

Jack Hollis Farrell

Research in physics with an eye toward science communication

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EDUCATION

Honours B.Sc. Physics, *University of Toronto* (2017–2021)

- Major in Physics, Minors in Mathematics and English.
- GPA 3.96/4.00

Ph.D. Physics, *University of Colorado Boulder* (2021–Present)

- Advisor: Prof. Andrew Lucas

RESEARCH

Research Assistant, *University of Colorado Boulder* (2021–Present)

- Advisor: Andy Lucas

Research Student (NSERC USRA), *University of Toronto* (2020)

- Project: *Computational Electron Hydrodynamics*
- Supervisors: Prof. Thomas Scaffidi & Prof. Nicolas Grisouard

Research Student (NSERC USRA), *University of Toronto* (2019)

- Project: *Balloon-Borne Spectrometer Mission*
- Supervisor: Prof. Kaley A. Walker

Videographer & Research Student, *Dalhousie University* (2018)

- Project: *Water Quality Research Outreach Videos*
- Supervisors: Prof. Graham Gagnon (Associate Vice-President Research, Dalhousie University) and Prof. Amina Stoddart
- <https://www.youtube.com/channel/UCcrrD4jos8wIMS4hqAVmUAg>

Director, *Indefensible: The Troubling Legacy of Edward Cornwallis* (2017)

- Directors: Jack Farrell and Tom Fraser
- Funded by: The *Northrop Frye Centre at Victoria College*
- <https://filmfreeway.com/indefensibleTheTroublingLegacyofEdwardCornwallis>

TEACHING

Teaching Assistant, *University of Colorado Boulder* (2021–Present)

- PHYS 1110/15, Fall 2021
- PHYS 1110/15, Spring 2022
- PHYS 1110/15, Fall 2022

Teaching Assistant, <i>University of Toronto</i> Extra help for programming in Python for physics majors	(2020–2021)
Physics Tutor, <i>Victoria College Physics Tutors</i> Extra help for first and second year physics classes	(2019–2020)

HONOURS

NSERC Canada Graduate Scholarship (CGS-M), <i>NSERC</i> <i>Declined: offered at U of T, UBC, University of Waterloo / Perimeter Institute</i> Research grant for first-year Ph.D. students	(2021)
University of Toronto BMO National Scholarship, <i>University of Toronto</i> Full scholarship to U of T, covering tuition and living fees for four years	(2017–2021)
Hymie and Roslyn Mida Award in Theoretical Physics, <i>University of Toronto</i>	(2020)
NSERC Undergraduate Summer Research Award, <i>NSERC</i> Research grant for undergraduates	(2020)
Luste Prize in Experimental Physics, <i>University of Toronto</i> Top physics major in U of T's laboratory classes	(2020)
NSERC Undergraduate Summer Research Award, <i>NSERC</i> Research grant for undergraduates	(2019)
University of Toronto Scholar, <i>University of Toronto</i> The University of Toronto Scholars Program recognizes exceptional students in first, second, or third year	(2018–2019)

PUBLICATIONS

1. **Jack H. Farrell**, Xiaoyang Huang, and Andrew Lucas. “Hydrodynamics with Helical Symmetry,” (2022), arXiv: [2208.12269](#)
2. **Jack H. Farrell**, Nicolas Grisouard, and Thomas Scaffidi. “Terahertz Radiation from the Dyakonov-Shur Instability of Hydrodynamic Electrons in a Corbino Geometry,” (2022), arXiv: [2112.07683](#)