

Curriculum Vitae for Ryohei (Rio) Weil

Personal Information

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GitHub: <https://github.com/RioWeil>

Education

University of British Columbia (2022-current)

MSc Physics (Quantum information and computation)

University of British Columbia (2018-2022)

BSc Combined Honours Physics and Mathematics (with distinction)

- Honours thesis: A Simulation of a Simulation: Algorithms for Measurement-Based Quantum Computing Experiments

Research

University of British Columbia, Vancouver, BC (4 months - Full-time) (2021)

Theory Research Student, Quantum Information Group

- Used condensed matter techniques to analyze resource states for measurement-based quantum computation.

University of British Columbia, Vancouver, BC (4 months - Full-time) (2020)

Computational NMR Research Student, Solid-State NMR Group

- Used SIMPSON NMR simulations to investigate the viability of maximum-length binary sequences in inhomogenous magnetization transfer for application in Myelin imaging.

TRIUMF, Vancouver, BC (4 months - Full-time) (2019)

Experimental Nuclear Physics Research Student, TITAN Group

- Assisted with the commissioning of a cryogenic Penning trap (CryoMPET) for precision mass measurement of ions.
- Developed SIMION simulations for optimization of ion extractions.

Teaching

UBC Department of Physics and Astronomy (2019-current)
Teaching Assistant and Lab Development Assistant

- PHYS 402: Applications of Quantum Mechanics (1 term)
- PHYS 129: Introductory Experimental Physics II (1 term)
 - Helped to develop simulations for the 2021-2022 iteration of the course.
- PHYS 119: Introductory Experimental Physics I (3 terms)
 - Currently developing materials for future transition of course to python.
 - Developed curriculum and simulations for 2020-2021 online course.
- SCIE 001: First-year Honours Physics/Mathematics (6 terms)

Leadership and Outreach

UBC Department of Physics and Astronomy (2018-current)
Physics Circle Coordinator/Outreach Volunteer

- Organized sessions, recruited faculty speakers, and developed discussion materials for UBC Physics circle, an outreach program for secondary school students.
- Helped with event planning, activity development, and organization for annual UBC Physics Olympics events.

UBC Alma Mater Society (2019-20)
Peer Counselor

UBC Orientations (2019)
First-Year Orientation Leader

Schools and Presentations (materials [here](#))

Physics Circle [UBC] <i>Title: The Physics of Snowmageddon</i>	(2022)
Cornerstone Models of Quantum Computing Summer School [TRIUMF]	(2021)
Physics Circle [UBC] <i>Title: Symmetry in Electrostatics</i>	(2021)
MRI Group [UBC] <i>Title: ihMT, MLBS and SIMPSON</i>	(2020)
Student Symposium [TRIUMF] <i>Title: Extracting CryoMPET</i>	(2019)

Honours and Awards

NSERC (2021-22)
CGS Master's - \$17500

NSERC (2020-21)
Undergraduate Student Research Award (USRA) (x2) - \$12000 total

UBC Department of Physics and Astronomy (2018)
 Erich Vogt First-year Summer Research Experience Award - \$3500

UBC (2019-21)
 Trek Excellence Award (x3) - *Top 5% of year and faculty* - \$4500 total

UBC (2019-21)
 Science Scholar (x3) - *Total course average of 90%+*

UBC Department of Physics and Astronomy (2022)
 Rudi Haering Medal in Physics - *Most outstanding graduating student in Physics*

UBC Department of Physics and Astronomy (2020)
 W H MacInnes Scholarship in Physics and Mathematics - \$3500

UBC Department of Physics and Astronomy (2021)
 Gordon Merritt Shrum Memorial Scholarship - \$2875

UBC Department of Mathematics (2020-21)
 Stanley M Grant Scholarship in Mathematics (x2) - \$3000 total

UBC Faculty of Science (2021)
 Volkoff Scholarship in Science - \$2350

Canadian Association of Physicists (2021)
 10th Place Nationwide - University Prize Examination

Canadian Association of Physicists (2020)
 Winner - Student Advisory Council Problem Competition