

Luis Cantu Jr.

Education:

University of Texas Rio Grande Valley – Edinburg, TX **December 2021**

- MS in Biochemistry and Molecular Biology, Thesis: “Evolutionary Development Study on Firebrat (*Thermobia domestica*).”

University of Texas Rio Grande Valley – Edinburg, TX **December 2017**

- BS in Biology with a Secondary Major in Psychology, Minor in Chemistry

Academic Scholarships:

- Recipient of the Presidential Graduate Research Assistantship from the University of Texas Rio Grande Valley (\$34,780)

Laboratory Skills:

- **Cellular/Molecular Biology** – PCR/qPCR, Fluorescent In-Situ Hybridization, Cloning, Confocal microscopy, RNA/DNA/Plasmid extraction, Flow cytometry, Immunoassay, Immunostaining, Gel electrophoresis, Ethanol precipitation, Boyden chamber assay, Enzyme-linked immunosorbent assay, Staining (DAPI and Tyramide), ELISA
- **Microbiology** – Inoculation in various media (Slant, Broth, Plate, Broth with Durham Tube), Streaking patterns, Preparing media (Nutrient agar, Blood agar, MacConkey agar, and Tetrathionate broth), Pouring plates, Aseptic techniques
- **Bioinformatics** – MEGA software, Transcriptome assembly, FastQC, Blast, Trinity software (Inchworm, Chrysalis, and Butterfly), Bioturing, Bowtie 2, Artemis, Ensembl

Research Experience:

University of Texas Rio Grande Valley, Edinburg, TX

Graduate Student (Laboratory of Dr. Matthew D. Terry)

May 2019 – December 2021

- Focusing in Evolutionary Developmental Biology with an emphasis in appendage growth for a basal clade in hexapoda.
- Through the conduction of repeated in-situ hybridizations, there is a better understanding of the localization of specific genes in early development.
- Highlighted specific genome biomarkers and their regulation through years of the gradualistic mesenchymal movement.
- Fixating eggs of *Thermobia domestica* and following early developmental stages through staining.
- By utilization of literature reviews, there was further familiarization with protocols.
- Transcriptome assembly is employed in order to improve current genetic sequence analysis.

Work Experience:

DHR Health Institute for Research and Development, Edinburg, TX

November 2021 – Current

Clinical Research Coordinator

- Oversight of research activities and procedures, ensuring efficient workflow and adequate care and treatment of research subjects.

- Gather patient data specified in the study protocol and provide general administrative duties in support of the study.
- Serve as the main contact with study sponsors or site investigator on data management issues and activities.
- Maintains and completes source documentation and oversees the preparation of study activity reports for sponsors and investigators as appropriate.
- Prepare regulatory and ethical submissions and procedures to the Institutional Review Boards and study sponsors.
- Implement the clinical trial from initiation through the stages of development documents, tools, organization of facilities and maintain current curriculum vitae and licenses.
- Responsible for the set-up and maintenance of the administrative structure and the infrastructure of the project(s).

University of Texas Rio Grande Valley, Edinburg, TX

Graduate Research Assistant (Laboratory of Dr. Andrew Tsin) June 2021 – December 2021

- Conducted literature reviews and organized prospective research topics of Diabetic Retinopathy treatments, emphasizing stem cell differentiation.
- Familiarized myself with laboratory protocols under instructor and lab staff, specifically with splitting stem cells.
- Ability to follow through with projects such as determining the growth curves for the HRP cells, conducting lipid analysis, cell counts, and measuring the absorbance levels (HPLC).
- Acquired the ability for furthering detail orientation with strong quantitative and analytic skills for the betterment of statistical analysis (JMP Software).

Graduate Teaching Assistant August 2020 – May 2021

- To contribute to the development of appropriate teaching materials to ensure content and methods meet the learning objective for the course (General Biology I, Anatomy and Physiology I & II, Comparative Embryology, and Microbial Ecology).
- Frequently attended and engaged in professional development to remain current.
- Learned to use a variety of methods and techniques and provide effective, timely and appropriate feedback to students to support their learning.
- Set up lab materials as needed in order to conduct experiments efficiently.
- Given the parameters of COVID had to alter teaching methodologies to online instruction.

Graduate Assistant May 2020 – August 2020

- Assisted professors with grading assignments in a timely fashion (courses include Microbial Ecology and Comparative Embryology).
- Became familiar with the content and pedagogy of Developmental Biology as well as Microbiology in more depth.
- Learned developmental stages, tissue types, hox genetic network, as well as stages in different species (including Arthropods, Sea Urchins, Mouse, Avian).

Graduate Research Assistant (Laboratory of Dr. Matthew D. Terry) May 2019 – May 2020

- Conducted literature reviews and organized prospective research topics, primarily within Genome Assembly of Pterygota.

- Familiarized myself and developed laboratory protocols under the instructor for the comprehension of mesenchymal movement through the gradualism of speciation.
- Ability to follow through with projects such as FISH, Cloning, PCR/qPCR and Transcriptome Assembly.
- Capable of adapting procedures and techniques to better propagate my sample species (*Thermobia domestica*) in order to collect DNA extract.
- Acquired the ability to be detail oriented with strong quantitative and analytic skills for betterment of statistical analysis (IBM SPSS and JMP Software).
- Ability to gather, analyze, and synthesize data from various sources.

South Texas College, McAllen, TX

Laboratory Specialist II

November 2018 – August 2020

- Worked closely with faculty in preparing materials and implementing new procedures for laboratory settings.
- Inoculated media, prepared reagents, and kept active within the laboratory by diversifying subject work.
- Cultured and maintained pathogenic and non-pathogenic bacteria.
- Familiarized with General Biology I&II, Microbiology, and Anatomy and Physiology I&II.
- Maintained accurate records related to inventory and operation of the laboratory.
- Recommended new laboratory equipment and research potential new laboratory experiments, as needed, or as requested by faculty.