

# W. Callum Wareham

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6639 Wellington Rd. 34, Cambridge, ON, N3C 2V4

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## Career Objective

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I am a third-year physics student seeking to further and broaden my research experience. I am interested in exploring opportunities in both theoretical/computational physics and in experiment, alongside other subjects where physics and mathematics are important!

## Skills

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- Extensive experience in Python, including numerical modelling and the development of a script for processing numerous CSV and JSON files into a database. Experience with GitHub and Git for project management. Basic knowledge of C and LaTeX, and general knowledge of the structure of modern programming languages acquired through 4 programming courses.
- Focused in both collaborative and independent situations.
- Strength in both oral and written communication, demonstrated by team management success and recognition by supervisors and instructors.
- Critical thinking, developed through physics, mathematics, and programming problem-solving.

## Education

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**Bachelor of Science, Honours Physics** – University of Guelph 2018 - Present  
Guelph, ON

- 92 GPA (“A+” Letter Grade)
- Exceptional understanding of Physics and Math concepts extending beyond the Third-Year level.
- Continuing to develop excellent physics, mathematics, programming, laboratory, communication, and documentation skills.

## Research & Work Experience

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**Departmental Summer Research Award** – University of Guelph

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Kilonova Modelling with Python – Dr. Daniel Siegel 2021 (Current)

- Implementing numerical models to predict multi-component kilonova emission based on the output from binary neutron star merger simulations.
- Interested in extending existing kilonova lightcurve models to account for new phenomena.

**NSERC Undergraduate Summer Research Assistantship** – University of Guelph

Infrared Spectroscopy of PEX-a Pipes – Dr. John Dutcher 2020-2021

- Independently planned, built, documented and maintained a Python script for processing over 14,000 infrared spectra on PEX pipes alongside categorical information on the scans. Group is using database to streamline new analyses and visualizations, and it has been used to produce some interesting results.
- Communicated with group effectively, including through group meeting presentations, to determine project requirements and develop effective solutions. Recognized by supervisor & other group members for excellent clarity and attention to detail when presenting.

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## **Strom's Farm and Bakery – Guelph, ON**

Field Manager 2016 - 2019

Corn Picker 2014 - 2015

- Collaborated with two teams to decide corn harvest schedule and maintain quality, competitive for Ontario-best. Documented corn plot flavour, yield, and abnormalities.
- Accomplished property upkeep and large projects autonomously and in teams.
- Operated tractors with farm implements, including understanding the use and exchange of hydraulic components. Troubleshoot problems with farm equipment and took necessary measures for their repair or removal.

## **Chickadee Christmas Trees – Cambridge, ON**

Customer Service Representative & Field Labourer 2012 - 2019

- Provided excellent customer service as a part of a team.
- Worked independently and collaboratively to accomplish farm upkeep tasks.

**Tutoring – Guelph, ON** 2018 - 2019

- Three years' experience communicating first-year and high-school physics, math and chemistry concepts at an appropriate level.

## **Awards and Scholarships**

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- **James L. Hunt Scholarship in Physics – 2020**
  - Awarded to a third-year physics major who has completed a minimum of 10 credits and who has the highest cumulative average over 80%
- **Copernicus Scholarship in Physics – 2020**
  - Awarded to the three students achieving the highest combined average in PHYS\*2330 (Electricity and Magnetism I) and PHYS\*2240 (Thermal Physics) in the previous academic semester.
- **College of Biological Sciences Dean's Scholarship – 2020**
  - Awarded to those students demonstrating a high level of academic achievement. At the time that I was considered for this award, I was enrolled in the College of Biological Sciences.
- **University of Guelph Retiree's Association Scholarship – 2020**
  - Awarded to a student with the highest average registered in a degree program who is a child, grand child, or great grand child of a retiree of the University of Guelph.
- **Puslinch Optimist's Club Scholarship – 2018-2019**
  - Awarded to a citizen of Puslinch township entering university in the preceding year, who has shown academic success and involvement in the community.
- **University of Guelph Entrance Scholarship – 2018**
  - Awarded for joining the University with an average greater than 90%.

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## Volunteer Experience

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**VP External** – U of Guelph Physics and Astronomy Club 2020-Present

- Attending CEPS Student Council Executive Committee meetings and assisting with event planning for undergraduate students and outreach. Guest Host on PAC podcast Gryphons and Gluons.

**Student Representative** - Undergraduate Physics Curriculum Committee 2019 - Present

- Gathering, interpreting and communicating student feedback on courses and program structure in order to improve future curriculum.

**Volunteer Farming** - WWOOF France January - March 2018

- Assisted with labour on four organic farms.
- Learned about sustainable agricultural practices.

## Organized Sports

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**Curling** – Centennial CVI “Gold” Team 2013-2017

- Team won two divisional championships and advanced to zone championships three times.
- Named Most Valuable Player in 2017.

### Other Sports:

- Cross-Country Running (Centennial CVI) 2014-2017
- Hockey (Hespeler and Cambridge House Leagues) 2007-2017
- Baseball (Cambridge: Tier I, Tier II and House League) 2009-2016
- Rugby (Centennial CVI) 2014-2016

# Unofficial Transcript

1008868 William Wareham

Course/Section and Title	Grade	Credits	Repeat	Term
NANO*3600 0101 Comptl Methods in Material Sci				W21
PHYS*3000 01 Optics				W21
PHYS*3510 01 Intermediate Laboratory				W21
PHYS*4040 0101 Quantum Mechanics II				W21
PHYS*3130 01 Mathematical Physics	085	0.50		F20
PHYS*3230 0101 Quantum Mechanics I	094	0.50		F20
PHYS*3400 01 Advanced Mechanics	093	0.50		F20
PHYS*4180 01 Adv Electromagnetic Theory	091	0.50		F20
STAT*2040 DE01 Statistics I	095	0.50		F20
MATH*3160 01 Linear Algebra II	092	0.50		W20
MATH*3260 01 Complex Analysis	080	0.50		W20
PHYS*2180 0102 Experimental Techs in Physics	094	0.50		W20
PHYS*2310 0101 Mechanics I	095	0.50		W20
PHYS*2340 0101 Electricity & Magnetism II	090	0.50		W20
CIS*1300 0109 Programming	095	0.50		F19
MATH*2200 01 Advanced Calculus I	089	0.50		F19
MATH*2270 0209 Applied Differential Equations	090	0.50		F19
PHYS*2240 01 Thermal Physics	098	0.50		F19
PHYS*2330 0101 Electricity and Magnetism I	097	0.50		F19
HIST*2280 DE01 Hockey in Canadian History	087	0.50		S19
BIOL*1070 0117 Discovering Biodiversity	093	0.50		W19
CHEM*1050 0358 General Chemistry II	095	0.50		W19
IPS*1510 0102 Int. Math. Phys. II	096	1.00		W19
MATH*1160 01 Linear Algebra I	098	0.50		W19
BIOL*1090 0228 Intro to Molecular & Cell Biol	090	0.50		F18
CHEM*1040 0360 General Chemistry I	086	0.50		F18
HIST*1010 01 Early Modern Europe	098	0.50		F18
IPS*1500 0107 Int. Math. Phys. I	091	1.00		F18
CHEM*9110 Chemistry- 100 Lvl	CRD	0.50		

Total Earned Credits 13.50

Total Grade Points 1199.50

Cumulative GPA 92.269