

CURRICULUM VITAE

Héctor D. García-Verdugo

Department of Molecular & Cellular Biology
Life Sciences South, Room 215
University of Arizona
1007 E. Lowell St.
Tucson AZ, 85721

E-mail: Hdg1@arizona.edu
Second reach: Hecdanielgarcia@protonmail.com
LinkedIn: <https://www.linkedin.com/in/hectordanielgarcia/>
Telephone: (520) 352-9678

PERSONAL SUMMARY

Published research scientist and graduate of the Neuroscience & Cognitive Science program (B.S.) & the Philosophy program (B.A.) from the University of Arizona with over 10 years of laboratory setting experience. My training has ranged from laboratory management and maintenance to a wide approach in biology research and project coordination. My goal is to establish a career with a focus on reproducible translational research and applied biosciences, where I can use my understanding of science, biology, and political philosophy to help elucidate mechanisms underlying real world problems in human development, public health, current economic systems and subsequently help solve them.

CHRONOLOGY OF EDUCATION, CREDENTIALS & CERTIFICATIONS

The University of Arizona, Tucson AZ

Bachelor of Science (B.S.) in Neuroscience & Cognitive Science	2018
Bachelor of Arts (B.A.) in Philosophy	2018

Pima Community College, Tucson AZ

Associate of Science (A.S.) & AGECS	2015
Associate of Arts (A.A.)	2014

POSITION HISTORY/CHRONOLOGY OF EMPLOYMENT (*selected/last decade*)

Research Technician I & II for Dr. Lisa Nagy, University of Arizona	2018-Present
Research Assistant for Dr. Martha Bhattacharya, University of Arizona	2017-2018
Research Lab Assistant for Dr. Lynne Oland & Dr. Leslie Tolbert, University of Arizona	2015-2017
Laboratory Aide for Biology Facilities, Pima Community College	2013-2015
Physician's Office Receptionist, Instituto Mexicano del Seguro Social (IMSS)	2013-2014
Librarian Aide, Pima Community College	2012-2013

PUBLICATIONS, SUBMITTED ABSTRACTS, AND ORAL PRESENTATIONS

1. S. Blunk, S.O Sullivan, H. Garcia-Verdugo, M. Haines, J. Camp, T. Coalter, T.A. Williams, L.M. Nagy “Functional divergence of engrailed and invected paralogs” Submitted for review June 2023, Insects Journal. **Publication Role:** Co-Author
2. Sierra O’ Sullivan, Summer Blunk, Hector Garcia-Verdugo, Terri Williams, Lisa Nagy “The story of engrailed and invected and the evolution of their functional redundancy” Society for Developmental Biology (SDB) Vancouver, Canada 2022. **Poster Role:** Contributing scientist.
3. Erik G. Larsen, Tiffany S. Cho, Matthew L. McBride, Jing Feng, Bhagyashree Manivannan, Cynthia Madura, Nathaniel E. Klein, Elizabeth B. Wright, Hector D. Garcia-Verdugo, Chelsea Jarvis, Rajesh Khanna, Hongzhen Hu, Tally M. Largent-Milnes, Martha R.C. Bhattacharya. “Transmembrane protein TMEM184B is necessary for interleukin-31-induced itch.” August 2021, Pain Journal. **Publication. Role:** Co-Author.
4. Ernesto Hernandez, Sarah E. MacNamee, Leah R. Kaplan, Kim Lance, Hector D. Garcia-Verdugo, Dara S. Farhadi, Christine Deer, Si W. Lee. Lynne A. Oland. “The astrocyte network in the ventral nerve cord neuropil of the *Drosophila* third-instar larva.” January 2020, Journal of Comparative Neurology. **Publication Role:** Co-Author.
5. Jing Feng², Matt McBride¹, Hector Garcia¹, Chelsea Jarvis¹, Mere French¹, Hongzhen Hu², Martha Bhattacharya¹. “Roles for Putative GPCR TMEM184b in Somatosensory Development and Function.” Gordon Research Conference on Cell Biology of the Neuron, Waterville, Valley BH, 2018. **Poster. Role:** Contributing Scientist.
6. Leah R. Kaplan, Héctor D. García, Ernesto Hernandez, Leslie P. Tolbert, Lynne A. Oland “*Drosophila* astrocytes span functional neural domains with little overlap” Undergraduate Biology Research Program Conference (UBRP), Tucson AZ, 2017. **Poster. Role:** Contributing Scientist & Poster Presenter.

CORE LABORATORY TECHNIQUES

Nagy Laboratory

- Laboratory Management: Undergraduate student/employee training, supervision, and evaluation. Compliance with University wide laboratory installation and safety

requirements, record keeping, communication with campus wide facilities, equipment installation and communication with building manager.

- Project coordination: Assist Principal Investigator in getting project specific weekly goals met by leading co-workers to achievable goals, judging what can be done by their current knowledge and abilities. Report results in lab specific formats daily via the web application Benchling.
- Grant management: Evaluating, making, and co-approving best financial decisions according to lab needs. Order purchasing using known UA system purchasing gateways.
- DNA & RNA Synthesis, Extraction & Purification, validation via routine PCR & specialized assay kits.
- Plasmid Synthesis via Ligation, Transformation & other standardized methods: MINI-MIDI-prep etc.
- mRNA & dsRNA synthesis and use of in assays. Visualization using confocal microscopy and time-based observation experiments.
- Labeling: Hybridization Chain Reaction (HCR), in situ hybridization, DAPI, Hoechst & immunofluorescence probes.
- *Tribolium castaneum* embryonic Injections: p element mediated transgenesis, RNAi, labeling & Dissections using entomological tools.
- Plasmid & Primer Design using SnapGene software & BLAST.

Bhattacharya Laboratory

- Collect data on animal behavioral assays: temperature and locomotion timed assays on wildtype/mutant *drosophila m.* larvae, characterization of mice with neuromuscular disorders in timed frames.
- Preparing and running agarose gels.
- Cell Culture: Plating, maintaining, and passaging cells (primarily HEK293 cells).
- Electrophysiology: Collecting electrical signals (EEG, EKG, EMG) in human patients, adult *Bullata sarcophaga* and some larval *Drosophila melanogaster*.
- Exposure to genetics: perform genetic crosses to obtain a specific construct for temporary experimentation/observation and sorting by phenotype for future mating.
- Exposure to Western Blot procedures (primarily using Bio-Rad equipment)

- Exposure to protein quantification of cell/tissue lysates via BCA kit and reading on Nanodrop.

Tolbert/Oland Laboratory

- Research scientific literature to assist Principal Investigators and/or ask further questions.
- Making reagents and other chemical solutions.
- Fly Microdissections: *Drosophila melanogaster* CNS, and PNS gross analysis using entomological tools & fixation protocols.
- *Drosophila m.* Immunocytochemistry/Immunohistochemistry: blocked and probed cells and tissue to quantify protein markers using commercially available antibodies.

Other laboratory techniques and experience

- Microscopy: Bright, Fluorescent, Stereoscopic, and Spinning Disk/single/multi-photon laser/confocal experience. Exposure to image manipulation and quantification using FIJI/Image J. Exposure to 3D modeling using Amira Life sciences software.
- Plant and animal care: Greenhouse care, human cadaver for physiological sciences maintenance, microorganism husbandry (Paramecium & Euglena), fly husbandry (*Drosophila m.*), beetle husbandry (*Tribolium c.*), exposure to mouse care and other animal facilities.
- Data Analysis/Presentation: Qualitative, and quantitative analysis using Excel and preparation of results for presentations using Adobe Photoshop, PowerPoint. Compilation of observed data and scientific methods/techniques in Microsoft Word.
- Exposure to Institutional Review Board (IRB) methodologies.
- Clinical Experience: Instructed patients on what physician appointment would consist about as a volunteer in Mexican Institute of Social Security Hospital (IMSS). Signing patient consent forms and assisting physician.

OTHER SKILLS

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- **Bilingual:** Native level Spanish fluency: translation, communication & writing.
 - **IT Literacy:**
 - Expert level IT services, able to use Windows XP-11, Mac OS, & Linux based operating systems as well as installation.

- Experienced with Microsoft Office 365. 80 WPM typing speed.
- Chat support, phone & e-mail communications.
- Troubleshooting. Computer building /maintenance/upgrade skills, Wireless, Routing.
- Use of assistive Artificial Intelligence tools like ChatGPT with a critical thinking lens.
- Familiar with blockchain technology and use.
- Some MATLAB & Python exposure.
- **E-Commerce retailer:** International sourcing, handling, and delivering products with tested customer service logistics to over 300 people with excellent feedback. High level knowledge of online retailer services like Amazon and eBay.
- **Financial Literacy:** Love to learn about tax rules, credit cards, debit, financial instruments of all kinds. Was able to finance a mortgage at the age of 25 (I am 28 now, with currently only 15% left to totally pay off my house!). First of everyone in my direct family to almost own my own home since my maternal grandfather.
- **Ability to lift/move 70lbs at a time for further transportation.**

HONORS, AWARDS & GRANTS

Selected as recipient of Galileo Circle College of Science Scholarship, University of Arizona	2018
Selected as recipient of Magellan Circle Scholarship for Philosophy, University of Arizona	2017
NSF: Undergraduate research grant by Western Alliance to Expand Student Opportunity	2016
Selected as recipient of Arizona Earn to Learn Scholarship, City of Tucson AZ	2015
Stephen Wolslager Foundation Scholarship, Pima Community College	2013 & 2014
AP Scholar Recognition	2012

LEADERSHIP ACTIVITIES/EXTRA CURRICULAR/

Movement for a Peoples Party (2020)

Involved in support for the creation of a new political party in the United States, attend hub meetings, organization for reach out events via Zoom, and social media outreach.

United States of America 2020 Elections:

Poll worker volunteering.

Symbiosis: An Exhibit of Biological Art (2017)

Created and presented artwork for community events organized around a science-oriented community.

United States of America 2016 Elections:

Organized with teams and distributed information effectively in neighborhoods. Polished communication skills to deliver a strong message to a diverse audience in the state of AZ.

Boys and Girls Club of America (2012):

Instructed children of ages 5-12 basic music lessons in guitar and air instruments as therapy for attention deficit as part of final high school project.