

Jordan Sawchuk

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☎ (778) 581-4034

Education

- 2023 – ···· **Ph.D. Simon Fraser University** Nonequilibrium statistical physics
Thesis focus: *Differential geometry of optimal control in mesoscopic systems*
Supervisor: *Dr. David Sivak*
- 2020 – 2023 **B.Sc. University of British Columbia** Honours physics, minor in mathematics.
Thesis: *Quantization of constrained Hamiltonian systems and negative energy densities in QFT.*
Supervisor: *Dr. Daniel Vollick*
Graduating average: 97.1%
- 2018 – 2020 **A.S. Okanagan College** Associate of Science, Graduated with Distinction
Graduating average: 96.15%

Experience

Academic

- 2024 **Conference Organizer**, Frontiers in Biophysics 2024
- 2022 – 2023 **Academic Assistant**, University of British Columbia.
- 2020 – 2021 **Writing Consultant**, University of British Columbia.
- 2019 – 2020 **Microbiology Laboratory Assistant**, Okanagan College.

Teaching

- 2024 **Teaching Assistant**, Simon Fraser University.
- 2021 – 2023 **Teaching Assistant**, University of British Columbia.
- 2020 – 2023 **Math & Physics Tutor**, Self-employed.
- 2019 – 2020 **Physics Learning Assistant**, Okanagan College
- 2020 **Biology Laboratory Assistant**, Okanagan College

Volunteering

- 2022 **Invigilation & marking**, BCSS Math Contest
- 2018-2022 **Farmhand**, Okanagan Fruit Tree Project Society
- 2017-2018 **Dog walker**, Prince George BCSPCA
- 2015 **English tutor**, Kamloops Immigration Centre

Other

- 2019 – 2021 **Farmhand**, Lightfoot Farm (*Kelowna, BC*)
- 2018 – 2019 **Helicopter & drill pad construction**, BCR (*Whitehorse, YT*)
- 2017 – 2018 **Bartender**, Alpine Pub & Grill (*Prince George, BC*)
- 2016 – 2017 **Line cook**, Munin's Post (*Kelowna, BC*)
- 2016 **Dispatcher**, BC Wildfire (*Kamloops, BC*)
- 2015 **Regional lead landscaper**, Class Design (*Kamloops, BC*)
- 2014 – 2015 **Breakfast cook**, Fireside Grill (*Kamloops, BC*)
- 2013 **Sous chef**, Long John's Pub (*Vernon, BC*)

Publications & Communication

Preprints

- 1 **J. R. Sawchuk** and D. A. Sivak. "Dynamical and spectral decompositions of the generalized friction tensor for optimal control." arXiv: 2409.18065 [cond-mat]. (Sep. 26, 2024).

Posters & Talks *(Presenter marked with an asterisk)*

- 1 **J. R. Sawchuk*** and D. A. Sivak, "A global thermodynamic manifold for optimal conservative control," Talk to be presented at the 2025 APS Global Physics Summit, Anaheim, CA, 2025. [URL: https://summit.aps.org/events/MAR-W65/9](https://summit.aps.org/events/MAR-W65/9).
- 2 S. Alderson*, G. Cornell, A. Menard, I. Kennedy, E. Launer, A. Nikou, **J. R. Sawchuk**, A. Zavahir, J. Andrews, F. Moosvi, H. Nakahara, and J. Bobowski, "Jupyter-based physics labs: Introducing scientific computing & discovery," Poster presented at the 2024 UBC ALT-2040 Showcase, 2024. [URL: https://github.com/UBC-Okanagan-Physics-Labs/ALT-2040-Showcase/blob/5dc9b8871baa27ffeb948af1163d932a5e661d8d/Jupyter%20Labs%20-%2020240527.pdf](https://github.com/UBC-Okanagan-Physics-Labs/ALT-2040-Showcase/blob/5dc9b8871baa27ffeb948af1163d932a5e661d8d/Jupyter%20Labs%20-%2020240527.pdf).
- 3 **J. R. Sawchuk***, I. Kennedy, E. Launer, A. Zavahir, A. Nikou, J. Andrews, H. Nakahara, F. Moosvi, and J. Bobowski, "Integrating discovery and computational skills into first-year physics labs," Presented at the 2023 UBC ALT-2040 Showcase, 2023. [URL: https://github.com/UBC-Okanagan-Physics-Labs/Celebrate-Learning-Week-Poster/blob/main/2023-ALT-2040-Poster-Jake-Bobowski.pdf](https://github.com/UBC-Okanagan-Physics-Labs/Celebrate-Learning-Week-Poster/blob/main/2023-ALT-2040-Poster-Jake-Bobowski.pdf).
- 4 **J. R. Sawchuk*** and J. Hopkinson, "Cation ordering on a lattice of corner-sharing tetrahedra: Investigation of a simple ising-like model," Poster presented at the 2022 UBC Faculty of Science Undergraduate Research Award Symposium, 2022. [URL: https://drive.google.com/file/d/1BXa6n3Th8LbiKmG93pxw5Qus9g58-CdT/view](https://drive.google.com/file/d/1BXa6n3Th8LbiKmG93pxw5Qus9g58-CdT/view).

Honours & Awards

Academic honours

- 2023 **Graduating Student Award in Physics**, University of British Columbia.
- 2022 **Upper-Level Physics Award**, University of British Columbia.
- 2021 **Second Year Physics Award**, University of British Columbia.
Upper-Level Mathematics Award (Nominated), University of British Columbia.
- 2020 **President's Award**, Okanagan College.
Associate of Science Award, Okanagan College.

Scholarships

- 2022 **James R. Conway Scholarship**, University of British Columbia.
- 2021 & 2022 **Deputy-Vice Chancellor Scholarship for Continuing Students**, University of British Columbia.
- 2021 **Irving K. Barber Transfer Scholarship**, University of British Columbia

Research Awards & Workshops

- 2023 **NSERC CGS-M**, Simon Fraser University.
NSERC USRA, Simon Fraser University.
- 2022 **Irving K. Barber Undergraduate Research Award**, University of British Columbia.
Entry into PSI Start Program, Perimeter Institute