

Current position

PhD Student | Department of Physics & Astronomy, Western University, Canada

2022 - Present

Supervisors: Pauline Barmby, Sarah Gallagher

Topic: Variability of Active Galactic Nuclei

Education

MSc in Astronomy & Astrophysics | Observatoire de Paris, France

2021 - 2022

Magistère (MSc) in Fundamental Physics | Université Paris-Saclay, France

2019 - 2022

BSc in Physics | Université Paris-Saclay, France

2017 - 2020

Previous Appointments

Graduate Researcher | Department of Physics, Eng. Physics & Astronomy, Queen's University, Canada

March - June 2022

Supervisor: Kristine Spekkens

Topic: Modelling The Kinematics of Ultra-Diffuse Galaxies

Graduate Researcher | Department of Physics & Astronomy, McMaster University, Canada

May - July 2021

Supervisor: Laura Parker

Topic: Galaxy Evolution in Dense Environments

Undergraduate Researcher | Laboratoire Gulliver, ESPCI Paris, France

June - August 2020

Supervisor: Matthieu Labousse

Topic: Self-Organization of Walking Drops

Publications

2 lead author, 2 co-author articles

Hélias A., Gallagher S. C., Barmby P., **"Investigating the AGN variability timescale - black hole mass relationship with Gaia, SDSS and ZTF"**, ApJ (2025, accepted for publication)

Deg N., Spekkens K., Arora N., Dudley R., White H., Hélias A. et al., **"WALLABY Pilot Survey: Characterizing Low Rotation Kinematically Modelled Galaxies"**, ApJ (2025, accepted for publication)

Christie H. S., Hélias A., do Carmo Carvalho M., Barmby P., **"TONGS: A Treasury of Nearby Galaxy Surveys"**, PASP, 136, 3 (2024)

Hélias A., Labousse M., **"Statistical self-organization of an assembly of interacting walking drops in a confining potential"**, EPJE, 46, 29 (2023)

Talks & Posters at Conferences

2 talks, 4 posters

CASCA 2025 Annual General Meeting | Saint Mary's University, NS - **Poster**

June 2025

The Formation and Early Evolution of Supermassive Black Holes | University of Maryland, MD - **Talk**

November 2024

CASCA 2024 Annual General Meeting | University of Toronto, ON - **Poster**

June 2024

Compact Objects in Michigan and Ontario | Henry Ford College, Detroit, MI - **Talk**

May 2024

CASCA 2023 Annual General Meeting | University of British Columbia, Penticton, BC - **Poster**

June 2023

CASCA 2022 Annual General Meeting | University of Waterloo, ON - **Poster**

May 2022

Awards

Paul & Kathryn Lycett Graduate Scholarship - 1,000 CAD | Western University

2024

Awarded annually to a full-time graduate student, based on academic achievement.

Leadership, Outreach & EDI Roles

Chair of the CASCA Graduate Student Committee

2024 - 2025

French Translator of the CASCA Graduate Student Committee

2023 - 2024

Outreach Coordinator of the Cronyn Observatory

2025

Outreach Assistant at the Cronyn Observatory

2023 - 2025

Graduate Representative of the EDI Committee of the Physics & Astronomy Department

2022 - 2023

Mentorship

Hannah Christie | MSc Student, Western University

2023 - 2024

Led to the successful publication of the article "**TONGS: A Treasury of Nearby Galaxy Surveys**" in 2024.

More than 1300 downloads as of December 2025!

Teaching

Astrophysics of Interstellar Space (including lectures) | 3rd year course

Fall 2025

Enriched Introductory Physics | 1st year course

Fall 2025

Introduction to Physical Measurement | 2nd year course

Winter 2025

Physics for the Sciences | 1st year course

Winter 2025

The Origin of the Universe | 2nd year course

Fall 2024

Enriched Introductory Physics | 1st year course

Fall 2024

Linear Algebra with Numerical Methods for Engineering | 1st year course

Winter 2024

Physics for the Sciences | 1st year course

Fall 2023

Linear Algebra with Numerical Methods for Engineering | 1st year course

Winter 2023

First Year Physics Labs | 1st year course

Fall 2022

Miscellaneous

When I taught Enriched Introductory Physics in the Fall 2024, I helped to develop a series of labs and tutorials based on Arduino with the course instructor, revamping the entire course from scratch.

When I was on the executive board of the CASCA Graduate Committee (GSC) from 2023 to 2025, we organized annual workshops for the Canadian astronomy grad students. We had numerous presentations, invited speakers and panels talking about important topics for our audience such as publishing, how to network and market yourself, how to use certain research tools, but also inspiring testimonies of former students and how to keep a good mental health.

While on the GSC, we also created an entire workshop of 4x2 hours online sessions on How to Apply to Astronomy Postdocs (GAAP). Throughout the Summer 2025, we talked about the fundamentals of applying to postdoctoral positions, how to write a research proposal, interview preparation and maintaining mental well-being during application season (cascagsc.github.io/gaap2025).

I was part of the Equity, Diversity, Inclusion and Decolonization Committee of the Physics & Astronomy Department for 1 year, and I am at the origin of the code of conduct that is now adopted by the entire department.