

ROBERT XAVIER CASTILLO CASTAÑAZA

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MISSION

To establish greater relationships between engineering and minority education

EDUCATION

University of California, Los Angeles

GPA: 3.41

Pursuing B.S. Degree in Mechanical Engineering with technical breadth in Materials Science & Double Major in Education Studies
Expected graduation date: June 2027

Relevant Coursework: - Differential Equations - Dynamics of Particles - Intro to Fluid Dynamics

Bakersfield College

GPA: 3.85

Enrolled within the Early College Industrial Automation Program

August 2020 - May 2023 - Basic Electronics (DC) - Mechanical Systems

Relevant Coursework: - Programmable Logic Controllers

SPECIAL SKILLS

- Research Paper Writing
- Manufacturing thermocouples
- Utilization of Scanning Electron Microscopy to analyze samples on the nano-scale
- Adobe Illustrator/Animate/Lightroom/Premiere
- Tensile Testing via Instron Machine
- CAD programs: Fusion 360 and Solidworks
- Arduino and Raspberry Pi utilization for small-scale projects
- Data Manipulation and Plotting on MATLAB/Excel/Python
- Fabrication with 3D-Printers, CNC mills, and laser engravers
- Soldering and circuit construction

EXPERIENCE

Nanoscale Transport Research Group, Undergraduate Researcher

1/2024 - Present

Los Angeles, California

- Created informational video on Adobe Animate to illustrate the lab's solar-graphite synthesization process
- Worked alongside a PhD student to conduct mechanical/elasticity testing on carbon fiber cloth reinforced by lab-synthesized cylindrical graphite to gauge link between refinement and yield strength
- Developed slideshow presentations and a physical poster to visually and orally present my research
- Ran SEM imaging and Raman Spectroscopy tests on graphite to investigate deposition amount and quality

Center for the Transformation of Schools, Research Assistant (Part-Time Job)

11/2024 - Present

Los Angeles, California

- Tasked with finding literature on the restorative practices within K-12 schools, compiling newsletter material
- Interpret data on current educational trends on a local or nationwide basis to determine new avenues of educational research
- Assist with Operations tasks, such as creating materials for presentation during staff meetings

ORGANIZATIONS

- Member of the UC Leadership Excellence through Advanced Degrees (UC LEADS) Program
- Member of the American Society of Mechanical Engineers, UCLA
- Member of the Center for Excellence in Engineering and Diversity (CEED) at UCLA
- Member of the Society of Latinx Engineers and Scientists (SOLES), the SHPE chapter at UCLA
- Co-President for the Latine Film and Theatre Association

RESEARCH PROGRAMS

UC LEADS First Summer Research Experience, Undergraduate Researcher

6/2024 - Present

Los Angeles, California

- Investigating how the graphitization of carbon fiber precursor material impacts the tensile strength of carbon carbon composites enveloped in a graphitic matrix
- Writing parts of the introduction section for a research paper due for review and publication
- Attending weekly meetings and programming designed to cultivate better lab practices for a career in academia

Summer Undergraduate Research Program (SURP), Undergraduate Researcher

6/2024 - 8/2024

Los Angeles, California

- Consisted of full-time research work, faculty/industry presentations, and instructional workshops on coherent methods to present experimental results and conclusions
- Published an abstract, overview oral presentation, and research poster within SURP's journal based on the mechanical properties of light-synthesized cylindrical graphite
- Obtained an Honorable Mention distinction for Best Oral Presentation
- Established new directions of graphite research to be explored during tenure in UC LEADS program, such as intermixing indigenous mayan weaving practices into graphite manufacturing process to discover new graphitic growth patterns, structures, and mechanical properties