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Lingappan Laboratory
Children's Hospital of Philadelphia
Division of Neonatology
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CURRENT POSITION

Children's Hospital of Philadelphia
Staff Scientist II

Philadelphia, PA
2022-Present

EDUCATION

Baylor College of Medicine

PhD, Developmental Biology
Dissertation: Endothelial development and specialization in health and disease.

Houston, TX
2015-2021

The University of Texas-Pan American

BS, *summa cum laude*, Biology

Edinburg, TX
2011-2015

GRANTS AND AWARDS

Predoctoral Fellowship Award

American Heart Association

2019-2020

Outstanding Student Poster Presentation Award

Baylor College of Medicine

2019

Zebrafish Development and Genetics Scholarship

Marine Biological Laboratory

2016

Undergraduate Research Training Program Award

Plas Lab, Howard Hughes Medical Institute (HHMI)

2012-2015

Outstanding Scientific Poster Presentation Award

Annual Biomedical Research Conference for Minority Students (ABRCMS)

2014

Exceptional Research Opportunities Program (EXROP) Fellowship

Hugo Bellen Lab, Howard Hughes Medical Institute (HHMI)

Summer 2014 and Summer 2015

RESEARCH EXPERIENCE

Children's Hospital of Philadelphia / University of Pennsylvania, Philadelphia

Staff Scientist II; Lingappan Lab

Philadelphia, PA
2022-Present

Deciphering the mechanisms behind sex-specific differences in lung diseases as it pertains to neonatology.

- Introduced and incorporated new technologies and protocols to the laboratory involving in vivo assays and bioinformatics pipelines.
- Mentored research staff and graduate students in animal research management as well as training in molecular and cellular biology assays.
- Involved in the planning and execution of research studies by supporting the day-to-day operations in the laboratory.
- Helped draft and analyze experimental results as well as supporting the process of research submission for publication.

Baylor College of Medicine

Graduate Researcher; Advisor: Joshua Wythe, PhD.

Houston, TX
2015-2021

Endothelial cell maturation during development and its role during glioblastoma formation and treatment resistance.

- Characterized the role of endothelial transcription factor *Erg* during vascular development using molecular biology assays in transgenic mice and zebrafish models.
- Developed and implemented using whole organ clearing and lightsheet microscopy to observe tumor and vascular development in the mouse brain.
- Processed endothelial cells of 6 different organs at 3 different developmental timepoints to compare the transcriptional and chromatin landscape across the body.
- Trained and supported over 13 students and laboratory staff.

Baylor College of Medicine

Undergraduate Researcher; Advisor: Hugo Bellen, PhD.

Houston, TX
Summer 2014 and Summer 2015

- Carried validation studies and publication of a novel strategy to manipulate tagged proteins in vivo in a reversible and spatial specific manner in fruit flies.

The University of Texas Pan-American

Undergraduate Researcher; Advisor: Daniel Plas, PhD.

- Develop a protocol to use confocal microscopy to image mitochondrial stress in neurons using a Parkinson's disease model using *Lymnaea stagnalis* (pond snail).

Edinburg, TX

2012-2015

RELATED PROFESSIONAL EXPERIENCE

Graduate Student Council Member, Baylor College of Medicine

- Helped with communication between students in my graduate program and school administration and faculty.
- Worked on welcome week events and yearly graduate student symposium.

PROFESSIONAL ASSOCIATIONS

Society for Advancement of Chicanos/Hispanics and Native Americans in Science, SACNAS

North American Vascular Biology Organization, NAVBO

American Thoracic Society, ATS

Organization for the Study of Sex Differences, OSSD

PEER-REVIEWED PUBLICATIONS

Cantu, Abiud, **Manuel Gutierrez**, Xiaoyu Dong, Connor Leek, Montserrat Anguera, and Krithika Lingappan. "Modulation of Recovery from Neonatal Hyperoxic Lung Injury by Sex as a Biological Variable." *Redox Biology* 68 (December 2023): 102933.

<https://doi.org/10.1016/j.redox.2023.102933>.

Lingappan, Krithika, Oluyinka O. Olutoye, Abiud Cantu, **Manuel Eliezer Cantu Gutierrez**, Nahir Cortes-Santiago, J. D. Hammond, Jamie Gilley, et al. "Molecular Insights Using Spatial Transcriptomics of the Distal Lung in Congenital Diaphragmatic Hernia." *American Journal of Physiology-Lung Cellular and Molecular Physiology* 325, no. 4 (October 1, 2023). <https://doi.org/10.1152/ajplung.00154.2023>.

Al-Mudares, Faeq, **Manuel Cantu Gutierrez**, Abiud Cantu, Weiwu Jiang, Lihua Wang, Xiaoyu Dong, Bhagavatula Moorthy, Eniko Sajti, and Krithika Lingappan. "Loss of Growth Differentiation Factor 15 Exacerbates Lung Injury in Neonatal Mice." *American Journal of Physiology-Lung Cellular and Molecular Physiology* 325, no. 3 (September 1, 2023). <https://doi.org/10.1152/ajplung.00086.2023>.

Cantu, Abiud, **Manuel Cantu Gutierrez**, Yuhao Zhang, Xiaoyu Dong, and Krithika Lingappan. "Endothelial to Mesenchymal Transition in Neonatal Hyperoxic Lung Injury: Role of Sex as a Biological Variable." *Physiological Genomics* 55, no. 8 (August 1, 2023): 345–54.

<https://doi.org/10.1152/physiolgenomics.00037.2023>.

Cantu, Abiud, **Manuel C. Gutierrez**, Xiaoyu Dong, Connor Leek, Eniko Sajti, and Krithika Lingappan. "Remarkable Sex-Specific Differences at Single-Cell Resolution in Neonatal Hyperoxic Lung Injury." *American Journal of Physiology-Lung Cellular and Molecular Physiology* 324, no. 1 (January 1, 2023). <https://doi.org/10.1152/ajplung.00269.2022>.

Gutierrez, Manuel E., Matthew C. Hill, Gabrielle Largoza, James F. Martin, and Joshua D. Wythe. "Defining the Transcriptional and Epigenetic Basis of Organotypic Endothelial Diversity in the Developing and Adult Mouse." *BioRx*, November 16, 2021.

<https://doi.org/10.1101/2021.11.15.468651>.

Carlson, Jeff C, **Manuel Cantu Gutierrez**, Brittney Lozzi, Emmet Huang-Hobbs, Williamson D Turner, Burak Tepe, Yiqun Zhang, et al. "Identification of Diverse Tumor Endothelial Cell Populations in Malignant Glioma." *Neuro-Oncology* 23, no. 6 (December 23, 2020): 932–44. <https://doi.org/10.1093/neuonc/noaa297>.

Shao, Yingyao, Sameer S. Bajjkar, Harini P. Tirumala, **Manuel Cantu Gutierrez**, Joshua D. Wythe, and Huda Y. Zoghbi. "Identification and Characterization of Conserved Noncoding Cis-Regulatory Elements That Impact Mecp2 Expression and Neurological Functions." *Genes & Development* 35, no. 7–8 (March 18, 2021): 489–94. <https://doi.org/10.1101/gad.345397.120>.

Fish, Jason E., Carlos Perfecto Flores Suarez, Emilie Boudreau, Alexander M. Herman, **Manuel Cantu Gutierrez**, Dakota Gustafson, Peter V. DiStefano, et al. "Somatic Gain of KRAS Function in the Endothelium Is Sufficient to Cause Vascular Malformations That Require MEK but Not PI3K Signaling." *Circulation Research* 127, no. 6 (August 28, 2020): 727–43. <https://doi.org/10.1161/circresaha.119.316500>.
Cantu Gutierrez, Abiud, Manuel Cantu Gutierrez, Alexander M. Rhyner, Oscar E. Ruiz, George T. Eisenhoffer, and Joshua D. Wythe. "FishNET: An Automated Relational Database for Zebrafish Colony Management." *PLoS Biology* 17, no. 6 (June 20, 2019).

<https://doi.org/10.1371/journal.pbio.3000343>.

Fish, Jason E., **Manuel Cantu Gutierrez**, Lan T. Dang, Nadiya Khyzha, Zhiqi Chen, Shawn Veitch, Henry S. Cheng, et al. "Dynamic Regulation of VEGF-Inducible Genes by an ERK-ERG-P300 Transcriptional Network." *Development*, January 1, 2017.

<https://doi.org/10.1242/dev.146050>.

Nagarkar-Jaiswal, Sonal, Pei-Tseng Lee, Megan E Campbell, Kuchuan Chen, Stephanie Anguiano-Zarate, **Manuel Cantu Gutierrez**, Theodore Busby, et al. "A Library of Mimics Allows Tagging of Genes and Reversible, Spatial and Temporal Knockdown of Proteins in *Drosophila*." *eLife* 4 (March 31, 2015). <https://doi.org/10.7554/elife.05338>.