

# Alicia Savelli

2220-3 Upper Middle Rd, Burlington ON, L7P 2Z9

☎ (289) 828-0923 • ✉ [aliciasavelli@gmail.com](mailto:aliciasavelli@gmail.com)  
🌐 [aliciasavelli.github.io](https://aliciasavelli.github.io)

I am an undergraduate student going into my final year of a physics degree at Brock University with previous Bachelor's degrees in mathematics and education. I am extremely passionate about astronomy, physics, mathematics, research, and teaching, and have significant experience and skills to support me in a career in science. I am interested in the fields of cosmology, galaxy formation and evolution, and relativity.

## Education

---

### **Brock University**

*B.Sc. Physics (Honours)* 2020 – 2022

- 92% average in upper level courses (4.0 GPA on 4 point scale)
- 88% cumulative average (4.0 GPA on 4 point scale)
- Top 15% of faculty

### **Brock University**

*B.Sc. Mathematics (Honours), minor in Physics* 2014 – 2019

- 93% average in upper level courses (4.0 GPA on 4 point scale)
- 88% cumulative average (4.0 GPA on 4 point scale)
- Top 15% of faculty

### **Brock University**

*B.Ed.* 2014 – 2019

- Intermediate/Senior qualifications
- Straight P1s(As) – 94% cumulative average (4.0 GPA on 4 point scale)

### **Notre Dame Catholic Secondary School**

*OSSD* 2010 – 2014

- Ontario Scholar with 90% average in top six grade 12 courses

## Research Experience

---

### Undergraduate Thesis.....

**Exploring the Possibility of Faster-than-Light Travel in Our Universe**

*Supervisor: Prof. Barak Shoshany*

**Brock University**

2020 – 2021

### Research Projects.....

**Analogues of the Milky Way in Cosmological Simulations**

*Supervisors: Dr. Ted Mackereth & Dr. Josh Speagle*

**University of Toronto**

Summer 2021

**Untitled?**

*Supervisors: Dr. Ted Mackereth & Dr. Josh Speagle*

**University of Toronto**

Winter 2022

## Publications

---

### Exploring the Possibility of Faster-than-Light Travel in Our Universe

Alicia Savelli, Barak Shoshany

*In prep.*

## Scholarships, Awards & Honours

---

### Summer Undergraduate Research Program Fellowship

Canadian Institute for Theoretical Astrophysics; Dunlap Institute for Astronomy & Astrophysics, \$9,595

2021

### SURP Student Spotlight

Canadian Institute for Theoretical Astrophysics; Dunlap Institute for Astronomy & Astrophysics

2021

### SURP Poster Contest – Runner Up

Canadian Institute for Theoretical Astrophysics; Dunlap Institute for Astronomy & Astrophysics

2021

### Dean's Honour List

Brock University

2015, 2016, 2017, 2018, 2021

- Awarded to students with an 80% average or greater each academic year
- Received every year of B.Sc. (Math) & B.Sc. (Physics) degrees
- Additional distinction of top 15% of the faculty

### Brock Scholars Award

Brock University, \$8,000

2014, 2015, 2016, 2017

- Entrance scholarship for incoming averages of 90% or greater
- \$2,000/year for a maximum of 4 years, renewed if average is maintained at 80% or greater

### Ontario Scholar

Halton Catholic District School Board

2014

- Distinction for graduating students with an average of 79.5% or greater in top six grade 12 courses

### Top Hat Marching Orchestra Scholarship

Top Hat Marching Orchestra, \$1,000

2014

### French Second Language Award

Halton Catholic District School Board, \$50

2014

- Awarded to graduating student with the highest mark in a grade 12 French course

## Conference Talks

---

### SDSS-V

Analogues of the Milky Way in Cosmological Simulations

Johns Hopkins University/Online

August 2021

## Conference Posters

---

### SDSS-V

Analogues of the Milky Way in Cosmological Simulations

Johns Hopkins University/Online

August 2021

## Teaching Experience

---

### Secondary Teacher.....

#### **Wembley High Technology College**

*Secondary Maths Teacher*

**London, UK**

*September 2019 – July 2020*

- Taught five maths classes from the GCSE Foundation and Higher curricula to Key Stage 3 and Key stage 4 learners at various levels of academic achievement
- Developed and delivered engaging and differentiated lessons, managed classroom behaviour, regularly assigned and marked homework
- Year 9 form tutor
- Volunteered to participate in and organize extra curricular activities such as a tutoring club, a puzzles club, a maths news letter, and UKMT national maths challenges

#### **St. John Henry Newman Catholic Secondary School (HWCDSB)**

*Physics Student Teacher*

**Hamilton, ON**

*April – May 2019*

- B.Ed. Practicum
- Taught one SPH3U grade 11 university level physics class and two SPH4U grade 12 university level physics classes
- Entirely responsible for creating notes and lessons that delivered the curriculum, and developing and marking tests, quizzes, assignments, and lab experiments/reports
- Volunteered with the school's concert band and lunchtime and after-school tutoring/homework clubs

#### **Cathedral High School (HWCDSB)**

*Math Student Teacher*

**Hamilton, ON**

*November – December 2018*

- B.Ed. Practicum
- Taught one MPM1D grade 9 academic level math class and one MCR3U grade 11 university level math class
- Entirely responsible for creating notes and lessons that delivered the curriculum, and developing and marking tests, quizzes, and assignments
- Volunteered with the after-school homework club

### Primary Teacher.....

#### **Prince of Wales South Public School (NDSB)**

*Student Teacher*

**Thorold, ON**

*October 2015 – March 2016*

- B.Ed. Practicum
- Delivered Levelled Literacy Intervention (LLI) program
- Helped students of all ages advance their reading levels in small groups of three to four students

### Professional Primary, Secondary, & Post-Secondary Tutor.....

#### **Oxford Learning**

*Teacher*

**Burlington & Hamilton, ON**

*May 2017 – Present*

- Tutor in groups of one to three high school students, and occasionally students at the college or primary levels
- Specialize in intermediate and senior level math, calculus, data management, and physics, but also tutor students in chemistry, general science, English, French, and more

#### **Private Tutor**

*Independent Private Tutor*

*2014 – Present*

- One-on-one private tutoring in all levels and categories of secondary math and science and first-year math and physics

## Other.....

### **Education Quality and Accountability Office**

*Scorer*

**Etobicoke, ON**

*July 2019*

- Scored academic- and applied-level grade 9 math EQAO tests

### **Brock University Mathematics Department**

*Exam Proctor*

**St. Catharines, ON**

*2015-2016*

- Proctored first-year math midterms and final exams

## Other Relevant Work Experience

---

### **McDonalds Canada**

*Team Leader, Crew*

**Burlington, ON**

*2013 – 2019*

- Responsibilities included area and shift management, customer service, order taking & filling, and birthday parties
- Transferable skills to research and education include strong leadership & team management, collaboration, time management, stress management, organization, and communication

### **ArcelorMittal Dofasco**

*Data Analyst*

**Hamilton, ON**

*Summer 2018*

- Developed and enhanced queries and data reports to improve company efficiency, wrote macros to supplement reports
- Enhanced technical skills with Visual Basic, SQL, MS Excel, and MS Access

## Workshops, Training, & Professional Development

---

### **CTA 200H Introduction to Python**

*Student*

**University of Toronto**

*May 2021*

- 2-week intensive introductory course to coding and data analysis with Python
- Covered topics such as advanced plotting, statistical analysis, and machine learning

### **SURP Astro 101 Lecture Series**

*Summer Research Student*

**University of Toronto**

*Summer 2021*

- Summer series of weekly introductory astronomy lectures
- Topics covered included planets & exoplanets, galaxy formation & evolution, instrumentation, statistics, cosmology, and black holes

### **SURP Professional Development Series**

*Summer Research Student*

**University of Toronto**

*Summer 2021*

- Summer series of weekly professional development workshops and seminars
- Topics covered included careers in astronomy, grad school applications and experiences, and presenting research

### **Shutdown STEM**

*Attendee*

**University of Toronto**

*July 2021*

- Day-long workshop within the Astronomy & Astrophysics department pertaining to action against racism with a special focus on Indigenous peoples
- Workshop included presentations, discussions, and activities such as researching and letter-writing

### **SAFETALK Mental Health Training**

*Attendee*

**Brock University**

*March 2018*

- Training in speaking to young people about their mental health and the best ways to be available

- and offer support
- Awarded certificate

## Relevant Coursework

---

- **Astronomy:** Introduction to Astronomy, Planetary Science
- **Physics:** Classical Mechanics, Electromagnetism, Quantum Mechanics, Statistical Mechanics & Thermal Physics, Optics, Special & General Relativity, Experimental Physics
- **Mathematics:** Calculus, Vector Calculus, Differential Equations, Linear Algebra, Statistics, Mathematical Physics, Differential Geometry
- **Computer Programming:** Mathematics Integrated with Computers and Applications I/II/III, Introduction to Scientific Computing
- **Education:** Mathematics, Physics, Diversity, Special Education

## Technical & Personal Skills

---

- **Programming Languages:** Python, Visual Basic, SQL, Physica, Extrema
- **Software:** Maple, Mathematica, L<sup>A</sup>T<sub>E</sub>X, Git
- **Operating Systems:** Windows, Linux
- **Professional Skills:** Presenting, writing, teaching
- **Personal Skills:** Enthusiasm, organization, communication, time management, leadership, collaboration, perseverance, diligence

## Professional Memberships

---

**Ontario College of Teachers (OCT)**  
 Member ID: 698209

2019 – Present

## Extracurricular Activities

---

**Burlington Concert Band**  
 1<sup>st</sup> Clarinet

**Burlington, ON**  
 2018-2019

**Brock University Winds Ensemble**  
 2<sup>nd</sup> Clarinet

**St. Catharines, ON**  
 2014-2018

**Brock Intramural Sports**  
 Soccer, Baseball, Volleyball

**Brock University**  
 2016-2018

## Media Appearances

---

**SURP Project Showcase**  
Poster, Research Summary

2021

**SURP Student Spotlight**  
Student of the Week interview

2021

