

# GIRLS IN PHYSICS Breakfast

WE EXTEND A WARM  
INVITATION TO WOMEN IN, OR  
PLANNING FOR A CAREER IN  
SCIENCE, OR ENGINEERING TO  
JOIN US AS A GUEST AT OUR  
BREAKFAST

As our guest, you will be seated at a table with curious senior secondary students and other like-minded women. You will have an opportunity to share your knowledge and passion for the sciences and answer the students questions about university and/or working as a professional in the field of science, or engineering.

You will also have the opportunity to learn from our guest speaker,

**Dr Karen Livesey**  
**AIP Women in Physics Lecturer**



**Nano-magnets: new materials to address  
biomedical and technological problems**

**Dr Karen Livesey**

**7.30am-10.00am**

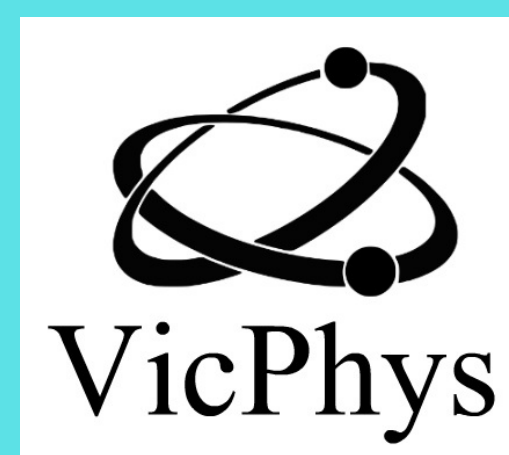
**Friday 21 July, 2023**

Monash University, Clayton Campus

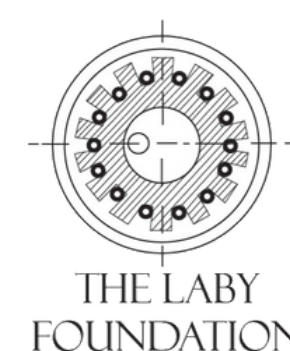
**Please note: there is no cost incurred by you, as you will be attending as  
our guest**



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# GIRLS IN PHYSICS BREAKFAST

Guest Speaker



**Dr Karen Livesey**  
**Theoretical Physicist**  
**University of Newcastle**

## **NANO-MAGNETS: NEW MATERIALS TO ADDRESS BIOMEDICAL AND TECHNOLOGICAL PROBLEMS**

### **Speaker:**

Theoretical physicist, Dr Karen Livesey, is designing new nano-sized magnets to address technological challenges, such as reducing the energy that computers use, and heating inoperable cancer tumours. Dr Karen Livesey was the first in her family to finish high school and studied Physics at the University of Western Australia, completing a PhD in 2010. For almost 10 years she worked at the University of Colorado at Colorado Springs reaching the rank of Associate Professor. While the covid-19 pandemic was raging, she moved to Newcastle NSW with her family in 2020. She is currently a Senior Lecturer of Physics at the University of Newcastle, and an Associate Investigator at the ARC Centre of Excellence in Future Low Energy Electronic Technologies (FLEET). Karen has won teaching awards and research grants in the US, Canada, the UK and Australia. In 2023 she is a national Superstar of STEM (Science and Technology Australia) and the AIP Women in Physics lecturer (Australian Institute of Physics).

### **Abstract**

Tiny magnets that are one thousand times smaller than the width of a human hair are starting to be used in technologies all around us, including cancer treatments, medical imaging and even self-repairing paints. Magnets that are shrunk down to the nanoscale behave very differently to the large ones that you have on your fridge, allowing a whole new set of materials to be designed to answer important technological problems. Come along to hear how a theoretical physicist studies nano-magnets and what exciting problems are currently being solved.



**SCAN ME**

**FRIDAY 21 JULY, 2023:  
7.30AM - 10.00AM**

