# Alexis Buzzell

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## References

- **Dr. Ramón Barthelemy**
  Associate Professor, Department of Physics & Astronomy, University of Utah
  Ramon.S.Barthelemy@utah.edu
- **Dr. Timothy Atherton**
  Chair & Professor, Department of Physics & Astronomy, Tufts University
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- **Dr. Noah Finkelstein**
  Vice Chair & Professor, Department of Physics, University of Colorado Boulder
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## Education

**University of Utah**, PhD in Physics — 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

## Experience

**Postdoctoral Scholar**, Physics Education Research, Auburn University — Jan 2026 - Present
**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
- Assisted PI in granting writing process for two NSF grants.

**Graduate Research Assistant**, NanoEnergy Lab, WPI — May - Sept 2019
**Undergraduate Research Assistant**, Ultrafast THz and Optical Spectroscopy Lab, WPI — June 2018 - May 2019
**Undergraduate Research Assistant**, Radiation Laboratory, WPI — Jan - May 2018

## Publications

### *Published*

- **Buzzell, A.**, Barthelemy, R., & Atherton, T. (2025).Modern physics: Understanding the content taught in the U.S., *Physical Review Physics Education Research* ***Focused Collection in Investigating and Improving Quantum Education through Research****, 21*(1), 010139, `https://doi.org/10.1103/PhysRevPhysEducRes.21.010139`.
- **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* ***Focused Collection in Investigating and Improving Quantum Education through Research****, 21*(1), 010102, `https://doi.org/10.1103/PhysRevPhysEducRes.21.010102`.

### *Peer Reviewed Conference Proceedings*

- **Buzzell, A.**, Barthelemy, R, & Atherton, T. (2025). Assessing a combined human coding and natural language processing method for qualitative analysis in physics education research. *Physics Education Research Conference Proceedings*, `https://doi.org/10.1119/perc.2025.pr.Buzzell`.
- **Buzzell, A.**, & Barthelemy, R. (2024). Certain bodies in uncertain fields: Thinking about gender through queer

theory & quantum mechanics. *Physics Education Research Conference Proceedings*, https://doi.org/10.1119/perc.2024.pr.Buzzell.

### *In-Review*

- **Buzzell, A.**, Barthelemy, R., & Atherton, T. (2026). Characterization of the Graduate Level Quantum Curriculum within US Physics Doctoral Programs and Theoretical Frameworks of US Quantum Curriculum. *PRPER*, Pre-print available at: https://doi.org/10.21203/rs.3.rs-7745493/v1.

### *Submitted*

- **Buzzell, A.**, Barthelemy, R., & Atherton, T. (2026). *Survey on Faculty Perspective of the US Quantum Currculum*.

### *In Preparation*

- **Buzzell, A.**, Barthelemy, R., & Atherton, T. (2026). *Mixed methods approach for curriculum characterization and adequacy*.

## Awards

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| **Physics Education Research Leadership and Organizing Council (PERLOC) Domestic Travel Grant**, $500 | June 2025 |
| **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 |
| **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. (2025, August). *Assessing a combined human coding and natural language processing method for qualitative analysis in physics education research* [Poster presentation]. Physics Education Research Conference Summer Meeting, Washington, DC, USA.
- **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.

## Teaching

**Mentor Teaching Assistant**, University of Utah — May 2025 - Jan 2026

- Developed and implemented course materials and curriculum for an online, asynchronous orientation for new departmental teaching assistants
- Developed materials and curriculum for and lead the in person 2025 incoming graduate student orientation
- Conducted observations of teaching assistants to provide feedback
- Developed and lead monthly workshops for teaching assistants with the objective of furthering their teaching skills and professional development

**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

## Service

**Teaching Assistant Committee**, Department of Physics & Astronomy, University of Utah — May 2025 - May 2026

- Assigned 52 graduate and undergraduate teaching assistants to roles across 27 courses.

## 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