CRISTIANO M CABRERA, CD

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https://cmcabrera97.github.io/index.html

OBJECTIVE

Mechanical engineer with extensive hands-on experience in research, lab coordination, and teaching. Previous experience focuses on passive flow control and wind power technology optimization. The projects I worked on through my education developed my skills in multi-disciplinary collaboration, prototyping, and technical documentation. I am actively seeking mechanical engineering research roles to contribute innovative solutions in research and development settings.

EDUCATIONAL EXPERIENCE

Purdue University Graduate School || West Lafayette, IN || Fall 2022 – Spring 2025

M.S. – Mechanical Engineering || Spring 2025

Southern Illinois University Edwardsville || Edwardsville, IL || Fall 2020 – Spring 2022

B.S. – Mechanical Engineering – Cum Laude || Spring 2022

Southwestern Illinois College || Belleville, IL || Fall 2016 – Summer 2020

A.E.S. – General Engineering || Summer 2020

A.A.S. – CAD – Machine Drafting Specialization || Spring 2020

Purdue University || West Lafayette, IN || Fall 2015 – Spring 2016

PROFESSIONAL EXPERIENCE

Impulse Lab Group || Graduate Research Assistant || Spring 2025

USSF Space Strategic Technical Institute for In-Space Operations

- Researched equipment for electronic component inspection, design verification, and operational testing
- Communicated with vendors about equipment for platform to perform multiple tests in a small environment

Purdue College of Engineering || Lead Lab Coordinator || Spring 2023 – Spring 2024, Fall 2024

Introduction to Mechanical Engineering Design, Innovation and Entrepreneurship (ME 26300)

- Providing mentorship and guidance to multiple teams of students in completing a design project
- Distribution and management of course materials
- Overseeing undergraduate teaching assistants and graduate lab coordinators

Purdue College of Engineering || Graduate Teaching Assistant || Summer 2024

Introduction to Manufacturing (ME 29700)

- Worked with faculty to test and develop projects for a new pilot manufacturing course
- Discussed projects to give students the best education on each manufacturing process in a fast-paced course
- Created lab manuals in collaboration with faculty for students to use during course projects in wood working, sheet metal bending, manual mill and lathe, and CNC mill and lathe

Purdue College of Engineering || Graduate Teaching Assistant || Fall 2022

Basic Mechanics I (ME 27000)

- Grading assignments and exams
- Hosting in-person and online tutoring sessions

Purdue University Minority Engineering Department || Tutor || Fall 2022 – Fall 2023

Plane Analytic Geometry and Calculus I and II (MA 16100/16200), Analytic Geometry and Calculus I and II (MA 16500/16600), Basic Mechanics I (ME 27000), Graphical Communication and Spatial Analysis (CGT 16300)

- Provided one-on-one tutoring to students, in-person and online
- Guided students to external resources for additional information and exercises

SWIC Success Center || Peer Tutor || Fall 2018 – Spring 2020

All MATH, All CAD, Engineering Graphics (ENGR 103), Analytical Mechanics – Statics (ENGR 263), Analytical Mechanics – Dynamics (ENGR 264), College Physics I (PHYS 151), Physics – Mechanics (PHYS 204)

- Lead individual and group tutoring sessions with students in-person
- Supplied students with Success Center and external resources for additional information and exercises

RESEARCH EXPERIENCE

Bio-Inspired Surfaces for Supersonic Flow Control || Project Lead || Purdue University || Spring 2023 – Present

- Designed a modular test-section for the Purdue Aerospace Science Lab supersonic wind tunnel
- Assisted in the performance of tunnel tests and collection of schlieren imagery for qualitative analysis of flow control potential

Comparison of Manufacturing Bio-Inspired Surfaces || Project Lead || Purdue University || Spring 2023 – Present

- Developed a program for the generation of bio-inspired surface models for simulation and manufacturing purposes
- Captured scanning electron microscope images of samples from different angles for qualitative comparisons

Sargassum Remote Sensing || Graduate Mentor || Universidad de Puerto Rico, Recinto de Río Piedras and Purdue University | Summer 2023 – Present

- Supervised the development of Python code for accessing and manipulating satellite imagery data
- Mentored students of diverse academic backgrounds in literature review, project execution, and both a slideshow and poster presentation

Sargassum Alcohol Extraction || Graduate Mentor || Universidad de Puerto Rico, Recinto de Río Piedras and Purdue University | Summer 2023 – Present

- Assisted in the collection of Sargassum samples in the field
- Aided students in lab work concluding with both a slideshow and poster presentation of the work completed

AWARDS AND CERTIFICATES

Purdue EBEC Python Programming Certificate || Spring 2023

SIUE Pi Tau Sigma Engineering Honors Society || Fall 2021

Occupational Certificate in Multi-Position Welding || Summer 2021

CRLA Tutor, Level 1 || May 2020

ADDA Certified Mechanical Drafter || December 2019

Eagle Scout || May 2015

VOLUNTEER AND SERVICE

Department of Energy Collegiate Wind Competition || Founding Graduate Mentor || Fall 2023 – Spring 2024

BIP Summer Institute for Climate Change and Coastal Resilience || Medici Mentor || Summer 2023

SIUE Pi Tau Sigma Engineering Honors Society - Secretary || Fall 2021 – Spring 2022

SIUE American Society of Mechanical Engineers - Secretary || Spring 2021 – Spring 2022