

Genomics Aotearoa Annual Meeting

A big thank you to all those who attended Genomics Aotearoa's Annual Meeting in November - the feedback we've received since reiterates what a great opportunity it was to update, network and look forward.

The two-day event at the University of Otago included 27 presenters and a joint session with MapNet 2023, was preceded by a very successful training day organised by Tyler McInnes.

We were fortunate to have all three of Genomics Aotearoa's International Advisory Panel (IAP) members in New Zealand for our Annual Meeting. Nick Goldman (European Molecular Biology Laboratory's European Bioinformatics Institute - EMBL-EBI), Andrew Gilbert (Bioplatforms Australia) and Elinor Karlsson (Broad Institute of MIT and Harvard), presented, listened to two days of talks, and took the opportunity to engage with many of our researchers during the breaks. Their presence was much appreciated.



After the Annual Meeting, Nick and Elinor stayed to see first-hand some of New Zealand's genomics research. The tour, hosted by GA Operations manager Jayashree Panjabi, started with a look at genomic-based research in the seafood sector, including a visit to Plant & Food Research's Nelson site hosted by Maren Wellenreuther, the Cawthron Institute hosted by Chris Cornelisen, and a meeting with GA research partners Wakatū Incorporation hosted by Charlie Eason and Miriana Stephens. Researcher Nathan Kenny, lead on an Indigenous Genomics Project project on the

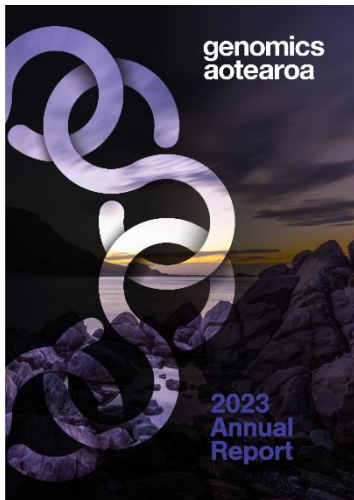
ribbed mussel (kopakopa), accompanied the panel on the Nelson leg.

In Auckland, the visitors spent time with Cris Print at his Molecular Medicine and Pathology Lab at the University of Auckland, discussing genomics opportunities to improve New Zealand health care. They also visited Plant & Food Research's Auckland headquarters, enjoyed a back-of-house tour of Auckland Museum, and saw a conservation project first-hand on a visit to Tiritiri Matangi Island accompanied by researchers Anna Santure and Kim Handley from the University of Auckland.

It was a great opportunity to showcase some of our world-class research and to get the perspectives of international experts on what we are doing well in New Zealand, and at the same time get some insight into where genomics has the potential to add future value to our health, environment and economy.

In the news

- World experts: Where NZ's genomic science is having global impact - [New Zealand Herald](#).
- Elinor Karlsson: Darwin's Dogs and DNA - [Radio New Zealand, Saturday](#).
- New Zealand's quest to save its rotund, flightless parrots - [Knowable Magazine](#).



Genomics Aotearoa Annual Report 2023

The Genomics Aotearoa 2023 Annual Report is now available - in hard copy and digital formats. Please let us know if you have collaborators who would appreciate a copy, or take a look [here](#).

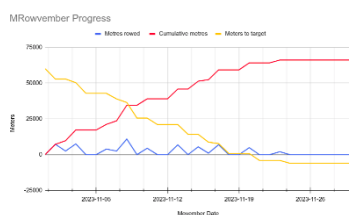
GA Movember team raises over \$2400 for charity



This year members of Genomics Aotearoa (and friends) joined together to raise money and awareness for men's physical and mental health through the Movember charity.

Team members grew moustaches, participated in the "Mo-movement challenge" and walked, ran, swam, cycled and rowed their way towards better mental health. Volunteers from the Biochemistry Administration team helped to run a bake sale, including a beautifully decorated moustache-adorned cake to raise funds.

Photo: The moustache growers: Marc Bailie, Joseph Guhlin, 10+ year veteran Mik Black, Rob Day, Nathan Kenny and Tyler McInnes



"Mrowvember" movement challenge: Paul Gardner tracks the movement challenge (60km of running etc., in recognition of the 60 men who commit suicide every hour globally).

Genomics Aotearoa research

We have added more publications to our Publications page on the Genomics Aotearoa website - follow this [link](#) for details.

Genomics Aotearoa Seminar Series

Thank you to recent seminar presenters:

- Manpreet Dhami (Manaaki Whenua - Landcare Research) and Ang McGaughran (University of Waikato), on *Invasomics for Biosecurity*.
- Gabriel Gasque (Protocols.io, Berkeley, CA), who talked about *the power of sharing detailed methods, credit, preservation and reproducibility*.
- Richard Newcomb (Plant & Food Research) presented *on where an interest in genomes can take you*.
- Andelka Phillips (University of Queensland), gave a presentation called *Think before you spit - privacy perceptions in the context of direct-to-consumer genetic testing*, covering views of the Australian and New Zealand general public concerning genetic privacy.

We also enjoyed two more seminars in the Asia-Pacific Genetics Seminar Series, from Jun Kitano (National Institute of Genetics), presenting on *ecological genetics of adaptation and speciation in sticklebacks*, and Melanie Bahlo (Walter and Eliza Hall Institute of Medical Research, Australia) on *understanding retinal diseases by combining genetics, metabolomics and imaging data*.

We have finished for the year - thank you to everyone who has made this year's programme a success. We are already planning for the 2024 seminar series - please [let us know](#) if you or a colleague would like to present.

eResearch NZ 2024

[eResearch NZ 2024](#) is thrilled to welcome six well-known keynote speakers to its 2024 programme:

- Carole Goble (University of Manchester)

- Karaitiana Taiuru (Ngāi Tahu, Ngāti Kahungunu, Ngāti Toa)
- Rodney Wilson (External Research Networks)
- Ian Foster (Argonne National Laboratory)
- Jan Sheppard (ESR)
- Rosie Hicks (Australian Research Data Commons)

The programme offers three inspiring days of talks, updates on research and workshops - take a look [here](#)

The strategic theme for the conference is **He Moana Pukepuke e Ekengia e te Waka / Navigating an Evolving eResearch Landscape**. This theme reflects the fast pace of technological change that is opening up new avenues for research and the change that is happening across our sector.

There are four pillars that support this theme:

- Creating new futures – speakers from a range of disciplines showcasing researchers operating at the cutting edge of their field.
- Evolution of eResearch Infrastructure – the enabler/infrastructure work stream talking about the trends and showcasing how researchers are using developments in technology to further their research.
- Developing our people – focus on retaining and developing talent.
- Embedding Te Tiriti – what does best practice look like?

Early bird registration closes on December 15 - click [here](#) to register.

Bioinformatics training

We are proud to announce Genomics Aotearoa has now trained over 1500 individuals at workshops held online and across Aotearoa! This is an excellent

opportunity for us to thank those members of the community who volunteer their time by contributing to the workshop material and attending as workshop instructors and helpers.

If you would like some exposure to teaching and training through volunteering, or if you have ideas for future workshops, please get in contact with **Tyler McInnes** (tyler.mcinnnes@otago.ac.nz).



Bioinformatics Spring School 2023

The annual Otago Bioinformatics Spring School (OBSS) attracted 42 attendees from across Aotearoa to participate in the week long training event. Training started with the basics of working in the command line, the basis for most bioinformatics analyses, and progressed to advanced and specialised topics such as Nanopore sequencing and genome assembly.

Photo: Ludovic Dutoit (Ludo) teaches a session on genome assembly, based on material GA co-developed with world leaders from the Telomere-to-Telomere (T2T) genome consortium.

Genomics Aotearoa, in collaboration with NeSI and the [Variant Analysis Hub](#) at [Genetics Otago](#), also recently hosted a very successful workshop "Customising nf-core workflows to enhance research," aimed at improving research reproducibility using Nextflow and nf-core. This workshop, designed and instructed by Chris Hakkaart from Sequera Labs, explored the fundamentals of the Nextflow pipeline management system and the nf-core workflow repository. It was aimed at researchers who strive for reproducibility in their data analysis.

Vacancies

Species are on the move globally, but how do they survive in new environments when they get there? What are the key predictors of invasion success? The University of Waikato is seeking a 2024 PhD applicant to explore such questions, with one major focus to be establishing an experimental evolution case study to elucidate the effects of genetic diversity and foundation size on invasion success. To apply, please send an interest statement and CV to amcgaugh@waikato.ac.nz.

Applications are open for a 2-year postdoctoral fellowship based with Anna Santure in the School of Biological Sciences, Waipapa Taumata Rau – University of Auckland, Aotearoa New Zealand. This project is an exciting opportunity to assess strategies for genotype imputation to ‘fill the gaps’ from low coverage sequencing in wild populations. The project will include (i) individual-based modelling to create populations with different levels of structure and genetic variation to test when best to leverage family and/or population variation for imputation, and (ii) the application of optimal imputation methods to our existing low coverage datasets to accurately characterise genetic variation and structure. For more information, please see the [Santure Group website](#).

The Gemmel Lab at the University of Otago has a postgraduate research opportunity available working on the Use of eDNA and other molecular tools to unravel the effects of land-based influences on rocky reef biodiversity and function. This project is part of a nationwide Coastal Programme between several New Zealand universities, institutes and agencies, entitled Toka ākau toitu Kaitiakitanga – building a sustainable future for coastal reef ecosystems. Its central purpose is to develop solutions for managing land-based stressors

on nearshore marine ecosystems at large scales. The successful candidate must have an interest in and knowledge of ecology and biology, and will ideally have a background in marine ecology or biological sciences, molecular biology, and familiarity with genetic laboratory methods. Please email an expression-of-interest letter (outlining interests and background), academic record/transcripts (unofficial), CV, and the names of at least three referees to [Allison Miller](#).

Science Media Centre media training

The Science Media Centre offers several **Science Media SAVVY** courses each year for currently active researchers, in any field, employed in New Zealand who have a research project or area of expertise of potential interest to media or is likely to encounter media interest in future. The next course is in Christchurch on April 18-19 2024 - see [here](#) for details.

Introducing a new Genomics Aotearoa Indigenous Genomics Platform project

Phylogenetic and Transcriptomic Analysis of Kawakawa for Rongoā and Kaitiakitanga

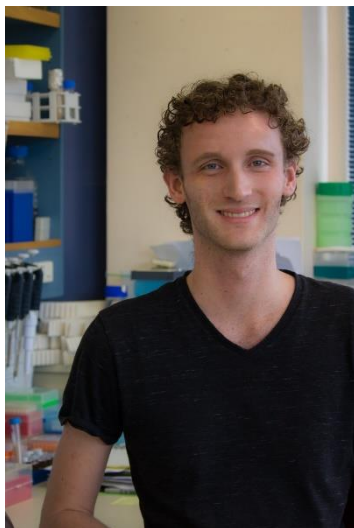


Kawakawa (*Piper excelsum*) is a taonga in every sense of the term. This indigenous shrub is an important component of the understory of forests around Aotearoa, and subspecies are also found on offshore islands.

As well as its important function in ecosystem dynamics, kawakawa is used in cultural ceremonies and for traditional medicine. While multiple varieties of kawakawa are known from across the motu, to date no studies have used molecular data to investigate the diversity, population structure and inter-relatedness of sub-populations of this species. This project seeks to add genomic information to the rich existing mātauranga on kawakawa.

Read more [here](#).

New to our website



Introducing Genomics Aotearoa post doctoral fellow Ben Halliday. Ben has had a long appreciation for genomics; read about his work in genomic medicine [here](#).

Genomics events

Feb 7-9, 2024 [eResearchNZ](#) 2024 conference

Let us know if you would like to add an event.

Genomics Aotearoa YouTube Channel



[Genomics Aotearoa YouTube Channel](#)

We welcome suggestions for linking to content that our community would find useful - please email [Jess McLean](#).

Contact Genomics Aotearoa

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