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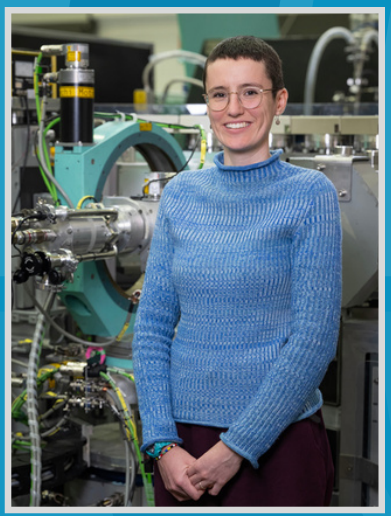
GIRLS IN PHYSICS
@BALLARAT 2026

Scatterbrained:
how neutron scattering reveals patterns of atoms in designer materials



Dr Siobhan Tobin
Instrument Scientist, NST Neutron Scattering
Australian Nuclear Science and Technology Organisation (ANSTO)

FOR STUDENTS IN YEARS 10, 11 & 12 INTERESTED IN A CAREER IN STEM

Meet like-minded students and women who have a career in STEM.
Ask questions and explore different pathways that might work for you!

SCAN FOR MORE INFO

Wednesday 9th September, 2026
Breakfast 8.30am to 11am
Craig's Hotel, Lydiard St S, Ballarat East

$15 per student
(Max. 12 Students per school)

Discounts available for low ICSEA schools

"I was talking to a guest at my table and her career sounded so amazing. Then I realised that in eight years that could be me. I got so excited!" - Year 10 Student

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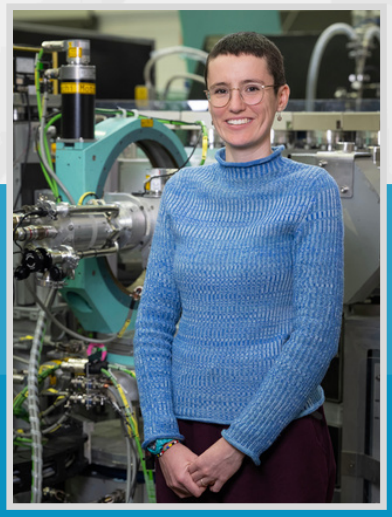

GIRLS IN PHYSICS @BALLARAT 2026

Scatterbrained: how neutron scattering reveals patterns of atoms in designer materials

Dr Siobhan Tobin
Instrument Scientist, NST NeutronScattering
Australian Nuclear Science and Technology Organisation (ANSTO)

Speaker Bio: Dr Siobhan Tobin is a physicist specialising in the structures and dynamics of materials at the atomic scale, and how this leads to different electronic, magnetic and even quantum effects.

Siobhan grew up in Ballarat and subsequently studied physics for her Bachelors degree and Honours year at the Australian National University in Canberra. In 2024 she finished her PhD in the physics of magnetic materials at the University of Oxford in the UK. She now works at the Australian Nuclear Science and Technology Organisation in Sydney as a neutron scattering instrument scientist. There she is co-responsible for two scientific instruments called Wombat and Echidna that receive beams of neutrons from Australia's only nuclear research reactor.

When she's not experimenting on customised crystals and manifesting magnets and Siobhan also enjoys gliding.

Abstract: Have you ever wondered why your computer runs on chips made of silicon and not jelly? What makes "critical minerals" so important anyway?

In this talk Dr Siobhan Tobin will attempt to answer these questions by explaining how useful and curious properties of materials are woven into their structure, right down to the scale of individual atoms. Neutron scattering is an amazing experimental technique used by chemists, physicists and materials scientists to discover these crystalline secrets. Siobhan will discuss how this enables the design of new materials for future energy, information and quantum technologies.

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