Te Mana Tangata Whakawhanake
MacDiarmid Institute
Advanced Materials & Nanotechnology

We hope this finds you and your whānau well through this Omicron outbreak. The upcoming border changes will enable many to see loved ones and will give those of us in the tertiary sector the chance to welcome back international students later this year.

In this first newsletter of the year, we are delighted to introduce our new Board Chair, and our new Deputy Director Māori, and share our latest research.

News and Updates

New MacDiarmid Institute Board Chair has extensive experience across both the science system and Te Aō Māori

Long-time MacDiarmid Institute Board member Hēmi Rolleston, from Ngāti Whakaue, Te Arawa, Ngāi Te Rangi and Ngāti Ranginui, has been appointed as Chair of the MacDiarmid Institute Board. Mr Rolleston is currently General Manager Māori Economy and Science Services at Scion.

Dr Pauline Harris appointed as MacDiarmid Institute Deputy Director Māori

Dr Pauline Harris from Rongomaiwahine, Ngāti Rakaipaaka and Ngāti Kahungunu ki Wairoa, has taken on our newly established role of Deputy Director Māori. The role is a further signal of our pathway and commitment as an Institute to Te Ao Māori, with much more to come.

Liquid Metals, Surface Patterns, and the possibility of accessing a wider range of nanomaterials

PhD student Stephanie Lambie with Principal Investigator Professor Nicola Gaston, and Associate Investigator Dr Krista Steenbergen were part of a collaboration from Australia, New Zealand, and the US. Their new paper in Nature Synthesis, reported a new type of solidification patterns appearing on the surface of solidifying liquid metals.

[Developing highly functional and tailorable surface coatings]

New [Associate Investigator Dr Taniela Lolohea]'s own research spans two disciplines. Plasma jet printing which has many potential real-world applications leading to highly functional and tailorable surfaces, and Pasifika science knowledge systems, an area that is multidisciplinary but not yet well defined.

[Bridging the divide between theoretical and experimental physics]

Fresh from a second year of working on COVID modelling, new [Associate Investigator Dr Kannan Ridings] is studying nanowire networks. This work aligns closely with the goals of the Institute's new [Materials for Low Energy Computing] research programme. Alongside this Dr Ridings is passionate about training the next generation of role models for Māori and Pasifika students.

[Ongoing partnership with Whakarewarewa Living Village]

The stream, which flows through the [Whakarewarewa Living Māori Village], was made off-limits for tamariki (locally known as the 'Penny Divers') two years ago. Whakarewarewa Living Village is looking to restore the health of the stream with help from some of our researchers. The collaboration combines multiple knowledge systems to bring together mātauranga Māori, putaiao Māori and science.

[Discovery Scholarships for Māori and Pacific Island students]

We awarded 23 new Discovery Scholarships for 2022, in the categories Te Mātauranga Pūtaiao (Māori Science), Te Taumata (High Achiever), Piki Ake (Step It Up), Te Kainga Rua (Second Chance Learner) and Te Huarahi Ki Mua. We are grateful for the co-sponsorship of these scholarships from [GNS Science and the Aotearoa: Green Hydrogen Technology Platform], and [Bioprotection Aotearoa].

Discovery Scholarship Summer Internships

We funded three summer internships for Discovery Scholarship recipients and alumni this year. Engineering students [Shannon MacDonald] and [Heamasi (Masi) Vaioleti] worked in the University of Auckland labs of Principal Investigators [Associate Professor Jenny Malmström] and [Professor Duncan McGillivray]. Environmental Science student [Eady Manawaiti] interned with [Stakeholder Relations Partner Iwi Diane Bradshaw] at [GNS Science].

Recent media

Covid immunity testing could be coming to a pharmacy near you

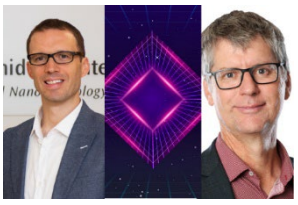
Affiliated start-up, Orbis Diagnostics made the news with a plan to deploy their analysis tool at your local pharmacy. Starting as a two-month pilot, people can take a blood test which will give them a read-out of how strong their immunity levels are on a scale of one to 10. Hear how the device works.

RNZ's Our Changing World: Revolutionising Ammonia Production

Associate Investigator, Associate Professor Franck Natali from Victoria University of Wellington spoke with RNZ's Dr Claire Concannon about the Breakthrough Energy Fellowship enabling his team to continue their research towards reducing the energy cost of ammonia production.

Pandemic disruption to PhD research is bad for society and the economy – but there are solutions

Principal Investigator Associate Professor Catherine Whitby from Massey University recently wrote on the growing concern about the impact of COVID-19 on doctoral students. You can find the full article on The Conversation where she suggests some solutions for pandemic disrupted PhD research.



RNZ's Sci Fi/Sci Fact - Tinfoil hats in Sci-Fi books and movies

Co-Director and Principal Investigator, Professor Justin Hodgkiss from Victoria University of Wellington spoke with RNZ Nights' host Bryan Crump about Tinfoil hats in Sci-Fi books and movies "It's actually quite safe to fly in a plane through a lightning storm, inside the plane acts like a Faraday cage".

Technologies and methods used in a Biointerfaces lab

Principal Investigator Associate Professor Jenny Malmström from the University of Auckland did a podcast with Biolin Scientific about lab instrumentation and analysis methods to answer questions on what analytical instrumentation should one have in a biointerfaces lab? And which equipment should one prioritize to invest in if the funding available for new instrument purchase is limited?