

# Alexis Buzzell

alexis.buzzell@utah.edu | alexisbuzzell.github.io | linkedin.com/in/alexis-buzzell

## 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

Outstanding Graduate Teaching Assistant, Department of Physics & Astronomy, University of Utah, \$1000	Apr 2025
APS Group on PER (GPER) Journal Publication Fee Mini-Grant Award, \$500	Dec 2024
Physics Education Research Leadership and Organizing Council (PERLOC) Domestic Travel Grant, \$634	Apr 2024
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

## Talks

### Contributed

- **Buzzell, A.**, Barthelemy, R. & Atherton, T. (2025, March). *Characterization of US institution's graduate quantum mechanics curriculum* [Contributed talk]. American Physical Society Global Summit Meeting, Anaheim, CA, USA.
- **Buzzell, A.**, Barthelemy, R., & Atherton, T. (2025, March). *Characterization of the four-year undergraduate quantum curriculum across US institutions* [Poster presentation]. American Physical Society Global Summit Meeting, Anaheim, CA, USA.
- Barthelemy, R., **Buzzell, A.**, & Atherton, T. (2025, March). *Characterization of the four-year undergraduate quantum curriculum across US institutions* [Contributed talk]. 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.

## Publications

### Published

- **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*, 21(1), 010102.

### Accepted

- **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.

## In Preperation

- **Buzzell, A., Barthelemy, R., & Atherton, T. (2025).** *Characterization of the Graduate Level Quantum Curriculum within US Physics Doctoral Programs and Theoretical Frameworks of US Quantum Curriculum.*
- **Buzzell, A., Barthelemy, R., & Atherton, T. (2025).** *Using natural language processing as a cross-variational method with human intelligence methods to characterize undergraduate quantum mechanics curriculum in the US.*

## 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 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
- Undergraduate Research Assistant**, 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
- 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
- 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
- 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**, Wy'East 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

## Organizations

---

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

## Outreach

---

<b>Women in STEM Club Advisor</b> , Wy'East Mountain Academy, Sandy, OR	Sept 2021-May 2022
• Provided Wy'East students with an inclusive space to gain hands on laboratory experience	
<b>STEM Started Academy Mentor</b> , Mount Wachusett Community College, MA	July 2018
• Taught newly enrolled college students about optical spectroscopy	
<b>WPI Touch Tomorrow Science Festival</b> , 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 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.