Jane Zavala

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EDUCATION

California State University, Long Beach | Bachelor of Science, Biomedical Engineering
GPA: 3.0 | Expected Graduation: May 2026
Relevant Course Work: Biomechanics, Introduction to Medical Devices, Regulatory Basics and Compliance in Biomedical Engineering, Introduction of Solid Modeling and Engineering Graphics, Calculus,

SKILLS

- **Software**: Python, MATLAB, SolidWorks, Multisim, ImageJ
- **Technical:** Design, Simulation, Research, Technical Writing, Cell Culture, Immunostaining, Quantitative Polymerase Chain Reaction (qPCR) Gene Expression Analysis, Pipetting

WORK EXPERIENCE

National Science Foundation REU | Research Assistant **June 2022 - August 2023**

- Conducted research in a tissue engineering and tissue regeneration lab assisting in the project of the development of a 3D Fibrosis model to better understand how to manipulate a cell's microenvironment to reduce fibrotic scars
- Investigated the progression of fibrosis and characteristics of 3T3 fibroblast cells in a collagen hydrogel integrated with matricellular proteins by implementing immunostaining and qPCR techniques
- Used fluorescent microscope imaging techniques to take images to analyze cell proliferation and color densities of blue and green using ImageJ and Excel

PROJECTS

"Talk with Bingo" Speech Therapy App | MATLAB **March 2023 - May 2023**

- Developed a script to simulate the chain of flashcards with audio and mouth orientation diagrams to aid with children's speech exercises
- Created a button function to add pre-recorded audio files to all designated flashcards
- Created a schematic diagram to represent key components of my team's speech therapy app visually

Prosthetic Finger Model | SolidWorks **March 2022 - May 2022**

- Created a SolidWorks 3D model for a prosthetic finger, incorporating a cost-effective titanium base milled with a monolithic zirconia screw fixture designed to permanently bind to the bone, thereby increasing the affordability of prosthetics for low-income patients
- Optimized screw sizing and placement for average knuckles and explored the use of a silicone sleeve
- Achieved the prosthetic finger's fixed shape, realism, and cost-effectiveness through material analysis, patient-specific size adjustments, and adaptable design for appearance and cost optimization

CONFERENCE PRESENTATIONS

Annual Biomedical Research Conference for Minority Scientists | Lead Presenter **November 2022**

- Presented research on the development of a 3D Fibrosis model
- Conducted an in-depth analysis of varying parameters, including cell density, collagen thickness, collagen concentration, and hydrogel stiffness, within the context of ongoing research
- Enhanced expertise in testing matricellular proteins in a hydrogel, biomaterials, and presentation skills through panel feedback

LEADERSHIP

Latinos in Science and Engineering (MAES) | President **August 2023 - Present**

- Supporting the growth of members' professional development through engagement with industry professionals, organizing general body meetings, and actively sharing knowledge and opportunities within our community

Society of Hispanic Professional Engineers (SHPE) | Executive Vice President **August 2022 - May 2023**

- Organized and developed biweekly professional development workshops and assisted in outreach events
- Collaborated in the planning and execution of the Night with Industry event fostering over 60 students