Anna Cobb

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Research Interests

I am interested in understanding the effects of technology adoption, especially in the realm of clean energy and transportation, on socially disadvantaged groups.

Education

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

- 2nd year Ph.D. Student in Engineering and Public Policy
- National Science Foundation Graduate Research Fellowship Program Recipient (2022)

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

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

Academic & Professional Employment

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

- Conducted preliminary investigations of integrating hydrogen production technology with Natrium nuclear reactor design
- Completed detailed literature review of available hydrogen production and storage technology
- Developed techno-economic model to understand potential plant operation and economics across different design scenarios

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

- Partnered with master's student on three-year industry sponsored project to conduct combustion testing and develop new diagnostic techniques for both on-engine and lab conditions
- Developed robust post processing procedure in MATLAB for combustion rig test data to identify and characterize potential thermoacoustic instabilities
- 2nd Author of Turbo Expo GT2021-59317 "Experimental Development of On-Line Flame Transfer Function Measurements for Fielded Gas Turbines"

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

- Created and calibrated geometric flow model of test combustion rig using Flownex
  - Analyzed experimental data to refine and verify model accuracy
- Conducted analysis of simulation results to identify potential combustion instabilities

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

- Grader/TA for ME 2016, Numerical Methods in MATLAB
- Held weekly office hours to help students understand mathematical and coding concepts
- Collaborated with other graders to create presentations and conduct exam review sessions for students throughout semester
- Graded handwritten homework and MATLAB coding projects for 50-person class

Skills

Software & Modeling Approaches

- Gurobi Optimization, Engineering Equation Solver, Simulink, Microsoft Office Suite
- Agent-Based Modeling, Basic Regression

Programming Languages

- Julia, MATLAB, R, Python

Academic Projects

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

- Assessed hydrogen supply chain readiness in terms of cost, technology readiness levels, and emissions
- Supported development of multi-objective optimization model of hydrogen supply chain technologies
- One of eight teams selected to compete in final competition at NASA headquarters in June 2023

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

- MIL (Model-in-Loop), HIL (Hardware-in-Loop), and VIL (Vehicle-in-Loop) code testing
- Automated and improved robustness of existing MIL testing through implementation of coverage reports
- Train new team members on software development process and testing procedures
- Develop high-level team goals, delegate work to team members, and collaborate with leads at other universities
- Winner of PCM Technical Presentation at 2022 EcoCAR competition. Entire team won first place Overall

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Awards & Honors

Dean's Fellowship (Carnegie Mellon) **Academic Year 2022-23**

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

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

President's Undergraduate Research Award (Georgia Tech) **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 (Georgia Tech) **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 (Georgia Tech) **2018 – 2022**

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

Volunteer Work

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 to participate in

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

- Plan and complete STEM activities with children at underserved schools in the Atlanta area
- During COVID, made "STEM kits" containing materials for experiments that children can do on their own at home

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

- Wrote grant application and gave presentation to GTSF Board--earned $3500 in funding for solar sewing project
- Worked to develop business plan and logistics for solar sewing system to help Haitian residents build self-sustaining businesses while providing a much-needed alternative to gas powered generators
- Completed development of prototype system and shipped components to Haiti in Summer 2019 for future installation
- Visited high schools during Spring 2021 to teach students about Haiti's electrical grid and introduce them to the fundamentals of circuit-building