

CRISTIANO M CABRERA, CD



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OBJECTIVE

I am an M.S.M.E. Student at Purdue University studying passive flow control methods for drag reduction. I am interested in the improvement of wind power technologies to create a more reliable method of power generation, as well as optimization of wind farms to maximize potential power generation.

EDUCATIONAL EXPERIENCE

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

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

Purdue College of Engineering || Lead Lab Coordinator || Spring 2023 – Present

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 || 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 (MA 16100), Plane Analytic Geometry and Calculus II (MA 16200), Analytic Geometry and Calculus I (MA 16500), Analytic Geometry and Calculus II (MA 16600), Modern Mechanics (PHYS 17200), 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

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
- Provided assistance to students in lab work and both a slideshow and poster presentation

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

- Created a program for the generation of bio-inspired surface models for simulation and manufacturing purposes
- Performing water tunnel tests on bio-inspired surfaces adhered to an acrylic airfoil to observe impact on flow from microstructure streamwise location

Bio-Inspired Surfaces for Supersonic Flow Control || Graduate Researcher || 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

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 – Present

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

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

Secretary || Fall 2021 – Spring 2022

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

Secretary || Fall 2021 – Spring 2022