

## GABRIELA M. ULLOA URIZAR, PhD.

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Molecular eco-epidemiologist with interdisciplinary expertise in molecular diagnostics, pathogen genomics, and infectious disease surveillance at the human-wildlife interface in the Amazon Basin. Ten years of field and lab experience in emerging infectious diseases, leading One Health research in remote Indigenous communities. Demonstrated leadership in collaborative projects, data analysis, and international research partnerships. Research focuses on emerging infectious diseases, antimicrobial resistance in enteric bacteria, zoonotic diseases, and evolutionary host-parasite dynamics. Passionate about impactful science for planetary health.

### CURRENT APPOINTMENTS

Lima, Peru

Apr. 2020 – Present      Universidad Científica del Sur (UCSUR), Faculty of Health Sciences.  
Group of Emerging Infectious Diseases. **Honorary Research Fellow.**

### EDUCATION

Belem, PA- Brazil

Mar. 2019 – Dec. 2024      Federal Rural University of Amazonia (UFRA). **PhD in Molecular Epidemiology.**

- Thesis: *Molecular epidemiology of Plasmodium spp. at the human-wildlife interface in the Peruvian Amazon.*
- Doctoral fellowships: CNPq, CAPES, OEI (Paulo Freire+)

Lima, Peru

Mar. 2017 – Dec. 2018      Universidad Peruana Cayetano Heredia (UPCH). **MSc in Epidemiological Research.**

- Fellowship: NIH/FIC

Mar. 2011 – Dec. 2015      Universidad Nacional Mayor de San Marcos (UNMSM). **Biologist with a mention in Zoology.**

### RESEARCH EXPERIENCE

Lima, Peru

Apr. 2020 – Present      Universidad Científica del Sur (UCSUR), Faculty of Health Sciences.  
Group of Emerging Infectious Diseases. **Honorary Research Fellow.**

- Strengthened One Health surveillance of antimicrobial resistance through study design, field sampling, molecular and serological analyses, and data interpretation.
- Led undergraduate and MSc student supervision in microbiology and data analysis, contributing to research capacity-building in Peru.

- Actively involved in grant writing and successful funding applications (Cabieses 2020 & 2021).
- **Outputs:** Co-author publications (2), Research fellowships and grants (4), Supervision of MSc students (1), Supervision of undergraduate students (4).

*Belem, PA- Brazil*

Mar. 2019 – Dec. 2024 Federal Rural University of Amazonia (UFRA). Research Group: Animal Health and Environment. **Doctoral Researcher.**

- Developed molecular surveillance tools (RNA/DNA extraction, nested PCR, qPCR, sequencing) to detect *Plasmodium* spp. in humans, non-human primates, ungulates, and small mammals in the Peruvian–Brazilian Amazon.
- Conducted bioinformatic and phylogenetic analyses to study host–parasite co-evolution and cross-species transmission dynamics in zoonotic malaria.
- Participated in WildEmerg, a multinational, interdisciplinary project on vector-borne diseases at the human–wildlife interface, funded by ERANet, CONCYTEC (Peru), ISCIII (Spain), and CNPq (Brazil).
- Worked as a predoctoral fellow across three partner institutions (UFRA, UPCH, ISGlobal), coordinating field activities in Peru and contributing to sample processing and data analysis in Brazil and Spain.
- Collaborated with the Leibniz Institute for Zoo and Wildlife Research (Germany) for molecular validation and confirmation of *Plasmodium* findings.
- Served as field coordinator during a health and research campaign in the Yagua Indigenous Community (Nueva Esperanza, Loreto – Peru), leading local coordination, community engagement, and sample collection.
- **Outputs:** First-author publications (3; co-corresponding author), Co-author publications (7), Research fellowships and grants (6), Field supervision and international collaboration (4 countries).

*Barcelona, Spain*

Jan. 2022 – Jun. 2022 Barcelona Institute for Global Health (ISGlobal). Research Group: Malaria. **Visiting Doctoral Researcher.**

- Selected for the Sandwich PhD Abroad Fellowship – SWE 2019 (CNPq, Brazil; BRL 120 000 for 12 months) to undertake international training and collaborative research as part of the WildEmerg project.
- Established an international research partnership between Brazil, Peru and Spain on the molecular epidemiology of *Plasmodium* spp. at the human–wildlife interface.
- Developed and optimized diagnostic protocols to detect *Plasmodium* DNA in long-stored dried blood spot samples (11 years of wildlife sampling from the Peruvian Amazon), expanding detection beyond human-related species.

- Conducted comparative validation of molecular platforms to assess and improve diagnostic sensitivity for wildlife-origin malaria.
- Trained ISGlobal laboratory staff in DNA extraction, nested PCR and qPCR protocols adapted for wildlife surveillance contexts.
- **Outputs:** *Supervision Lab assistant (1), Poster at international conferences (2).*

*Jun. 2021 – Dec. 2021* University of Barcelona (UB). Faculty of Pharmacy and Food Sciences. Department of Biology, Health and Environment, Research Group: Parasitology. **Visiting Doctoral Researcher.**

- Served Focused on the molecular detection of *Trypanosoma* spp., *Leishmania* spp., and *Toxoplasma gondii* in field-collected wildlife and human samples from the Peruvian Amazon, under the WildEmerg consortium.
- Adapted and validated DNA extraction, nested PCR, and qPCR protocols for use in degraded or long-stored samples from non-model hosts.
- Supported comparative evaluation of molecular workflows for parasite detection in wildlife-based One Health surveillance.
- **Outputs:** *Supervision MSc students (2), Poster at international conferences (5).*

*Lima, Peru*

*Mar. 2017 – Aug. 2018* Universidad Peruana Cayetano Heredia (UPCH), Faculty of Public Health and Administration, Research Unit in Emerging Diseases and Climate Change – Emerge. **Research Assistant in Emerging Diseases.**

- Coordinated epidemiological research activities in the Peruvian Amazon as part of a prospective malaria cohort in Loreto.
- Oversaw fieldworker operations in remote areas, ensuring adherence to protocols and high-quality data collection.
- Curated and cleaned field data for epidemiological analysis and database integration.
- Designed and implemented SOPs for DNA extraction and nested PCR for molecular malaria diagnostics in a local laboratory.
- Led training and capacity building in both field and laboratory components.
- **Outputs:** *Poster presentations (3: 1 national, 2 international), Mentorship of 3 trainees (1 lab assistant, 2 field interns), Completion of MSc with NIH/FIC 2D43 TW007393-11 research fellowship.*

*Jan. 2014 – Jul. 2016* Institute of Nutritional Research (IIN). Molecular and Cellular Biology Laboratory. **Research Assistant in Neglected Infectious Diseases.**

- Participated in molecular research on neglected and emerging infectious diseases, including viral and bacterial pathogens, with a focus on Carrion's disease.

- Performed a wide range of wet-lab techniques: DNA/RNA extraction, PCR, nested PCR, qPCR, primer design, Sanger sequencing, and ELISA.
- Contributed to antimicrobial resistance studies and molecular surveillance of vector-borne diseases.
- Developed and applied SOPs for diagnostic workflows and laboratory quality control.
- **Outputs:** *First-author publications (2), Co-author publications (4), Poster presentations at international conference (2), Mentorship (5 undergraduate students).*

## **TEACHING AND SUPERVISION**

*Lima, Peru*

*Jun. 2024 – Present*

Universidad Científica del Sur (UCSUR), Faculty of Environmental Sciences. ***Undergraduate Student Supervisor.***

- Supervise the full development of an undergraduate research thesis in Environmental Engineering, including protocol design, fieldwork planning, data analysis, and scientific writing.
- Guide the student through methodological decisions, field logistics, and critical interpretation of interdisciplinary environmental and epidemiological data.

*Oct. 2019 – Dec. 2023*

Universidad Científica del Sur (UCSUR), Faculty of Health Sciences. ***Adjunct Lecturer.***

- Participated in the delivery of undergraduate courses in Thesis Seminar and Evidence-Based Medicine for medical students.
- Supported students in the development of research protocols, critical appraisal of scientific literature, and presentation of thesis work.

## **LEADERSHIP, SERVICE & COMMUNITY ENGAGEMENT**

*Manuscript peer-review: PLOS Neglected Tropical Diseases (1)*

*May. 2023 – Present.*

***Member – COMFAUNA (Comunidad de Manejo de Fauna Silvestre en la Amazonía y Latinoamérica)***

Active member of a multicultural and multidisciplinary network dedicated to promoting sustainable wildlife management and conservation across the Amazon and Latin America. I contribute to knowledge sharing, interdisciplinary collaboration, and the integration of local and scientific perspectives to enhance biodiversity conservation, ecosystem health, and community well-being.

*Apr. 2021 – Present.*

***Founder & Social Impact Entrepreneur – Ecocrespa (Peru)***

I founded a science-based startup that develops solid hair care products for curly and textured hair. I lead product formulation and research, sustainability initiatives, and education on Afro hair health and environmental awareness in Peru market.

*Sep. 2018 – Mar. 2019*

**Data Analysis Consultant – National Center for Epidemiology, Prevention and Disease Control (CDC Peru).**

Contributed to the 2018 National Health Situation Analysis (ASIS) through statistical management, epidemiological data processing, and reporting of national health indicators.

*Aug. 2016 – Jan. 2017*

**Founder & Scientific Advisor – Endémica (Peru)**

Science outreach project using fashion and visual arts to raise awareness about biodiversity and neglected tropical diseases. I provided scientific background and curated content for the biological elements featured in textile designs and educational materials.

**ADDITIONAL TRAINING AND PROFESSIONAL DEVELOPMENT**

- **Biomedical Research - Basic/Refresher.** Collaborative Institutional Training Initiative (CITI PROGRAM). *Valid until May 5, 2020*
- **Responsible Conduct of Research.** Andean Center for Research and Training in Informatics for Global Health (Quipu). *April 27, 2017*
- **Foundations of Project Management.** Google Career Certificates (Coursera). Completed October 30, 2024. Grade: 93.4%. 17 hours.

**SKILLS**

Laboratory & Field Techniques	Bioinformatics & Data Analysis	Software & Tools	Soft Skills	Languages
DNA/RNA extraction	Univariate/multivariate analysis	Geneious Prime	Integrity	Spanish Portuguese English
PCR/qPCR	Epidemiological data	RStudio	Problem-solving	
Primer design	curation	Stata	Commitment	
Sequencing (Sanger)	Phylogenetic analysis	MEGA	Empathy	
ELISA	Bioinformatic pipelines	BEAST	Initiative	
Field data collection	Population genetics	QGIS	Critical thinking	
Vector surveillance	Reproducible research			

**AWARDS AND FUNDINGS**

*Mar. 2020 – Mar. 2024* Federal Rural University of Amazonia (UFRA), Postgraduate. Program in Health and Animal Reproduction of the Amazon.

	<i>PhD scholarship.</i> Funded by: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq).
May. 2021 – Apr. 2022	Universidad Científica del Sur (UCSUR). <i>Cabieses 2021 Grant, from the 2020 Associate Researcher Competition</i> , 10 May 2021. Funded by: UCSUR.
Apr. 2021 – Mar. 2022	Federal Rural University of Amazonia (UFRA), Postgraduate Program in Health and Animal Reproduction of the Amazon. <i>Scholarship in Sandwich PhD abroad modality – SWE 2019 (201546/2020-5)</i> . Funded by: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)
May. 2020 – Apr. 2021	Universidad Científica del Sur (UCSUR). <i>Cabieses 2020 Grant, from the 2020 Associate Researcher Competition</i> , 10 May 2020. Funded by: UCSUR.
Apr. 2020 – Nov.2020	Organization of Ibero-American States (OEI). <i>Senior Research Fellowship of the Paulo Freire+ Programme</i> . Funded by: OEI
Mar. 2019 – Feb. 2020	Federal Rural University of Amazonia (UFRA), Postgraduate Program in Health and Animal Reproduction of the Amazon. <i>PhD scholarship.</i> Funded by: CAPES.
Mar. 2017 – Jul. 2018	Universidad Peruana Cayetano Heredia (UPCH), Faculty of Public Health and Administration, Research Unit on Emerging Diseases and Climate Change, Lima - Peru. <i>Master's scholarship.</i> Funded by: NIH/FIC 2D43 TW007393-11.
Jul. 2015 – Jul. 2016	Universidad Peruana de Ciencias Aplicadas (UPC), Faculty of Health Sciences, Lima - Peru. National Innovation Programme for Competitiveness and Productivity (Innovate Peru)-116-PNICP-PIAP-2015. Project: “Implementation of a multidisciplinary platform to contain the impact of febrile syndromes in high-risk areas”. <i>Bachelor thesis scholarship.</i> Funded by: Innovate Peru -116-PNICP-PIAP-2015.

## **PUBLICATIONS**

### **A. Peer-Reviewed Indexed Journals**

**2025**

1. **Ulloa, G. M.**, Greenwood, A. D., Cornejo, O. E., Monteiro, F. O. B., Santolalla, M. L., & Mayor, P. (2025). Molecular Screening of *Plasmodium* spp. in Free-Living Ring-Tailed Coatis (*Nasua nasua*) and Nine-Banded Armadillos (*Dasypus novemcinctus*) in the Peruvian Amazon. *Animals*, 15(16), 2413. <https://doi.org/10.3390/ani15162413>.
2. Menajovsky MF, Mayor P, Bodmer R, Pérez-Peña P, **Ulloa GM**, Greenwood AD, Montero S, Lescano AG, Santolalla ML, Segalés J, Sibila M, Cabezón O, Espunyes J. Monitoring of Selected Swine Viral Diseases in Peruvian Amazon Peccaries (2025). *Ecohealth*. doi: 10.1007/s10393-024-01692-9.

## 2024

3. Menajovsky MF, Espunyes J, **Ulloa G**, Montero S, Lescano AG, Santolalla ML, Cabezón O, Mayor P. A Survey of Hepatitis B Virus and Hepatitis E Virus at the Human–Wildlife Interface in the Peruvian Amazon (2024). *Microorganisms*; 12(9):1868. <https://doi.org/10.3390/microorganisms12091868>.
4. Li J, **Ulloa GM**, Mayor P, Santolalla Robles ML, Greenwood AD. Nucleic acid degradation after long-term dried blood spot storage (2024). *Mol Ecol Resour*; e13979. doi: 10.1111/1755-0998.13979. Epub ahead of print. PMID: 38780145.
5. Menajovsky MF, Espunyes J, **Ulloa G**, Calderon M, Diestra A, Malaga E, Muñoz C, Montero S, Lescano AG, Santolalla ML, et al. *Toxoplasma gondii* in a Remote Subsistence Hunting-Based Indigenous Community of the Peruvian Amazon (2024). *Tropical Medicine and Infectious Disease*; 9(5):98. <https://doi.org/10.3390/tropicalmed9050098>.
6. **Ulloa, Gabriela M.**; Greenwood, Alex D.; Cornejo, Omar E.; Barros Monteiro, Frederico Ozanan; Scofield, Alessandra; Santolalla Robles, Meddly L.; Lescano, Andres G.; Mayor, Pedro (2024). Phylogenetic congruence of *Plasmodium* spp. and wild ungulate hosts in the Peruvian Amazon. *Infection, Genetics and Evolution*; 118:105554. <https://doi.org/10.1016/j.meegid.2024.105554>

## 2023

7. Pons, M. J., Mayanga-Herrera, A., **Ulloa, G. M.**, Ymaña, B., Medina, S., Alava, F., Álvarez-Antonio, C., Meza-Sánchez, G., Calampa, C., Casanova, W., Carey, C., Rodríguez-Ferrucci, H., Morrison, A. C., & Quispe, A. M. (2023). Dengue and COVID-19 Co-Circulation in the Peruvian Amazon: A Population-Based Study, *The American Journal of Tropical Medicine and Hygiene*, ajtmh.22-0539. <https://doi.org/10.4269/ajtmh.22-0539>.

## 2022

8. Conga, David F., El Bizri, Hani R., González Crespo, C., Gomez-Puerta, L. A., **Ulloa-Urizar, G. M.**, Pérez-Peña, P.E., Bowler, M., Mayor, P (2022). Environmental predictors of filarial infection in Amazonian primates: Ecological factors and primate filarial infection. *Acta Tropica*. <https://doi.org/10.1016/j.actatropica.2022.106670>.
9. González-Olvera, M., Hernandez-Colina, A., Pérez, J.G., **Ulloa, G. M.**, Montero, S., Maguiña, J. L., Lescano, A. G., Santolalla, M. L., Baylis, M., Mayor, P. (2022). Haemosporidians from a Neglected Group of Terrestrial Wild Birds in the Peruvian Amazonia. *EcoHealth*. <https://doi.org/10.1007/s10393-022-01612-9>.

2021

10. Blas, Wendy V., Gerónimo, Ida B., **Ulloa, Gabriela M.**, Huaman, Mónica, Pons, Maria J. (2021). *Escherichia coli* multidrogorresistente en urocultivos realizados en el Instituto Nacional Materno Perinatal de Lima, Perú. Revista Peruana de Medicina Experimental y Salud Pública. 38(4): 670-1.

2015 - 2018

11. **Ulloa U., Gabriela**, Vásquez-Achaya, Fernando, Gomes, Claudia, del Valle, Luis J., Ruiz, Joaquim, Pons, Maria J.\*, del Valle M., Juana. (2018). Molecular detection of *Bartonella bacilliformis* in *Lutzomyia maranonensis* in Cajamarca, Peru. A new potential vector of Carrion's disease in Peru?. American Journal of Tropical Medicine & Hygiene. 99(5): 1229-1233. doi: <https://doi.org/10.4269/ajtmh.18-0520>.
12. Cornejo-Tapia A, Orellana- Peralta F, Weilg P, Bazan-Mayra J, Cornejo-Pacherres H, **Ulloa-Urizar G**, Aguilar-Luis M, Pons M, del Valle-Mendoza J. (2017). Etiology, epidemiology and clinical characteristics of acute diarrhea in hospitalized children in rural Peru. J Infect Dev Ctries. 11:826-832. doi: <https://doi.org/10.3855/jidc.7881>.
13. Tantaléan Y., Derek, Sánchez C., José, **Ulloa U., Gabriela**, Aguilar L., Miguel Ángel, Caballero G., Stefany, Mayta T., Frank y del Valle M., Juana.(2016). Arboviruses emerging in Peru: Need for early detection of febrile syndrome during El Niño episodes. Asian Pacific Journal of Tropical Medicine. 9(8): 819-820.
14. Camere C., Rosella, **Ulloa U., Gabriela**, Medina F., Dyanne, Caballero G., Stefany, Mayta T., Frank y del Valle M., Juana (2016). Antibacterial activity of *Myrciaria dubia* (Camu camu) against *Streptococcus mutans* and *Streptococcus sanguinis*. Asian Pacific Journal of Tropical Biomedicine. 6(9): 740-744.
15. Medina F., Dyanne, **Ulloa U., Gabriela**, Camere C., Rosella, Caballero G., Stefany, Mayta T., Frank y del Valle M., Juana. (2016). Antibacterial activity of *Bixa orellana* L. against *Streptococcus mutans* and *Streptococcus sanguinis*. Asian Pacific Journal of Tropical Biomedicine. 6(5): 400-403.
16. **Ulloa U., Gabriela**, Aguilar L., Miguel Ángel, De Lama O., María del Carmen, Camarena L., José y del Valle M., Juana. (2015). Antibacterial activity of five Peruvian medicinal plants against *Pseudomonas aeruginosa*. Asian Pacific Journal of Tropical Biomedicine. 5(11): 928-931.

## B. Manuscripts Accepted

1. Mayor, Pedro; Rius-Taberner, Guillem; **Ulloa, Gabriela M.**; Orta-Martínez, Martí (2025). Unexpected high blood lead levels in a remote Indigenous community in the Northeastern Peruvian Amazon. *Toxics*.

## C. Manuscripts Under Review



2. **Ulloa, Gabriela M.**; Greenwood, Alex D.; Cornejo, Omar E.; Alonso, Henar; Santolalla Robles, Meddly L.; Lescano, Andres G.; Mayor, Pedro (2025). Molecular epidemiology of *Plasmodium* cross-species transmission between humans and wild non-human primates in the Peruvian Amazon. *Clinical Microbiology and Infection*.

### **SELECTED PRESENTATIONS**

*I have participated in oral and poster presentations at 14 conferences (5 international, 2 national).*

#### **2023**

1. **Ulloa, Gabriela;** et al., Anthropozoonotic malaria among humans and non-human primates (NHP) from subsistence hunting in the Peruvian Amazon. XV International Congress on Wildlife Management in the Amazon and Latin America, 20 to 24 November 2023. Santa Marta - Colombia/Oral.
2. **Ulloa, Gabriela;** et al., Natural infection of *Plasmodium vivax* in large rodents (*Cuniculus paca* and *Dasyprocta fuliginosa*) in the Peruvian Amazon. XV International Congress on Wildlife Management in the Amazon and Latin America, 20 to 24 November 2023. Santa Marta - Colombia/Oral.

#### **2022**

3. **Ulloa, Gabriela;** et al., *Trypanosoma cruzi* and *Leishmania* spp. infection in humans and wild mammals from the Peruvian Amazon. XII Congress of the Spanish Society of Tropical Medicine and International Health (SEM-TSI), 8-10 March 2022 at the Museo Universidad de Navarra, Pamplona, Spain/Poster.
4. **Ulloa, Gabriela;** et al., Detection of *Toxoplasma gondii* at the human-wildlife interface in an indigenous community of the Peruvian Amazon. XII Congress of the Spanish Society of Tropical Medicine and International Health (SEM-TSI), 8-10 March 2022 at the Museo Universidad de Navarra, Pamplona, Spain/Poster.

#### **2021**

5. **Ulloa, Gabriela;** Menajovsky, María Fernanda; Moya, Sebastián; Lescano, Andrés G.; Santolalla, Meddly L.; Mayor, Pedro. Ethnographic approach to vector-borne disease transmission risk in rural Amazonian communities, XIV International Congress on Wildlife Management in the Amazon and Latin America, 8 to 12 November 2021. Ica-Peru/Poster.
6. **Ulloa, Gabriela;** Mayor, Pedro; García, Paul; Montero, Stephanie; Maguiña, Jorge L.; Lescano, Andrés G.; Santolalla, Meddly L. Natural infection of *Plasmodium brasilianum* in *Cacajao calvus* and *Lagothrix poeppigii* in Peruvian Amazonia, XIV International Congress on Wildlife Management in the Amazon and Latin America, 8 to 12 November 2021. Ica-Peru/Poster.

**2019**

7. **Ulloa-Urizar, Gabriela M.**, Valle-Campos, Andree, Munayco E., César, Castro G., Dante, Lescano G., Andrés G. Climate variables related to outbreaks of acute cases of Carrion's disease in Peru, 2000 – 2016, ASTMH 68th Annual Meeting on November 20-24, 2019 at the Gaylord National Resort and Convention Center in National Harbor, Maryland (adjacent to Washington, DC)/Poster.

**2017**

8. **Ulloa U., Gabriela**, Vásquez-Achaya, Fernando, Gomes, Claudia, del Valle, Luis J., Ruiz, Joaquim, Pons, Maria J.\*, del Valle M., Juana. *Lutzomyia maranonensis* is a carrier for *Bartonella bacilliformis*. a new vector of carrion's disease in the north of Peru?. The 8<sup>th</sup> International Conference on *Bartonella* as Emerging Pathogens, National Institute for Communicable Disease Control and Prevention (ICDC) and Chinese Center for Disease Control and Prevention (China, CDC), 10 to 13 October 2017. Beijing - China/Oral.