



Te Mana Tangata Whakawhanake  
**MacDiarmid Institute**  
Advanced Materials & Nanotechnology

2023 has been a challenging year for many, especially those working in universities and other parts of the Tertiary Sector. And yet there have been huge positives, including awards for startups and new IP, and funding success for research that will have an impact on sustainability and the future of life here on our planet.

But firstly huge congratulations to our Co-Director Professor Nicola Gaston who was last month awarded the [Thomson Medal by Royal Society Te Apārangi](#) for transformative leadership for the research, science and innovation sector and as a 'driver of change' towards equity for women in science.

As Professor Justin Hodgkiss said at the time:

"The achievements and personal leadership qualities that Nicola is recognised for bringing to New Zealand's research sector are things that her MacDiarmid Institute colleagues have seen shining over many years. Nicola is courageous and is a driver of change. She has had an incredible impact on matters of equity in the science system, and as we've seen in recent times, Nicola stands out amongst the strongest and most constructive voices for the research sector."

Justin said that Nicola had also been an incredible role model and colleague in MacDiarmid Institute.



Prof Nicola Gaston being awarded the Thomson Medal by Royal Society Te Apārangi

# News and Updates

The past two months have seen a number of successes for our researchers. [We celebrated a long list of MacDiarmid Institute Marsden winners](#). We were thrilled to see the talent being recognised with Fast-Start grants, and those at the next career stage with their first Standard grants, and especially to see the strong thread of materials for sustainability running through this list.

A couple of these grants are highlighted in Royal Society press releases, such as our new Associate Investigator Dr Joseph Nelson's project about [computation design of Li ion battery materials here](#).

You can also read about Associate Investigator Dr Erin Leitao's project about [alternatives to harmful forever materials here](#).

And one of our [new independent Research Fellows](#), Dr Amy Yewdall, based at the University of Canterbury, has been awarded a [Rutherford Discovery Fellowship](#) for her project: "Enhancing enzyme networks in condensates for carbon capture and sustainable synthesis". This is a further development of her field of research which sits in the exciting space at the intersection of our Reconfigurable Systems and Catalytic Architectures Research



Programmes.

MacDiarmid Institute alumnus Justin (Gus) Brooks of Te Herenga Waka Victoria University of Wellington, has just been awarded a [Ngā Puanga Pūtaiao Fellowship to research 'Ultra-fast optically switched high-Tc superconducting power electronics'](#). Gus is a former PhD student of Principal Investigator Prof Chris Bumby and will hold this four-year early career fellowship at the Paihau Robinson Research Institute while working in the 'Machines' team (which is led by Prof Rod Badcock).



Our Deputy Director for Outreach and Engagement, Assoc Prof Anna Garden did an explainer for the ODT on quantum dots and the 2023 Nobel Prize in Chemistry – great intro! <https://www.odt.co.nz/lifestyle/magazine/bright-ideas-small-scale>



And mark your calendars for AMN11 – which will take place in Ōtautahi Christchurch in February 2025.

AMN11 will include technical symposia organised around the following themes, broadly including all aspects of nanotechnology and advanced materials science.

- **Recyclable and reconfigurable materials**
- **Biological materials**
- **Sustainable Resource Use**
- **Materials for Zero Carbon Systems**
- **Materials for Low Energy Tech and Future Computing**
- **Photonics, spectroscopy and materials characterisation**
- **Science outside the lab, including:**
  - Challenges and opportunities of commercialising fundamental science
  - Citizen science
  - The virtuous cycle of fundamental science and commercialisation (dollars, inspiration and talent)

- The commercial drivers of a green transition based on advanced materials
- Interface between academia and industry

You can read more and [register for updates here](#).



That's it from us for 2023. Thank you for your continued interest in and support for the MacDiarmid Institute and if you know anyone who is interested in signing up to our quarterly email newsletters, [please let us know](#).



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