



EDUCATION

The University of Auckland

Auckland, New Zealand

PHD PHYSICS

September 2021 - Present

- Supervisors: Prof. Jan (JJ) Eldridge & Assoc. Prof. Nicholas Rattenbury
- Thesis: *The Next Generation: Refining the Standard Population Synthesis Model to Better Predict Stellar Population Properties*
- Expected Completion Date: **September 2024**

The University of Auckland

Auckland, New Zealand

MSc PHYSICS

March 2020 - March 2021

- Supervisor: Prof. Jan (JJ) Eldridge
- Thesis: *The Missing Mergers: Modelling the observed binary neutron-star population and their mergers*
- Awarded with **Honours (First Class)**

The University of Auckland

Auckland, New Zealand

PGDIPSci PHYSICS

March 2019 - February 2020

- Supervisor: Assoc. Prof. Nicholas Rattenbury
- Dissertation: *The University of Auckland Ground Station One*
- Technical report: *The University of Auckland Ground Station One: System Overview*
- Technical report: *Ground Segment Support for APSS-I* (contains non-public information, and cannot be distributed)

The University of Auckland

Auckland, New Zealand

BSc

February 2016 - November 2018

- Majored in Physics and Computer Science

AWARDS, FELLOWSHIPS, & GRANTS

2021 **University of Auckland Doctoral Scholarship**, The University of Auckland

2019 **First in Course Award (PHYSICS 746)**, The University of Auckland

PRESENTATIONS

* presenting author; + mentored undergraduate

CONTRIBUTED PRESENTATIONS

Richards, S*. 2022. *New constraints on the Bray conservation-of-momentum natal kick model from multiple distinct observations*. Oral presentation: Supernovae in the Gravitational Wave Detection Era, Melbourne, Victoria, Australia.

Richards, S*, Eldridge, J, Briel, M, Ghodla, S. 2024. *The variable evolution of accretor stars in binary systems due to accretion of increasingly helium-rich material*. Oral presentation: Annual Scientific Meeting of the Astronomical Society of Australia (online).

TEACHING EXPERIENCE

2023-2024 **PHYSICS 102 Tutor**, Department of Physics

The University of Auckland

2021-2023 **Tuākana Tutor**, Department of Physics

The University of Auckland

2018- **ASTRO 100 / PHYSICS 107**, Graduate Teaching Assistant

The University of Auckland

RESEARCH EXPERIENCE

University of Auckland - Department of Physics

SUPERVISOR: ASSOC. PROF. NICHOLAS RATTENBURY

- Research Assistant: University of Auckland Ground Station One

Auckland, NZ

June 2023 - December 2023

University of Auckland - Department of Physics

SUPERVISOR: PROF. JAN (JJ) ELDRIDGE

- Research Assistant

Auckland, NZ

April 2021 - September 2021

University of Auckland - Department of Physics

SUPERVISOR: ASSOC. PROF. NICHOLAS RATTENBURY

- Summer Research Scholar: "Ground Segment Support for APSS-I"
- This report is non-distributable due to a non-disclosure agreement

Auckland, NZ

December 2019 - February 2020

OUTREACH & PROFESSIONAL DEVELOPMENT

SERVICE AND OUTREACH

2023	Department of Physics Equity Committee, Member	The University of Auckland
2021	Post Graduate Students Association, Welfare Vice President	The University of Auckland
2021	Physics Association of the University of Auckland, Vice President	The University of Auckland
2020	Physics Association of the University of Auckland, Treasurer	The University of Auckland
2017-2018	The University of Auckland Magic Society, President	The University of Auckland
2018	Physics Association of the University of Auckland, Committee Member	The University of Auckland

PUBLICATIONS

PUBLISHED

Richards, S., Eldridge, J., Briel, M., Stevance, H., Willcox, R. 2022. New constraints on the Bray conservation-of-momentum natal kick model from multiple distinct observations. Monthly Notices of the Royal Astronomical Society.

Stevance, H., Ghodla, S., **Richards, S.**, Eldridge, J., Briel, M., Tang, P. 2022. VFTS 243 as predicted by BPASS models. Monthly Notices of the Royal Astronomical Society.

IN REVIEW

IN PREP

Richards S., Eldridge J., Briel M., Ghodla S. 2024. The variable evolution of accretor stars in binary systems due to accretion of increasingly helium-rich material.

Richards S., Eldridge J. 2024. Detailed models of overcontact binary stars.