

Alexis Buzzell

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Education

University of Utah , PhD in Physics	Expected May 2026
• Advisor: Ramón S. Barthelemy	
Worcester Polytechnic Institute (WPI) , MS in Mechanical Engineering	May 2020
Worcester Polytechnic Institute (WPI) , BS in Physics	May 2019
• Summa Cum Laude	

Awards

APS Group on PER (GPER) Journal Publication Fee Mini-Grant Award , \$500	Dec 2024
Physics Education Research Leadership and Organizing Council (PERLOC)	Apr 2024
Domestic Travel Grant , \$634	
GPER Conference Support Mini-Grant , \$1,000	Dec 2023
Swigart Fellowship , University of Utah	May 2023 - Aug 2023
Clare Booth Luce Research Scholar , WPI, \$6,000	Oct 2018 - May 2019
Summer Undergraduate Research Fellowship (SURF) , WPI, \$5,000	June - Aug 2018
Nuclear Regulatory Commission (NRC) Scholarship , WPI, \$10,000	Jan - May 2018

Experience

Graduate Research Assistant , Physics Education Research, University of Utah	Sept 2022 - Present
• Obtained skills in Physics Education Research (PER) methods	
• Focused on Quantum Education Research and the undergraduate quantum curriculum offered at US institutions	
• Analyzed 167 syllabi across the US to determine content taught in Modern Physics courses	
• Determined quantum course time required for 4 year physics degree in US	
Graduate Research Assistant , NanoEnergy Lab, WPI	May - Sept 2019
• Concluded vertically grown BiI ₃ crystals were the optimum crystal orientation for photovoltaic applications due to record carrier lifetime of 0.6 nanoseconds, characterized by time-resolved photoluminescence spectroscopy	
Undergraduate Research Assistant , Ultrafast THz and Optical Spectroscopy Lab, WPI	June 2018 - May 2019
• Characterized nanostructured BiI ₃ for photovoltaic applications using photoluminescence spectroscopy and time-resolved photoluminescence spectroscopy	
• Built experimental optical spectroscopy system to observe radiative lifetime of 2D semiconducting materials	
• Completed Major Qualifying Project (MQP)	
• Awarded Summer Undergraduate Research Fellowship and Clare Booth Luce Research Scholar Award	
Undergraduate Research Assistant , Radiation Laboratory, WPI	Jan - May 2018
• Assisted in the development of a technique to enable high-resolution in-vivo functional imaging using neutrons	

Teaching

Teaching Assistant , University of Utah	Jan - May 2025
• Held regular office hours for algebra based physics I course via Zoom	
• Recorded problem solving tutorials for asynchronous online course	
• Graded projects and exams	
Teaching Assistant , University of Utah	Aug - Dec 2024
• Held regular office hours for first-semester graduate-level Quantum Mechanics course	
• Graded homework and exams	
• Created solutions and grading rubrics for homework assignments	

Teaching Assistant , University of Utah	Jan - Apr 2024
<ul style="list-style-type: none"> • Held regular office hours for Advanced Electrodynamics and Quantum Mechanics course • Graded homework and exams • Created solutions and grading rubrics for homework assignments 	
Teaching Assistant , University of Utah	Aug - Dec 2023
<ul style="list-style-type: none"> • Lead recitations for Intermediate Electrostatics and Quantum Mechanics course • Held regular office hours • Graded homework and exams • Created solutions and grading rubrics for homework assignments 	
Teaching Assistant , University of Utah	Jan - Apr 2023
<ul style="list-style-type: none"> • Lead recitations for Modern Physics course • Held regular office hours • Graded homework and exams • Created solutions and grading rubrics for homework assignments 	
Teaching Assistant , University of Utah	Aug - Dec 2022
<ul style="list-style-type: none"> • Lead recitations for Algebra based Physics I class • Held regular office hours 	
STEM Teacher , Wy'East Mountain Academy, Sandy, OR	Aug 2021- May 2022
<ul style="list-style-type: none"> • Taught STEM classes including Physics, Precalculus, Algebra, and Geometry 	
Long Term Substitute Physics Teacher , Hadley Public Schools, Hadley, MA	Oct - Dec 2020
<ul style="list-style-type: none"> • Taught Introductory Physics, AP Physics I, and Geology • Created lesson plans, laboratory experiments, homework, and classwork assignments 	
Peer Learning Assistant , WPI	Oct - Dec 2017
<ul style="list-style-type: none"> • Instructed Physics II (electricity and magnetism) Laboratory Courses and graded lab reports 	

Publications

Accepted

- **Buzzell, A.,** Barthelemy, R., & Atherton, T. (2025). *Quantum curriculum in the US: Quantifying the instructional time, content taught, and paradigms used*, Physical Review Physics Education Research, preprint on arXiv:2407.15977.

In Review

- **Buzzell, A.,** Barthelemy, R., & Atherton, T. (2025). *Modern physics: Understanding the content taught in the U.S.* *Physical Review*, preprint on arXiv:2407.15951.

Peer Reviewed Conference Proceedings

- **Buzzell, A.,** & Barthelemy, R. (2024). *Certain bodies in uncertain fields: Thinking about gender through queer theory & quantum mechanics*. Physics Education Research Conference Proceedings.

Talks

Contributed

- **Buzzell, A.,** & Barthelemy, R. (2025, March). *Characterization of the four-year undergraduate quantum curriculum across US institutions* [Poster presentation]. American Physical Society Global Summit Meeting, Anaheim, CA, USA.
- **Buzzell, A.,** & Barthelemy, R. (2024, July). *Certain bodies in uncertain fields: Thinking about gender through queer theory & quantum mechanics* [Poster presentation]. Physics Education Research Conference Summer Meeting, Boston, MA, USA.

- **Buzzell, A.**, Barthelemy, R., & Atherton, T. (2024, July). *Quantum curriculum in the US: Quantifying the instructional time, content taught, and paradigms used* [Contributed talk]. American Association of Physics Teachers Summer Meeting, Boston, MA, USA.
- **Buzzell, A.**, Barthelemy, R., Atherton, T., & Gerton, J. (2024, April). *Modern physics: Understanding the content taught in the US* [Contributed talk]. American Physical Society April Meeting, Sacramento, CA, USA.

Organizations

American Association of Physics Teachers (AAPT)	2024-Present
Quantum Education Journal Club	2023-Present
• Organized and hosted monthly meetings.	
American Physical Society (APS)	2023-Present
Physics and Astronomy Society for Support and Advocacy for Gender Equity (PASSAGE)	2022-Present
Society of Physics Students (SPS)	2016-2019

Outreach

Women in STEM Club Advisor , Wy'East Mountain Academy, Sandy, OR	Sept 2021-May 2022
• Provided Wy'East students with an inclusive space to gain hands on laboratory experience	
STEM Started Academy Mentor , Mount Wachusett Community College, MA	July 2018
• Taught newly enrolled college students about optical spectroscopy	
WPI Touch Tomorrow Science Festival , WPI, Worcester, MA	June 2018
• Presented physics experiments to local elementary school students through hands on activities and demonstrations	

Undergraduate Projects & Thesis

Buzzell, A. T. & Mendizabal, A. (2019). *Photoluminescence Spectroscopy of BiI₃, a 2D Material for Photovoltaic Applications* (Undergraduate Major Qualifying Project). Retrieved from Worcester Polytechnic Institute Electronic Projects Collection.

Buzzell, A. T., Schroeder, C. C., Strauss, J. S., & Alexander, T. D. B. (2018). *A System to Monitor Microplastics on Icelandic Shores*. Retrieved from Worcester Polytechnic Institute Electronic Publications Collection.