Anna Cobb

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Research Interests

I am interested in understanding the environmental and economic consequences of clean energy technology adoption and implementation.

Education

Carnegie Mellon University (Pittsburgh, PA) **Since August 2022**

- 4th year Ph.D. Candidate in Engineering and Public Policy
- National Science Foundation Graduate Research Fellow (NSF GRFP)

Georgia Institute of Technology (Atlanta, GA) **2018 – 2022**

- Bachelor of Science in Mechanical Engineering, minor in Energy Systems

Research Experience

Carnegie Mellon University (Pittsburgh, PA), *Graduate Research Assistant* **Since August 2022**

I am a member of the Vehicle Electrification Group (VEG), which is directed by my advisor, Dr. Jeremy Michalek. My research examines the implementation of transportation technology, which covers topics ranging from how long people have to wait for their Uber and Lyft drivers to the logistics of electric vehicle battery recycling markets.

TerraPower (Seattle, WA), *Hydrogen Generation Development Intern* **Summer 2022**

I conducted preliminary investigations of integrating hydrogen production technology with TerraPower's Natrium nuclear reactor design by writing a literature review and developing a system-level technoeconomic model to evaluate different hydrogen production methods.

Ben T. Zinn Combustion Lab (Atlanta, GA), *Undergraduate Research Assistant* **2020 - 2022**

In collaboration with a master's student, I worked on the development of a probe for monitoring gas turbine engine health. I focused on the creation of post-processing code in MATLAB for identifying and characterizing thermoacoustic instabilities from the combustion rig test data.

Solar Turbines (Virtual), *Research Fellow* **Summer 2021**

Using experimental data, I created and calibrated a geometric flow model of a test combustion rig using Flownex. Model simulation results were used to help identify combustion instabilities that might occur during engine operation.

Teaching Experience

Carnegie Mellon (Pittsburgh, PA), *Teaching Assistant* **Fall 2025**

Introduction to engineering and public policy – responsibilities: grading, hold weekly recitations

Carnegie Mellon (Pittsburgh, PA), *Teaching Assistant* **Fall 2024**

Engineering Optimization – responsibilities: conversion of course content from MATLAB to Python, assisting students with troubleshooting coding problems

Carnegie Mellon (Pittsburgh, PA), *Peer Tutor* **Spring 2024**

Introduction to Machine Learning – responsibilities: increasing comprehension of course content

Georgia Tech (Atlanta, GA), *Teaching Assistant* **Spring & Fall 2020**

Numerical Methods in MATLAB – responsibilities: grading, office hours, & review sessions

Academic Projects

USAEE Virtual Case Competition (Carnegie Mellon), *Group Member* **August 2025**

Month-long competition focused on strategies for utilities to handle load growth from data centers.

- Ran Monte Carlo simulations to examine how the composition of data centers requesting connection affects magnitude of uncertainty over time.
- Overall winner

NASA Blue Skies Competition (Carnegie Mellon), *Group Member* **Academic Year 2022-23**

- Assessed hydrogen supply chain technology readiness for use in commercial aviation in terms of cost, technology readiness levels, and emissions
- Supported development of multi-objective optimization model of hydrogen supply chain technologies including production, long-distance transport, and last-mile transport
- One of eight teams selected to compete in final competition at NASA headquarters in June 2023: awarded "Best Oral Presentation"

Georgia Tech EcoCAR (Georgia Tech), *PCM Sub-Team Lead* **2021 - 2022**

Four-year collegiate competition focused on converting a gas-powered Chevrolet Blazer to a hybrid electric vehicle through software and hardware reconfiguration, testing, and installation.

- MIL (Model-in-Loop), HIL (Hardware-in-Loop), and VIL (Vehicle-in-Loop) software testing
- Automated and improved robustness of existing MIL testing procedures
- Trained new team members, developed high-level team goals, delegated work to team members, and collaborated with leads at other universities
- Winner of PCM Technical Presentation at 2022 EcoCAR competition. Entire team won first place Overall.

Skills

Programming Languages/Software

- Julia, MATLAB, R, Python, Stata, GitHub, use of supercomputing resources

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Awards & Honors

Robert W. Dunlap Award **Spring 2024**

- Awarded for the most outstanding solution submitted for the Part B Qualifying Examination of the Department of Engineering and Public Policy

Carnegie Institute of Technology Presidential Fellowship **Academic Year 2024-2025**

Dean's Fellowship **Academic Year 2022-23**

National Science Foundation Graduate Research Fellowship **Spring 2022**

- Prestigious fellowship providing funding for tuition & stipend for 3 years of graduate education
- Awarded for research proposal focused on hydrogen supply chain development and optimization

President's Undergraduate Research Award **Spring 2021**

- Stipend awarded for research proposal: "PMT Data Analysis for Flame Transfer Function of Test Combustion Rig"

Leslie U. and Ola Ryle Hammack Memorial Scholarship **Academic Year 2020-21**

- Awarded to junior-year mechanical engineering student at Georgia Tech with highest GPA who is a Georgia resident

Zell Miller Scholarship **2018 – 2022**

- Full tuition coverage awarded to residents of Georgia for maintaining a 3.3 GPA

Volunteer Work

Graduate Application Support Program, *Team Member* **Academic Year 2025-2026**

- Match Engineering and Public Policy (EPP) graduate applicants with current students to provide support with the application process (answering questions about the application, providing high-level feedback on essays)

GROW+ (Pittsburgh, PA), *Co-Facilitator* **Academic Year 2023-2024**

- Facilitate social, academic, and professional event planning to support women and non-binary graduate students in the engineering and public policy department

Student Competition Center Outreach Committee (Atlanta, GA), *Chair* **Academic Year 2021-22**

- Plan and execute youth outreach events for members of Georgia Tech's competition teams

Little Einstein's Organization (Atlanta, GA), *Member* **2021 – 2022**

- Plan and complete STEM activities with children at underserved schools in the Atlanta area

GT Haiti Solar Initiative (Atlanta, GA), *Team Member* **2018 – 2021**

- Wrote grant application and presented to board; earned $3,500 in funding for solar sewing project
- Completed development of prototype system and shipped components to Haiti in Summer 2019
- Visited high schools during Spring 2021 to teach students about Haiti's electrical grid and introduce them to the fundamentals of circuit-building

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Publications

A. Cobb *et al.*, "A Techno-economic Assessment of Electric Vehicle Battery End-of-Life Pathways: When to Repurpose and When to Recycle," *Submitted*, Oct. 2025.

M. Tsuchiya, A. Cobb, and P. Vaishnav, "Chicago Riders' Choice of Uber and Lyft over Transit Implies a Median Breakeven Value of Travel Time Equal to the Regional Hourly Wage of $30 per Hour," *Environ. Sci. Technol.*, vol. 59, no. 4, pp. 1921–1931, Feb. 2025, doi: 10.1021/acs.est.4c08808.

A. Cobb, A. Mohan, C. D. Harper, D. Nock, and J. Michalek, "Ride-hailing technology mitigates effects of driver racial discrimination, but effects of residential segregation persist," *Proceedings of the National Academy of Sciences*, vol. 121, no. 41, p. e2408936121, Oct. 2024, doi: 10.1073/pnas.2408936121.

A. Matthews *et al.*, "Experimental Development of On-Line Flame Transfer Function Measurements for Fielded Gas Turbines," Sept. 2021. doi: 10.1115/GT2021-59317.