

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

- 3.86/4.0 GPA in program specific astronomy courses; 3.75/4.0 GPA in upper-level courses.

Research Experience

Undergraduate Theses

Department of Astronomy & Astrophysics

Toronto, ON, Canada

Advisor: Prof. Jeremy Webb

Fall 2022 & Winter 2023

University of Toronto

- Determine the possibility of detecting the presence of an exoplanet and measuring its atmosphere within modelled stellar streams in synthetic images from the Twinkle space telescope.

Department of Astronomy & Astrophysics

Toronto, ON, Canada

Advisors: Dr. Lamiya Mowla & Dr. Kartheik Iyer; Course Supervisor: Prof. Yanqin Wu

Fall 2021 & Winter 2022

University of Toronto

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

Summer Research

Institute for Research on Exoplanets Trottier Grant

Montréal, QC, Canada

Advisor: Prof. Jonathan Gagné

Summer 2022

Université de Montréal, Planétarium Rio Tinto Alcan

- Identified astrometric exoplanet candidates in Gaia Data Release 3.

Summer Undergraduate Research Program

Toronto, ON, Canada

Advisors: Dr. Lamiya Mowla & Dr. Kartheik Iyer

Summer 2021

University of Toronto

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

Summer Student Research Program

Toronto, ON, Canada

Supervisor: Dr. JoAnne McLaurin

Summer 2019

Sunnybrook Research Institute

- 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.

Scholarships & Awards

Award for Outstanding Exhibition of College Spirit and Pride

University of Saint Michael's College, University of Toronto

2022

Trottier Excellence Grant

Institute for Research on Exoplanets, \$8,000

2022

Walter John Helm Scholarship in Astronomy and Astrophysics

University of Toronto, \$1,763.43

2021

Orientation Leader of the Year Award

University of Saint Michael's College, University of Toronto

2021

Summer Undergraduate Research Program (SURP) Fellowship

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

2021

Presentations

Conference Talks

iREx Final Presentation Day Université de Montréal <i>Identifying Exoplanet Candidates in Gaia Data Release 3.</i>	Montréal, QC, Canada August 2022
Undergraduate Research Conference University of Toronto <i>Mapping the Mass-Light Evolution of Galaxies in the Hubble eXtreme Deep Field (XDF) and SIMBA Simulations.</i>	Toronto, ON, Canada/Online February 2022
SDSS-V 2021 Collaboration Meeting Johns Hopkins University <i>Decoding galaxy evolution through the lens of galaxy morphology.</i>	Baltimore, MD, USA/Online August 2021
SURP Midterm Presentation University of Toronto <i>What does morphology tell us? Understanding galaxy evolution through the lens of galaxy shapes and sizes.</i>	Toronto, ON, Canada/Online July 2021
Vitrine de savoirs 2021, Sprint-présentations de la relève en recherche L'Acfas, University of Alberta <i>Que nous dit la morphologie des galaxies? Procédure pour identifier les lacunes dans nos simulations actuelles.</i>	Edmonton, AB, Canada/Online June 2021

Conference Posters

Canadian Conference for Undergraduate Women in Physics Canadian Association of Physicists <i>What does morphology tell us? Employing galaxy morphology to decode galaxy evolution.</i>	Online January 2022
SDSS-V 2021 Collaboration Meeting Johns Hopkins University <i>What does morphology tell us? Employing galaxy morphology to decode galaxy evolution.</i>	Baltimore, MD, USA/Online August 2021
SURP Poster Presentation University of Toronto <i>What does morphology tell us? Employing galaxy morphology to decode galaxy evolution.</i>	Toronto, ON, Canada/Online August 2021
407 ETR Summer Student Poster Competition Sunnybrook Research Institute <i>Behavioural and Pathological Characterization of Prodromal Alzheimer's Disease in TgF344-AD Model.</i>	Toronto, ON, Canada August 2019

Outreach

École élémentaire catholique L'Envol, Grade 4-5 Class <i>The Sun, The Stars and the Planets Beyond.</i>	Trenton, ON, Canada/Online June 2022
UofT Talks Presents Interstellar Health: Medicine to New Heights <i>Dunlap Institute for Astronomy & Astrophysics Workshop.</i>	Toronto, ON, Canada/Online June 2022
Girls SySTEM <i>Astronomy in the Movies: Fiction vs. Reality.</i>	Toronto, ON, Canada/Online May 2022
St. Gregory Catholic Elementary School, Grade 6 Class <i>Let's Talk About Astronomy.</i>	Toronto, ON, Canada/Online January 2022

Teaching Experience

Teaching Assistant

Toronto, ON, Canada

Department of Astronomy & Astrophysics, University of Toronto

2021-2022

- **AST101H1 - The Sun and Its Neighbours** (Fall 2021, 2022): First year course for non-science students about the Sun, planets, comets, and the formation of the solar system. Duties included being a first point of contact to students via email and online discussion boards, invigilating midterms, and marking assignments and the midterm test.
- **AST201H1 - Stars and Galaxies** (Winter 2022): Second year course for non-science students about properties and life cycles of stars, galaxies, and the Universe. Duties were marking assignments and the midterm test, and responding to student emails and discussion board posts.

Mentorship

Mentor

University of Toronto

University of Saint Michael's College Mentorship Program

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

University of Toronto

Astronomy Undergraduate Mentorship Program

2021-2022

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

Other Relevant Work & Volunteer Experience

USMC Student Union Electoral By-Laws Review Committee

Toronto, ON, Canada

University of Saint Michael's College, University of Toronto

July 2022 - April 2023

Committee Member

Astronomy and Youth

Toronto, ON, Canada

Star Chasers

February 2022

Undergraduate Panelist

AstroTours

Toronto, ON, Canada

Department of Astronomy & Astrophysics, University of Toronto

December 2021 - Present

Volunteer

St. Mike's Grad Week

Toronto, ON, Canada

University of Saint Michael's College, University of Toronto

October 2021

Panel Moderator

USMC Student Union Mental Health & Accessibility Committee

Toronto, ON, Canada

University of Saint Michael's College, University of Toronto

Fall 2021 & Winter 2022

Committee Member

USMC Mentorship Program

Toronto, ON, Canada

University of Saint Michael's College, University of Toronto

Fall 2021 & Winter 2022

Mentor, Academic Representative

USMC Orientation

Toronto, ON, Canada

University of Saint Michael's College, University of Toronto

Summer 2019, 2020, 2021, 2022

Leader (2019-2021), Marshal (2022)

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.

Workshops & Training

- **Teaching Assistant Training:** Teaching Assistants' Training Program (*September 2021*); Accessibility for Ontarians with Disabilities Act (*September 2021*).
- **Astronomy Lectures & Workshops:** SURP Astro 101 Lecture Series & Professional Development Series (*Summer 2021*); CTA200H: Introduction to Computational Astrophysics (*Summer 2021*).
- **Outreach Training:** Equity & Diversity Training (*Summer 2020*); LivingWorks Start (*Summer 2020, 2021*); Call it out: racism, racial discrimination human rights (*Summer 2021*); Identify, Assist, Refer Education Module (*Summer 2020, 2021, 2022*); LivingWorks safeTALK (*Summer 2022*).

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

Media Appearances

<i>Institute for Research on Exoplanets: Website Profile, Facebook Interview & Internship Lookback</i>	2022
<i>Astronomy and Youth: Meet Our University Student Panel</i>	2022
<i>St. Gregory Catholic Elementary School: Blog Post & Newsletter</i>	2022
<i>SURP Project Showcase: Poster & Research Summary</i>	2021
<i>SURP Student Spotlight: Student of the Week interview</i>	2021
<i>Meet the SMC Mentorship Team 2021-2022: Facebook & Instagram</i>	2021
<i>L'Acfas Vitaines des savoirs 2021: Event program & Presentation</i>	2021