-Curriculum Vitae-
Víctor López del Amo
Victor.lopezdelamo@uth.tmc.edu

EDUCATION

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

2012-2013 **M. Sc., Molecular Approaches in Health Sciences.** School of Medicine and Dentistry. University of Valencia, Valencia, Spain.

2006-2011 **B.Sc., Biological Sciences.** School of Biological Sciences. University of Valencia, Valencia, Spain.

RESEARCH AND PROFESSIONAL EXPERIENCE

2022-Present Assistant Professor at UTHealth Houston.
Epidemiology, Human Genetics and Environmental Sciences Department (School of Public Health).

- Investigating human rare diseases and building CRISPR-based technologies to fight vector-borne diseases

2017-2022 **Postdoctoral Scientist at University of California San Diego** (UCSD).
Principal Investigator, Dr. Valentino Gantz
Biological Sciences Department. UCSD, San Diego, US

- Developing CRISPR gene-drive technologies to combat vector-borne diseases

2013-2017 **Ph.D. student in Biomedicine and Biotechnology.**
Principal Investigator, Dr. Maximo Ibo Galindo Orozco
Developmental Biology and Neuromuscular Disease Models Department. Principe Felipe Research Center, Valencia, Spain.

- Working with animal models (*Drosophila* and cell culture) to study rare neurodegenerative diseases affecting mitochondrial biology.

2016 **Visiting graduate student.**
Principal Investigator, Prof. Axel Methner
Focus Program Translational Neuroscience. Johannes Gutenberg University Mainz, Mainz, Germany.

- Working with mammalian neuronal cell culture and demonstrated the link between neurodegeneration and insulin signaling in Charcot-Marie-Tooth disease.

2012-2013 **Master's student**
Principal Investigator, Dr. Maximo Ibo Galindo Orozco
Developmental Cell Biology Unit. Biomedicine Institute of Valencia (Higher Council for Scientific Research), Valencia, Spain.

- Presented my master thesis entitled "Validation of the Drosophila gene CG4623 with GDAP1 and its role in mitochondrial dynamics as the cause of Charcot-Marie-Tooth disease.

LEADERSHIP AND MANAGEMENT

2019-2022 Co-tutor contributor master thesis "*Evaluating Factors Affecting the Performance of the gRNA Component of a Gene Drive*". Defended by Emily Okamoto.

2018-Present Scientific advisor in Apoyo Dravet Association.

2018-Present Mentor of the IMFAHE International Mentor Program (https://www.imfahe.org/en/international-mentor-program-imp).

2015 Co-tutor contributor master thesis "*Importance of mitochondrial dynamics in neuromuscular degeneration*". Defended by Andrea Tapia.

2016 Co-tutor contributor master thesis "*Effects of the silencing TMBIM6 gene on Drosophila melanogaster*". Defended by Sandra Fernandez.

2014-2016 Promoter and member of the organizing committee for the "*National Conference of Biomedicine Young Researchers*" in Spain (~150 attendees).

HONORS AND GRANTS

2022-2025 University of Texas Rising Star award

2020-2021 UCSD Global Health Institute grant.

- Develop CRISPR tools in *Culex* mosquitoes to fight West Nile virus disease.

2019 National Institute of General Medical Sciences (NIGMS) grant to attend a Scientific Writing course at Cold Spring Harbor Laboratories (New York).

2017 Cum laude for the Ph.D. thesis dissertation.

2016 Travelling Fellowship granted by "*The Company of Biologists*" to visit Prof. Axel Methner at the Neurological Department at University of Mainz (Germany).

2014 Young Scientist Meeting Travel Grant for The 7th IECB Young Scientist Symposium.

2013 VIII scientific "City of Valencia" award for the Master Dissertation.

ORAL COMMUNICATIONS AT CONFERENCES

2019 López del Amo V, Alena Bishop, Ethan Bier, Amit Choudhary, Valentino Gantz.
Trans-complementing gene drive system uncovers fine workings of the CRISPR-based homing process.
60th Annual Drosophila Research Conference. Dallas, USA.

2014 López del Amo V, Seco-Cervera M, García-Giménez J, Withworth A, Pallardó F, Galindo I.
A *Drosophila* model to study the Charcot-Marie-Tooth Neuropathy caused by mutations in GDAP1.
European Young Scientists Symposium. Bordeaux, France.

2013 López del Amo V, García Giménez JL, Pallardó F, Galindo MI.
Generation and analysis of *Drosophila* model to study mitochondrial dynamics in Charcot-Marie-Tooth disease.
5th Charcot-Marie-Tooth International Meeting. Amberes, Belgium.

SELECTED POSTERS IN CONFERENCES

2018 A synthetic gene drive with small-molecule contingency.
Britanny Leger, Kurt Cox, Victor Lopez del Amo, Shubhroz Gill, Basudeb Maji, Ethan Bier, James Walker, Valentino Gantz, Amit Choudary.
Genome Engineering: The CRISPR-Cas Revolution. Cold Spring Harbor laboratory, New York, USA.

2017 Mild mitochondrial fusion stress extends Drosophila lifespan through a systemic metabolome reorganization.
López del Amo V, Tapia-González A, Palomino-Schätzlein M, Puig Serra P, Pineda Lucena A, Galindo MI
25th European Drosophila Research Conference. Imperial College, London, UK.

2015 A Drosophila model of GDAP1 function links mitochondrial dynamics to insulin signaling in Charcot-Marie-Tooth neuropathy.
López del Amo V, Palomino-Schätzlein M, Seco-Cervera M, García-Giménez JL, Pallardó F, Pineda Lucena A, Galindo Orozco MI.
38th Congress of the Spanish Society of Biochemistry and Molecular Biology. Valencia, Spain.

2014 Mitochondrial defects and neuromuscular degeneration caused by altered expression of Drosophila Gdap1: implications for the Charcot-Marie-Tooth neuropathy.
López del Amo V, Seco-Cervera M, García-Giménez JL, Withworth AJ, Pallardó F, Galindo
I Congress of Biomedicine for PhD students in Valencia. Principe Felipe Research Center, Valencia, Spain.

INVITED TALKS

2023 Invited speaker Universidade Federal do Rio de Janeiro – Graduate CRISPR courses series

2022 Invited speaker MD Anderson – Department of Genetics research exchange hybrid series.

2022 Invited speaker UT Brown Foundation Institute of Molecular Medicine seminar series.

2020 Invited speaker at UCSD-Salk Institute Online Retreat.

2019 Invited speaker at UCSD Medical and Population Genetics Seminar.

2019 Invited speaker by the United States Department of Agriculture - Agricultural Research Service.

ASSOCIATIONS

2019-Present Member of the Association of Responsible Research and Innovation in Genome Editing

PUBLICATION LIST

Michael Clark, Christina Nguyen, Hung Nguyen, Aidan Tay, Samuel J Beach, Maciej Maselko, **López Del Amo V**. "*Expanding the CRISPR base editing toolbox in Drosophila melanogaster*". ***Communications Biology*** 2024 Sep 12;7(1):1126. doi: 10.1038/s42003-024-06848-5.

Travis C Collier , Yoosook Lee, Derrick K Mathias, **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 Jul 17;25(1):700. doi: 10.1186/s12864-024-10597-4.

Sanz Juste S, Okamoto ME, Xuechun Feng*, **Lopez del Amo V***. "*Next-generation CRISPR gene-drive systems using Cas12a nuclease*". ***Nature Communications***. 2023 Oct 12;14(1):6388. doi: 10.1038/s41467-023-42183-9. *Corresponding authors

Sitara Roy, Sara Sanz Juste, Marketta Sneider, Ankush Auradkar, Carissa Klanseck, Zhiqian Li, Alison Henrique Ferreira, **López del Amo V**, Ethan Bier, Annabel guichard. "*Cas9/Nickase-induced allelic conversion by homologous chromosome-templated repair in Drosophila somatic cells"*.
Science Advances**,** 2022 July 1, 8:eabo0721

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López del Amo V*, Sara Sanz Juste, Valentino Gantz*. "*A nickase Cas9 gene-drive system promotes super-Mendelian inheritance in Drosophila"*
Cell Reports , 2022 May 24;39:110843nhttps://doi.org/10.1016/j.celrep.2022.110843
* Corresponding author

Alena Bishop, **Lopez del Amo V**, Okamoto E, Zsolt Bodai, Alexis Komor, Valentino Gantz. "*Double-tap gene drive uses iterative genome targeting to help overcome resistance alleles*".
Nature Communications. 2022 May 9; 13:2595. https://doi.org/10.1038/s41467-022-29868-3

Xuechun Feng, **López del Amo V**, Enzo Mameli, Megan Lee, Alena L. Bishop, Norbert Perrimon, Valentino M. Gantz. "*Optimized CRISPR tools and site-directed transgenesis in Culex quinquefasciatus mosquitoes for gene drive development*".
Nature Commununications. 2021 May 20;12(1):2960. doi:10.1038/s41467-021-23239-0

Andrea Tapia-González, Martina Palomino-Schätzlein, Marta Roca, Agustín Lahoz, Antonio Pineda-Lucena, **López del Amo V***, Máximo Ibo Galindo*. "*Mild muscle mitochondrial fusion distress extends Drosophila lifespan through an early and systemic metabolome reorganization*"
Int. J. Mol. Sci., 2021, 22, 12133. doi: 10.3390/ijms222212133
*Corresponding author

López del Amo V, Brittany S. Leger, Kurt J. Cox, Shubhroz Gill, Alena L. Bishop, Garrett D. Scanlon, James A. Walker, Valentino M. Gantz, Amit Choudhary.
"Small-molecule control of super-Mendelian inheritance in gene drives".
Cell Reports, 2020 Jun 30;31(13):107841. doi: 10.1016/j.celrep.2020.107841.

Wolf C*, **López Del Amo V***, Arndt S, Bueno D, Tenzer S, Hanschmann EM, Berndt C, Methner A.
"Redox Modifications of Proteins of the Mitochondrial Fusion and Fission Machinery".
Cells (Review), 2020 Mar 27;9(4). pii: E815. doi: 10.3390/cells9040815. ***Equal contribution**

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 Jan 17;11(1):352. doi: 10.1038/s41467-019-13977-7.

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 and Mechanisms, 2018 Jan 17;11(1). pii: dmm029082. doi: 10.1242/dmm.029082.

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"*.
Biochim Biophys Acta (BBA)- Molecular Basis of Disease. 2017 Mar;1863(3):801-809. doi: 10.1016/j.bbadis.2017.01.003

López del Amo V, Seco-Cervera M, García Giménez JL, Withworth AJ, Pallardó F, Galindo MI.
"*Mitochondrial defects and neuromuscular degeneration caused by altered expression of Drosophila Gdap1: implications for the Charcot-Marie-Tooth neuropathy"*.
Human Molecular Genetics. 2015 Jan 1;24(1):21-36. doi: 10.1093/hmg/ddu41

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PATENTS LIST

The PI recently filled 3 different patents describing new tools with potential commercialization for vector control. More details can be found in Google Patents with the accession numbers provided below:

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)