

CURRICULUM VITAE
Alejandro Llanes Mazón

Current position: Researcher
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EDUCATION

Ph.D. in Biotechnology – 2021 – Acharya Nagarjuna University (India) / INDICASAT-AIP (Panama)
B.S. in Biochemistry with specialization in Bioinformatics – 2004 – University of Havana, Cuba

CAREER

2004 - 2006 **Research Professor**, Computing Facility, Faculty of Biology, University of Havana
(Havana, Cuba)

2008 - 2014 **Research Professor**, Faculty of Health Sciences Dr. William C. Gorgas, Latin
University of Panama (Panama, Panama)

2014 - **Researcher**, Centre for Molecular and Cell Biology of Diseases, INDICASAT-AIP
(Panama, Panama)

SELECTED PUBLICATIONS

- Restrepo CM, [Llanes A](#), Herrera L, Ellis E, Quintero I, Fernández PL (2025) Baseline gene expression in BALB/c and C57BL/6 peritoneal macrophages influences but does not dictate their functional phenotypes. *Exp Biol Med* 249, 10377.
- Boya CA, Rodriguez C, ..., [Llanes A](#), Spadafora C, Mejía LC, Gutiérrez M (2024) Antiprotozoal natural products from endophytic fungi associated with cacao and coffee. *Metabolites* 14(11):575.
- Barbosa LN, [Llanes A](#), Madesh S, *et al.* (2024) Enhancement of clinical signs in C3H/HeJ mice vaccinated with a highly immunogenic Leptospira methyl-accepting chemotaxis protein following challenge. *PLOS Neg Trop Dis* 18 (9), e0012155.
- Ayala A, [Llanes A](#), Leonart R, Restrepo CM (2024) Advances in *Leishmania* Vaccines: Current Development and Future Prospects. *Pathogens* 13 (9), 812.
- Cruz H, [Llanes A](#), Fernández PL (2024) Computational Prediction of Amino Acid Preferences of Potentially Multispecific Peptide-Binding Domains Involved in Protein-Protein Interactions. *J Vis Exp* 26:(203).
- [Llanes A](#), Cruz G, Morán M, *et al.* (2022) Genomic diversity and genetic variation of *Leishmania panamensis* within its endemic range. *Infect. Genet. Evol.* 103:105342.
- Restrepo, CM, [Llanes A](#), Herrera L., Ellis E., Leonart R., Fernández PL (2021) Gene expression patterns associated with *Leishmania panamensis* infection in macrophages from BALB/c and C57BL/6 mice. *PLOS Neg Trop Dis* 15(2): e0009225.

SELECTED PUBLICATIONS (contd.)

- Llanes A, Cruz H, Nguyen VD, Larionov OV, Fernández PL (2021) A Computational Approach to Explore the Interaction of Semisynthetic Nitrogenous Heterocyclic Compounds with the SARS-CoV-2 Main Protease. *Biomolecules* 11(1):18.
- Llanes A, Ortiz L, Moscoso J, Gutierrez G, *et al.* (2021) HLA allele and haplotype frequencies in the Panamanian population. *Human Immunol* 82(1):5-7.
- Herrera L, Llanes A, Álvarez J, *et al.* (2021) Antileishmanial activity of a new chloroquine analog in an animal model of *Leishmania panamensis* infection. *Int J Parasitol Drugs Drug Resist* 14:56-61.
- Llanes A, Restrepo CM, Caballero Z, Rajeev S, Kennedy MA, Leonart R (2020) Betacoronavirus genomes: How genomic information has been used to deal with past outbreaks and the COVID-19 pandemic. *Int J Mol Sci* 21(12):4546.
- Llanes A, Prakoso D, Restrepo CM, Rajeev S (2020) Complete genome sequence of a virulent *Leptospira interrogans* serovar Copenhageni strain, assembled with a combination of Nanopore and Illumina reads. *Microbiol Resour Announc* 9(17):e00200-20.
- Llanes A, Rajeev S (2020) First whole genome sequence of *Anaplasma platys*, an obligate intracellular rickettsial pathogen of dogs. *Pathogens* 9(4):277.
- Rajeev S, Shiokawa K, Llanes A, *et al.* (2020) Detection and characterization of *Leptospira* infection and exposure in rats on the Caribbean island of Saint Kitts. *Animals* 10(2), 350.
- Restrepo CM, Llanes A, Cedeño EM, *et al.* (2019) Environmental conditions may shape the patterns of genomic variations in *Leishmania panamensis*. *Genes* 10(11), 838.
- Llanes A, Restrepo CM, Leonart R (2018) VianniaTopes: a database of predicted immunogenic peptides for *Leishmania* (*Viannia*) species. *Database* 2018:bay111.
- Shiokawa K, Llanes A, Hindoyan A, Cruz-Martinez L, Welcome S, Rajeev S (2018) Peridomestic small Indian mongoose: An invasive species posing as potential zoonotic risk for leptospirosis in the Caribbean. *Acta Tropica* 190:166-170.
- González Y, Doens D, Cruz H, Santamaría R, Gutiérrez M, Llanes A, Fernández PL (2018) A Marine Diterpenoid Modulates the Proteasome Activity in Murine Macrophages Stimulated with LPS. *Biomolecules* 8(4), 109.
- Llanes A, Restrepo CM, Riesgo-Ferreiro P, Rajeev S (2018) Genomic variability among field isolates and laboratory-adapted strains of *Leptospira borgpetersenii* serovar Hardjo. *Int. J. Microbiol.* 2018, 2137036.
- Larson CR, Dennis M, Nair RV, Llanes A, Peda A, Welcome S, Rajeev S (2017) Isolation and characterization of *Leptospira interrogans* serovar Copenhageni from a dog from Saint Kitts. *JMM Case Rep.* 4(10), e005120.
- Restrepo CM, Llanes A, Leonart R. (2017) Use of AFLP for the study of eukaryotic pathogens affecting humans. *Infect. Genet. Evol.* 63, 360-369.
- Llanes A, Restrepo CM, Rajeev S (2016) Whole genome sequencing allows better understanding of the evolutionary history of *Leptospira interrogans* serovar Hardjo. *PLoS ONE* 11(7), e0159387.
- Restrepo CM, Llanes A, De La Guardia C, Leonart R (2015) Genome-wide discovery and development of polymorphic microsatellites from *Leishmania panamensis* parasites circulating in central Panama. *Parasit. Vectors.* 8, 527.

SELECTED PUBLICATIONS (contd.)

- Llanes A, Restrepo CM, Del Vecchio G, Anguizola FJ, Leonart R (2015) The genome of *Leishmania panamensis*: insights into genomics of the *L. (Viannia)* subgenus. **Sci. Rep.** 5, 8550.
- Pajon R, Yero D, Lage A, Llanes A, Borroto CJ (2006) Computational identification of beta-barrel outer-membrane proteins in Mycobacterium tuberculosis predicted proteomes as putative vaccine candidates. *Tuberculosis*. 86(3-4), 290-302.

RELEVANT TRAINING AND COURSES

- **Training course on the use of Ensembl platform.** EBI/INDICASAT-AIP, Panama, Panama, December 2024.
- **Fundamentals of Deep Learning.** NVIDIA Deep Learning Institute, Panama, Panama, June 2022.
- **Research Explorer Ruhr.** Ruhr Universität Bochum, Bochum, Germany, June 2019.
- **Next-generation Sequencing Bioinformatics.** Wellcome Trust Advanced Courses, Pontificia Universidad Católica de Chile, Santiago, Chile, January 2019.
- **International Workshop on Computational Chemistry and Molecular Modelling in Drug Design.** INDICASAT-AIP, Panama, Panama, June 2018.
- **Parasite Database Resources.** Wellcome Trust Advanced Courses, Wellcome Genome Campus, Hinxton, Cambridge, United Kingdom, October 2013.

TEACHING (POSTGRADUATE PROGRAMS)

2024 – 2025 Applied Bioinformatics. Master's Programme in Biomedical Sciences. Faculty of Medicine, University of Panama, Panama, Panama.

LANGUAGES

Spanish – native language

English – speak, read, and write with good competence