

Grace Daja

Carnegie Mellon University

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EDUCATION

Carnegie Mellon University, Mellon College of Science, Pittsburgh, PA

May 2028

Bachelor of Science, Physics with Astrophysics track

GPA: 3.66

Relevant Coursework: Stars Galaxies & the Universe, Modern Physics III, Physics II for Engineering and Physics Students, Black Holes First Year Seminar, Experimental Physics

Liberty High School, Bethlehem, PA

June 2024

High School Diploma

GPA: 4.83

RESEARCH

Discovering Massive Binary Black Hole Systems (MBBH)

March 2025 - Present

Dr. Antonella Palmese

- Analyze variable objects reported to the Transient Name Server (TNS) from Dark Energy Spectroscopic Instrument (DESI) to identify the unique spectral signature of MBBH targets
- Cross-match DESI spectra with corresponding spectra from the Sloan Digital Sky Survey (SDSS) to search for broad line shifts and evolutions
- Utilize Zwicky Transient Facility (ZTF) lightcurves to identify possible MBBH periodicity

EXPERIENCES

Teaching Assistant Assistant (TAA)

Sept. 2025 - Present

Course: Physics I for Science Students

- Hold bi-weekly (T, TR) recitations and assist graduate student TAs
- Engage students in group work on complex physical problems
- Teach physical concepts and deepen understanding during evening help sessions

Black Holes First Year Seminar

March 2025

Dr. Di Matteo

- Mapped the black hole mass vs galaxy stellar mass over various redshifts using Python
- Plotted characteristic strain vs frequency over redshifts of black hole merger gravitational waves and cross plotted with LISA detectability curve
- Utilized data from the Illustris and Illustris TNG Project simulations

CU*IP at Fermilab National Accelerator

January 2025

- Attended conference for undergraduate women and gender minorities in physics
- Viewed presentations and talks on particle and high energy physics, grad school, and a poster session
- Connected with high energy physics researchers, professors, and mentors

LEADERSHIP/SERVICE

Kiltie Band

October 2025 - Present

Vice President of Marching Band

- Transport PA system for all rehearsals
- Coordinate with other officers for game day logistics including setting up seat covers in the seating area, cleaning and filling water coolers for use in the stands, and prepping the band room for check-in and changing
- Ensure game day script is distributed properly in time for half time

Society of Physics Students (SPS)

September 2024 - Present

External Events Chair

- Coordinate events outside of normal SPS meetings such as fundraising events and assisting with the SPS journal club
- Initiate cross-organization interactions and events with local universities
- Arrange trips to local Pittsburgh attractions such as ice skating and an orchard trip

Physics Steering Committee

April 2025 - Present

Sophomore Representative

- Act as a representative of the physics department class of 2028
- Liaison between students and department leadership (Department Head and Director of Undergraduate Affairs)
- Provide critical communication and insight on the student perspective on the use of department spaces, the metacurricular program, and undergraduate research

MEMBERSHIP

Physics Steering Committee	(2025 - Present)
American Physical Society	(2024 - Present)
Society of Physics Students	(2024 - Present)
Gender Minorities and Women in Physics	(2024 - Present)
Spirit Racing Systems Buggy	(2024 - Present)
Marching Band	(2017 - Present)

HONORS/AWARDS

Dean's List	(2024, 2025)
1st Award at Pennsylvania Junior Academy of Science State Competition	(2022, 2023, 2024)
8th Place State Competition; Public Service Announcement - Future Business Leaders of America (FBLA)	(2023)
1st Place Regional Champion; Intro to Public Speaking FBLA	(2022)
11th Place State Competition; Intro to Public Speaking FBLA	(2022)

SCHOLARSHIPS & GRANTS

SPS Underserved Student Travel Award	(2025)
American Association of University Women (AAUW) Scholarship	(2024)
William Burkhardt Scholarship	(2024)
Roland J. Worthing Scholarship	(2024)