Luigui **Gallardo-Becerra**

BIOINFORMATICIAN | MOLECULAR BIOLOGIST

+1 619 602 0725 | luiguimichelgallardo@gmail.com | www.lmgb.xyz | LuiguiGallardo | luiguigallardo

Bioinformatician and Molecular Biologist looking for new challenges to apply and expand my skills. In recent years, I participated in different projects using modern Genomic technologies (NGS), Data Analysis, and Data Science, to obtain novel biological information that culminated in high-impact peer-reviewed scientific publications

Research experience

Graduate Research Assistant (Bioinformatics) *Institute of Biotechnology, UNAM*
January 2019 - Current

I was part of different research projects, from the beginning obtaining or creating the raw data to the final report or publication. The tasks that I carried out includes the following:

- Management of research projects: participated in the creation of main and secondary objectives and research questions from different projects to obtain novel biological information useful for the scientific community
- Server management (HPC): managed the Laboratory's server, installed Linux operative systems and specific software/packages, avoided server slowdowns, and built secure server environments
- Creation of pipelines: created pipelines to avoid repetitive workflows and make reproducible analysis using bash, Python, Nextflow, and Snakemake
- Software development: developed several software tools to solve and achieve specific goals using bash, Python, Perl, and R
- Creation of plots: using R, Rstudio, Jupyter Notebooks, Excel, and Graphpad
- Maintenance of version control (CI/CD): creation and maintenance of GitHub repositories and their continuous version control
- Creation of reports/publications: using Markdown and Word, I delivered weekly and biannual reports to the members of the Laboratory. Also, I co-authored peer-reviewed publications that are highly cited in their respective areas
- Presentations to the general public and academic events: participated in scientific dissemination, specialized seminars, and congresses

Education

National Autonomous University of Mexico *Mexico City, Mexico*
PH.D. (COMPUTATIONAL BIOLOGY) *January 2019 - Current*

National Autonomous University of Mexico *Mexico City, Mexico*
MASTER OF SCIENCE (COMPUTATIONAL BIOLOGY) *August 2016 - January 2019*

University of Guadalajara *Guadalajara, Mexico*
BACHELOR OF SCIENCE (MOLECULAR BIOLOGY) *August 2012 - January 2016*

Teaching Experience

- Guest lecturer at Universidad de La Sabana (Chia, Colombia). December 2023.
- Microbiota Symposium from Theory to Clinical Practice, Colegio de Profesionales de la Nutrición de Querétaro y el Bajío. June 2021.
- Bioinformatics and Reproducible Research Workshop, Postgraduate Program in Biological Sciences, UNAM. October 2019.
- Guest lecturer at Center of Genomic Sciences, UNAM. August 2018.

Directed Theses

- Bachelor's Thesis: Itzel Abigail Hernández Reyna, Bachelor's in Nutrition (Universidad Autónoma del Estado de Morelos), December 2019. "Impact of bacteriophages associated with childhood obesity on the intestinal metagenome."

Soft Skills

- Effective team player with strong communication skills, capable of working independently.
- Quick learner with the ability to adapt to new technologies rapidly.
- Exceptional problem-solving abilities.
- Capacity to manage significant workloads or multiple projects across different areas while maintaining organization and efficiency.

Programming Languages, Tools & Bioinformatic skills:

- Programming Languages: Python, C#, R, SQL, Bash, HTML & CSS, JavaScript, Typescript
- Web frameworks: Django, ASP.NET, Angular
- Other tools: High-Performance Computing (HPC), Linux, Tableau, Docker, Nextflow, Snakemake, Jupyter Notebooks, Rstudio, MySQL, PostgreSQL, MongoDB
- Bioinformatic skills: 16S rRNA profiling, Genome/Transcriptome assembly, and annotation, Metagenomics, Metatranscriptomics, Viromics

Languages

- English – Full professional proficiency
- Spanish – Native

Publications

1. Gallardo-Becerra, L., Cervantes-Echeverría, M., Cornejo-Granados, F., Vazquez-Morado, L. E., & Ochoa-Leyva, A. (2023). Perspectives in Searching Antimicrobial Peptides (AMPs) Produced by the Microbiota. Microbial Ecology, 87(1), 8. `https://doi.org/10.1007/s00248-023-02313-8`
2. Gallardo-Becerra, L., Cornejo-Granados, F., García-López, R., Valdez-Lara, A., Bikel, S., Canizales-Quinteros, S., López-Contreras, B. E., Mendoza-Vargas, A., Nielsen, H., & Ochoa-Leyva, A. (2020). Metatranscriptomic analysis to define the Secrebiome, and 16S rRNA profiling of the gut microbiome in obesity and metabolic syndrome of Mexican children. Microbial Cell Factories, 19(1), 61. `https://doi.org/10.1186/s12934-020-01319-y`
3. Bikel, S., Gallardo-Becerra, L., Cornejo-Granados, F., & Ochoa-Leyva, A. (2022). Protocol for the isolation, sequencing, and analysis of the gut phageome from human fecal samples. STAR Protocols, 3(1), 101170. `https://doi.org/10.1016/j.xpro.2022.101170`
4. Bikel, S., López-Leal, G., Cornejo-Granados, F., Gallardo-Becerra, L., García-López, R., Sánchez, F., Equihua-Medina, E., Ochoa-Romo, J. P., López-Contreras, B. E., Canizales-Quinteros, S., Hernández-Reyna, A., Mendoza-Vargas, A., & Ochoa-Leyva, A. (2021). Gut dsDNA virome shows diversity and richness alterations associated with childhood obesity and metabolic syndrome. iScience, 24(8), 102900. `https://doi.org/10.1016/j.isci.2021.102900`
5. Cervantes-Echeverría, M., Gallardo-Becerra, L., Cornejo-Granados, F., & Ochoa-Leyva, A. (2023). The Two-Faced Role of crAssphage Subfamilies in Obesity and Metabolic Syndrome: Between Good and Evil. Genes, 14(1), Article 1. `https://doi.org/10.3390/genes14010139`
6. Chino de la Cruz, C. M., Cornejo-Granados, F., Gallardo-Becerra, L., Rodríguez-Alegría, M. E., Ochoa-Leyva, A., & López Munguía, A. (2023). Complete genome sequence and characterization of a novel Enterococcus faecium with probiotic potential isolated from the gut of Litopenaeus vannamei. Microbial Genomics, 9(3), 000938. `https://doi.org/10.1099/mgen.0.000938`
7. Cornejo-Granados, F., Gallardo-Becerra, L., Leonardo-Reza, M., Ochoa-Romo, J. P., & Ochoa-Leyva, A. (2018). A meta-analysis reveals the environmental and host factors shaping the structure and function of the shrimp microbiota. PeerJ, 6, e5382. `https://doi.org/10.7717/peerj.5382`
8. Cornejo-Granados, F., Lopez-Zavala, A. A., Gallardo-Becerra, L., Mendoza-Vargas, A., Sánchez, F., Vichido, R., Brieba, L. G., Viana, M. T., Sotelo-Mundo, R. R., & Ochoa-Leyva, A. (2017). Microbiome of Pacific Whiteleg shrimp reveals differential bacterial community composition between Wild, Aquacultured and AHPND/EMS outbreak conditions. Scientific Reports, 7(1), 11783. `https://doi.org/10.1038/s41598-017-11805-w`

9. Jatuyosporn, T., Laohawutthichai, P., Romo, J. P. O., Gallardo-Becerra, L., Lopez, F. S., Tassanakajon, A., Ochoa-Leyva, A., & Krusong, K. (2023). White spot syndrome virus impact on the expression of immune genes and gut microbiome of black tiger shrimp Penaeus monodon. Scientific Reports, 13(1), Article 1. `https://doi.org/10.1038/s41598-023-27906-8`

10. Ochoa-Romo, J. P., Cornejo-Granados, F., Lopez-Zavala, A. A., Viana, M. T., Sánchez, F., Gallardo-Becerra, L., Luque-Villegas, M., Valdez-López, Y., Sotelo-Mundo, R. R., Cota-Huízar, A., López-Munguia, A., & Ochoa-Leyva, A. (2022). Agavin induces beneficial microbes in the shrimp microbiota under farming conditions. Scientific Reports, 12(1), Article 1. `https://doi.org/10.1038/s41598-022-10442-2`

11. Palomino-Hermosillo, Y. A., Berumen-Varela, G., Ochoa-Jiménez, V. A., Balois-Morales, R., Jiménez-Zurita, J. O., Bautista-Rosales, P. U., Martínez-González, M. E., López-Guzmán, G. G., Cortés-Cruz, M. A., Guzmán, L. F., Cornejo-Granados, F., Gallardo-Becerra, L., Ochoa-Leyva, A., & Alia-Tejacal, I. (2022). Transcriptome Analysis of Soursop (Annona muricata L.) Fruit under Postharvest Storage Identifies Genes Families Involved in Ripening. Plants, 11(14), 1798. `https://doi.org/10.3390/plants11141798`

12. Manzo, R., Gallardo-Becerra, L., Díaz de León-Guerrero, S., Villaseñor, T., Cornejo-Granados, F., Salazar-León, J., Ochoa-Leyva, A., Pedraza-Alva, G., & Pérez-Martínez, L. (2024). Environmental Enrichment Prevents Gut Dysbiosis Progression and Enhances Glucose Metabolism in High-Fat Diet-Induced Obese Mice. International Journal of Molecular Sciences, 25(13), Article 13. `https://doi.org/10.3390/ijms25136904`