

Paloma Suárez Davila

Mechanical Engineering, University of Colorado Boulder

✉ paloma.suarezdavila@colorado.edu

🌐 www.linkedin.com/in/pasuada

Education

B.S. in Mechanical Engineering, University of Colorado Boulder

2021-2025

- GPA: 4.0
- Relevant Coursework: Bioengineering: Lung Mechanics, Computer-Aided Design, Thermodynamics, Computational Methods, Fluid Dynamics, System Dynamics
- Senior Design: Designed and manufactured custom components for a four-point bending fatigue testing apparatus to analyze PMMA flexural. Managed project documentation. Coordinated with industry sponsor.
- Honors: President's List (4 semesters), Dean's List (2 semesters)

Awards

Third Place, Poster Competition (Materials Science and Engineering Section VII)

2024

American Institute of Chemical Engineers Annual Student Conference, San Diego, CA

Second Place Student Poster Award

2024

Young Scholars Summer Research Program Symposium, University of Colorado Boulder, CO

Contributed Poster Presentations (# denotes presenting author)

1. **Suarez Davila, P.#**, Ganguly, A., Raj, R., Gupta, A., Flow Visualization of a Marangoni Surfer: Relating Flow to Surfer Motion, American Institute of Chemical Engineers Annual Student Conference 2024 (*Poster*).
2. **Suarez Davila, P.#**, Ganguly, A., Raj, R., Gupta, A., Flow Visualization of a Marangoni Surfer: Relating Flow to Surfer Motion, Young Scholars Summer Research Program Symposium, University of Colorado Boulder 2024 (*Poster*).

Research Experience

Geometry Effects on Bent Rod Actuators and Diffusiophoresis

08/2024-Present

- Analyzed bent rod actuator performance across varied geometries
- Modeled concentration profiles for different actuator shapes
- Developed Python code for data computation and analysis

Flow Visualization of a Marangoni Surfer: Relating Flow to Surfer Motion

06/2024-08/2024

- Studied Marangoni surfer's dynamics under surfactant gradients, to advance understanding of microfluidic systems and particle control
- Designed and built experimental setup to visualize and quantify fluid flow
- Used ImageJ and MATLAB's Particle Image Velocimetry (PIV) tool and analyzed fluid flow patterns
- Conducted COMSOL Multiphysics simulations to validate experimental data
- Set up the experimental lab infrastructure, now being utilized for ongoing research and studies

Boreal Toad Terrarium Project

01/2022-05/2022

- Designed an interactive exhibit for Boreal Toads, and built terrarium features such as waterfalls and hideouts
- Developed a functional water-pump system and design features using SolidWorks to support the exhibit's operation
- Designed a permanent installation used for educational outreach and conservation awareness

Effects of Musical Instrument Learning on Cognitive Skills in Teenagers

09/2019-05/2021

- Led a study on musical learning's impact on memory and auditory function
- Designed experimental framework and assessments to evaluate cognitive effects
- Analyzed data from 20 participants and used statistical analysis in Excel
- Demonstrated a positive correlation between musical learning and cognitive improvement

Work Experience

Peer Coach | Colorado Mesa University/University of Colorado Boulder Engineering Partnership Program *08/2024-Present*

- Advise 25 first- and second-year engineering students on course registration, academic policies, and transitioning to upper-division coursework
- Plan Peer Coaching events to enhance academic support (i.e. Cram Jams, resume workshops)
- Organize regular 1:1 meetings with mentees
- Improved student engagement and academic preparedness

Math and Engineering Tutor | Tutorial Learning Center, Colorado Mesa University *01/2023-Present*

- Tutor approximately 10 undergraduate students per week
- Tutor calculus series, differential equations, and engineering dynamics in English and Spanish
- Attending continuous tutor trainings to enhance skills
- Enabled students to build confidence and achieve higher grades in challenging STEM courses

Activities and Community Service

Women in Science and Engineering (WiSE) | Colorado Mesa University *08/2023-Present*

- Manage financial responsibilities as treasurer, overseeing budget
- Coordinate course registration events and social gatherings
- Organize Open Shop Night, providing students hands-on experience with machines and tools

Women's Triathlon Team | Colorado Mesa University *08/2021-05/2023*

- Committed 25 hrs/week to training, meetings, travel, and competitions while maintaining full course load
- Lead tours of facilities to prospective student-athletes and their families
- 5 College Triathlon Coaches Association awards
- Selected as a representative on the Student-Athlete Advisory Committee
- Built focus, work ethic, and perseverance to achieve personal and team goals

Participation in Professional Societies

- Tau Beta Pi (Engineering Honor Society)
- Society of Women Engineers

Languages

- English (Bilingual, over 8 years of school in English-speaking countries)
- Spanish (Native/Bilingual)

