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GIRLS IN PHYSICS BREAKFAST 2026

Behind the Beam:

Health Discoveries Made Possible by the Australian Synchrotron

Dr Rachel Williamson
Beamline Group Manager - Crystallography
Australian Synchrotron

Australian Synchrotron Tour

As a special addition to the breakfast, there is the option to tour the Australian Synchrotron

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

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

SCAN FOR MORE INFO

Thursday 7th May, 2026
Breakfast 8.00am to 10.30am (11:30am with tour)
Australian Synchrotron, Clayton

$25 per student Breakfast (Max. 6 Students per school)
$10 per student Synchrotron tour 60 min (optional)

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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Speaker Bio: Dr Rachel Williamson is the Group Manager of the Crystallography Group at ANSTO's Australian Synchrotron and is responsible for the operation, maintenance, development, scientific direction and management of the Macromolecular Crystallography (MX) beamlines.

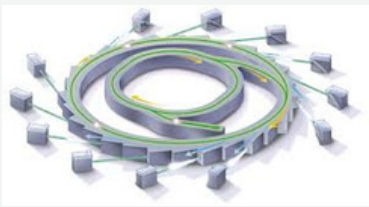
After completing her PhD in Synthetic Organic Chemistry from Massey University (NZ), Rachel worked as a Science Advisor at Medsafe (Ministry of Health, NZ) evaluating generic and new medicines for safety and efficacy. She then returned to research and development as an NIH funded Postdoctoral Fellow in the Bioscience Division at Los Alamos National Laboratory (USA). Using core skills developed during her PhD, she undertook research for the Centre for Disease Control, synthesising targeted stable isotope labelled bioactive molecules for homeland security and environmental applications. She returned to the southern hemisphere and has been a Beamline Scientist at the Australian Synchrotron since 2007, specialising in chemical crystallography, with research interests in organic electronics and biosensors. Rachel has led the MX team since 2018 and is particularly proud of the contribution the team made to Australian and international scientific efforts in COVID-19 related research during the pandemic.

Abstract: **In this presentation, Dr Rachael Williamson takes students behind the beam at the Australian Synchrotron to reveal how scientists are using intense, fast-moving light to unlock medical and scientific breakthroughs. She'll show how synchrotron X-rays — millions of times brighter than the Sun — allow researchers to see inside cells, tissues, and materials in extraordinary detail, helping to tackle real health challenges such as cancer, infectious diseases, biomaterials, and drug development.**

Through captivating stories from the cutting edge of medical research, Rachael will demonstrate how physics powers modern medicine and how young people — especially girls — can be part of the next generation of discovery.

Australian Synchrotron Tour

As a special addition to the breakfast, there is the option to tour the Australian Synchrotron. Learn how this world-class science facility combines science and technology to produce cutting edge research. The Australian Synchrotron supports a broad range of high-quality research across medicine, nanotechnology, manufacturing and mineral exploration. Amongst many of its benefits it can produce a powerful source of light a million times brighter than the sun.



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