

Hannah M. Ross

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Education

Baldwin Wallace University, Berea, OH

Bachelor of Science and Bachelor of Music (2019 - 2024)

- Majors: Physics, Cello Performance
- Honors: Summa Cum Laude

Research Experience

University of Michigan, Ann Arbor, MI

Post-Baccalaureate Research Assistant, Spitz Group (2025 - present)

- *Paleo-Detection*: Developed experimental techniques for the detection of neutrinos and rare particles in ancient natural minerals, including mineral sample preparation and electron and x-ray microscopy techniques. Contributed to computational efforts, including simulation and data analysis.
- *IsoDAR Experiment*: Assisted with target sleeve injector construction.
- *Manuscript in Preparation*: A. Calabrese-Day, E. LaVoie-Ingram, K. Ream, H. Ross, J. Spitz, K. Sun, A. Takla, *Measurement of Ion-induced Crystal Damage Track Width in Olivine*, expected submission January 2026

Summer REU Student, Spitz Group (2023)

- *IsoDAR Experiment*: Developed an Arduino-based actuator control system for the IsoDAR experiment's target sleeve assembly. Presented work at the University of Michigan REU Symposium (2023).

Baldwin Wallace University Riemenschneider Bach Institute/Department of Physics, Berea, OH

Undergraduate Researcher, Gott Scholar (2021 - 2022)

- *String Instrument Acoustics*: Performed acoustic analysis of cello and viola da gamba sound production by analyzing and reconstructing the waveforms produced by excitation of the instrument body and bridge. Presented work at the Baldwin Wallace University Ovation Festival (2022), the Baldwin Wallace University Bach Festival (2022), and the Baldwin Wallace University Winter STEM Showcase (2021).

Teaching Experience

Baldwin Wallace University Department of Physics/Conservatory of Music, Berea, OH

Teaching Assistant (2023)

- Course: Electronics and Circuits for Engineers

Tutor in Physics, Aural Skills, and Music History (2020 - 2023)

- Courses: calculus-based and algebra-based introductory physics, modern physics, aural skills (I-III), and music history (I-III)

Work Experience

Great Lakes Science Center, Cleveland, Ohio

Exhibits & Electronics Technician (2024 - 2025)

- Principal Developer (design, programming, electronics, artwork) on select exhibits for the Summer 2025 special exhibition, *Steam & Steel: Propelling the Future of the Great Lakes*:
 - Willy G.'s Bow Thruster Adventure!
 - Automatic Identification System (AIS) Interactive Map
 - Canal Locks Challenge

- Maintained, repaired, and modernized electronic components of museum interactives

Guest Engagement Specialist (2024)

- Interacted with museum guests through shows, demonstrations, and conversations about scientific concepts related to museum displays

Baldwin Wallace University Department of Physics, Berea, Ohio

Laboratory and Machine Shop Assistant (2024)

- Constructed replacement electronic components for the department's raman spectrometer
- Assisted with maintenance of biology, chemistry, and physics student laboratory spaces

Honors and Awards

Baldwin Wallace University Physics Department Student Teacher of the Year (2022)

Kappa Mu Epsilon Mathematics Honor Society - Ohio Gamma Chapter (Inducted 2022)

Dayton C. Miller Honor Society (Inducted 2021)

Rahotina Award for Academic Achievement in Physics (2021)

Professional Affiliations

American Physical Society, member (2021 - present)

Additional Training and Skills

Programming Languages: Python (NumPy, Pandas, Matplotlib, SciPy, Tkinter, Pygame), Arduino IDE, LaTeX, HTML, CSS, JavaScript

Technical Skills: electronics assembly and repair, heavy equipment operation and safety training (forklift, scissor lift)

Other Skills: grant writing, Suzuki pedagogy training (*Every Child Can* and Cello Units 1-2), experienced chamber and collaborative musician