

Daniella Morrone

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Education

- University of Toronto** **Toronto, ON, Canada**
H.B.Sc. Astronomy & Physics Specialist, Minors in Mathematics and French Language *2018 – 2023*
– 3.80/4.0 GPA in astronomy courses; 3.68/4.0 GPA in upper level courses.
- Bishop Allen Academy Catholic Secondary School** **Toronto, ON, Canada**
OSSD *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** **Montreal, QC, Canada**
Advisor: Prof. Jonathan Gagné *Summer 2022*
- Summer Undergraduate Research Program, University of Toronto** **Toronto, ON, Canada**
Advisors: Dr. Lamiya Mowla & Dr. Kartheik Iyer *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** **Toronto, ON, Canada**
Supervisor: Dr. JoAnne McLaurin *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** **Toronto, ON, Canada**
Advisors: Dr. Lamiya Mowla & Dr. Kartheik Iyer; Super-advisor: Prof. Yanqin Wu *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, \$7,500 *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

- Mapping the Mass-Light Evolution of Galaxies in the Hubble eXtreme Deep Field (XDF) and SIMBA Simulations.** **University of Toronto/Online**
Undergraduate Research Conference *February 2022*

What does morphology tell us? Employing galaxy morphology to decode galaxy evolution. <i>Canadian Conference for Undergraduate Women in Physics, Poster Presentation</i>	Online <i>January 2022</i>
Decoding galaxy evolution through the lens of galaxy morphology. <i>SDSS-V 2021 Collaboration Meeting, Lightning Talk</i>	Johns Hopkins University/Online <i>August 2021</i>
What does morphology tell us? Employing galaxy morphology to decode galaxy evolution. <i>SDSS-V 2021 Collaboration Meeting, Poster Presentation</i>	Johns Hopkins University/Online <i>August 2021</i>
What does morphology tell us? Employing galaxy morphology to decode galaxy evolution. <i>SURP Poster Presentation</i>	University of Toronto/Online <i>August 2021</i>
What does morphology tell us? Understanding galaxy evolution through the lens of galaxy shapes and sizes. <i>SURP Midterm Presentation</i>	University of Toronto/Online <i>July 2021</i>
Que nous dit la morphologie des galaxies? Procédure pour identifier les lacunes dans nos simulations actuelles. <i>Vitrine de savoirs 2021, Sprint-présentations de la relève en recherche</i>	L'Acfas/Online <i>June 2021</i>
Behavioural and Pathological Characterization of Prodromal Alzheimer's Disease in TgF344-AD Model. <i>407 ETR Summer Student Poster Competition</i>	Sunnybrook Research Institute <i>August 2019</i>

Outreach

(UPCOMING) Astronomy in the Movies: Fiction vs. Reality. <i>Girls SySTEM, Invited Talk</i>	Girls SySTEM/Online <i>May 2022</i>
Let's Talk About Astronomy. <i>Grade 6 Class, Invited Talk</i>	St. Gregory Catholic Elementary School/Online <i>January 2022</i>

Teaching Experience

Teaching Assistant <i>Department of Astronomy & Astrophysics</i>	University of Toronto <i>2021-2022</i>
<ul style="list-style-type: none">– 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

Astronomy and Youth <i>Undergraduate Panelist</i>	Star Chasers <i>February 2022</i>
<ul style="list-style-type: none">– Answered questions about undergraduate research, university experiences, application procedures and what to expect from a career in astronomy.	
AstroTours <i>Volunteer</i>	University of Toronto <i>December 2021 - Present</i>
<ul style="list-style-type: none">– 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

Panel Moderator

University of Toronto

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

Introductory Post <i><u>Astronomy and Youth Introductions</u></i>	2021
Let's Talk About Astronomy, Grade 6 Class Talk <i><u>Blog Post & Newsletter</u></i>	2022
SURP Project Showcase <i><u>Poster & Research Summary</u></i>	2021
SURP Student Spotlight <i><u>Student of the Week interview</u></i>	2021
Meet the SMC Mentorship Team 2021-2022 <i><u>Facebook & Instagram</u></i>	2021
Vitrine des savoirs 2021 <i><u>Event program & Presentation</u></i>	2021