

Daniella Morrone

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Education

University of Toronto

H.B.Sc. Astronomy & Physics Specialist, Minors in Mathematics and French Language

- 3.80/4.0 GPA in astronomy courses; 3.68/4.0 GPA in upper level courses.

Toronto, ON, Canada

2018 – 2023

Bishop Allen Academy Catholic Secondary School

OSSD

Toronto, ON, Canada

2014 – 2018

- Ontario Scholar, 92% average in top 6 grade 12 courses. Completed 4 Advanced Placement examinations.

Research Experience

Summer Research

Institute for Research on Exoplanets Trottier Grant, Université de Montréal

Advisor: Prof. Jonathan Gagné

Montreal, QC, Canada

Summer 2022

Summer Undergraduate Research Program, University of Toronto

Advisors: Dr. Lamiya Mowla & Dr. Kartheik Iyer

Toronto, ON, Canada

Summer 2021

- Developed a pipeline developed to measure morphological characteristics of galaxies in real observations (XDF), mock observations and simulations (SIMBA Simulations).

Summer Student Research Program, Sunnybrook Research Institute

Supervisor: Dr. JoAnne McLaurin

Toronto, ON, Canada

Summer 2019

- Performed immunostaining techniques and analysis of behavioural tests to characterize the behaviour and pathology of prodromal Alzheimer's Disease in the TgF344-AD Rat Model.

Undergraduate Thesis

Department of Astronomy & Astrophysics, University of Toronto

Advisors: Dr. Lamiya Mowla & Dr. Kartheik Iyer; Super-advisor: Prof. Yanqin Wu

Toronto, ON, Canada

Fall 2021 & Winter 2022

- Applying the pipeline developed in Summer 2021 (see above) to map the morphological evolution of galaxies in the Hubble eXtreme Deep Field (XDF) and SIMBA Simulations.

Scholarships & Awards

Trottier Excellence Grant

Institute for Research on Exoplanets, \$7,000

2022

Walter John Helm Scholarship in Astronomy and Astrophysics

University of Toronto, \$1,763.43

2021

Summer Undergraduate Research Program (SURP) Fellowship

Dunlap Institute for Astronomy & Astrophysics, \$9,595

2021

Sunnybrook Research Institute (SRI) Summer Student Research Program

Sunnybrook Research Institute, \$6,978

2019

Presentations

Conferences

(UPCOMING) Mapping the Mass-Light Evolution of Galaxies in the Hubble eXtreme Deep Field (XDF) and SIMBA Simulations.

Undergraduate Research Conference

University of Toronto/Online

February 2022

What does morphology tell us? Employing galaxy morphology to decode

Online

January 2022

galaxy evolution.

Canadian Conference for Undergraduate Women in Physics, Poster Presentation

Decoding galaxy evolution through the lens of galaxy morphology. Johns Hopkins University/Online
SDSS-V 2021 Collaboration Meeting, Lightning Talk August 2021

What does morphology tell us? Employing galaxy morphology to decode galaxy evolution. Johns Hopkins University/Online
SDSS-V 2021 Collaboration Meeting, Poster Presentation August 2021

What does morphology tell us? Employing galaxy morphology to decode galaxy evolution. University of Toronto/Online
SURP Poster Presentation August 2021

What does morphology tell us? Understanding galaxy evolution through the lens of galaxy shapes and sizes. University of Toronto/Online
SURP Midterm Presentation July 2021

Que nous dit la morphologie des galaxies? Procédure pour identifier les lacunes dans nos simulations actuelles. L'Acfas/Online
Vitrine de savoirs 2021, Sprint-présentations de la relève en recherche June 2021

Behavioural and Pathological Characterization of Prodromal Alzheimer's Disease in TgF344-AD Model. Sunnybrook Research Institute
407 ETR Summer Student Poster Competition August 2019

Outreach

(UPCOMING) Astronomy in the Movies: Fiction vs. Reality. Girls SySTEM/Online
Girls SySTEM, Invited Talk May 2022

Let's Talk About Astronomy. St. Gregory Catholic Elementary School/Online
Grade 6 Class, Invited Talk January 2022

Teaching Experience

Teaching Assistant University of Toronto
Department of Astronomy & Astrophysics 2021-2022

- **AST101 - The Sun and Its Neighbours:** Marked midterm and assignments for a first year course for non-science students about the Sun, planets, comets, and the formation of the solar system.
- **AST201 - Stars and Galaxies:** Communicated with students via email and discussion boards and marked midterm and assignments for a second year course for non-science students about properties and life cycles of stars, galaxies, and the Universe.

Technical Skills

Proficient in **Python** and have experience with **HTML**. Comfortable using **LaTeX** and **Git**. Have experience with **macOS** command line. Speak **English** with Native proficiency and **French** with Working proficiency.

Other Relevant Work & Volunteer Experience

(UPCOMING) Star Chasers Toronto District School Board High School Astronomy Clubs
Undergraduate Panelist February 2022

AstroTours University of Toronto
Volunteer December 2021 - Present

- Discussed the science motivation and different instruments of the New Horizons Space Probe and James Webb Space Telescope to a public audience.

St. Mike's Grad Week University of Toronto
Panel Moderator October 2021

- Moderated a panel of three UofT alumni from Physical Sciences focusing on academic success, the post-grad

journey of the panelists and their careers, geared towards upper year undergraduate students.

USMC Student Union Mental Health & Accessibility Committee

Committee Member

University of Toronto

Fall 2021 & Winter 2022

- Work alongside the St. Michael's College (USMC) Student Union VP Mental Health & Accessibility to plan events and workshops, and collaborate with students groups to increase visibility of campus health resources.

USMC Mentorship Program

Mentor, Academic Representative

University of Toronto

Fall 2021 & Winter 2022

- Actively and regularly communicate with a group of five mentees, both individually and as a group. Create a welcoming and inclusive environment for all mentees and program staff.
- Help all mentees enrolled within the Physical Sciences by answering program-specific questions. Support Professional Development Team in organizing events geared towards academic success.

USMC Orientation

Leader

University of Toronto

Summer 2019, 2020, 2021

- Oriented and led a group of up to 30 first year students during the first week of university. Guided the group around campus, introduced them to university life and fostered a welcoming community.
- Lead an in-person tours of UofT campus and moderated panels of representatives from the Math and Physical Sciences departments. Awarded Leader of the Year in 2021.

USMC Student Union Formal Committee

Committee Member

University of Toronto

Winter 2020

- Work alongside the SMCSU VP Community Life to plan and execute the USMC Formal. Worked specifically on promotional aspects of planning the event

Mentorship

Mentor

USMC Mentorship Program

University of Toronto

2021-2022

- Fall 2021 & Winter 2022: **Ruchira Ray Verma.**
- Summer 2021-Winter 2022: **Erica Rose, Jing-Zu Tate Li, Joshua Thoppil, Jou Glasheen.**
- Summer 2021: **Megh Agarwal.**

Mentee

Astronomy Undergraduate Mentorship Program

University of Toronto

2021-2022

- Fall 2021 & Winter 2022: **Simran Nerval.**
- Fall 2020 & Winter 2021: **Jacob Taylor.**

Workshops, Training, & Professional Development

Teaching Assistants' Training Program

Trainee – Teaching Assistant

University of Toronto

September 2021

SURP Astro 101 Lecture Series

Attendee – Summer Research Student

University of Toronto

Summer 2021

SURP Professional Development Series

Attendee – Summer Research Student

University of Toronto

Summer 2021

Call it out: racism, racial discrimination & human rights

Trainee – Orientation Leader, Mentor

Ontario Human Rights Commission

July 2021

LivingWorks Start

Trainee – Orientation Leader, Mentor

LivingWorks

July 2020, 2021

Identify, Assist, Refer Education Module

Trainee – Orientation Leader, Mentor

University of Toronto

July 2020, 2021

Shutdown STEM*Attendee***University of Toronto***July 2021***Introduction to Computational Astrophysics***Student***University of Toronto***May 2021***Equity & Diversity Training***Trainee – Orientation Leader***University of Toronto***July 2020*

Relevant Coursework

- **Astronomy:** Astronomy Research, Computational Astrophysics, Introduction to Astrophysics
- **Physics:** Classical & Quantum Mechanics, Electricity & Magnetism, Thermal Physics
- **Mathematics:** Ordinary & Partial Differential Equations, Complex Variables, Multivariable Calculus
- **Computer Programming:** Introduction to Computational Astrophysics

Media Appearances

Let's Talk About Astronomy, Grade 6 Class Talk*Blog Post & Newsletter*

2022

SURP Project Showcase*Poster & Research Summary*

2021

SURP Student Spotlight*Student of the Week interview*

2021

Meet the SMC Mentorship Team 2021-2022*Facebook & Instagram*

2021

Vitrine des savoirs 2021*Event program & Presentation*

2021