Verapaz,

Guatemala. Participated in field collecting trips, did laboratory molecular genetic analysis with microsatellites, and data analysis to publication of our results.

Research Assistant, January 2010 - January 2011, USAC
PI: Licda. Antonieta Rodas, Project: Potential foci for the evaluation of lung fluke infection (Paragonimiasis) and molecular determination of the *Paragonimus* sp. present in the southern departments of Guatemala. Participated in field work, performed DNA extractions, optimized and assayed the molecular marker "COI", completed data analysis and wrote the report.

Academic Experience Program Research, January 2009 – January 2010, USAC
Year-long internship in rural communities required for Licenciatura degree. Working with the Laboratory of Entomology and Applied Parasitology, USAC, I analyzed the genetic structure of the stingless bee, *Melipona beecheii*, in Guatemala using molecular genetic markers.

TEACHING AND MENTORING ACTIVITIES

Graduate Teaching Assistant

BIOL 254, Population Genetics, Biology Department, University of Vermont. Fall 2020, Fall 2019, Fall 2018, Fall 2016, Summer 2016
BIOL 001, Exploring Biology, Biology Department, University of Vermont. Fall 2017

Undergraduate Teaching Assistant

Embryology, Zoology Department, School of Biology, USAC. Spring 2013.
Pharmacobotanic II, Botany Department, School of Biology, USAC. Fall 2012.
Comparative Physiology and Anatomy II, Zoology Department, School of Biology, USAC. Fall 2011.
Genetics II, Department of Zoology, School of Biology, USAC. Fall 2011.
Invertebrate Zoology II, Department of Zoology, School of Biology, USAC. Spring 2011.
Evolution, Department of Zoology, School of Biology, USAC. Spring 2011.

PROFESSIONAL SOCIETY MEMBERSHIP

BROAD Institute affiliated. (past)
Society for Vector Ecology (SOVE) (past)
American Society of Tropical Medicine and Hygiene (ASTMH) (past)
Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), UVM chapter. (Current)

INVITED INTERNATIONAL CONFERENCES

Update on vector borne diseases in Central America. National University of Honduras (virtual conference with presenters and audience from North American and across Central America). December 11th 2020.

Title: *Actualización de enfermedades tropicales de transmisión vectorial: Enfermedad de Chagas en Centro América*.

INVITED PRESENTATIONS

Kids for World Health Panel: Understanding Human Partnership: An Evening of Global Health Awareness and Connection. October 14, 2016.

CONTRIBUTED PRESENTATIONS

Lima-Cordón, R.A., Dorn, PL., Justi, S., Monroy, C., Rodas, A., Stevens, L. "Mitochondrial typification and genetic diversity of *Trypanosoma cruzi* in three species vectors of Chagas disease in Guatemala", Poster Society of Vector Ecology, 48th Annual Conference, October 7-11, 2018, Yosemite, California.

Stevens, L., Dorn, P., Monroy, C., Keller, J.I., **Lima-Cordón, R.A.**, Justi, S., Ballif, B. "-omics approaches to interrupting Chagas transmission in Central America". Invited presentation Society of Vector Ecology, 48th Annual Conference, October 7-11, 2018, Yosemite, California.

Keller, J.I., **Lima-Cordón, R.A.**, Monroy, C., Ballif, B., Stevens, L. Protein Mass spectrometry outperforms DNA-based methods for detection and quantification of Chagas disease vector blood meal sources. U Society of Vector Ecology, 48th Annual Conference, October 7-11, 2018, Yosemite, California.

Lima-Cordón, R., Dorn, P., Justi, S., Monroy, C., Rodas, A., Stevens, L. "Discovery of two new species of insect vectors and their relationship to disease epidemiology: Chagas disease and kissing bugs (*Triatoma spp*.)". Poster UVM Student Research Conference, April 2018.

McCann, C., **Lima-Cordón, R.A**, Stevens, L., Solórzano, E., Rodas, G.A., Castellanos, S., Rodas, A., Monroy, A. Evolution of Chagas Disease Variation: Signatures of selection in mitochondrial DNA from *Trypanosoma cruzi*. Poster UVM Student Research Conference, April 2018.

Lima-Cordón, R.A., "Untangling the taxonomy of *Triatoma dimidiata* and its relation to Chagas disease", Oral presentation, Biolunch, Biology Department, UVM, Spring 2018.

Lima-Cordón, **R.A.**, "*Trypanosoma cruzi typification for Central America*", Oral presentation, Biolunch, Biology Department, UVM, Spring 2017.

Lima-Cordón, R.A., Gallant, J., Viola, T., McCann, C., Monroy, C., Rodas, A., Solórzano, E., Rodas, G.A., Castellanos, S, Dorn, P., Stevens, L. "*Trypanosoma cruzi typification for Central America*", Poster. UVM Student Research Conference, April 2017.

Lima-Cordón, R.A., "*Phylogenetic Analysis of* Trypanosoma cruzi *reveals new records of TcIV DTU and infra-DTU variation within TcIV and TcI for Central America*", Oral presentation, Annual Ecology and Evolution of Infectious Disease meeting, Belize, June 2016.

Lima-Cordón, R.A. "*Investigating Chagas Disease dynamics in northern Central America*", Oral presentation, Biolunch, Biology Department, UVM, spring 2016.

Lima-Cordón, R.A., Stevens, L., Solórzano Ortíz, E., Rodas, G.A., Abrego, A., Zúniga, C., Monroy, C. "*Blood sources and Trypanosoma cruzi infection reveal the relationship between wild and domestic transmission cycles for Chagas Disease in northern Central America*", Poster. UVM Student Research Conference, April, 2016.

Lima-Cordón, R.A. "*Strain type and virulence of Trypanosoma cruzi*", Oral presentation, Annual Ecology and Evolution of Infectious Disease meeting, Athens, Georgia, USA, May 2015.

Lima-Cordón, R.A. "*Analysis of blood meal sources of Chagas disease vectors from two locations in Guatemala: Jutiapa and Chiquimula*", Oral presentation. Symposium for collaborative investigation between the Loyola University New Orleans, UVM and USAC, April 2012, Guatemala City, Guatemala.

WORKSHOPS ORGANIZED AND PRESENTED

Symposium: "What is new in Chagas disease", for Society for Vector Ecology (SOVE), September 2023

USAC workshop: "*PCR Training for the detection of bloodmeals in triatomines*", for USAC undergraduates, USAC, Guatemala, November 2011

National workshop: "*Training in Molecular Characterization of Biodiversity*", for students across Guatemala, USAC, Guatemala, May 2011

MEETINGS, COURSES AND TRAINING

American Society of Tropical Medicine and Hygiene (ASTMH) 67th Annual Meeting, New Orleans, LA. Oct 28 - Nov 1, 2018.

SOVE 48th Annual Conference held Yosemite, California, Oct 7 – Oct 11, 2018.

XII Annual Congress, Ecology Evolution of Infectious Disease, Denver, Colorado, USA, June 2014.

Workshop "*Generation of proposals in the genomic and proteomic investigation of triatomines*". Guatemala City, September 2011.

Training "*Hypervariable Molecular Markers, Microsatellites*", Ecological Genetics and Evolution Laboratory, institute of Ecology, National University of Mexico, September 2011.

MANUSCRIPT REVIEWER

Journal of Medical Entomology
PLoS Neglected Tropical Diseases
Frontiers in Ecology and Evolution
Scientifict Reports
Trends in Parasitology
Zootaxa
Journal of Vector Ecology
Infection, Genetics and Evolution

Revista da Sociedade Brasileira de Medicina Tropical

MENTORING/TRAINING

Undergraduate Student	Year	Degree
Joseph Gallant	2016	Biology Major
Tony Viola	2016	Biology Major
Cai McCann	2018	Biology Major