Conference Programme

*Please note the programme is subject to change

	SATURDAY 11 November 2023
09.00 - 15.00	*Walter Nash Centre, Taitā, Lower Hutt* **Earth Fest – Festival of Earth Science Public Open Day** Click here for the EarthFest website

	SUNDAY 12 November 2023
Various times	*Several locations around Wellington Te Whanganui a Tara* **Earth Fest - Public Field Trip** Come and meet us at designated spots at the designated times to hear kōrero from our expert volunteers about the rocks beneath your feet; there's literally millions of years' worth of stories they can tell! Click here for the Public Field Trip website

	MONDAY 13 November 2023
	Pre-Conference Workshops
08.00 - 17:30	*Meet at Wellington Railway Station* Featherston Core Store – Core Workshop **Convenors: Mark Lawrence GNS Science Te Pū Ao; Miles Dunkin, Ministry of Business, Innovation & Employment (MBIE); Paul Viskovic GNS Science Te Pū Ao**
09.00 - 16.00	*Avalon Campus of GNS Science Te Pū Ao* GeoNet and Geohazard Monitoring in Aotearoa: What We Do, How We Do It, and a Peek Behind the Scenes **Convenors: Ery Hughes, Libby Abbott, Rachael Pritchard-Thorsen, GNS Science Te Pū Ao**
09.00 – 12.00	*Alan McDiarmid 104* Building a Framework for Earthquake Catalogues in Aotearoa New Zealand **Convenors: Kenny Graham, Jonathan Hanson, GNS Science Te Pū Ao; Calum Chamberlain, Victoria University of Wellington Te Herenga Waka**
09.30 - 16.00	*Cotton 216* Wanna See Something Cool? Geoscience Communication for Engaging Education and Outreach **Convenor: Jenny Stein, Geoscience Society of New Zealand**
10.00 - 12.30	CANCELLED ~~Understanding Public Preparedness to Facilitate Realistic Natural Hazard Drills in Aotearoa New Zealand~~ ~~**Convenors: Aisling O'Kane GNS Science Te Pū Ao and University of Canterbury Te Whare Wānanga o Waitaha,**~~ ~~**with stakeholder representatives from EQC, WREMO, NEMA and NIWA Taihoro Nukurangi**~~
13.00 - 16.00	*Alan McDiarmid 104* Volcano Risk Communication in Aotearoa New Zealand **Convenor: Julia Becker, Joint Centre for Disaster Research, Massey University Te Kunenga Ki Pūrehuroa**
16.00 - 19.00	*Maclaurin Foyer* **Registration**
17.00 - 19.00	*Maclaurin Foyer* **Icebreaker Function**
19.30	*The Ballroom* **Early Career Researcher Mixer**

	TUESDAY 14 November 2023		
07.30	*Maclaurin Foyer* **Registration**		
08.30 - 09.25	*Maclaurin Lecture Theatre 103* **Opening Ceremony** Mihi Whakatau, Kelvin Tapuke Nic Smith, Vice-Chancellor, Victoria University of Wellington Te Herenga Waka Michael Stokoe, Tourism NZ Kat Holt, President GSNZ Scott Nodder, Convenor		
09.25 - 09.55	*Maclaurin Foyer* **Morning Tea**		
09.55 - 10.25	*Maclaurin Lecture Theatre 103* **Plenary Speaker – Dr Lauren Vargo** Melting glaciers and climate change: What can we do? **Kindly sponsored by GNS Science Te Pū Ao**		
10.25 - 10.30	**Transition to concurrent sessions**		
10.30 - 12.00	*Maclaurin Lecture Theatre 103*	*Cotton Lecture Theatre 122*	*Maclaurin Lecture Theatre 102*
	1. Our Changing Landscapes; Surface Process Dynamics, Evolution and Impacts Convenors: Sam McColl, Katie Jones, GNS Science Te Pū Ao; Kevin Norton, Anya Leenman, Victoria University of Wellington Te Herenga Waka	**2. High-energy Coastal Hazard Events in Aotearoa New Zealand: Records, Processes and Preparedness** Convenors: Jean Roger, GNS Science Te Pū Ao; Catherine Chagué, UNSW Sydney; Emily Lane, NIWA Taihoro Nukurangi; Jonathan Hanson, GEONET, GNS Science Te Pū Ao **Kindly sponsored by EQC**	**3. Geoscience in the Built Environment** Convenors: David Barrell, Andrea Wolter and Katie Jones, GNS Science Te Pū Ao
10.30 - 10.45	Keynote Talk: Seasonal dynamics of slow landslides in exhumed subduction mélange reveal	Airwave-tsunami source inversion using barometric pressure data for the 2022 Hunga	An updated geological map of the Dunedin urban area - **David Barrell, GNS Science Te Pū Ao**

	quantitative and qualitative similarities to shallow slow slip in subduction zones - **Noah Finnegan, University of California, Santa Cruz**	Tonga – Hunga Ha'apai volcanic tsunami - **Aditya Gusman, GNS Science Te Pū Ao**	
10.45 - 11.00		Small tsunami can represent a danger to navigation and persons in an apparently sheltered area: a case study of Mana Marina, Porirua - **Jean Roger, GNS Science Te Pū Ao**	Shallow shear wave reflection surveys in urban environments **- Sam Thorpe-Loversuch, Victoria University of Wellington Te Herenga Waka** (student)
11.00 - 11.15	Rainfall-induced shallow landslides in New Zealand hill country: a synthesis of findings from the STEC Endeavour programme- **Hugh Smith, Manaaki Whenua - Landcare Research**	Tsunami backwash deposits as evidence of historical and prehistorical events in the south Pacific - **Catherine Chagué, UNSW Sydney**	Insights gained from geomorphological mapping of the Napier-Hastings area - **Julie Lee, GNS Science Te Pū Ao**
11.15 - 11.30	Data-driven shallow landslide connectivity analysis to reduce sediment delivery to streams - **Anatoii Tsyplenkov, Manaaki Whenua Landcare Research**	Inversion of NZ DART tsunami data for tsunami early warning - **Bill Fry, GNS Science Te Pū Ao**	Engineering geological study and runout analysis of urban landslides triggered from intense rainfall in Gisborne, New Zealand - **Saima Sakik, University of Auckland Waipapa Taumata Rau** (student)
11.30 - 11.45	Simulation of the 2012 Te Maari debris avalanche from failure to impact - **Juliette Vicente, Massey University Te Kunenga Ki Pūrehuroa** (student)	The hazard beyond the horizon: A hybrid tsunami hazard model for Aotearoa New Zealand - **Aisling O'Kane, University of Canterbury Te Whare Wānanga o Waitaha & GNS Science Te Pū Ao**	Geoelectric structure of Northland, Auckland & Waikato Regions: a magnetotelluric survey in Aotearoa, New Zealand - **Kristin Pratscher, Victoria University of Wellington Te Herenga Waka** (student)
11.45 - 12.00	Landslide Dams in Aotearoa: A national database to characterize their formation, longevity and breaching behaviour - **Andrea Wolter, GNS Science Te Pū Ao**	From coast to inundation: a new method of analysing tsunami hazard using physics-based synthetic earthquake catalogues - **Laura Hughes, Victoria University of Wellington Te Herenga Waka** (student)	Reactivated Coastal Hot Springs, Waiwera Geothermal Field - **Paul Viskovic, GNS Science Te Pū Ao**
12.00 - 13.30	*Maclaurin Foyer* **Lunch**		
12.30 - 13.15	**SIG Lunchtime Meetings**		
	Cotton 216 Geochemistry SIG **Sebastian Naher, GNS Science Te Pū Ao**	*Cotton 118* Sedimentology SIG **Mark Lawrence, GNS Science Te Pū Ao**	*Alan McDiarmid 104* Strong Roots: The science NEMA needs to grow 'Te Rākau Whakamarumaru **Ashleigh Fromont, National Emergency Management Agency**	*Cotton Lecture Theatre 122* Saving Earth Science **Joint university discussion group facilitated by the GSNZ** **All welcome!**

13.30 - 14.45	*Maclaurin Lecture Theatre 103*	*Cotton Lecture Theatre 122*	*Maclaurin Lecture Theatre 102*
	4. Our Changing Landscapes; Surface Process Dynamics, Evolution and Impacts Convenors: Sam McColl, Katie Jones, GNS Science Te Pū Ao; Kevin Norton, Anya Leenman, Victoria University of Wellington Te Herenga Waka	**5. Understanding Climate and Environmental Change** Convenors: Peter Almond, Lincoln University Te Whare Wānaka o Aoraki; David Barrell, GNS Science Te Pū Ao; Shaun Eaves, Victoria University of Wellington Te Herenga Waka; Kat Holt, Massey University Te Kunenga Ki Pūrehuroa	**6. Community Resilience to Tsunami: Insights from Social Science** Convenors: Sara Harrison, Danielle Charlton, GNS Science Te Pū Ao; Lauren Vinnell, Joint Centre for Disaster Research Massey University Te Kunenga Ki Pūrehuroa
13.30 - 13.45	Acceleration of landscape change in the Southern Alps during the past decade – **Simon Cox, GNS Science Te Pū Ao**	High-resolution imaging of post-glacial sedimentation in New Zealand's fjords reveals regional history of deglaciation - **Andrew Gorman, University of Otago Te Whare Wānanga o Ōtākou**	Risk perception, attitudes, and behaviour when considering both earthquake and tsunami: An experimental survey - **Lauren Vinnell, Massey University Te Kunenga Ki Pūrehuroa**
13.45 - 14.00	Pre-and post-uplift shore platform erosion rates and patterns: Implications for rock coast evolution in active regions (Māhia and Kaikōura Peninsulas, New Zealand) - **Jokotola Omidiji, University of Otago Te Whare Wānanga o Ōtākou**	Discovery Deep, Antarctica, characterised by seismic and gravity surveys - **Will Oliver, University of Otago Te Whare Wānanga o Ōtākou** (student)	A social science review into Tsunami evacuation mapping for Aotearoa New Zealand - **Danielle Charlton, GNS Science Te Pū Ao**
14.00 - 14.15	Convergent shore platform evolution – demonstrating tectonics, eustatic sea level and inheritance controls on NZ shore platform formation using cosmogenic nuclides - **Aidan McLean, University of Auckland Waipapa Taumata Rau** (student)	A record of the Paleocene-Eocene Thermal Maximum in deep-sea fan deposits of the Gulf of Mexico, U.S.A - **Glenn Sharman, University of Arkansas**	Exploring factors influencing decision-making in tsunami evacuation- **Marion Lara Tan, Massey University Te Kunenga Ki Pūrehuroa**
14.15 - 14.30	Sedimentary dynamics in the Hokianga Harbour tidal estuary - **Karsten Kroeger, GNS Science Te Pū Ao**	Northern Hikurangi deep marine processes between Pleistocene event beds: A study of background sedimentation **- Natasha Ngadi, University of Auckland Waipapa Taumata Rau** (student)	Understanding boaties' needs for tsunami warnings in Aotearoa New Zealand: A post-event case study of the 15 January 2022 volcanic eruption-induced tsunami - **Sara Harrison, GNS Science Te Pū Ao**
14.30 - 14.45	A Zealandia provenance for explosive felsic and mafic volcanism during much of the Permian within the southeastern Sydney Basin and its impact on the biodiversity - **Glen Bann, University of Wollongong**	Investigating the marine-terrestrial interface of Te Whakaraupō Lyttelton Harbour - **Johanna Hanson, University of Canterbury Te Whare Wānanga o Waitaha** (student)	Evolution of the tsunami risk management and warning end-end system over 18 years: a myriad of research, guidelines, standards, tools and remaining gaps - **Graham Leonard, GNS Science Te Pū Ao**

14.45 - 15.00	**(Short Break)**		
15.00 - 16.00	*Maclaurin Lecture Theatre 103*	*Cotton Lecture Theatre 122*	*Maclaurin Lecture Theatre 102*
	7. Our Changing Landscapes; Surface Process Dynamics, Evolution and Impacts Convenors: Sam McColl, Katie Jones, GNS Science Te Pū Ao; Kevin Norton, Anya Leenman, Victoria University of Wellington Te Herenga Waka	**8. Understanding Climate and Environmental Change** Convenors: Peter Almond, Lincoln University Te Whare Wānaka o Aoraki; David Barrell, GNS Science Te Pū Ao; Shaun Eaves, Victoria University of Wellington Te Herenga Waka; Kat Holt, Massey University Te Kunenga Ki Pūrehuroa	**9. Volcanoes around the World** Convenors: Finnigan Illsley-Kemp, Victoria University of Wellington Te Herenga Waka; Kate Mauriohooho, University of Auckland Waipapa Taumata Rau
15.00 - 15.15	Reflections on the challenges of mapping >100,000 landslides triggered by Cyclone Gabrielle - **Kerry Leith, GNS Science Te Pū Ao**	Studying the Gentle Dance – Environmental Response of Remote Alpine Lakes to Natural Climate Variability - **Julian Eschenroeder, University of Otago Te Whare Wānanga o Ōtākou** (student)	Particle morphologies and damage fractures created by high-energy eruptions: Comparing particles from Tonga's 2022 Hunga eruption with Krakatoa 1883, and Havre 2012 eruptions - **Rachael Baxter, University of Otago Te Whare Wānanga o Ōtākou** (student)
15.15 - 15.30	Understanding the "Window of Vulnerability" in New Zealand's steepland plantation forests - **Chris Phillips, Manaaki Whenua - Landcare Research**	Contrasting vegetation recovery and landscape responses in the Hawke's Bay region and Waikato lowlands after the 1.8 ka Taupō eruption - **Stephen Piva, Victoria University of Wellington Te Herenga Waka** (student)	Improving eruption forecasting through transfer machine learning: a global approach utilizing models trained on 24 volcanoes - **Alberto Ardid, University of Canterbury Te Whare Wānanga o Waitaha**
15.30 - 15.45	Shaping landscapes: Landslip analysis from Cyclone Gabrielle in Hawke's Bay - **Ashton Eaves, Hawkes Bay Regional Council**	Using radiocarbon in Southern Hemisphere tree-rings to understand the Southern Ocean carbon sink - **Christian Lewis, GNS Science Te Pū Ao**	SAR observations the 2021-2023 eruptive sequence at Ambae volcano, Vanuatu - **Ian Hamling, GNS Science Te Pū Ao**
15.45 - 16.00	Forecasting landslide hazard and risk in Aotearoa New Zealand under a changing climate - **Livio Dreyer, University of Canterbury Te Whare Wānanga o Waitaha** (student)	Forecasting relative sea level change within an active plate-boundary zone: New Zealand tide gauge and GNSS time series - **Tim Stern, Victoria University of Wellington Te Herenga Waka**	Monitoring Data: What Can It Tell Us About Eruption Explosivity? - **Brenda Contla Hernandez, Massey University Te Kunenga Ki Pūrehuroa** (student)
16.00 - 17.30	*Maclaurin Foyer and Te Toki a Rata Foyer* **Afternoon Tea & Poster Session** **Kindly sponsored by NIWA**		
17.00 - 18.00	*Maclaurin Lecture Theatre 103* **Public Lecture – Mike Hannah** The Earth System		

18.30	**Coaches Depart for Brewtown Bash**
19.00 - Late	**Brewtown Bash (ticketed function)**

	WEDNESDAY 15 November 2023		
From 08.00	*Maclaurin Foyer* **Registration**		
08.25 - 08.55	*Maclaurin Lecture Theatre 103* **Plenary Speaker –Professor Jonathan Procter** He haerenga mōrearea – A hazardous journey; Exploring Mātauranga Māori and Volcanic Hazards		
08.55 - 09.00	**Transition to concurrent sessions**		
09.00 - 10.30	*Maclaurin Lecture Theatre 103*	*Cotton Lecture Theatre 122*	*Maclaurin Lecture Theatre 102*
	10. Active Volcanoes of Aotearoa – Past, Present, and Future Convenors: Finnigan Illsley-Kemp, Simon Barker, Victoria University of Wellington Te Herenga Waka; Ery Hughes, GNS Science Te Pū Ao; Eleanor Mestel, Victoria University of Wellington Te Herenga Waka; Shane Rooyakkers, GNS Science Te Pū Ao	**11. Earthquake Early Warning and Rapid Response Science** Convenors: Dr Caroline Holden SeismoCity Ltd; Dr Anna Kaiser GNS Science Te Pū Ao; Dr Raj Prasanna, Dr Marion Tan, Dr Julia Becker, Massey University Te Kunenga Ki Pūrehuroa; Dr Quincy Ma, University of Auckland Waipapa Taumata Rau	**12. On the precipice: the Future of Geoscience in Aotearoa New Zealand** Convenors: Kat Holt, President GSNZ; Jenny Stein, Secretary GSNZ
09.00 - 09.15	Modelling the processes that may lead to phreatic eruptions, with comparison to Whakaari, New Zealand - **Sophie Pearson-Grant, GNS Science Te Pū Ao**	Knowledge, perceptions, and behavioural responses to earthquake early warning in Aotearoa New Zealand - **Lauren Vinnell, Massey University Te Kunenga Ki Pūrehuroa**	Volcanofest and events that bring schools, teachers, and the public into scientific conferences - **Ben Kennedy, University of Canterbury Te Whare Wānanga o Waitaha**
09.15 - 09.30	Three-Dimensional Inversion of Magnetotelluric Data from Mt. Ruapehu, New Zealand - **Pascal Semper, TU Bergakademie Freiberg** (student)	Implementation of an experimental MEMS-based EEW sensor network supported by decentralised peer-to-peer mesh networking architecture: Progress and Future Directions - **Raj Prasanna & Chanthujan Chandrakumar, Massey University Te Kunenga Ki Pūrehuroa**	A novel model of geoscience education: empowering primary teachers through bilingual interactive science resource kits - **Jane Hoggard, House of Science NZ**
09.30 - 09.45	Multiproxy investigation of the source processes behind Mt Ruapehu's 2022 unrest period - **Liam Bramwell, Victoria University of Wellington Te Herenga Waka** (student)	Rapid rupture characterisation for New Zealand using the FinDer algorithm and its potential for earthquake early warning - **Jen Andrews, GNS Science Te Pū Ao**	Engaging preschool children with geoscience: challenges and opportunities - **Sophie Briggs, University of Otago Te Whare Wānanga o Ōtākou**
09.45 - 10.00	Bayesian Networks for eruption forecasting - **Yannik Behr, GNS Science Te Pū Ao**	TenFor: An ensemble forecasting tool enabling time-dependent tsunami early warning - **Christof Mueller, GNS Science Te Pū Ao**	**Visible Geology** - Tomorrows geoscientists are todays digital natives. The trouble is they are choosing something else. - **Peter Joynt, Seequent**

10.00 - 10.15	Appropriate complexity of volcanic hazard models - **Emmy Scott, Massey University Te Kunenga Ki Pūrehuroa** (student)	Testing pathways for rapid generation of earthquake source - shaking - landslide forecast maps for post-event response to large earthquakes (M7+) in New Zealand **- Anna Kaiser, GNS Science Te Pū Ao**	**Open Discussion**
10.15 - 10.30	Revised NZ volcano threat levels and instrumentation recommendations for the next decade of volcano monitoring in NZ - **Samuel Taylor-Offord, GNS Science Te Pū Ao**	24/7 monitoring and rapid response in Aotearoa: the story of the 2023 Kawerau Swarm - **C Rapson Nuñez del Prado, National Geohazards Monitoring Centre, GNS Science Te Pū Ao**	

10.30 - 11.00	*Maclaurin Foyer* **Morning Tea**		
11.00 - 12.30	*Maclaurin Lecture Theatre 103*	*Cotton Lecture Theatre 122*	*Maclaurin Lecture Theatre 102*
	13. Active Volcanoes of Aotearoa – Past, Present, and Future Convenors: Finnigan Illsley-Kemp, Victoria University of Wellington Te Herenga Waka; Simon Barker, Victoria University of Wellington Te Herenga Waka; Ery Hughes, GNS Science Te Pū Ao; Eleanor Mestel, Victoria University of Wellington Te Herenga Waka; Shane Rooyakkers, GNS Science Te Pū Ao	**14. Geoscience for Future Energy: Navigating the Path to a Low-Emissions Future** Convenors: Jess Hillman, GNS Science Te Pū Ao; Andrew La Croix, University of Waikato Te Whare Wānanga o Waikato	**15. Geoscience Communication & Culturally Responsive Geoscience** Convenors: Jenny Stein, GSNZ; Ben Kennedy, University of Canterbury Te Whare Wānanga o Waitaha
11.00 - 11.15	Taranaki Maunga: It's Older Than You Think - **Glenn Thrasher, GNS Science Te Pū Ao**	**Keynote Talk:** A Spike in the Road? - **Angela Griffin, GNS Science**	Is anybody even listening? The hazardous road getting science into local government policy - **Tabitha Bushell, Toka Tū Ake EQC**
11.15 - 11.30	Cosmogenic 3He constraints of postglacial edifice construction at Mt. Ruapehu - **Pedro Doll, University of Canterbury Te Whare Wānanga o Waitaha** (student)		New Zealand Geopark Group - **Sasha Morriss, Waitaki Whitestone Geopark**
11.30 - 11.45	What can Antarctic ice cores tell us about New Zealand eruptions? - **Simon Barker, Victoria University of Wellington Te Herenga Waka**	Kapuni field CO2 sequestration opportunity: borehole seismic monitoring feasibility and design - **Steve Morice, Todd Energy**	The story behind our maps - **Andrew Frederick Boyes, GNS Science Te Pū Ao**
11.45 - 12.00	Eruptive histories of New Zealand's nearshore volcanoes: Insights from marine cores around Tūhua and Whakaari volcanoes - **Jacqueline**	Quantification of geothermal carbon dioxide fluxes using radiocarbon - **Jocelyn Turnbull, GNS Science Te Pū Ao**	A universal size classification system for landslides for improved communication - **Sam McColl, GNS Science Te Pū Ao**

	Grech Licari, Victoria University of Wellington Te Herenga Waka (student)					
12.00 - 12.15	A 20-year study of hydrothermal mineralization and 226Ra and 228Ra isotopes at Brothers volcano, Kermadec arc - **Robert Ditchburn, GNS Science Te Pū Ao**		Characterising CCS opportunities: investigating how seismic resolution impacts interpretation of 3D seismic data using a synthetic depositional model - **Michele D'Ath Woodd, SeisMomentum Ltd**		Partnering with communities in co-produced field-based research around Taupō volcano - **Eleanor Mestel, Victoria University of Wellington Te Herenga Waka** (student) **& Kelvin Tapuke, Massey University Te Kunenga Ki Pūrehuroa**	
12.15 - 12.30	Hochstetter's Long Lost Auckland Diary – **Bruce Hayward, Geomarine Research**		Spatial modelling to support carbon capture through enhanced rock weathering- **Matthew Hill, GNS Science Te Pū Ao**		Governance of Māori geoscience data - **Mark Rattenbury, GNS Science Te Pū Ao**	
12.30 - 14.00	*Maclaurin Foyer* **Lunch**					
13.00 - 13.45	**SIG Lunchtime Meetings**					
	Cotton 216 GeoNet Programme Update **Catherine Ross; Jonathan Hanson; Elizabeth Abbott; Elisabetta D'Anastasio and the GeoNet Team**	*Cotton 118* Paleontology Special Interest Group **James Crampton, Victoria University of Wellington Te Herenga Waka**	*Alan McDiarmid 104* The Road to Publication: Advice from Editors and a Journal Publisher **Fei He, New Zealand Journal of Geology and Geophysics; Catherine Chagué, Sedimentary Geology, UNSW Sydney**	*Maclaurin Lecture Theatre 102* Future Energy **Jess Hillman, GNS Science Te Pū Ao**	*Room Tbc* A Crowd of Communicators: GeOID + SCANZ **Jenny Stein, GNS Science Te Pū Ao**	*Cotton LT 122* LAVA NZ - Volcanology SIG Geoff Kilgour **GNS Science Te Pū Ao**
14.00 - 15.30	*Maclaurin Lecture Theatre 103*		*Cotton Lecture Theatre 122*		*Maclaurin Lecture Theatre 102*	
	16. Active Volcanoes of Aotearoa – Past, Present, and Future Convenors: Finnigan Illsley-Kemp, Victoria University of Wellington Te Herenga Waka; Simon Barker, Victoria University of Wellington Te Herenga Waka; Ery Hughes, GNS Science Te Pū Ao; Eleanor Mestel, Victoria University of Wellington Te Herenga Waka; Shane Rooyakkers, GNS Science Te Pū Ao		**17. Geoscience for Future Energy: Navigating the Path to a Low-Emissions Future** Convenors: Jess Hillman, GNS Science Te Pū Ao; Andrew La Croix, University of Waikato Te Whare Wānanga o Waikato		**18. Advances in Active Faulting and Earthquake Hazards** Convenors: Carolyn Boulton, Victoria University of Wellington Te Herenga Waka; Genevieve Coffey, GNS Science Te Pū Ao; Carmen Juarez Garfias, Victoria University of Wellington Te Herenga Waka	
14.00 - 14.15	Episodic coastal uplift at Matatā: constraints from geology, geomorphology, and geodesy - **Jesse Kearse, Victoria University of Wellington**		Earth science, energy transition, reserves, exponential growth bias, and supply chains: our responsibility to advise - **Rupert Sutherland,**		Temporal variations in seismic scattering structure during deep slow slip beneath the	

	Te Herenga Waka (student) **& Ian Hamling, GNS Science Te Pū Ao**	**Victoria University of Wellington Te Herenga Waka**	Hikurangi Subduction Zone - **Pasan Herath, GNS Science Te Pū Ao**
14.15 - 14.30	Plutonic nature of a transcrustal magmatic system: evidence from ultra-high resolution Sr-disequilibria in plagioclase microantecrysts from the southern Taupo Volcanic Zone, New Zealand - **Georg Zellmer, Massey University Te Kunenga Ki Pūrehuroa**	Future availability of hydrogen, ammonia and liquid biofuels for heavy transport and aviation in New Zealand - **Nicholas Powell, Forensic & Industrial Science Ltd**	Stress relaxation around the fault edges before the mainshock of intraplate earthquakes - **Yoshihisa Iio, Kyoto University**
14.30 - 14.45	Gabbroic insights into mafic magmatism beneath the K-Trig scoria centre, Taupō Volcanic Zone. - **L. K. Seelig, Victoria University of Wellington Te Herenga Waka** (student)	Reservoir simulation workflows for hydrogen geostorage in Taranaki depleted gas fields - **Matt Parker, University of Canterbury Te Whare Wānanga o Waitaha**	Source parameters of crustal events in New Zealand from Generalized Inversion**- Chuanbin Zhu, University of Canterbury Te Whare Wānanga o Waitaha**
14.45 - 15.00	From Source to Surface: Insights into the timescales and processes driving young eruptions at Red Crater, Tongariro- **Kerstin Gruender, Victoria University of Wellington Te Herenga Waka** (student)	Copper in onshore New Zealand: mineral deposit types, occurrences and potential for this critical metal - **Tony Christie, GNS Science Te Pū Ao**	Generalized inversion of New Zealand ground-motion data: implications for attenuation and site-effects - **Sanjay Bora, GNS Science Te Pū Ao**
15.00 - 15.15	Widespread assimilation of altered crust in the Taupō Volcanic Zone - **Shane Rooyakkers, GNS Science Te Pū Ao**	Thermal properties of Rakaia Terrane, New Zealand - **Adam Gouwland, Victoria University of Wellington Te Herenga Waka** (student)	Hydrological controls on seismic velocity changes after earthquakes: The WELLington water WELL VELocity change project (WELLVEL) - **Martha Savage, Victoria University of Wellington Te Herenga Waka**
15.15 - 15.30	Where will it flow? The relative effects of temperature, cross sectional area and wall defects on flow focusing in artificial fissure eruptions - **Javiera Andrea Ruz Ginouves, University of Otago Te Whare Wānanga o Ōtākou** (student)	The quest for commercial low enthalpy geothermal resources in New Zealand **- Simon Ward, Ian R Brown Associates Ltd**	A controlled environment evaluation of smartphone and low-cost multi-GNSS, dual frequency sensors for deformation monitoring - **Chien Zheng Yong University of Otago Te Whare Wānanga o Ōtākou**
15.30 - 17.00	*Maclaurin Foyer and Te Toki a Rata Foyer* **Afternoon Tea & Poster Session**		
17.00 - 18.00	*Cotton Lecture Theatre 122* **GSNZ AGM**		
19.00 - Late	*Pipitea Marae* **Gala Dinner (ticketed function)** **Wellington Paranormal Theme!**		

	THURSDAY 16 November 2023		
From 08.30	*Maclaurin Foyer* **Registration**		
08.55 - 09.25	*Maclaurin Lecture Theatre 103* **Plenary Speaker- Phil Barnes** New insights into Hikurangi subduction inputs, accretionary wedge, and plate interface host rocks spanning along-strike changes in fault slip behavior, New Zealand		
09.25 - 09.30	**Transition to concurrent sessions**		
09.30 - 11.00	*Maclaurin Lecture Theatre 103*	*Cotton Lecture Theatre 122*	*Maclaurin Lecture Theatre 102*
	19. Advances in Active Faulting and Earthquake Hazards Convenors: Carolyn Boulton, Victoria University of Wellington Te Herenga Waka; Genevieve Coffey, GNS Science Te Pū Ao; Carmen Juarez Garfias, Victoria University of Wellington Te Herenga Waka	**20. Databases** Convenors: Elisabetta D'Anastasio, Jonathan Hanson, GNS Science Te Pū Ao & **Underwater Geosciences** Convenors: Sally Watson, NIWA Taihoro Nukurangi /IMS University of Auckland Waipapa Taumata Rau; Jess Hillman, GNS Science Te Pū Ao; Marta Ribó, Auckland University of Technology Te Wānanga Aronui o Tāmaki Makau Rau; Suzanne Bull, GNS Science Te Pū Ao	**21. To Honour a Time Lord** Convenors: James Crampton, Victoria University of Wellington Te Herenga Waka; Mike Hannah, Victoria University of Wellington Te Herenga Waka ***Kindly sponsored by GNS Science Te Pū Ao*** 
09.30 - 09.45	**Keynote Talk:** Active faulting and seismicity in low strain rate regions: new perspectives from the southern South Island - **Jack Williams, University of Otago Te Whare Wānanga o Ōtākou**	Enhancing Interdisciplinary access to GeoNet's Data: Tilde, an in-house developed solution - **Elisabetta D'Anastasio, GNS Science Te Pū Ao**	One Step Ahead of Extinction: Quantifying extinction risk of New Zealand marine molluscs - **Nicole Obren, Victoria University of Wellington Te Herenga Waka** (student)
09.45 - 10.00		Recent developments in NZP&M's geoscience collections - **Miles Dunkin, Ministry of Business, Innovation & Employment (MBIE)**	New Zealand evidence for CO2-forcing of climatic warming following the end-Cretaceous asteroid impact - **Christopher Hollis, Victoria University of Wellington Te Herenga Waka**
10.00 - 10.15	Understanding multi-fault ruptures and earthquake clustering in central New Zealand using paleoearthquake records and earthquake simulators - **Jade Humphrey, University of Canterbury Te Whare Wānanga o Waitaha** (student)	Mapping the geology of an underwater continent: example of 96% submerged North Zealandia - **Nick Mortimer, GNS Science Te Pū Ao**	The Titirangi Sand: a marker of uplift and sea level change at the eastern end of the Chatham Rise - **Katherine Holt, Massey University Te Kunenga Ki Pūrehuroa**

10.15 - 10.30	Characterization of post-Pliocene dynamics of the Mangatangi Fault, South Auckland – **Hannah Martin, University of Auckland Waipapa Taumata Rau** (student)	Shear-wave velocity structure of Aotearoa New Zealand's upper mantle from surface wave dispersion of an amphibious dataset - **Taylor Tracey Kyryliuk, University of Ottawa** (student)	New Zealand Cenozoic stages and the macro/micro dichotomy - **Martin Crundwell, GNS Science Te Pū Ao**
10.30 - 10.45	Frictional properties of greywacke sandstone and siltstone: implications for earthquake nucleation - **Carolyn Boulton, Victoria University of Wellington Te Herenga Waka**	Future Opportunities for New Zealand and Australia in international scientific drilling - **Ron Hackney, Australia New Zealand IODP Consortium**	Whale-fall scallops decode the mid-Cenozoic – hunting down strontium dates across the Oligocene-Miocene boundary and a review of mid-Cenozoic chronostratigraphic data - **Marcus Richards, University of Otago Te Whare Wānanga o Ōtākou**
10.45 - 11.00	A synthetic earthquake catalogue based on the Aotearoa-NZ Community Fault Model - **Andy Howell, University of Canterbury Te Whare Wānanga o Waitaha**	The diverse morphology of pockmarks offshore Aotearoa New Zealand – relict seeps or geomorphological anomalies? - **Jess Hillman, GNS Science Te Pū Ao**	Strontium isotope (87/86Sr) dating of the base Nukumaruan stage boundary, New Zealand - **Ben Hines, Victoria University of Wellington Te Herenga Waka**
11.00 - 11.30	*Maclaurin Foyer* **Morning Tea**		
11.30 - 13.00	*Maclaurin Lecture Theatre 103*	*Cotton Lecture Theatre 122*	*Maclaurin Lecture Theatre 102*
	22. Advances in Active Faulting and Earthquake Hazards Convenors: Carolyn Boulton, Victoria University of Wellington Te Herenga Waka; Genevieve Coffey, GNS Science Te Pū Ao; Carmen Juarez Garfias, Victoria University of Wellington Te Herenga Waka	**23. Underwater Geosciences** Convenors: Sally Watson, NIWA Taihoro Nukurangi/IMS University of Auckland Waipapa Taumata Rau; Jess Hillman, GNS Science Te Pū Ao; Marta Ribó, Auckland University of Technology Te Wānanga Aronui o Tāmaki Makau Rau; Suzanne Bull, GNS Science Te Pū Ao	**24. To Honour a Time Lord** Convenors: James Crampton, Victoria University of Wellington Te Herenga Waka; Mike Hannah, Victoria University of Wellington Te Herenga Waka & **Geochemical Tools and Applications to Reconstruct Environmental and Climate Change, Human Impact and Earth History in New Zealand, Australia and Antarctica** Convenors: Sebastian Naeher, GNS Science Te Pū Ao; James Scott, University of Otago Te Whare Wānanga o Ōtākou; Dan Sinclair, Victoria University of Wellington Te Herenga Waka
11.30 - 11.45	Unearthing slickenlines on the 2016 rupture of the Kekerengu Fault: testing the veracity and utility of the rupture-propagation-direction / curved-slickenline hypothesis - **Russ Van Dissen, GNS Science Te Pū Ao**	Spatial-temporal development of paleo-pockmarks on the Chatham Rise from 3D imaging with subbottom profiler data - **Fynn Warnke, University of Auckland Waipapa Taumata Rau** (student)	Walking backward into the future – what can Paleozoic bryozoans tell us about the future of modern bryozoans? - **Catherine Reid, University of Canterbury Te Whare Wānanga o Waitaha**

11.45 - 12.00	The structural geology of curved slickenline patterns and modelling their geometrical evolution as a function of asperity inception timing, longevity, and rupture propagation - **Timothy Little, Victoria University of Wellington Te Herenga Waka**	Morphological trends of pockmarks on the Chatham Rise: The interplay of fluid escape and ocean currents - **Dina Hanifah, University of Auckland Waipapa Taumata Rau** (student)	New insights into the Cretaceous belemnites of New Zealand: the best 2023 stories, revealed from the study of GNS collections - **Alexey Ippolitov, Victoria University of Wellington Te Herenga Waka** (student)
12.00 - 12.15	The Alpine Fault in the Lidar Age: Refined interpretations, new discoveries, and the next earthquake - **Nicolas Barth, University of California**	Benthic Terrain modelling across the Hauraki Gulf: habitat identification and human impacts - **Sam Davidson, NIWA Taihoro Nukurangi**	Fossils from South Taranaki reveal Aotearoa New Zealand as a long-term 'hot spot' for seabirds - **Alan Tennyson, Museum of New Zealand Te Papa Tongarewa**
12.15 - 12.30	How will earthquakes move Wellington's coastlines? A probabilistic coast-seismic hazard model - **Jaime Delano, University of Canterbury Te Whare Wānanga o Waitaha** (student)	Lake tsunami hazards and lacustrine mass wasting in high seismicity regions of New Zealand's South Island - **Katie Hughes, Victoria University of Wellington Te Herenga Waka** (student)	Automated image acquisition, processing and recognition of microfossils - **Martin Tetard, GNS Science Te Pū Ao**
12.30 - 12.45	How often do subduction interfaces and overriding upper-plate faults rupture in the same earthquake (or close enough in time to be the same situation)? - **Chris Rollins, GNS Science Te Pū Ao**	Evaluating the confluence test on the southern Hikurangi margin using historical earthquakes - **Stephanie Tickle, Victoria University of Wellington Te Herenga Waka** (student)	Temporal and spatial variations in trace element – organic carbon ligand complexes in cave water: Implications for speleothem paleoclimate research - **Robert Brodnax, University of Waikato Te Whare Wānanga o Waikato** (student)
12.45 - 13.00	The cascading impacts from an earthquake on the Hikurangi Subduction Zone: Two case studies for Napier - **David Ross Burbidge, GNS Science Te Pū Ao**	Lipid biomarkers in sediment traps in a eutrophic reservoir **- Andres Martinez Garcia, University of Granada** (student)	Uranium isotopes record in the Southern Ocean since the last glaciation (~ 32 ka to present): Interrogating a paleo-redox proxy - **Marie Andréa Hennequin, University of Otago Te Whare Wānanga o Ōtākou** (student)
13.00 - 14.00	*Maclaurin Foyer* **Lunch**		
14.00 - 15.30	*Maclaurin Lecture Theatre 103*	*Cotton Lecture Theatre 122*	*Maclaurin Lecture Theatre 102*
	25. Advances in Active Faulting and Earthquake Hazards Convenors: Carolyn Boulton, Victoria University of Wellington Te Herenga Waka; Genevieve Coffey, GNS Science Te Pū Ao; Carmen Juarez Garfias, Victoria University of Wellington Te Herenga Waka	**26. Underwater Geosciences** Convenors: Sally Watson, NIWA Taihoro Nukurangi/IMS University of Auckland Waipapa Taumata Rau; Jess Hillman, GNS Science Te Pū Ao; Marta Ribó, Auckland University of Technology Te Wānanga Aronui o Tāmaki Makau Rau; Suzanne Bull, GNS Science Te Pū Ao	**27. Geochemical Tools and Applications to Reconstruct Environmental and Climate Change, Human Impact and Earth History in New Zealand, Australia and Antarctica** Convenors: Sebastian Naeher, GNS Science Te Pū Ao; James Scott, University of Otago Te Whare Wānanga o Ōtākou; Dan Sinclair,

			Victoria University of Wellington Te Herenga Waka
14.00 - 14.15	From Maruia to Milford Sound: extending our understanding of the Alpine Fault's seismicity - **Olivia Pita-Sllim, Victoria University of Wellington Te Herenga Waka** (student)	**Keynote Talk:** Cyclone Gabrielle impacts on seabed ecosystems off Te Matau a Māui/Hawke's Bay and Tairāwhiti/Gisborne regions **- Alan Orpin, NIWA Taihoro Nukurangi**	A review of occurrence, fate, and Environmental pathways of Erionite in soil - **Satendra Kumar, University of Auckland Waipapa Taumata Rau** (student)
14.15 - 14.30	The South Westland Alpine Fault: What's down there and how does it make earthquakes stop? - **Emily Warren-Smith, GNS Science Te Pū Ao**		Reconstructing Southern Hemisphere Maunder Minimum and Satellite Era relative changes in surface UV-B flux based on sporopollenin chemistry - **Bert Verleijsdonk, Massey University Te Kunenga Ki Pūrehuroa** (student)
14.30 - 14.45	Inferred source models for Alpine Fault Earthquake Scenarios and influence on seismic hazard - **Caroline Holden, SeismoCity Ltd**	Morphological evolution of the Hunga Tonga–Hunga Ha'apai submarine volcano caldera- **Marta Ribó, Auckland University of Technology Te Wānanga Aronui o Tāmaki Makau Rau**	The response of Antarctic vegetation to major glaciation during the Oligocene/Miocene Transition - **Bella Duncan, Victoria University of Wellington Te Herenga Waka**
14.45 - 15.00	Earthquake rate variability on the Hikurangi subduction zone using a dense 11-year long earthquake catalogue - **Calum Chamberlain, Victoria University of Wellington Te Herenga Waka**	Intraplate volcanism and characterisation of Caravel Granite in the Canterbury-Great South basins, New Zealand - **Tusar Ranjan Sahoo, GNS Science Te Pū Ao**	Classification and features of the 2004 Auckland meteorite - **Kevin Faure, GNS Science Te Pū Ao**
15.00 - 15.15	Coseismic Slip Profiles - **Kiran Kumar Thingbaijam, GNS Science Te Pū Ao**	New Zealand's offshore sedimentary basins - **Kyle Bland, GNS Science Te Pū Ao**	Strontium Isotope (87/86Sr) Stratigraphy: Applications in the New Zealand Geological Record - **Ben Hines, Victoria University of Wellington Te Herenga Waka**
15.15 - 15.30	Earthquake forecasting in New Zealand: What have we learned from the past to implement in the future - **Annemarie Christophersen, GNS Science Te Pū Ao**	Organic carbon stocks and vulnerability in marine sediments in New Zealand - **Geoffroy Lamarche, Office of the Parliamentary Commissioner for the Environment**	Sediment source fingerprinting in New Zealand fluvial environments: an overview of recent applications **- Simon Vale, Manaaki Whenua - Landcare Research**
15.30 - 16.30	*Maclaurin Lecture Theatre 103* **Closing Ceremony** **Student Prize-giving** **Royal Society NZJGG presentation** **2024 Conference**		

	FRIDAY 17 November 2023
	Field Trips
07.00-19.00	Sedimentation on an Evolving Margin **Leaders: Ben Hines, Cliff Atkins, James Crampton, Victoria University of Wellington Te Herenga Waka**
08.00 - 17.00	Tsunamis and Related Geology around Wellington Harbour **Leaders: Jean Roger & Russ van Dissen, GNS Science Te Pū Ao**
09:00 - 10:00 11:00 - 12:00 13:00 - 14:00 15:00 - 16:00	Wellington Te Whanganui a Tara Harbour Seafloor Geology **Leaders: Scott Nodder & Susi Woelz, NIWA Taihoro Nukurangi**
08.30 - 17.00	New Findings on Active Tectonics in the Central and Southern Wairarapa **Leaders: Nicola Litchfield, Genevieve Coffey, GNS Science Te Pū Ao; Julian Thomson, Out There Learning**