

William Miyahira

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Career Objective

Use ultracold atoms to develop novel quantum sensors and tests of fundamental physics.

Education

College of William and Mary, Williamsburg, VA <i>Ph.D. Physics</i>	2021 - Present
College of William and Mary, Williamsburg, VA <i>M.S. Physics – GPA: 3.83/4.00</i>	2019 - 2021
University of Puget Sound, Tacoma, WA <i>B.S. Physics and Mathematics – GPA: 3.62/4.00</i>	2015 - 2019

Research Experience

Graduate Research Assistant June, 2020 - Present

Advisor: Seth Aubin, College of William and Mary

- Maintain and improve apparatus for producing Bose-Einstein condensates
- Design and simulate RF and microwave atom chip structures for generating AC Zeeman traps
- Design and test apparatus for digital phase control of microwaves using IQ modulation
- Measure potential roughness suppression in an AC Zeeman atom chip trap

Sherman Fairchild Reserach Scholar June - August, 2018

Advisor: David Latimer, University of Puget Sound

- Used techniques in quantum field theory to study mechanisms of polarizing majorana fermions.

Adam S. Goodman Reserach Scholar June - August, 2017

Advisor: Randy Worland, University of Puget Sound

- Investigated the effects of commercial dampeners on the decay of vibrational modes of a circular drum.

Skills

- 3D design and simulation of RF and microwave structures in FEKO, SONNET, HFSS
- Use computational methods to model and visualize physical problems and data
- Programming: MATLAB, PYTHON, LATEX, GIT/Github, C++
- Optics (lasers, optomechanics) and electronics (analog, digital, RF)
- Design: 3D printing

Awards

- | | |
|---|------------|
| • Virginia Space Grant Consortium Fellowship | 2022, 2023 |
| • Top Undergraduate Research Poster – APS Northwest Division Conference | 2018 |
| • Winner – University of Puget Sound Concerto Aria Competition | 2018 |

Professional Service

- | | |
|---|--------------|
| • William & Mary Optica Chapter | |
| – Vice President | 2021-present |
| – Treasurer | 2020-2021 |
| • William & Mary Physics Graduate Student Association | |
| – Vice President | 2020-2021 |

Teaching

- | | |
|---|-------------|
| • College of William & Mary | |
| – PHYS 252: Analog Electronics (Teaching Assistant) | Spring 2021 |
| – PHYS 108: Physics for Life Sciences (Teaching Assistant) | Fall 2020 |
| – PHYS 301: Mathematical Physics (Grader) | Spring 2020 |
| – PHYS 108: Physics for Life Sciences (Teaching Assistant) | Fall 2019 |
| • University of Puget Sound | |
| – Lab assistant and grader for introductory physics courses | 2017-2019 |

Publications

1. Rotunno, A.P., **Miyahira, W.**, Du, S., and Aubin, S. Radio Frequency ac Zeeman Force for Ultracold Atoms. *In preparation.*

2. Du, S., Ziltz, A.R., **Miyahira, W.**, and Aubin, S. Suppression of potential roughness in atom chip ac Zeeman traps. *Physical Review A* 105, 053127 (2022)
3. **Miyahira, W.**, Rotunno, A.P., Du, S., and Aubin, S. Microwave Atom Chip Design. *Atoms*, 9(3):54, 2021.
4. **Miyahira, W.** and Latimer, D.C. Dipoles in Quantum Field Theory. *American Journal of Physics*, 87(2):146-152, 2019.

Presentations

- William & Mary Graduate and Honors Research Symposium (talk) 2023
- Division of Atomic, Molecular, and Optical Physics meeting (poster) 2021, 2022
- APS Northwest Division Conference (poster) 2018
- University of Puget Sound Research Symposium (talk, poster) 2017, 2018

Extracurriculars

- Drummer and percussionist in musical ensembles throughout undergrad and graduate school
 - Discography: *Sunrise* (Zach Armstrong, 2017)
- Eagle Scout (Troop 44, San Mateo, CA)