Emma Rice

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Research Interests

I am broadly interested in using gamma-ray spectroscopy to study low energy nuclear structure. My current work focuses on nuclei near $N = 40$.

Education

Bachelor of Science in Physics
Ohio University, Athens, OH — May 2022
Average unweighted GPA: 3.9/4.0

Awards and Honors

Barry Goldwater Scholarship	2021
Outstanding Undergraduate TA Award	2020
OHIO Premier Scholarship	2018-Present
John Edwards Scholarship	2020
Undergraduate Research Fellowship	2019
James Shipman Scholarship	2019

Research Experiences

Nuclear Structure near N=40 with GRETINA — June 2020 - Present
Lawrence Berkeley National Laboratory
Mentored by Dr. Heather L. Crawford

- Analyzed gamma-ray spectra of neutron-rich iron & neighbors measured with GRETINA
- Performed calibration, background subtraction, and efficiency correction to gamma-ray energies
- Placed gamma-ray transitions into level scheme via coincidence analysis
- Extracted nuclear deformation from transition energies
- Compared results to Nilsson, particle-plus-rotor models
- Began drafting a manuscript for publication in Physics Review C

	Instrumentation for Nanophotonics & Spectroscopy Lab Ohio University Summer Research program Mentored by Dr. Eric A. Stinaff • Designed and built high-intensity LED mount to illuminate microscope, tapping-mode quartz-tuning-fork-based atomic force microscope (AFM) • Wrote user interface to control microscope illumination with LabView • Wrote user interface to control and view data from AFM with LabView	May 2019 - December 2019
Teaching Experience	Teaching Assistant *PHYS2002: Introduction to Physics II*, class and lab component Supervisor: Dr. Chen Department of Physics & Astronomy Ohio University	2019-2020
Skills	• Programming languages: Python, C++ • Operating systems: Linux, Windows • Software: ROOT, LabView, LaTeX, Git	
Posters	"Determining the nuclear structure of ^{66}Fe with GRETINA" Workforce Development & Education Virtual Poster Session Lawrence Berkeley National Lab	August 2020
Relevant Coursework	Physics: Classical Mechanics, Electromagnetism, Quantum Mechanics, Thermal Physics Mathematics: Calculus, Differential Equations, Linear Algebra	
Conferences Attended	Spring Meeting of American Physical Society Ohio-Region Section The College of Wooster Wooster, OH	2019
	Conference for Undergraduate Women in Physics Michigan State University East Lansing, MI	2019

Professional Memberships	Society of Physics Students (SPS) • 2020 - 2021, President • 2019 - 2020, Vice President	2018-2021
	American Physical Society Inclusion, Diversity, and Equity Alliance (APS-IDEA)	2020-2021
	Women in Physics and Astronomy (WiPhA)	2018-2021
Outreach	*Volunteer*, Discovery Lab • Assisted in weekly STEM community outreach based out of Clippinger Laboratories.	2019 - 2020
	Volunteer, Athens County family science nights • Demonstrated and performed various physics concepts to school-age children and their families in Athens County.	2018-2020