

Carmen Martinez Harris - Curriculum Vitae

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Brisbane, Queensland

Research Interests

My interests lie in galaxy evolution at high redshift, the formation of supermassive black holes, and the structure of the early universe. I'm also passionate about space sustainability, ethical frameworks in space exploration, and using data visualisation tools to communicate scientific research.

Education

2023-25	B.Sc. Physics/Astrophysics , Queensland University of Technology (QUT)
2024	Introduction to Aerospace Engineering: Astronautics and Human Spaceflight Massachusetts Institute of Technology (MIT Online Learning)
2024	Space Mission Design and Operations Swiss Federal Technology Institute of Lausanne (EPFL)

Research Experience

2024–2025	Queensland University of Technology – <i>Vacation Research Experience Scholarship (VRES)</i> (Supervisors: Dr. Michael Horn, Ms. Janhavi Malagalu Prakash Babu). Project: “ <i>Lithium Ion Battery Sustainability and Effectiveness</i> ”
2024–2025	Co-Author, ASTRA Program, Australian Youth Aerospace Association , IAC-25 Abstract: “ <i>An analysis on the current environment and potential methods to improve regional space collaboration in Oceania</i> ” (Session: E11.1, Connecting Emerging Space Ecosystems).
2025	Queensland University of Technology – <i>Mid-Year Research Experience Scholarship (MYRES)</i> (Supervisors: A/Prof Soniya Yambem). Project: “ <i>Organic Transmitter Sensors</i> ”
2025	Queensland University of Technology – <i>Physics Research Unit (PVB304)</i> (Supervisors: Dr. Michael Cowley). Project: “ <i>Testing Star Formation Histories: Exponentially Declining vs Delayed vs Burst</i> ” This project utilised High-Performance Computing (HPC) to run and analyse astrophysical models.

- 2025 Queensland University of Technology – *Advanced Research Skills and Techniques (STB200)* (Supervisors: Dr. Michael Cowley). Project: “*An Ethnographic Investigation of Indigenous Australian Astronomical Knowledge and Practices*”
- 2025–2026 CSIRO – *Vacation Studentship Program* (Supervisors: Dr. Nikhel Gupta). Project: “*Discovering New Radio Phenomena in ASKAP Data Using a Vision-Language Machine Learning Model*”
- 2025–2026 Queensland University of Technology – *Vacation Research Experience Scheme (VRES)* (School of Mathematical Sciences (Supervisors: Dr. Matthew Adams)). Project: “*Recovering Parameters of Truncated Multivariate Gaussian Distributions via Numerical Optimisation*”

Awards & Honors

2024	QUT College of Excellence
2024	QUT Quarter 3 Innovation Award
2024	QUT Researcher (\$2,500)
2025	QUT Best Presentation Award (\$150)
2025	QUT Researcher (\$1,250)
2026	QUT Researcher (\$2,500)

Publications

1. **C. Martinez Harris**, M. Horn, J. Malagalu Prakash Babu. *Identifying Trends in Lithium-Ion Battery Performance through Relational Databases and Power BI*. QUT VRES Showcase 2025, Queensland University of Technology. Poster presentation. (In progress)
2. R. Chong, D. Kapur, E. Keane, L. Roychoudhry, M. Soejoeti, N. Wiskich, N. Ravindranath, R. Ganesh, S. Tung, T. Phan, **C. Martinez Harris**. *An Analysis on the Current Environment and Potential Methods to Improve Regional Space Collaboration in Oceania*. IAC-25, IAF Symposium on Emerging Space Ecosystems (E11.1), 2025. (Accepted.)

Invited Talks and Conferences

- **Attended:** ANITA Summer School 2025 – Mount Stromlo Observatory, ACT. Focused on advanced astrophysical simulation and theory in Australia's leading theoretical astrophysics community.
- **Invited:** TEDx-style talk for Space Generation Advisory Council and the National Oceanic and Atmospheric Administration Student Lightning Talks – Washington D.C., 2025. International space collaboration as part of the Space Generation Congress.
- **Presented:** IAC-25 Symposium – *IAF Symposium on Emerging Space Ecosystems (E11.1)*. Co-authored and co-presented abstract on improving regional space collaboration in Oceania.
- **Presented:** QUT Research Showcase 2025 – Findings from research project *“Identifying Trends in Lithium-Ion Battery Performance through Relational Databases and Power BI”* .
- **Panel:** QUT Open Day 2025 - School of Chemistry and Physics Showcase
- **Presented:** QUT Mid-Year Research Showcase 2025 – Findings from research project *“Customisable Ion Selective Sensors for Potassium Detection”*
- **Invited as Speaker:** Australian Mathematical Sciences Institute (AMSI) National Student Conference – Early 2026. To present research on “*Recovering Parameters of Truncated Multivariate Gaussian Distributions via Numerical Optimisation*”.
- **Speaker:** eGrad School Global Conference on Indigenous Knowledge in Global Research: Celebrating and Amplifying Voices. Presenting research from “*An Ethnographic Investigation of Indigenous Australian Astronomical Knowledge and Practices*”.

Teaching & Outreach Experience

- **Academic Tutor** (2021–present).
- **Astrophysics Mentor**, ASPIRE Program (2024).
- **Physics Student Ambassador** (2023-2025), Queensland University of Technology.
- **Astrophysics Student Volunteer** Brisbane World Science Festival (2025).
- **QARG Representative** Bray Park SHS Astronomy Night (2025)
- **Organiser and MC** Joint Astrophysics Monthly Meeting (UQ-UniSQ-QUT) (2025)

Student Involvement

- **Student Club President** (2023-2024)
- **Student Event Committee President** (2023-2024)
- **QUT College of Excellence** (2024-2025)
- **QUT Astrophysics Research Group (QARG)** (2024-2025)
- **QUT Future YOU Summit (Astrophysics)** (2024-2025)

Memberships

- **Space Generation Advisory Council** (Space Exploration Group)
- **Space Generation Advisory Council** (Space Policy Group)
- **QUT Astrophysics Research Group** (Undergraduate Student Member)

Media and Features

- **Q&A with Carmen: A Physics Student's Journey into Research and Leadership**
Queensland University of Technology (QUT) Faculty of Science – Insights Article, April 2025
<https://www.qut.edu.au/about/faculty-of-science/insights/q-and-a-with-carmen-a-physics-students-journey-into-research-and-leadership>

References

Available upon request. Selected referees listed below:

- **Dr. Michael Cowley**
Senior Lecturer in Astrophysics, Queensland University of Technology
Director, Centre for Astrophysics
michael.cowley@qut.edu.au

- **Dr. Matthew Adams**

Senior Lecturer in Mathematical Sciences, Faculty of Science, School of Mathematical Sciences, Queensland University of Technology
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Last updated: October 29, 2025