

# ARIELLA MAIA BLACKMAN

ariella1@mit.edu | (914) 202-5895 | [www.ariellablackman.com](http://www.ariellablackman.com)

## EDUCATION

### MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Cambridge, MA | Expected Graduation: May 2027

- Current second-year student, candidate for Bachelor of Science. Major: Aerospace Engineering | GPA: 4.7/5.0

## RELEVANT EXPERIENCE

### SUPPORTABILITY INTERN

Space Mission Analysis Branch, NASA Langley Research Center, Summer 2024

- Conducted foundational work necessary to model water margins for future crewed exploration missions.
- Identified and researched factors relevant to water usage/production through initial literature review.
- Determined qualitative and quantitative relationships between components of crewed spaceflight systems.
- Designed and ran case study to identify modeling considerations regarding water usage during human spaceflight.
- Developed and documented a model methodology.

### EXAMINING WAX MELTING AND SOLIDIFICATION IN MICROGRAVITY

MIT Media Lab, Space Enabled Group, 2023-2024

- Conducted tests of wax melting system prior to suborbital flight (Blue Origin NS-24).
- Analyzed test results of model system to make decisions regarding flight hardware.
- Contributed towards flight hardware modifications.
- Analyzed visual and quantitative data to map wax behavior to flight timeline.

### “DEVELOPING A MODEL IN-SITU RESOURCE UTILIZATION SYSTEM FOR OXYGEN SUSTAINING

Independent Research, 2020-2023

### LIFE SUPPORT AND LAUNCH COST REDUCTION FOR MARS” | [www.ariellablackman.com/res](http://www.ariellablackman.com/res)

- Independently designed and conducted a study to model a sustainable, oxygen production, in-situ resource utilization life support system for human spaceflight to Mars.
- Grew crops in potting soil and Martian regolith simulant to analyze the impact of growth substrate on plant growth.
- Created original mathematical model for ideal conditions to optimize high oxygen production with low launch mass/cost.
- Conducted follow-up study to address composition-related limitations of growth in Martian regolith simulant.
- Communicated work with various audiences by creating and presenting posters, scientific papers, and oral presentations.

### SUMMER SCIENCE PROGRAM (SSP) IN ASTROPHYSICS

University of Colorado Boulder, Summer 2022

- Conducted research regarding near-Earth asteroid orbits.
- Utilized observations to write Python program to calculate orbital elements necessary to model orbit of asteroid 1994 PC1.
- Authored an orbital determination report detailing results.
- Worked with Southwest Research Institute to model the stability of calculated orbit.

## AWARDS AND HONORS

**REGENERON SCIENCE TALENT SEARCH (STS)** National Top 40, 2023

**REGENERON INTERNATIONAL SCIENCE AND ENGINEERING FAIR (ISEF)** Grand Award winner: 2nd place in Plant Sciences, 2022 | Special Award winner: 1st place Air Force Research Laboratory on behalf of the United States Air Force award in Plant Sciences, 2022

**NEW YORK STATE SCIENCE AND ENGINEERING FAIR (NYSSEF)** Grand Award winner: 1st place in Plant Sciences, 2022 | Special Award winner: Mu Alpha Theta Award in Mathematics, 2022 | Grand Award winner: 2nd place in Plant Sciences, 2023 | Special Award winner: NASA Earth Systems Award, 2023

**AMERICAN SOCIETY FOR GRAVITATIONAL AND SPACE RESEARCH (ASGSR) ANNUAL MEETING** Invited to speak at professional conference | Second Place in High School Student Poster Competition, 2022

## LEADERSHIP AND INVOLVEMENT

**MIT ROCKET TEAM** Structures Sub-team: Recovery, Outreach Chair, 2023-Present

- Design dual deployment and reefed recovery systems for Spaceport America Cup competition rocket.
- Relevant skills include SolidWorks CAD, hardware manufacturing, and hardware testing.
- Lead K-12 outreach program to promote interest in STEM and rocketry.

**EAST CAMPUS HALL CHAIR** 2025-Present

- Elected leadership for dormitory hall to manage budget, organize hall-wide events, and navigate conflicts.

**“WOMEN IN STEM” PROGRAM** Founder/Lead Instructor, 2021-2023

- Developed curriculum for arts-based, interactive program for elementary-aged girls to promote gender equality in STEM.

**BIOENGINEERING JOURNAL SEMINAR** 2023

- Graduate-level MIT class discussing prominent scientific journal articles in the field of bioastronautics.

## SKILLS

- Technical communication, collaboration, creative problem solving, SolidWorks, experimental design/troubleshooting, hardware manufacturing, systems analysis/mapping, data visualization, proficiency in French