

ARIELLA MAIA BLACKMAN

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Cambridge, MA | Expected Graduation: May 2027

- Current first-year student, candidate for Bachelor of Science in Aerospace Engineering | GPA: N/A

HARRISON HIGH SCHOOL

Harrison, NY | Graduated: June 2023

- International Baccalaureate Recipient | GPA: 101.766 | *summa cum laude*

SKILLS: Technical communication, SolidWorks, experimental design/troubleshooting, hardware manufacturing, proficiency in French

RELEVANT EXPERIENCE

EXAMINING WAX MELTING AND SOLIDIFICATION IN MICROGRAVITY

MIT Media Lab, Space Enabled Group, 2023-Present

- Conducted tests and reliability inspections of flight hardware.
- Analyzed test results of model system to make decisions regarding flight hardware.
- Launched on Blue Origin NS-24 and currently analyzing data post-flight.

“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

- 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

- Used Sommers-Bausch Observatory to catalog 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 Finalist and \$27,000 award winner, 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 Presented independent research at ASGSR professional conference | Second Place in High School Student Poster Competition, 2022

LEADERSHIP & INVOLVEMENT

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

- Design 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.

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

- Developed and taught curriculum for arts-based program to 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.

HARRISON HIGH SCHOOL ASTRONOMY CLUB President (2022-2023), Treasurer (2021-2022), Member (2019-2021)

- Researched astronomy, authored original scripts, and performed in planetarium shows to promote public STEM interest.

BET AM SHALOM SYNAGOGUE HEBREW SCHOOL Teaching Assistant, 2019-2023

SUMMER CAMP COUNSELOR 2021, 2023

PROFESSIONAL MEMBERSHIPS

AMERICAN SOCIETY FOR GRAVITATIONAL AND SPACE RESEARCH SOCIETY FOR SCIENCE

AMERICAN STATISTICAL ASSOCIATION

SUMMER SCIENCE PROGRAM (SSP)