VÍCTOR LÓPEZ DEL AMO

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CRISPR genome editing • Vector biology • Gene drives • Mitochondrial biology

EDUCATION

Ph.D., Biomedicine and Biotechnology 2013 – 2017
University of Valencia, Valencia, Spain

M.Sc., Molecular Approaches in Health Sciences 2012 – 2013
University of Valencia, Valencia, Spain

B.Sc., Biological Sciences 2006 – 2011
University of Valencia, Valencia, Spain

RESEARCH & PROFESSIONAL EXPERIENCE

Assistant Professor 2022 – Present
UTHealth Houston — School of Public Health — Department of Epidemiology
- Developing CRISPR-based technologies to fight vector-borne diseases and investigating human rare diseases.

Postdoctoral Scientist 2017 – 2022
University of California San Diego (UCSD) — PI: Dr. Valentino Gantz
- Developed CRISPR gene-drive technologies to combat vector-borne diseases.

Ph.D. Student in Biomedicine and Biotechnology 2013 – 2017
Principe Felipe Research Center, Valencia, Spain — PI: Dr. Maximo Ibo Galindo Orozco
- Used Drosophila and cell-culture models to study rare neurodegenerative diseases affecting mitochondrial biology.

Visiting Graduate Student 2016
Johannes Gutenberg University Mainz, Germany — PI: Prof. Axel Methner
- Studied neuronal cell culture and links between neurodegeneration and insulin signaling in Charcot-Marie-Tooth disease.

Master's Student 2012 – 2013
Biomedicine Institute of Valencia (CSIC), Valencia, Spain
- Investigated Drosophila GDAP1 and mitochondrial dynamics in Charcot-Marie-Tooth disease.

HONORS & GRANTS

NIH R01AI187493, Principal Investigator
National Institutes of Health (NIH) 2024 – Present
University of Texas Rising Star Award 2022 – 2025
UCSD Global Health Institute grant — CRISPR tools in Culex mosquitoes 2020 – 2021
NIGMS grant — Scientific Writing course, Cold Spring Harbor Laboratory 2019
Ph.D. thesis dissertation, Cum laude 2017
Travelling Fellowship, The Company of Biologists 2016
Young Scientist Meeting Travel Grant 2014
VIII Scientific “City of Valencia” Award for the Master Dissertation 2013

PUBLICATIONS

1. Bravo R*, Nguyen C, Carballar R, James A, **López Del Amo V***. CRISPR-based gene drive systems alter the transcriptome in *Anopheles gambiae* mosquitoes. ***Communications Biology*. 2026**. ***Accepted, in press***. **Corresponding authors.*

2. Feng X, Ding J, Liu Y, **Lopez del Amo V**, Gantz VM, Chen XX, Champer J, Liu F. Self-limiting population suppression gene drive design in the West Nile vector mosquito, *Culex quinquefasciatus*. ***Nature Communications*. 2026**; 17:6847.

3. Nguyen C, Omotayo AI, Sanz Juste S, Feng X*, **López Del Amo V***. A temperature-sensitive CRISPR-Cas12a system for sterile insect technique. ***Nature Communications*. 2025** ;16:9677. **Corresponding author.*

4. Clark M, Nguyen C, Nguyen H, Tay A, Beach SJ, Maselko M*, **López Del Amo V***. Expanding the CRISPR base editing toolbox in *Drosophila melanogaster*. ***Communications Biology*. 2024**; 7:1126. **Corresponding author.*

5. Collier TC, Lee Y, Mathias DK, **López Del Amo V***. CRISPR-Cas9 and Cas12a target site richness reflects genomic diversity in natural populations of *Anopheles gambiae* and *Aedes aegypti* mosquitoes. ***BMC Genomics*. 2024**; 25:700. **Corresponding author.*

6. Sanz Juste S, Okamoto ME, Feng X*, **Lopez del Amo V***. Next-generation CRISPR gene-drive systems using Cas12a nuclease. ***Nature Communications*. 2023**;14:6388. **Corresponding authors.*

7. Roy S, Sanz Juste S, Sneider M, Auradkar A, Klanseck C, Li Z, Ferreira AH, **López del Amo V**, Bier E, Guichard A. Cas9/Nickase-induced allelic conversion by homologous chromosome-templated repair in *Drosophila* somatic cells. ***Science Advances*. 2022**; 8:eabo0721.

8. López del Amo V*, Sanz Juste S, Gantz VM*. A nickase Cas9 gene-drive system promotes super-Mendelian inheritance in *Drosophila*. **Cell Reports. 2022**; 39:110843. **Corresponding authors.*

9. Bishop AL, **Lopez del Amo V**, Okamoto ME, Bodai Z, Komor AC, Gantz VM. Double-tap gene drive uses iterative genome targeting to help overcome resistance alleles. ***Nature Communications*. 2022**; 13:2595.

10. Feng X, **López del Amo V**, Mameli E, Lee M, Bishop AL, Perrimon N, Gantz VM. Optimized CRISPR tools and site-directed transgenesis in *Culex quinquefasciatus* mosquitoes for gene drive development. ***Nature Communications*. 2021**; 12:2960.

11. Tapia-González A, Palomino-Schätzlein M, Roca M, Lahoz A, Pineda-Lucena A, **López del Amo V***, Galindo MI*. Mild muscle mitochondrial fusion distress extends *Drosophila* lifespan through an early and systemic metabolome reorganization. ***International Journal of Molecular Sciences*. 2021**; 22:12133. **Corresponding authors.*

12. López del Amo V, Leger BS, Cox KJ, Gill S, Bishop AL, Scanlon GD, Walker JA, Gantz VM, Choudhary A. Small-molecule control of super-Mendelian inheritance in gene drives. ***Cell Reports*. 2020**; 31:107841.

13. Wolf C*, **López Del Amo V***, Arndt S, Bueno D, Tenzer S, Hanschmann EM, Berndt C. Redox modifications of proteins of the mitochondrial fusion and fission machinery. ***Cells*. 2020**; 9:E815. **Co-first authors.*

14. López Del Amo V, Bishop AL, Sánchez C HM, Bennett JB, Feng X, Marshall JM, Bier E, Gantz VM. A transcomplementing gene drive provides a flexible platform for laboratory investigation and potential field deployment. ***Nature Communications*. 2020**; 11:352.

15. Calpena E, **López del Amo V**, Chakraborty M, Llamusí B, Artero R, Espinós C, Galindo Orozco MI. The *Drosophila* junctophilin gene is functionally equivalent to its four mammalian counterparts and is a modifier of a Huntingtin poly-Q expansion and the Notch pathway. ***Disease Models & Mechanisms*. 2018**;11:dmm029082.

16. López del Amo V*, Palomino-Schätzlein M*, Seco-Cervera M, García-Giménez JL, Pallardó F, Pineda-Lucena A, Galindo Orozco MI. A *Drosophila* model of GDAP1 function links mitochondrial dynamics to insulin signaling in

Charcot-Marie-Tooth neuropathy. ***Biochimica et Biophysica Acta - Molecular Basis of Disease*. 2017**; 1863:801–809. **Co-first authors.*

17. López del Amo V, Seco-Cervera M, García-Giménez JL, Whitworth AJ, Pallardó F, Galindo MI. Mitochondrial defects and neuromuscular degeneration caused by altered expression of *Drosophila* Gdap1. ***Human Molecular Genetics*. 2015**; 24:21–36.

SELECTED CONFERENCE ORAL COMMUNICATIONS

Gordon Research Conference — Genetic Biocontrol, **Maine, US** 2026
Cas12a-Based Technologies for Managing Mosquito Populations

American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting, Toronto, Canada, 2025
CRISPR-Based Strategies for Managing Mosquitoes and Fighting Vector-Borne Diseases

International BEACONS Meeting, New Orleans, USA, 2024
Advancing CRISPR-Based Genome Editing Strategies for Managing Mosquito Populations

60th Annual Drosophila Research Conference, Dallas, USA, 2019
A trans-complementing gene drive system for laboratory investigation and potential field deployment

INVITED TALKS

Imperial College London — Department of Life Sciences, Seminar Series, London, UK 2026
CRISPR/Cas12a-Based Strategies for Vector Control

University of Cambridge — Mitochondrial Biology Unit, Seminar Series, Cambridge, UK 2026
CRISPR/Cas12a-Based Strategies for Vector Control

Texas A&M University — Department of Entomology, Seminar Series, College Station, TX 2025
CRISPR-Based Technologies for Controlling Mosquito Populations

University of North Texas — BioFrontiers Biology Seminar, Denton, TX 2024
Editing Genes, Eliminating Diseases: A New Era in Mosquito Control

Mosquito BEACONS — Invited Seminar/Working Group — 2023
CRISPR-based Technologies for Vector Control

Universidade Federal do Rio de Janeiro — Graduate CRISPR Course, Rio de Janeiro, Brazil 2023
CRISPR-based Technologies for Vector Control

MD Anderson — Department of Genetics Research Exchange Series, Houston, TX 2022
CRISPR-gene drive technologies for population engineering and beyond

UT Brown Foundation Institute of Molecular Medicine Seminar Series, Houston, TX 2022
CRISPR-gene drive technologies for population engineering and beyond

PATENTS

1. Method and composition for temperature controllable insect suppression or modification (WO2023064084A1)

2. Methods for delaying CRISPR action and improve gene drive effectiveness (WO2023060058A1)

3. Nickase gene drive system and method of use thereof (WO2023064706A1)