ALEXIS BUZZELL

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EDUCATION:

University of Utah, Salt Lake City, UT
Ph.D., Physics, Advisor: Ramón S. Barthelemy — Expected 2027

Worcester Polytechnic Institute (WPI), Worcester, MA
M.S., Mechanical Engineering, GPA: 3.60/4.0 — May 2020
B.S., Physics, Summa Cum Laude, GPA: 3.74/4.0 — May 2019

AWARDS:

Physics Education Research Leadership and Organizing Council (PERLOC) Domestic Travel Grant, $634 — April 2024
APS Group on PER (GPER) Conference Support Mini-Grant, $1000 — December 2023
Swigart Fellowship, University of Utah — May 2023 - August 2023
Clare Booth Luce Research Scholar, WPI, $6,000 — October 2018 - May 2019
Summer Undergraduate Research Fellowship (SURF), WPI, $5,000 — June - August 2018
Nuclear Regulatory Commission (NRC) Scholarship, WPI, $10,000 — January - May 2018

EXPERIENCE:

Graduate Research Assistant, Physics Education Research, University of Utah — September 2022 - Present
- Obtained skills in Physics Education research methods
- Focused on Quantum Education Research and student ontology and epistemology
- Analyzed 167 syllabi across the US to determine content taught in Modern Physics courses
- Determined course time required for 4 year physics degree in US

Graduate Research Assistant, NanoEnergy Lab, WPI — May 2019 - September 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 — January 2018 - 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 — January 2024 - April 2024
- Held regular office hours for Advanced Electrodynamics and Quantum Mechanics course
- Graded homeworks and exams
- Created solutions and grading rubrics for homework assignments

Teaching Assistant, University of Utah August 2023 - December 2023
- Lead recitations for Intermediate Electrostatics and Quantum Mechanics course
- Held regular office hours
- Graded homeworks and exams
- Created solutions and grading rubrics for homework assignments

Teaching Assistant, University of Utah January 2023 - April 2023
- Lead recitations for Modern Physics course
- Held regular office hours
- Graded homeworks and exams
- Created solutions and grading rubrics for homework assignments

Teaching Assistant, University of Utah August 2022 - December 2022
- Lead recitations for Algebra based Physics I class
- Held regular office hours

STEM Teacher, Wy'East Mountain Academy, Sandy, OR August 2021 - May 2022
- Taught STEM classes including Physics, Precalculus, Algebra, and Geometry

Long Term Substitute Physics Teacher, Hadley Public Schools, Hadley, MA October 2020 - December 2020
- Taught Introductory Physics, AP Physics I, and Geology
- Created lesson plans, laboratory experiments, homework, and classwork assignments

Peer Learning Assistant, WPI October 2017 - December 2017
- Instructed Physics II (electricity and magnetism) Laboratory Courses and graded lab reports

PUBLICATIONS:

IN REVIEW:

- **A. Buzzell**, R. Barthelemy, T. Atherton, (2025). Modern Physics: Understanding the Content Taught in the U.S., *Physical Review Physics Education Research.*
- **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.*

CONFERENCE PROCEEDINGS:

- **A. Buzzell**, R. Barthelemy, (2024). Certain Bodies in Uncertain Fields: Thinking about gender through queer theory & quantum mechanics, PERC Proceedings Summer 2024.

PRESENTATIONS:

CONTRIBUTED:

- **Buzzell, A.,** Barthelemy, R., Atherton, T., (July 9, 2024). *Quantum Curriculum in the US: Quantifying the instructional time, content taught, and paradigms used,* Oral Presentation. American Association of Physics Teachers Summer Meeting 2024, Boston, MA, USA.
- **Buzzell, A.,** Barthelemy, R., Atherton, T., and Gerton, J. (April 5, 2024). *Modern Physics: Understanding the Content Taught in the U.S*. Oral Presentation. American Physical Society April Meeting 2024, Sacramento, CA, USA.

ORGANIZATIONS:

American Association of Physics Teachers (AAPT) Member 2024 - Present

Quantum Education Journal Club 2023 - Present

- Organized and hosted monthly meetings

American Physical Society (APS) Member 2023 - Present

Physics and Astronomy Society for Support and Advocacy for Gender Equity (PASSAGE) 2022 - Present

Society of Physics Students 2016 - 2019

LEADERSHIP ACTIVITIES:

Head Coach, We Are Camp, Sandy, OR May 2022 - August 2022

- Managed snowboard and ski coaches during 2022 summer camp

Women in STEM Club Advisor, Wy'East Mountain Academy, Sandy, OR September 2021 - May 2022

- Provided Wy'East students with an inclusive space to gain hands on laboratory experience

Women's Snowboard Coach, Self Employed November 2020 - April 2021

- Coached a competitive female snowboarder to prepare for regional and national slopestyle competitions

Women's Snowboard Coach and Mentor, American Snowboard Training Center January 2020 - March 2020

- Provided support and mentorship to competitive female snowboarders, an underrepresented group in snowboarding

STEM Starter Academy Mentor, Mount Wachusett Community College July 2018

- Taught newly enrolled college students about optical spectroscopy

WPI Touch Tomorrow Science Festival June 2018

- Presented physics experiments to local elementary school students through hands on activities and demonstrations

PROJECTS:

- **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.