



Genomics Aotearoa news



Saving a species from extinction

Peter Dearden and Joseph Guhlin enjoyed considerable national and international media attention from a recently released [kākāpō paper](#) in Nature Ecology and Evolution - see the [Newshub's](#) coverage of the story (thanks to Georgia Cullen and Josh Gilligan from the University of Otago Dearden Lab for their help).

State-of-the-art methods developed by Joseph Guhlin (University of Otago) and an international team have revealed important aspects of kākāpō biology. As a result, the high-quality sequencing of nearly the entire kākāpō population, funded by Genomics Aotearoa, is now helping the Department of Conservation to manage the health of this critically endangered species. The methods, reusable code and pipeline are also a blueprint for conservation genomics in other species. Read more [here](#).



Minister's visit

Rachel Brooking (list MP based in Dunedin, Otago, Minister for Oceans and Fisheries, and Food Safety, and Associate Minister for the Environment, and Immigration) met with some of the Genomics Aotearoa team at the University of Otago recently.

The visit included a tour of Nathan Kenny's lab, where she was impressed with his team's work on the taonga species kuku (Green Lipped Mussel), a project being undertaken in conjunction with Wakatu Inc.

Genomics outreach



DNA & genomics workshop for school teachers

Genomics Aotearoa, in conjunction with Pūtahi Manawa (Healthy Hearts for Aotearoa New Zealand - HHANZ), ran a DNA and genomics workshop for primary and secondary school teachers on **July 10**, at the University of Auckland. The programme included talks from Mike Bunce (Chief Science Advisor for the Department of Conservation), genomic researchers, STEM academy organisation representatives and teachers already conducting environmental DNA sampling experiments with primary and secondary school students.

Genomics Aotearoa research



Advanced genome assembly workshop

Genomics Aotearoa and the New Zealand eScience Infrastructure (NeSI) recently hosted an advanced workshop with global leaders in genomics to hear first-hand about emerging techniques used on the first draft of the human pangenome reference (May 2023). Researchers from the Human Pangenome Reference Consortium (HPRC), visiting from the United States, presented to a group of New Zealand genomics researchers at the University of Otago.

The presentation was delivered by Dr Karen Miga (University of California, Santa Cruz), voted amongst [Time's 100 most influential people for 2022](#). Karen co-founded the Telomere-to-Telomere (T2T) Consortium in 2012 - an open, community-based effort to generate the first complete assembly of a human genome, and is the Director of the Reference Production Center for the Human Pangenome Reference Consortium (HPRC).

The focus was on read handling, assembly generation, evaluation and curation. This included comparisons between sequence platforms and popular long-read assemblers, examples of good and bad assemblies, and approaches to assembly phasing.

Genomics Aotearoa Seminar Series

Thank you to recent seminar presenters:

- **Laura Duntsch** (University of Auckland) on Conservation genomics and the hihi, a threatened Aotearoa New Zealand passerine.
- **Joseph Guhlin** (University of Otago), on Species-wide genomics of kākāpō provides transformational tools to accelerate recovery.
- **Karen Miga** (University of California Santa Cruz), talking about expanding studies of global genomic diversity with complete, telomere-to-telomere (T2T) assemblies.

We also enjoyed a seminar in the Asia-Pacific Genetics Seminar Series from **Kim Handley** (University of Auckland) on Adaptations to physicochemical stress: some like it salty and some like it hot. The Asia-Pacific Genetics Seminar Series is a collaboration between the Genetics Society of Japan (GSJ) and the Genetics Society of Australasia (GSA). It aims to further develop the field of genetics and promote international exchange among researchers in Asia and Oceania.

Next Genomics Aotearoa seminar is **September 15**, with Jan Charbonneau (University of Tasmania) and Andelka Phillips (University of Queensland), talking on Views of the Australian and New Zealand general public concerning genetic privacy.

<https://otago.zoom.us/j/97097442106?>

Please [let us know](#) if you know of a potential presenter for future seminars.

Ngā Puanga Pūtaiao Fellowships

The Government is investing \$19.3 million in the Ngā Puanga Pūtaiao Fellowships, a new initiative for Māori and Pacific Peoples establishing and progressing their research careers in science, technology, engineering and

mathematics (STEM) fields. Ngā Puanga Pūtaiao Fellowships are for researchers who:

- whakapapa Māori or identify as Pacific ethnicity (or both),
- are in the early-to-mid stages of their research careers (0-15 years research experience),
- propose research under the Fellowship that relates to a STEM subject,
- are supported by a New Zealand-based research organisation.

Two types of four-year fellowships will be awarded:

- early-career fellowships (0-6 years post-PhD research experience)
- mid-career fellowships (7-15 years post-PhD research experience).

Ngā Puanga Pūtaiao is expected to be open for applications in early September 2023. An independent panel of Māori and Pacific Peoples will assess eligible applications for their suitability to receive a Ngā Puanga Pūtaiao Fellowship. Suitable applications will then be randomly selected to receive a Ngā Puanga Pūtaiao Fellowship award.

Ngā Puanga Pūtaiao is an MBIE initiative, administered by the Royal Society Te Apārangi. More information about Ngā Puanga Pūtaiao is available on the [MBIE](#) and the [Royal Society Te Apārangi](#) websites.

Scholarship opportunity

The Department of Conservation (DOC) is encouraging postgraduate students to apply for its natural and social science scholarships, with a focus this year on new and innovative technologies that generate conservation outcomes.

There are eight scholarships available for fulltime or part time Masters students

enrolled at a New Zealand university or NZQA accredited tertiary institution, who plan to do research on a relevant topic in the 2024 academic year - see [Inside Government NZ](#) for more information. For application information, visit [Postgraduate scholarship programme \(doc.govt.nz\)](#). Applications close October 2, 2023.

Upcoming bioinformatics training

Upcoming training workshop: Reproducible Bioinformatics Workflows with Nextflow and nf-core (11th and 12th October, 9am – 12pm)

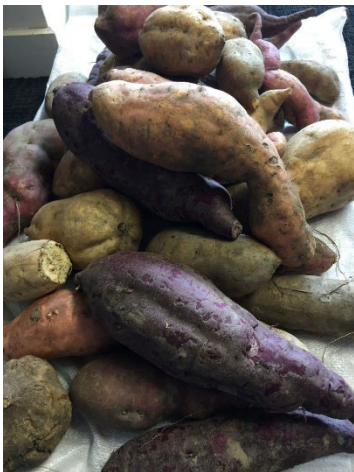
This free, online workshop will be run over two half-days and will introduce users to [Nextflow](#) a workflow management system that enables the writing of scalable and reproducible scientific workflows. The workshop will also cover [nf-core](#), a community-driven, peer-reviewed repository of pipelines for use with Nextflow. This workshop is jointly run by Genomics Aotearoa, NeSI, and Genetics Otago, and will be taught by an international expert from [Seqera labs](#). Registration and full details for this event will be available shortly. Please contact tyler.mcinnnes@otago.ac.nz if you have any queries.

New to our website



Introducing Genomics Aotearoa post doc [Brooke Whitelaw](#) - see what they are working on to understand movement patterns and genetic diversity in rats.

Introducing a new Genomics Aotearoa Indigenous Genomics Platform project



Molecular characterisation of Māori traditional root crops in Aotearoa as an insurance policy for food security; He wae kai pakiaka (a grounded solution)

The Māori perspective of horticulture includes a growing and pressing need for food security alongside food sovereignty on what can be termed 'traditional Māori' foods.

This project is aligned primarily at attaining food security through supporting kaitiaki, building Māori capability and future opportunity in the horticulture sector through documenting and managing historical and heritage crops and food sources aligned to Māori. Tāhuri Whenua - the National Māori horticulture collective - will lead the project and draw from their kaumātua rōpū and broad membership to lead the gathering and management of plant materials and mātauranga into a 'collection' with appropriate international germplasm protocols to ensure their accessibility for future generations to ensure its long-

term success. It will include a scoping exercise to understand the educational needs from both a traditional and science perspective for the future success of such a collection and for the establishment of true kaitiaki to look after this kaupapa going forward.

The initial crops of interest for this project are those grown from clonal material including taewa, NZ taro and kūmara.

Link [here](#) to read more.

Genomics events

Sept 18-19	NZ Research Software Engineering Conference 2023 , online
Nov 20-22	Genomics Aotearoa Annual Meeting, Dunedin
Nov 22-24	MapNet , Dunedin
Nov 20-23	NZ Microbiological Society Conference , Auckland
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 are continuing to share the Asia-Pacific Genetics Seminar Series on our You Tube channel:

[John Bowman](#) talking about The Origin and Evolution of Land Plants.

[Tomoko Ohta](#) on Near-Neutrality, Epigenetics and Transposable Elements.

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