

Capability growth continues: Genomics Aotearoa and NeSI set to reach 1,000 learners in 2022



New Zealand eScience Infrastructure
Genomics Aotearoa
Ngoni Faya & Dinindu Senanayake



NeSI

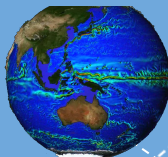
New Zealand eScience
Infrastructure

NeSI is a national
collaboration of:



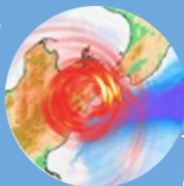
**Dr Olaf Morgenstern
and Dr Erik Behrens
(Earth Science)**

*Deep South Challenge
project using NeSI
supercomputers
for climate modelling.*



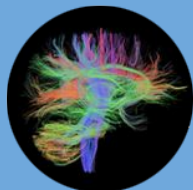
**Yoshihiro Kaneko
(Seismology)**

*GNS Science using NeSI
supercomputers to
recreate earthquake
events to better
understand their
processes and
aftermath effects.*



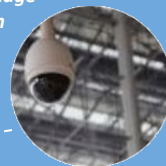
**Dr Richie Poulton
(Psychology)**

*Using NeSI Data
Transfer platform to
send MRI scan images
from Dunedin
Multidisciplinary Health
& Development Study
Research Unit to a
partner laboratory in
the United States for
analysis.*



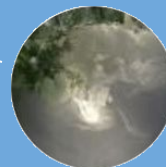
Andrew Chen (Engineering)

*Using NeSI supercomputers for advancing image
processing capabilities using computer vision*



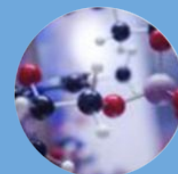
**Dr Kim Handley
(Biological
Sciences)**

*Genomics Aotearoa
project using NeSI
supercomputers to
better understand
environmental
processes on a
microbial level*

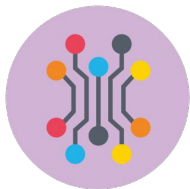


**Dr Sarah Masters,
Dr Deborah Crittenden,
Nathaniel Gunby (Chemistry)**

*Using NeSI supercomputers to
develop new analysis tools for
studying molecules' properties.*



NeSI Services



High performance computing (HPC) and analytics

- Fit-for-purpose national HPC platform including data analytics



Data services

- High speed, secure data transfer with end-to-end integration
- Hosting of large actively used research datasets, repositories, and archives



Training and researcher skill development

- In-person and online training to grow capabilities in NZ research sector
- Partnership with The Carpentries (global programme to teach foundational coding and data science skills to researchers)



Consultancy

- Computational science experts available to lift the computational capabilities of research teams, as well as optimise tools & workflows

Genomics Aotearoa

**An MBIE funded platform to support developments in
genomics and bioinformatics**

Hosted by University of Otago

Director: Professor Peter Dearden

9 University and CRI partners

Large number of affiliate organisations

Up and running on a range of projects

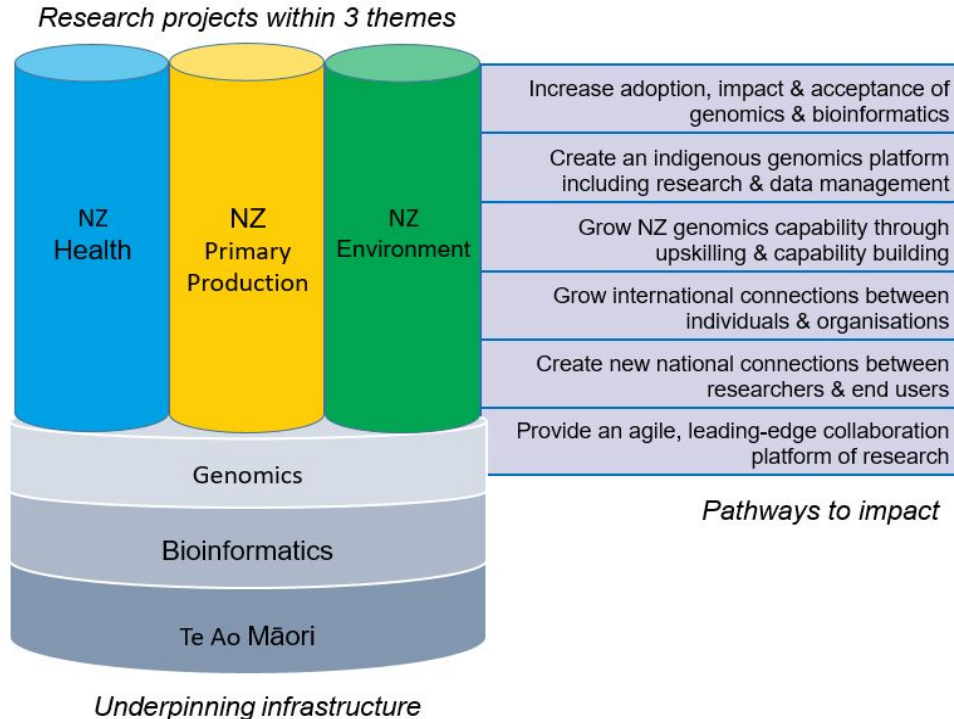
Funded for 7 years at approximately \$5 million/year



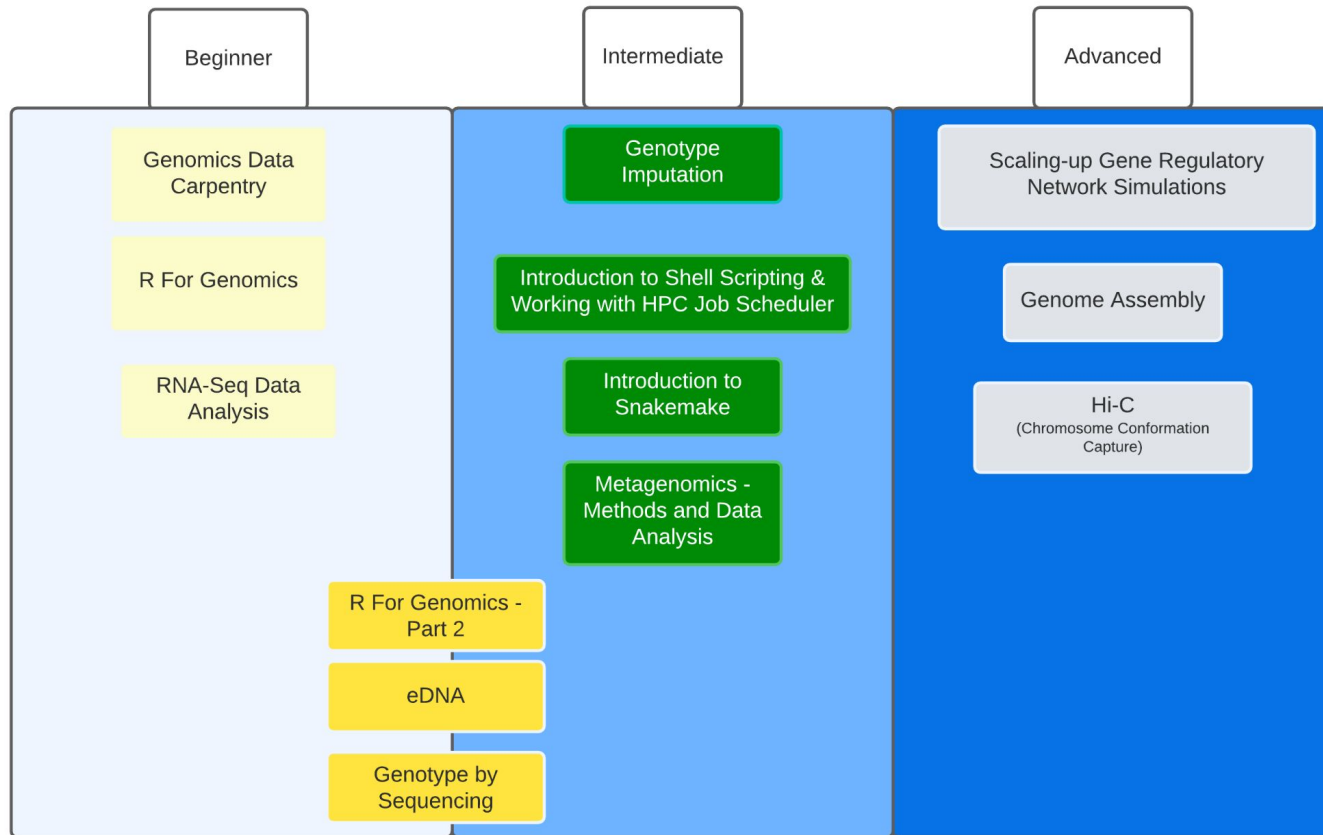
Our collaborative platform



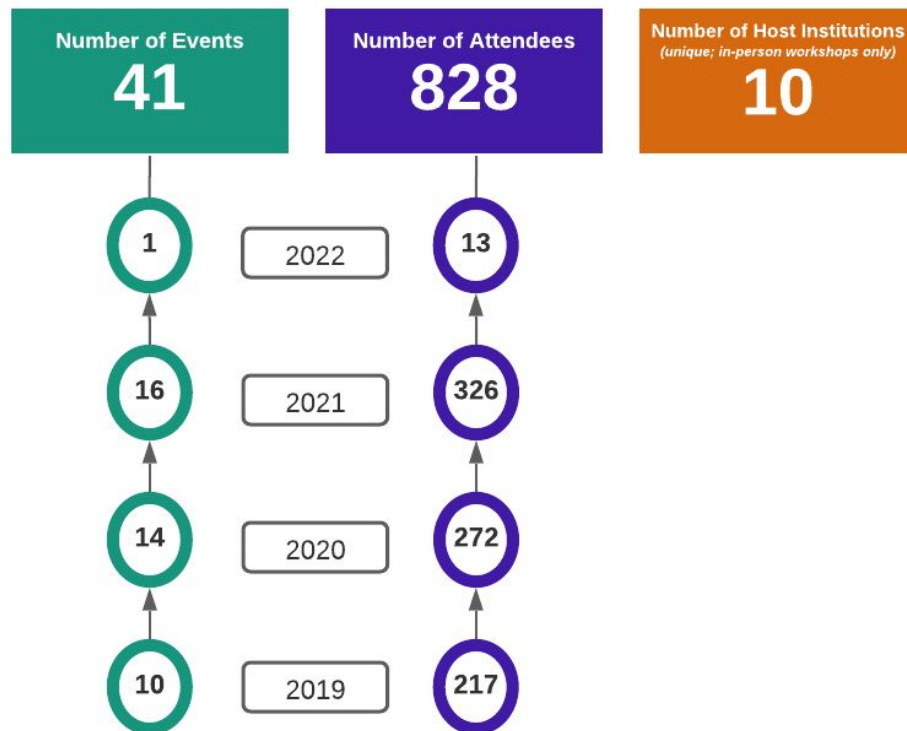
Genomics Aotearoa research themes



GA/NeSI Training Series: What we offer



NeSI / Genomics Aotearoa : Training Summary (11.06.2019-27.01.2022)



Number of Events: In-person is still ahead :)

In-person

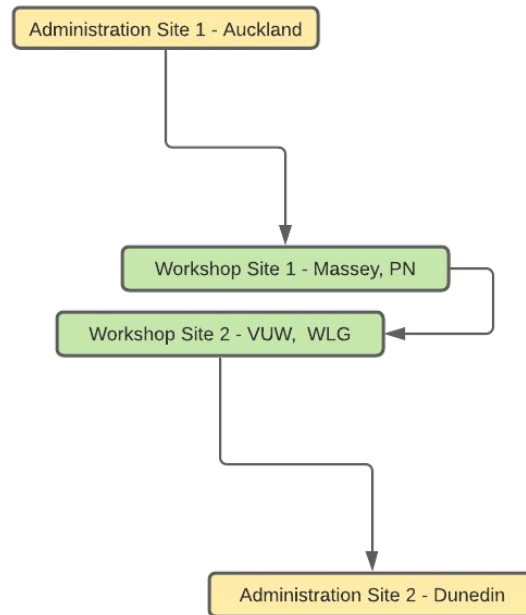
25

Online

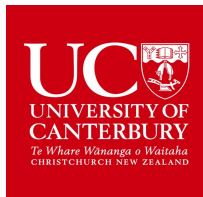
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Hybrid approach during lockdowns: AKL-PALMY-WLG-DUD

Tried once :)

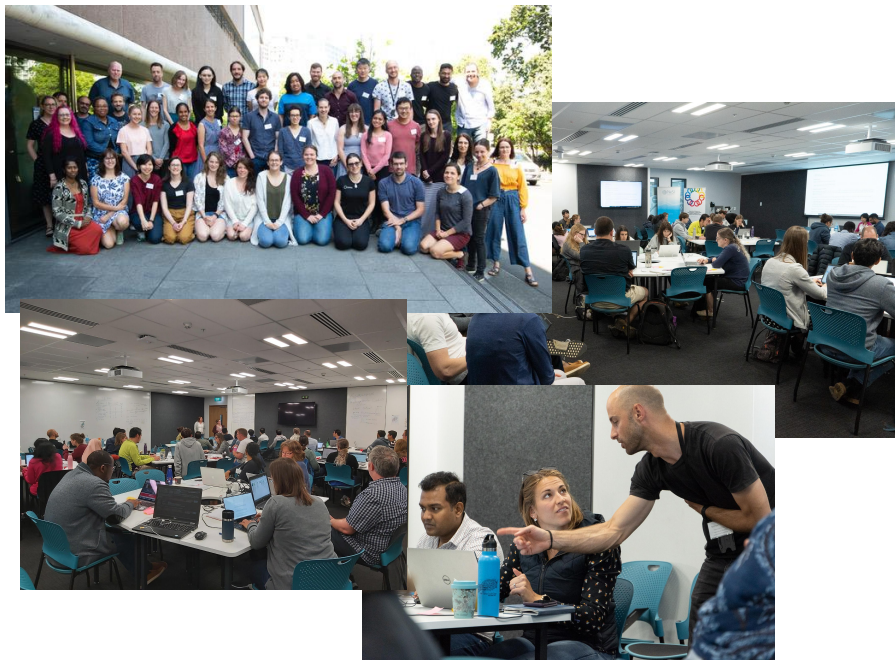


Attendees from 23 Institutes



Week Long Events

Metagenomics Summer School (2019 -



Otago Bioinformatics Spring School (2020-

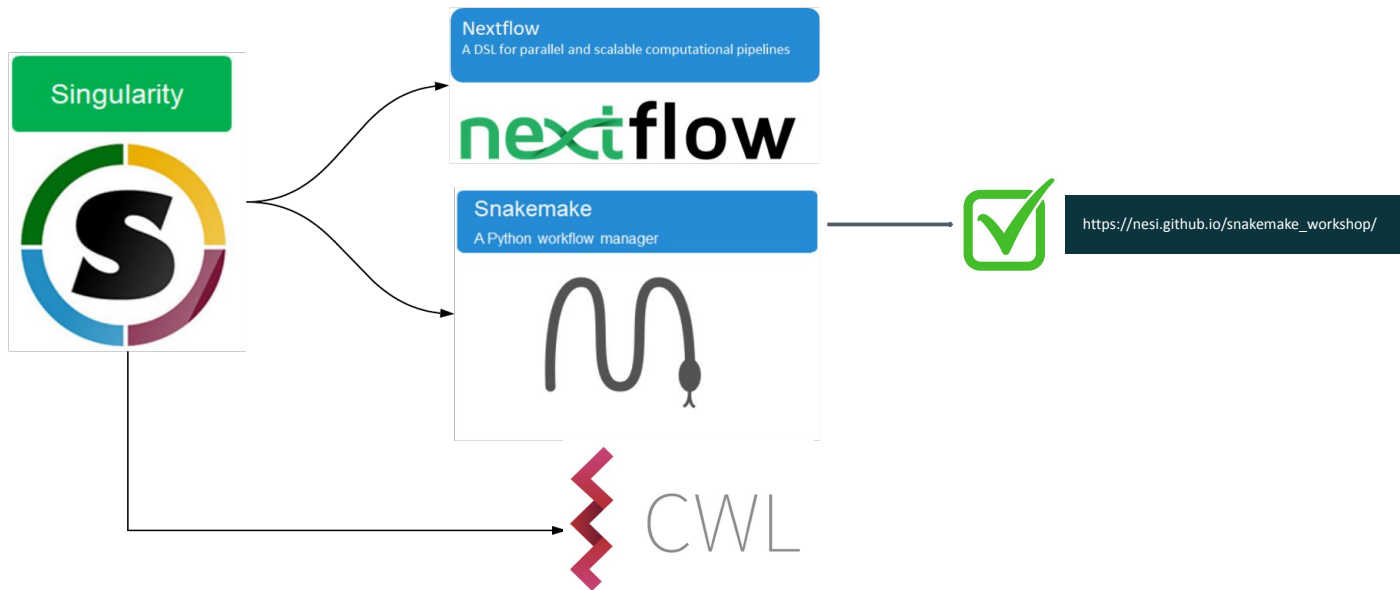


Tiered training program for Capability Development - GA-NeSI-Ministry of Primary Industries

HTS Methods and Data Analysis workshop series : https://github.com/GenomicsAotearoa/hts_workshop_mpi

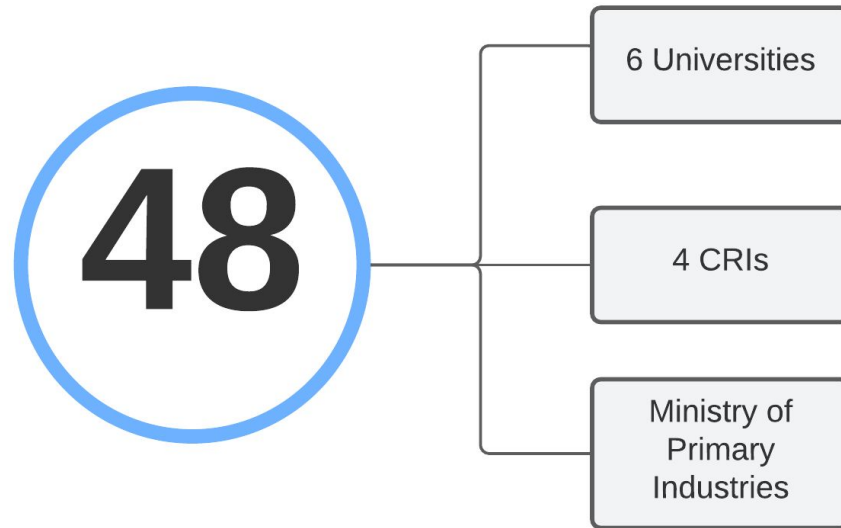


SLOW progress: Training on the significance of Reproducibility



Building a training community : Number that matters

Instructors/Helpers Contributed to NeSI/GA Training Events since 2019 June



Bioinformatics training



Carpentries-style training system (workshops)

- Carpentries
- Genomics workshops



Progress so far

More online and less person

- Reaching many institutions
- Mixture of beginners and advanced learners
- Open source workshops
- New GA Trainer (Jian Sheng Boey)
- New Instructors



Upcoming Workshops

Carpentries

Specialised workshops



Thank You!!!

