

# Alexis Buzzell

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## Education

<b>University of Utah</b> , PhD in Physics	Expected May 2027
• Advisor: Ramón S. Barthelemy	
<b>Worcester Polytechnic Institute (WPI)</b> , MS in Mechanical Engineering	May 2020
• GPA: 3.6/4.0	
<b>Worcester Polytechnic Institute (WPI)</b> , BS in Physics	May 2019
• GPA: 3.7/4.0	
• Summa Cum Laude	

## Awards

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

## Experience

<b>Graduate Research Assistant</b> , 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	
<b>Graduate Research Assistant</b> , NanoEnergy Lab, WPI	May - Sept 2019
• Concluded vertically grown BiI3 crystals were the optimum crystal orientation for photovoltaic applications due to record carrier lifetime of 0.6 nanoseconds, characterized by time-resolved photoluminescence spectroscopy	
<b>Undergraduate Research Assistant</b> , Ultrafast THz and Optical Spectroscopy Lab, WPI	June 2018 - May 2019
• Characterized nanostructured BiI3 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	
<b>Undergraduate Research Assistant</b> , Radiation Laboratory, WPI	Jan - May 2018
• Assisted in the development of a technique to enable high-resolution in-vivo functional imaging using neutrons	

## Teaching

<b>Teaching Assistant</b> , University of Utah	Jan - Apr 2024
• Held regular office hours for Advanced Electrodynamics and Quantum Mechanics course	
• Graded homework and exams	
• Created solutions and grading rubrics for homework assignments	
<b>Teaching Assistant</b> , University of Utah	Aug - Dec 2023
• 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
- 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
- Lead recitations for Algebra based Physics I class
- Held regular office hours  
**STEM Teacher**, WyEast Mountain Academy, Sandy, OR Aug 2021- May 2022
- Taught STEM classes including Physics, Precalculus, Algebra, and Geometry  
**Long Term Substitute Physics Teacher**, Hadley Public Schools, Hadley, MA Oct - Dec 2020
- Taught Introductory Physics, AP Physics I, and Geology
- Created lesson plans, laboratory experiments, homework, and classwork assignments  
**Peer Learning Assistant**, WPI Oct - Dec 2017
- Instructed Physics II (electricity and magnetism) Laboratory Courses and graded lab reports

## Publications

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### *In Review*

- **A. Buzzell**, R. Barthelemy, T. Atherton, (2025). Quantum Curriculum in the US: Quantifying the instructional time, content taught, and paradigms used, *Physical Review Physics Education Research*.
- **A. Buzzell**, R. Barthelemy, T. Atherton, (2025). Modern Physics: Understanding the Content Taught in the U.S., *Physical Review Physics Education Research*.

### *Peer Reviewed Conference Proceedings*

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

## Talks

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### *Contributed*

- **A. Buzzell**, R. Barthelemy, (July, 2024). *Certain bodies in uncertain fields: Thinking about gender through queer theory & quantum mechanics*, [Poster], Physics Education Research Conference Summer Meeting, Boston, MA, USA.
- **A. Buzzell**, R. Barthelemy, T. Atherton, (July 2024). *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.
- **A. Buzzell**, R. Barthelemy, T. Atherton, J. Gerton, (April, 2024). *Modern physics: Understanding the content taught in the US*, [Contributed Talk], American Physical Society April Meeting, Sacramento, CA, USA.

## Organizations

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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

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- Women in STEM Club Advisory**, 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

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**Buzzell, A. T.** Mendizabal, A. (2019). *Photoluminescence Spectroscopy of BiI<sub>3</sub>, 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.