

# Sarah Elaine Demsky

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## Education

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### Massachusetts Institute of Technology (Cambridge, MA)

S.M., Aeronautics and Astronautics Sep. 2021 – June 2023

### Georgia Institute of Technology (Atlanta, GA)

B.S., Aerospace Engineering, *with Highest Honors* Aug. 2017 – May 2021

## Experience

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### Hawai'i Natural Energy Institute (Honolulu, HI)

Junior Researcher, Grid System Technology Advanced Research Team Nov. 2023 – Present

Faculty Member, University of Hawai'i at Mānoa School of Ocean and Earth Science and Technology (SOEST) Nov. 2023 – Present

### Massachusetts Institute of Technology (Cambridge, MA)

Graduate Research Assistant, Lab for Aviation & the Environment Sep. 2021 – Oct. 2023

### Georgia Institute of Technology (Atlanta, GA)

Undergraduate Research Assistant, Dr. German Research Group Aug. 2020 – May 2021

Undergraduate Research Assistant, Spatiotemporal COVID-19 Modeling Aug. 2020 – Dec. 2020

Undergraduate Research Assistant, Space Systems Design Lab Aug. 2018 – May 2020

### Sandia National Laboratory (Albuquerque, NM)

Intern, Nonlinear Mechanics & Dynamics Summer Research Institute June 2021 – Aug. 2021

### Ball Aerospace (Boulder, CO)

Intern, Mechanical Group Support Equipment Group June 2020 – Aug. 2020

### NASA Marshall Space Flight Center (Huntsville, AL)

Intern, Structural Dynamics and Integration Jan. 2019 – May 2019

## Leadership

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### MIT AeroAstro Communication Lab (Cambridge, MA)

Communication Fellow Mar. 2022 – Sep. 2023

### Georgia Tech Aero Maker Space (Atlanta, GA)

President May 2020 – May 2021

### Georgia Tech Women's Water Polo Club (Atlanta, GA)

Captain Aug. 2019 – May 2021

### Georgia Tech Sigma Gamma Tau (Atlanta, GA)

Programming and Development Chair Jan. 2020 – May 2021

## Skills

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### Programming, data analysis, and climate/energy modeling

MATLAB, Julia, Python, QGIS, Microsoft Excel, GREET, HOMER, XENDEE

### Print, design, and web development

HTML/CSS, Amazon Web Services, SolidWorks, Fusion 360, LaTeX, Microsoft Word, PowerPoint

### Prototyping and machining

CNC and Manual Mill, Lathe, Waterjet, Soldering, Laser Cutting, SLS and SLA 3D Printing

## Selected Publications

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**Demsky, Sarah, E.** [Analysis of Double Cropping to Expand Sustainable Aviation Fuel Production in the United States](#). Master's thesis, *Massachusetts Institute of Technology, Department of Aeronautics and Astronautics*, May 2023.

Goldberg, Nathaniel N., **Demsky, Sarah**, Youssef, Abdelrahman A., Carter, Steven, Fowler, Deborah, Jackson, Nathan, Kuether, Robert, Steyer, Andrew. [Experimental and Computational Investigation of Nonlinear Dynamics of a Simplified Bearing-and-Shaft Assembly](#). Sandia National Laboratory, *International Modal Analysis Conference*, February 2022.

## Selected Presentations

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Potential for biofuels to lower U.S. aviation carbon emissions in 2035. Featured showcase presenter, [MIT Energy Night](#), Cambridge, MA, October 21, 2022.

Design and Manufacturing of a Semi-Autonomous CubeSat Inflation Tank. [Symposium on Space Innovations](#) Student Poster Competition Runner-up, Atlanta, GA, 2019. With Alex Bustos.