

Iliana Balaskas

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Education

University of Rochester

B.S. Electrical & Computer Engineering

B.A. Physics

Rochester, NY

Expected May 2027

Achievements: Sigma Pi Sigma Physics Honor Society, Kapitza Society, Dean's Scholarship, Earl Young Memorial Award

Relevant Courses: Mechatronics and Embedded Systems, Electronic Devices and Circuits, Electromagnetic Waves, Computer Organization, Digital Logic, Probability for Electrical Engineers, Classical Mechanics, Applied Boundary Value Problems, and Quantum Mechanics

Varsity Women's Volleyball Team • Research Ambassador • Schwartz Discover Grant • Society of Women Engineers

Experience

Undergraduate Research Assistant – S. Wu Research Group

September 2025 – Present

University of Rochester

Rochester, NY

- Characterized quantum devices and two-dimensional materials using Park Systems NX10 AFM.
- Performed KPFM, NCM, cAFM, and PFM measurements to investigate nanoscale electrical and structural properties.
- Independently diagnosed various sample, probe, and instrument issues by interpreting AFM images and systematically troubleshooting unsuccessful scans, tip performance, and imaging parameters.
- Prepared samples for characterization and collaborated with graduate researchers on experimental design, data analysis, and device characterization.

Teaching Assistant – ECE 270 (Probability for Engineers)

August 2026 – Present

University of Rochester

Rochester, NY

- Assist students in course questions and homework problems.
- Grade homework and quizzes for all students in course.

Mees Observatory Operator & Tour Guide

May 2026 – August 2026

C.E.K. Mees Observatory

Ontario County, NY

- Lead public observatory tours and taught astronomy and astrophysics concepts to visitors of all ages.
- Operated observatory equipment; including telescope initialization, slewing, imaging, and shut-down procedure.

Teaching Assistant – PHYS 121 (Mechanics Lab)

August 2024 - May 2026

University of Rochester

Rochester, NY

- Guided undergraduate students through physics laboratory experiments and procedures.
- Assisted students with laboratory equipment, troubleshooting, and interpretation of experimental results.
- Took part in revising and improving Mechanics labs set-up and content.

Undergraduate Research Assistant

January 2024 – May 2024

University of Rochester

Rochester, NY

- Worked on Arduino-based software to analyze experimental data.
- Constructed/calibrated laboratory equipment applied systematic troubleshooting techniques to improve experimental performance.

Technical Skills

Programming & Software: Python, C, C++, MATLAB, CAD, HSPICE, LTspice, OriginPro, ImageJ, Gwyddion, Arduino IDE, Microsoft 365

Laboratory & Characterization: Atomic Force Microscopy (NCM, KPFM, cAFM, PFM), Scanning Electron Microscopy (SEM), Optical Microscopy, Confocal Microscopy, Cleanroom Processing, Laser Direct Writing, Thin-Film Sputtering, Sample Preparation

Electrical & Embedded Systems: Analog Circuit Design, Soldering, Instrument Calibration, Microcontrollers, Arduino, Digital Logic, RF Interferometry, Hardware Interfacing, Data Acquisition

Projects

Autonomous RF Inventory Localization Robot (ECE 348): Developing a system that uses phase differences between received RF signals to track the motion of a model rocket, ball, or other moving object. Working in a four-person team to integrate department-provided RF hardware with signal processing, data acquisition, and experimental testing.

Audio Amplifier Design (ECE 222): Designed, simulated, constructed, and tested a headphone amplifier. Evaluated frequency response, gain, distortion, and output power through HSPICE and LTspice simulations.

Atomic Force Microscopy Characterization (PHYS 371): Characterized nanoscale surface features using Atomic Force Microscopy (AFM). Processed, corrected, and analyzed topographical data using Gwyddion, including surface roughness, feature dimensions, and 2D/3D image reconstruction.