



March 2024

Kia ora koutou

This month I had the great pleasure of joining Her Excellency Ms Iona Thomas, British High Commissioner to New Zealand and the Honourable Judith Collins, Minister of Science, Innovation and Technology, to **celebrate NZ-UK partnerships in science and innovation**. I was able to tell the story of a collaboration between MSL and the **National Physical Laboratory** in the UK to bring a new technology to the Pacific. Later this year we plan to send ultra stable frequency signals into existing undersea fibre optic cables to develop a technique to utilise them as sensors for earthquakes, ocean currents, and maybe even to track tsunamis.

The potential for this was realised during time transfer experiments via optical fibres between the new generation of optical clocks. As a measurement scientist, I can't help but be thrilled by a project like this. It is another lovely example of how improvement in measurement has given rise to development of new, game-changing technology. We can see this throughout the history of time measurement.

Calendars allowed us to manage planting and harvesting. The pastoral communities that developed required sundials and hourglasses to give structure to communal and religious activities. These early timing devices allowed navigation and seafaring; which demanded even more precise mechanical clocks as they ventured further and further. International trade then drove the industrial revolution and telecommunication. The accuracy of clocks developed during the 20th century to support the ever-growing hunger for bandwidth enabled GPS technology, which we rely on in so many different ways.

And now we see the next generation of clocks potentially unlocking a new depth of information about our planet.

Ko ahau ko te taiao ko te taiao ko ahau – I am the environment and the environment is me. Here's hoping that as our measurement capability and technology develops, so does our ability to live in tune with te whenua, the land, te moana, the sea, te rangi, the sky.

Ngā mihi nui

Annette
Director and Chief Metrologist



Invitation to MSL's World Metrology Day Celebration 2024

This is a wonderful opportunity to build connections and hear from an exciting range of speakers. The theme of World Metrology Day for 2024 is:

Sustainability – the numerous measurement opportunities that contribute to the establishment of a sustainable global economy.

The Press Release and Director's Message can be viewed on the [Official Website](#).

The day at MSL will feature the following:

- Hydrogen, its potential and challenges
- Management of the national grid
- How sustainable are Leap Seconds, The Second and the MSL Talking Clock?

As always, it will also be an opportunity to visit some of MSL's laboratories, and this year we will feature a visit with Robert Holt to see the [HyLink](#) demonstrator on the Callaghan Innovation campus. Another part of the day to look forward to will be the Metrology Society of Australasia's (MSA) Emerging Young Metrologist Award presentation and the MSA networking hour.

We invite you to join us in person for the day, including lunch, the tours and the networking hour, or virtually for the presentations. The event is free but spaces may be limited on site, so please register now to confirm your place.

The full programme will be available soon. Please register [here](#).



August Training Courses – Register Now!

MSL training courses are a great opportunity to support your laboratory's accreditation and to further the professional development of employees.

Catch the early bird discounts and register now for Lower Hutt or Auckland.

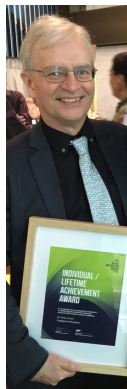
[Registration portal for Lower Hutt](#)

[Registration portal for Auckland](#)

[Find out more](#)

Staff Spotlight

Ellie Molloy graduated on 6 December 2023 achieving her PhD in Physics. She joined MSL as a summer student in 2018, and in 2019 started her PhD with us working on the goniospectrophotometer. She is now working as a Research Scientist in the Photometry and Radiometry team, predominantly focusing on spectrophotometry and goniospectrophotometry. So proud!



Keith Jones was honoured with the prestigious Lifetime Achievement Award by [Science New Zealand](#) in December!

With over 44 years dedicated to Metrology, Keith has played a pivotal role in fundamental metrology. This includes, but not limited to, his work in the verification of the material interdependence of the Quantum Hall Effect (QHE) at the part-per-billion level. His role in encouraging best practice metrology in New Zealand – becoming a major contributor to the metrology part of the industry codes of practice for electricity supply in New Zealand. His leadership – as Director and Chief Metrologist of MSL, and internationally – and as the Chairperson of the [Asia Pacific Metrology Programme](#). As well as his leadership in ongoing advisory roles, most recently with the Metrology Enabling Developing Economies in Asia, underscoring his commitment to enhancing technical training and policy development in Asia.

Here's a link to Keith's [profile video](#). We congratulate Keith for this well-deserved honour 🌟.

MSL's [Adam Dunford](#), aka 'Time Lord' had a chat to Emile Donovan on Radio New Zealand recently about "How did the world decide on one system of time?"

Click [here](#) for a wonderful listen!



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[MSL's Strategic Plan](#)

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