Geoscience Society of New Zealand
Annual Conference
13 - 16 November, Victoria University, Wellington

GEOSCIENCES '23

Where plates and people meet

Conference Handbook

Geoscience Society of New Zealand

For more information visit the conference website:

https://confer.eventsair.com/gsnz2023/

Kia ora koutou

Welcome to Te Whanganui-a-Tara Wellington and the Geoscience Society of New Zealand's annual conference. We acknowledge the mana whenua and Te Herenga Waka Victoria University of Wellington for their hosting of the 2023 conference.

We have an exciting programme of talks and poster presentations as well as workshops, fieldtrips and social events, including the traditional Icebreaker, an informal Brewtown excursion to sample the region's top craft beers, a student and Eary Career Researcher social get-together and the formal dinner at Pipitea Marae. We also have a range of public outreach events, devised and run by Jenny Stein, as well as an exciting Public Lecture by VUW Emeritus Professor Mike Hannah.

All in all, it will be a great opportunity to meet and network with geoscientists from around the motu and to hear exciting updates of the research being undertaken in Aotearoa New Zealand and further afield.

Special acknowledgements to the Local Organising Committee and the guidance and drive of our conference organisers, Ali Howard and Luxor McGowen from Conferences & Events.

Finally, we hope you make the most of all the opportunities that Wellington and Geosciences'23 offers over this coming week.

Scott Nodder, *Conference Convenor*

Kat Holt, *President, Geoscience Society of New Zealand*

GSNZ 2023 Conference Committee

Scott Nodder, *NIWA (Chair)*

Linda Balfoort, *Victoria University of Wellington*

Carolyn Boulton, *Victoria University of Wellington*

Calum Chamberlain, *Victoria University of Wellington*

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Kat Holt, *Massey University*

Yaasameen Shalla, *GNS Science Te Pū Ao*

Jenny Stein, *GNS Science Te Pū Ao*

Susi Woelz, *NIWA*

Conference Organisers

conferences & events

Ph: +64 (0)4 384 1511
www.confer.co.nz

Plenary Speakers

Dr Philip Barnes

New insights into Hikurangi subduction inputs, accretionary wedge, and plate interface host rocks spanning along-strike changes in fault slip behaviour, New Zealand.

Philip holds a PhD in Geology from the University of Canterbury and is a Principal Scientist in Marine Geology at the National Institute of Water & Atmospheric Research (NIWA). With >35 years of experience in the field of active continental margins, his work has focussed mainly on submarine neotectonics, sedimentary systems, and geohazards. Phil is a former Technical Advisor (1996-2006) and New Zealand Delegate (2006-2008) to the United Nations Commission on the limits of the Legal Continental Shelf under UNCLOS Article 76. He received NIWA's Research Excellence Award in 2014, was elected a Fellow of the Royal Society of New Zealand Te Apārangi (FRSNZ) in 2019, and is the 2023 recipient of the Francis P. Shepard Medal for excellence in marine geology awarded by SEPM The Society for Sedimentary Geology.

Dr Lauren Vargo

Melting glaciers and climate change: What can we do?

For as long as I can remember, I've loved being outdoors and exploring the natural world. But I didn't feel like I was good at science, I didn't really care about science, and I didn't know that science could be applied to the Earth and outdoors until I took a Geology class in university. Since then, I've loved learning about and studying the Earth, especially the icy parts. I now use field observations, remote sensing data, climate data, GCM (global computer model simulation) output, and numerical modelling to investigate questions in glaciology and climate science. My current research interests include monitoring how glaciers in Aotearoa New Zealand are changing, and investigating the impacts of climate change on snow and glaciers in New Zealand and globally.

Professor Jonathon Procter

He haerenga mōrearea - A hazardous journey; Exploring Mātauranga Māori and Volcanic Hazards

Jonathan Procter is a Professor of Natural Hazards at Massey University. He has contributed to developing research that focuses on volcanic hazard simulation and working with communities to increase resilience to natural and environmental hazards. Jonathan manages the Volcanic Risk Solutions (VRS) research group and has contributed nationally to developing new research directions in volcanology. He currently leads the NZ National Science Challenge; Resilience to Natures Challenges, volcano research program and is active in finding new solutions to mitigate the hazards posed by our volcanoes. Being one of only a handful of Māori professorial scientists, Jonathan feels he has a duty to contribute to Māori development. His greatest contribution in this respect has been the development of a new area of research on mātauranga Māori, volcanic hazards and building resilience in Māori communities.

Cultural Guidance for Geosciences 2023

Aotearoa New Zealand is a land of many different people and cultures. Out of respect for those who came before us, the GSNZ is making an effort to conduct our conference in a culturally inclusive and respectful manner. We request that all conference participants conduct themselves in culturally sensitive ways throughout the conference, and provide the following guidance in accordance with advice from Te Herenga Waka - Victoria University of Wellington as our host organisation, and from Te Atiawa ki Te Whanganui a Tara mana whenua (Māori territorial rights holders over the region in which we are gathering). Please take a moment to read this guidance as cultural etiquette differs from tribe to tribe, and marae to marae, and the protocols and procedures below may be different to those you may have experienced at other events and places.

Welcoming Ceremony

Most people attending the Geosciences conference will come as manuhiri (guests) to the university campus, and to the Whanganui a Tara Wellington region. As our conference may be attracting people who have never visited here before, cultural protocol is to hold a pohiri (formal Māori ceremony of welcome) on the host marae, Te Herenga Waka. However, due to ongoing work to seismically strengthen the marae buildings, holding a pohiri is not currently possible. We have therefore received permission from the Te Herenga Waka - Victoria University of Wellington Deputy Vice Chancellor of Maori, Tū Temara, to welcome guests with a mihi whakatau (less formal welcoming ceremony) to be held inside the main conference auditorium.

The mihi whakatau will be an opportunity for all conference participants to come together in good spirit and settle in for the sessions ahead.

We ask all conference attendees to conduct themselves respectfully throughout the proceedings by:

- arriving at the venue at least 10 mins before the Opening Ceremony is due to start so that everyone can be seated 2-3 minutes before the ceremony begins.
- leaving the front two rows of seating free for dignitarites, conference organisers and representatives from the GSNZ National Committee. You are welcome to sit anywhere from the third row back.
- muting all mobile devices for the duration of the ceremony.
- not talking while the ceremony is being conducted.

What to expect

Te Atiawa ki Te Whanganui a Tara hold mana whenua (Māori territorial rights) over the land on which our conference will take place and will be officating the mihi whakatau with authorisation from Te Herenga Waka - Victoria University of Wellington Deputy Vice Chancellor of Maori, Tū Temara. Please find your own way to the auditorium and be seated and ready 2 -3 minutes before the mihi whakatau is due to start. Mute all mobile devices.

The ceremony will be conducted by Matua Kelvin Tapuke. It will last approximately 10 – 15 minutes and be conducted entirely in Te Reo Maori. Please use this as an opportunity to immerse yourself in the traditional language and culture of Aotearoa New Zealand. Some explanation in English will be offered at the end, following a waiata (song) and karakia (spiritual recitation).

Closing Ceremony

The closing ceremony will end with an inoi whakamutunga (final prayer) acknowledging the learnings from our conference and bidding everyone travel safely home. Following this recitation, everyone is encouraged to join in the waiata: "Te Aroha". We encourage all conference attendees to sing along with this waitata if they can, as this shows respect and support for the speaker representing you. You can listen to and learn Te Aroha, and find a translation into English, on this YouTube video.

Tikanga Tips

Tikanga loosely translates to "the way of doing things" in te reo Māori. In our ongoing efforts to make the GSNZ annual conference a more welcoming and inclusive space, we invite all conference participants and delegates to be 'good guests' and show respect for our hosts by minding the following advice:

Heads

Avoid touching another person's head, unless invited. Māori people regard the head as very tapu (sacred).

Hats

Avoid putting hats on food tables. Why? This is linked to the idea that heads are tapu so anything that relates to heads, like pillows or hats, should also be treated carefully. (see 'Food' below).

Food

Avoid passing food over anybody's head. Why? There are many Māori rituals and practices relating to food. In a teaching and learning context, it is common for Māori to share food as a means of welcoming people, celebrating success, or building rapport. However, another important function of food is to remove tapu so it needs to be handled carefully around things that are considered to be tapu.

Tables and bags

Avoid sitting on tables, particularly tables with food on them or those likely to have food on them at any point. Avoid putting bags on tables. Instead place them on the floor or a chair. Why? Putting your bottom or carry bag on the table is perceived to be unhygienic. Not sitting on tables is also linked to Māori beliefs about the tapu nature of bodily wastes and the need to keep them separate from food.

Speaking

Avoid entering and crossing a room while someone in authority is addressing an audience. To avoid offence, either wait quietly by the door until there is a break in the dialogue or, when that is not appropriate, enter as discretely as possible. Try not to walk directly in front of the speaker or, if you can not avoid it, crouch down as you pass as a sign of respect. Why? Traditionally Māori society is very hierarchical and crossing in front of a more 'senior' person is considered rude.

Stepping

Avoid stepping over people, even in crowded teaching spaces when you are over people trying to find a suitable seat. Ask the person to draw their legs in first, or find another route. Why? From a Māori cultural perspective, it is considered offensive for a woman to step over a man.

Cushions

Avoid sitting directly on pillows or cushions. They can however be used to prop up your back.

Tikanga Tips are courtesy of our venue hosts, Te Herenga Waka - Victoria University of Wellington

Sessions and Themes

Thank you to the session convenors for their time and involvement in helping to prepare the programme.

Advances in Active Faulting and Earthquake Hazards

This session explores recent advances in our understanding of active faulting and earthquake physics with an emphasis on novel research and techniques that improve our understanding of processes that generate earthquake hazards.

Session Convenors: Carolyn Boulton, Te Herenga Waka Victoria University of Wellington; Genevieve Coffey, GNS Science Te Pū Ao; Carmen Juarez Garfias, Te Herenga Waka Victoria University of Wellington

Community Resilience in the face of tsunami: Insights from social science

Tsunamis present considerable risks to coastal communities in Aotearoa New Zealand. In addition to the advances that continue to be made in understanding the physical and geological aspects of tsunami hazards and risk, integrating social science research is vital to enhancing resilience and community preparedness. This conference session focuses on the significance of social science research in understanding and addressing the social, cultural, and psychological dimensions of tsunamis.

This session brings together researchers, practitioners, and policymakers interested in exploring the multidimensional impacts of tsunamis. Presentations cover topics such as community engagement; risk perception; forecasts, warnings and risk communication; social vulnerability; preparedness and resilience; cultural perspectives; psychosocial impacts; and policy and governance . By fostering interdisciplinary dialogue, this session aims to advance our understanding of the social dynamics associated with tsunamis and promote collaboration between geoscientists, social scientists, emergency management professionals, and community stakeholders.

Session Convenors: Sara Harrison, GNS Science Te Pū Ao; Danielle Charlton, GNS Science Te Pū Ao; Lauren Vinnell, Joint Centre for Disaster Research Massey University,

Early Earthquake Warning and Rapid Response Science

Earthquake Early Warning Systems (EEWS) are an important part of any Earthquake Resilience toolkit, due to their potential to save lives and reduce injuries. Similarly, rapid earthquake science information helps emergency responders best direct resources to people in need, supporting the response and recovery. Despite global advances in operational EEW, New Zealand does not yet operate a national EEWS. However, foundational research has explored its benefits and potential capability.

This session will explore key aspects of EEWS and rapid earthquake science for New Zealand: seismology (source characterization, ground

shaking and earthquake forecasting), social science, communication engineering and earthquake engineering.

Session 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; Dr Quincy Ma, University of Auckland

Geochemical tools and applications to reconstruct environmental and climate change, human impact and Earth history in New Zealand, Australia and Antarctica

This session highlights innovative research of the New Zealand and overseas geochemistry community about environmental and climate change. It discusses technological developments and applications of new indicators on topics such as reconstructing productivity, nutrient cycling and water quality in aquatic environments, and metal tracers and non-traditional isotope systems to quantify processes on land and at sea. Selected topics discuss pollution and human impact or new research into global geochemical cycles across time that link the earth, ocean and atmosphere. Multiproxy reconstructions of life evolution and bioheritage, high-resolution paleorecords and dating of environmental archives are also presented.

Session Convenors: Dr Sebastian Naeher, GNS Science Te Pū Ao; A/Prof James Scott, University of Otago; Dr Dan Sinclair, Te Herenga Waka Victoria University of Wellington

Geoscience communication for influence, education and impact

Whether you engage with the media, the general public, students or stakeholders, or anyone in between, you're communicating geoscience! As such, you are encouraged to attend and contribute to this session focused on practical tips and tools to help us all become better geoscience communicators. The focus of this session will be on what you learned from your initiative(s); what worked well, what didn't, and what would you do differently next time? Share your experiences to help others more effectively, and inclusively, get their geoscience out to those who want and need it.

Session Convenors: Jenny Stein, GSNZ; Ben Kennedy, University of Canterbury

Geoscience for future energy: Navigating the path to a low-emissions future

In the pursuit of a sustainable future, the energy industry faces an unprecedented challenge: meeting the world's growing energy demands while mitigating environmental impact and reducing emissions. This session brings together diverse topics across renewable and hydrocarbon energy sectors, with a particular emphasis on emerging technologies (offshore wind, low temperature geothermal, carbon sequestration etc). This session will include discussion of new discoveries, regional case studies, the application of novel technology, and much more. We also welcome submissions on understanding the critical intersection of geoscience and energy policy, where geoscientific data and assessments inform sustainable energy decision-making.

Session Convenors: Jess Hillman, GNS Science Te Pū Ao; Andrew La Croix, University of Waikato

Geoscience in the Built Environment

Many components of the built environment of Aotearoa New Zealand depend for their safe functioning and resilience on geoscientific information. This session aims to gain insights to the nature and breadth of geoscientific enquiry, geotechnical or engineering geological applications and achievements in relation any aspect of the built environment, including buildings, residential or industrial developments, and any type of infrastructure. Submissions are invited on topics ranging from fundamental geological knowledge through the many tools of site investigation and analysis,

Sessions and Themes (continued)

to geotechnical applications and engineering design.

Session Convenors: David Barrell, GNS Science Te Pū Ao; Andrea Wolter, GNS Science Te Pū Ao; Katie Jones, GNS Science Te Pū Ao

High-energy coastal hazard events in Aotearoa/New Zealand: records, processes and preparedness

This session will represent a great opportunity to discuss the different high-energy hazard coastal events having occurred in New Zealand, from the most recent ones to very ancient signatures preserved within sedimentological records. It aims to gather people from different areas of research with the objective to help developing future interdisciplinary projects to better understand the phenomena and protect the population from their impact. Expected presentations will deal with numerical modelling, mapping, sedimentological/ geological investigations, database construction and real-time monitoring. This session is linked to the session "Community Resilience in the face of tsunami: Insights from social science".

Session Convenors: Jean Roger, GNS Science Te Pū Ao; Catherine Chagué, UNSW Sydney; Emily Lane, NIWA; Jonathan Hanson, GEONET, GNS Science Te Pū Ao

On the precipice: the future of Geoscience education in Aotearoa New Zealand

This session aims to create a forum for open discussion about what we as a geoscience community can do to improve the uptake of geoscience education at all levels in Aotearoa New Zealand. We invite oral and poster presentations which relate to all aspects of geoscience education, including new tools and techniques, removing barriers to access, tales of success (and failure), and so on. The session will also include a panel discussion & open forum where we hope to collectively devise a national strategy for promoting geoscience as an exciting and enticing study option.

Session Convenors: Kat Holt, President of the Geoscience Society of NZ; Jenny Stein, Secretary of the Geoscience Society of NZ, GEOID Convenor; and the wider Geoscience Society of NZ National Committee

Our changing landscapes; surface process dynamics, evolution, and impacts

If you research any aspect of landscape dynamics or landscape evolution, or the impacts of Earth surface processes, then this session will be a great place to present your work. The session aims to showcase measurements and observations of the changing surface of Earth or beyond, over contemporary to geological timescales, and contribute new understanding to what drives these changes, and the environmental and hazard impacts that they impart.

Session Convenors: Sam McColl, GNS Science Te Pū Ao; Katie Jones, GNS Science Te Pū Ao; Kevin Norton, Te Herenga Waka Victoria University of Wellington; Anya Leenman, Te Herenga Waka Victoria University of Wellington

The active volcanoes of Aotearoa – past, present, and future

Aotearoa hosts a myriad of active volcanoes, each with a distinct eruptive behaviour, patterns of unrest, and level of understanding. Improving knowledge of these volcanoes is crucial to enhancing the resilience of local communities, and the country as a whole, to volcanic risk. This session accepts contributions from the full range of disciplines that improve our scientific understanding of magmatic and volcanic processes. This includes, but is not limited to,

geophysics, igneous petrology, geochemistry, remote sensing, physical volcanology, and future scenario modelling.

Session Convenors: Finnigan Illsley-Kemp, Te Herenga Waka Victoria University of Wellington; Simon J. Barker, Te Herenga Waka Victoria University of Wellington; Ery Hughes, GNS Science Te Pū Ao; Eleanor Mestel, Te Herenga Waka Victoria University of Wellington; Shane Rooyakkers, GNS Science Te Pū Ao.

To honour a Time Lord: geological time, Earth history and paleontology in memory of Alan Beu

Alan Beu made major contributions to New Zealand Cenozoic paleontology and development of the New Zealand geological time scale. In honour of his contributions, this session will explore biological, environmental, and Earth system histories, as documented in the wonderful fossil records preserved on Zealandia and elsewhere. All time scales will be considered, from the ancient extremes of the Paleozoic or older, to the immediacy of the Anthropocene.

Session Convenors: James Crampton, Te Herenga Waka Victoria University of Wellington; Mike Hannah, Te Herenga Waka Victoria University of Wellington

Towards culturally inclusive and responsive geoscience

This session will present geoscience research that is aligned with or follows mātauranga Māori best-practice, with case studies and approaches to ensure culturally responsive and inclusive protocols.

Understanding climate and environmental change

This session explores climate and environmental change with data and models. It provides context for changes we are observing and anticipating with examples from the geological past.

Session Convenors: Peter Almond, Lincoln University; David Barrell, GNS Science Te Pū Ao; Shaun Eaves, Te Herenga Waka Victoria University of Wellington; Kat Holt, Massey University

Underwater Geosciences

This interdisciplinary session aims to examine geological processes that occur underwater, from our inland lakes to the coast and the deep ocean. This session will bring together scientists from a range of disciplines to interact and learn from each other and facilitate cross-disciplinary collaboration within this dynamic field of research. We encourage contributions to this session that are comprehensive and interdisciplinary within the broad field of geology, from coastal areas such as beaches and estuaries, lakes and rivers, shallower shelves and slope down to the deep ocean floor.

Session Convenors: Sally Watson, NIWA/IMS UoA; Jess Hillman, GNS Science Te Pū Ao; Marta Ribó, AUT; Suzanne Bull, GNS Science Te Pū Ao

Pre-Conference Workshops
MONDAY 13 NOVEMBER

Building a Framework for Earthquake Catalogues in Aotearoa New Zealand

Join us at the "Framework Development for Earthquake Catalogues in New Zealand" workshop! This event brings together earthquake experts, researchers, and data scientists to collaborate on developing a comprehensive framework for earthquake catalogues specific to New Zealand. By establishing a unified framework, we can enhance the FAIRness earthquake catalogues for research. Together, we'll work towards developing a comprehensive framework and recommendations for earthquake catalogues in New Zealand. We will also explore the evolution of earthquake catalogues from their current state to future advancements, particularly through AI/ML innovations. Your participation and perspective will play a crucial role in shaping the future of earthquake research.

Leaders: Kenny Graham, Jonathan Hanson (GNS Science Te Pū Ao) and Calum Chamberlain (VUW).
Time: 9am - 12pm
Location: Alan McDiarmid 104 room, Kelburn Campus
Additional Information: Lunch is provided.

Featherston Core Store – Core Workshop

The Featherston Core store is an amazing but poorly recognised geological resource. This workshop aims to introduce participants to what the store has to offer, and provides the opportunity to view and discuss some core from a range of depositional environments.

Leaders: Mark Lawrence (GNS Science Te Pū Ao), Miles Dunkin (MBIE), Paul Viskovic (GNS Science Te Pū Ao).
Time: 8am - 5:30pm
Location: Meet at Wellington Railway Station Depart Wellington Station 08:00 hours to be at core store at 09:00 hours.
Finish: Depart core store at 16:30 hours to return to Wellington Station by 17:30 hours.

Additional Information:

- Lunch is NOT included. Please BYO your own packed lunch or you are able to buy sandwiches from TRAX café, Platform 1, at Wellington Station.
- Essential item: Sturdy footwear suitable for an industrial facility e.g. steel toecaps if available, otherwise just fully covered shoes (NO open-toed sandals, jandals etc).
- Something to take notes on at the time (laptop, good old-fashioned pen/pencils and a notebook, whatever). Workshop materials will be made available to download prior to and after the workshop.
- •High viz (orange) vest if they have one, otherwise we will supply some.

GeoNet and Geohazard Monitoring in Aotearoa: What We Do, How We Do It, and a Peek Behind the Scenes

Want to learn how the GeoNet programme at GNS Science monitors geohazards in Aotearoa? Interested in what type of jobs support monitoring in Aotearoa and how to access all the awesome data GeoNet collects? Come along to GNS Science and see the National Geohazards Monitoring Centre / Te Puna Mōrearea i te Rū where we monitor Aotearoa 24/7 for geohazards!

Leaders: Ery Hughes, Libby Abbott, Rachael Pritchard-Thorsen, GNS Science Te Pū Ao.
Time: 9am - 4pm
Location: Avalon Campus of GNS Science Te Pū Ao (1 Fairway Drive, Avalon 5010) in Lower Hutt, which is a ~25 min walk from Naenae train station.
Additional Information: The workshop will be hybrid (although some aspects will not be available for virtual attendees: lunch and NGMC tour)

Understanding Public Preparedness to Facilitate Realistic Natural Hazard Drills in Aotearoa New Zealand [WORKSHOP CANCELLED]

This workshop is designed to bring together hazard scientists, science communicators, policymakers and community stakeholders to work together to discuss, plan, and design public preparedness resources and hazard response scenarios which could be subsequently tested in schools, homes, and workplaces. The workshop will offer a forum to brainstorm new, innovative materials with a multihazard focus to raise the awareness and preparedness amongst people in Aotearoa New Zealand and empower the public to feel adequately trained and prepared to respond confidently to naturally hazardous events.

Leaders: Aisling O'Kane (GNS Science Te Pū Ao and University of Canterbury) with stakeholder representatives from EQC, WREMO, NEMA and NIWA.
Time: 10am - 12:30pm

Volcano Risk Communication in Aotearoa New Zealand

This workshop will commence with a series of brief presentations that highlight recent research or examples of practice for volcano risk communication. Consideration will be given to how this work has, or can, inform readiness, reduction, response and recovery. Second, we will discuss gaps in our understanding of volcano risk communication and consider the needs for future research and practice. We welcome a range of participants to our workshop including researchers undertaking risk communication research, researchers who have experience of engaging and communicating, practitioners and decision-makers, and community members, including Iwi, hapū, and Māori stakeholders.

Leader: Julia Becker, Joint Centre for Disaster Research Massey University
Time: 1 - 4pm
Location: Alan McDiarmid 104 room, Kelburn Campus
Additional Information: Lunch is NOT included. Please BYO your own lunch or you are able to buy lunch from the cafes at Victoria University.

Pre-Conference Workshops

MONDAY 13 NOVEMBER (continued)

"Wanna See Something Cool?" Geoscience Communication for Engaging Education and Outreach

Communicating geoscience well has numerous benefits for everyone involved. In this workshop we will explore, critique and develop practical skills for successfully communicating geoscience topics and concepts in outreach and education settings.

After 'Developing your key messages' with the Science Media Centre, we will spend the rest of the day exploring some of the following topics (depending on the group's interests):

- Knowing your audience; key considerations for successful geoscience communication
- Compelling telling; how to craft engaging stories and narratives
- Presentations skills; PowerPoints and public speaking
- Attracting the eye; a crash-course in graphic design
- Hands On; interactive geoscience activities and games
- Mighty multimedia; tips for making your own simple videos (and animations)
- Contemporary communication channels; spotlight on social media
- Pitch perfect; tips for pitching stories to the media
- Other? (possible upon timely request)
- Workshop participants are encouraged to prepare a 5–10-minute presentation about an education or outreach activity they have been involved in, to act as starting points for the day's discussions.

Leader: Jenny Stein, Geoscience Society of New Zealand
Time: 9:30am - 4pm
Location: Cotton 216 room, Kelburn Campus
Additional Information: Lunch is NOT included. Please BYO your own lunch or you are able to buy lunch from the cafes at Victoria University.

Lunchtime Meetings
TUESDAY 14 NOVEMBER 12.30-13.15

Special Interest Groups Lunch Meetings Tuesday 14 & Wednesday 15 November

Lunch breaks are 1.5 hours in the programme. The first 30 minutes delegates will have the chance to have lunch before moving to 45-minute lunch time meetings.

Geochemistry Special Interest Group (GSIG) Lunchtime Meeting

Led by: Sebastian Naeher
Room: Cotton 216

We aim to have our yearly GSIG lunchtime meeting also at this year's GSNZ Annual Conference. It is a great opportunity for interested group members to discuss any matters related to geochemistry in general or any of our group activities. We always discuss new initiatives and ideas for future activities and what we can do better going forward. We will share news and updates of the group, try to connect the various scientists at various career stages, and overall provide a good platform for networking and exchange of the NZ geochemistry community.

Sedimentology Special Interest Group (SSIG)

Led by: Mark Lawrence
Room: Cotton 118

The annual meeting of the Sedimentology Special Interest Group (SSIG) will continue with planning of the IAS ISC 2026 and provide a forum for the planning and discussion local SSIG activities.

Strong Roots: The Science NEMA Needs to Grow 'Te Rākau Whakamarumaru'

Led by: Ashleigh Fromont
Room: Alan McDiarmid 104

Join NEMA staff for a short presentation and Q&A session about the key challenges facing the emergency management sector now and into the future, and how research can enable solutions for resilience.

Saving Earth Science

Joint university discussion group facilitated by the GSNZ

Room: Cotton Lecture Theatre 122

Representatives from universities around the country have been meeting online to discuss ways we and the GSNZ might collaborate to address the falling numbers of students enrolling in undergraduate earth science courses in Aotearoa New Zealand. Geosciences 2023 is providing our first opportunity to meet in person, during which we will review initiatives and decide where to focus our efforts in 2024. Anyone interested in helping boost the numbers of students taking Earth science at the tertiary undergraduate level is welcome to come!

Lunchtime Meetings

WEDNESDAY 15 NOVEMBER 13.00-13.45

GeoNet Programme Update

Led by: Catherine Ross, Jonathan Hanson, Elizabeth Abbott, Elisabetta D'Anastasio, and the GeoNet Team
Room: Cotton 216

Come kōrero with GeoNet! Learn about GeoNet's strategic vision and highlights from the ongoing 5-year planning cycle and join us to talk about ways we can work together. How do we better align research and GeoNet operations? We want to share examples of the spectrum of collaborations from the past several years, kōrero about ways we can best work together, and hear from you about what's on your horizon in the coming years.

Paleontology Special Interest Group

Led by: James Crampton, Victoria University of Wellington Te Herenga Waka
Room: Cotton 118

Come kōrero with GeoNet! Learn about GeoNet's strategic vision and highlights from the ongoing 5-year planning cycle and join us to talk about ways we can work together. How do we better align research and GeoNet operations? We want to share examples of the spectrum of collaborations from the past several years, kōrero about ways we can best work together, and hear from you about what's on your horizon in the coming years.

The Road to Publication: Advice from Editors and a Journal Publisher

Led by: Dr Catherine Chagué (Editor-in-Chief, Sedimentary Geology) & Fei He, (Publishing Manager, New Zealand Journal of Geology and Geophysics)
Room: Alan McDiarmid 104

This lunchtime event is aimed at new authors who are seeking guidance on the publishing process, especially those who are writing their first manuscript derived from their thesis or have limited experience of publishing in a peer-reviewed journal. The workshop will provide insights from both a journal editor and a Journal Publisher. The format of the event will be an informal Q&A session, allowing ample time for questions and discussion. Attendees will have the opportunity to engage in open dialogue, seek clarification, and gather valuable advice related to the publishing journey.

Pre-Conference Workshops

WEDNESDAY 15 NOVEMBER 13.00-13.45

Geoscience for Future Energy SIG

Led by: Jess Hillman
Room: Maclaurin Lecture Theatre 102

The Geoscience for Future Energy lunchtime meeting is an opportunity for interested group members to discuss any matters related to the special interest group or any of our group activities. We welcome new initiatives and ideas for future activities and what we can do better going forward. We will share any news and updates from the group, discuss relevant issues, and try to connect members across different career stages, and overall provide a platform for networking and exchange of ideas across the research community.

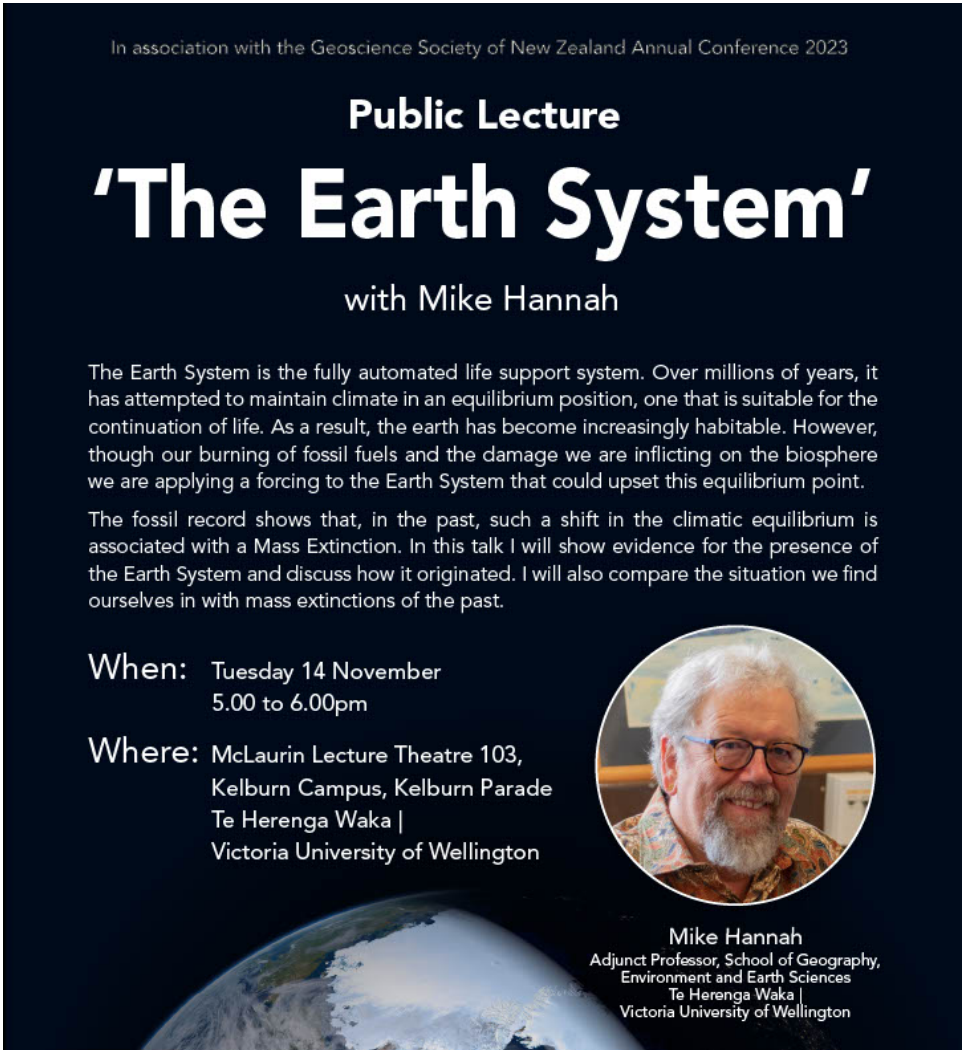
A Crowd of Communicators: GeOID – SCANZ Combined Networking Lunch

Led by: Jenny Stein
Room: Cotton 127

Taking advantage of an overlap in conference dates and in lieu of a more formal GeOID SIG meeting that will be held online at another time, all GeoEducation, Outreach and International Development (GeOID) SIG members and other interested conference goers are invited to bring their lunch along to a combined social networking event with members of the Science Communicators' Association of New Zealand (SCANZ). The topic of conversation: How can we combine forces to help make geoscience more engaging and accessible to all New Zealanders?

Public Lecture

Mike Hannah is an Adjunct Professor in the School of Geography, Environment and Earth Sciences at Te Herenga Waka Victoria University of Wellington He completed his PhD at Adelaide University, specialising in palaeontology and biostratigraphy. This was followed by a stint in industry after which he took up the position at Victoria University. Throughout his career he has been fascinated by the story of the evolution of early life on Earth and the terrifying consequences of the mass extinctions that are evident in the fossil record. He has published a book *(Extinctions – living and dying in the margin of error – Cambridge university Press)* which focuses on the Earth System, mass extinctions and assesses the likelihood that we are in the early stages of such an event.



Social Events

If you have registered for social function tickets these are shown with an icon on your name badge.

Drink tickets are attached to your name badge, and you will need to show these for your complimentary drink. An Eftpos (cashless) bar will also be available. If you are no longer able to attend the functions, please advise the registration desk in case there is a waitlist.

Icebreaker Function

for pre-registered attendees

Monday 13th November 2023
5.00pm - 7.00pm
McLaurin Foyer, Kelburn Campus, Victoria University of Wellington

ECR Get-together

for pre-registered attendees

Monday 13th November 2023
7.30pm
The Ballroom, 68 Courtenay Place, Wellington

This year's GSNZ Early Career Researcher Mixer will be held at The Ballroom, upstairs on Courtney Place, after the conference Icebreaker. The event aims to be an opportunity for people to network and socialise, from undergraduate to post-doc, over friendly pool, darts, a drink at the bar or even pizza. The entry fee includes use of pool tables, a drink and pizza on entry.

Brewtown Bash

for pre-registered attendees

Tuesday 14th November 2023
7.00pm
Brewtown, Upper Hutt

Coaches leave at 6.30pm from the bus stop near Victoria University Gate 3, Kelburn Parade, Kelburn Campus and at 6.40pm from Platform 10, Wellington Railway Station. Return coaches at 9.30, 10.00 and last bus at 10.30pm.

Join us for a fun and laid-back evening under Brewtown's large, covered greenspace. Unwind and lounge in the comfort of retro-inspired furniture. Engage in friendly competition with classic lawn games such as Giant Jenga and Cornhole.

Taste some of the best craft beers direct from the breweries and enjoy a yummy Boneface 'low and slow' BBQ dinner. For the adventurous, plan to arrive early and book one of the activities at the Daytona Park next door: ice skating, bowling, go-karting, paintball.

Gala Dinner

for pre-registered attendees

Wednesday 15th November 2023
7.00pm
Pipitea Marae, Thorndon Quay, Wellington

Nau Mai, Haere Mai. Pipitea Marae is a traditional urban Marae in the heart of Wellington and welcomes you for the 2023 GSNZ Conference Gala Dinner. Don't miss out on this opportunity to unwind, network, and enjoy some dinner and drinks in the company of your fellow colleagues. No allocated seating.

Gala Dinner Theme: Wellington Paranormal

The 'Wellington Paranormal' theme will combine elements of the supernatural, humour, and elegance to create a memorable evening. Dress up is encouraged! Join Us for a Spook-tacular Evening!

Post-Conference Field Trips
FRIDAY 17TH NOVEMBER

Please liaise with your respective field trip leaders before departure to confirm arrangements.

Tsunamis and Related Geology around Wellington Harbour

What is more impressive than having a capital city like Wellington sitting above a subduction zone, cut by several major seismic faults, and surrounded by the sea? This field trip, bringing people in well-known sites, will provide the opportunity to the participants to discover the history of earthquakes and tsunamis in Wellington, and also how these natural hazards are monitored (showing real instruments in-situ), for a better preparedness and protection of the population.

Leaders: Jean Roger & Russ van Dissen, GNS Science Te Pū Ao
Level of Fitness Required: Maximum walking distance is 1.6 km (return) on flat sandy/gravel track along the shore
Pick up: From Wellington Railway Station at 8am
Drop off: At Wellington Railway Station at 5pm - drop off at the airport can be arranged at 4:30pm (please contact the leader to arrange this).
Additional Information: Lunch is NOT included. Please BYO your own packed lunch or you are able to buy sandwiches from TRAX café, Platform 1, at Wellington Station.

Bring rain jacket, warm clothes (it could be windy), shoes for walking on a sandy/gravel track, water bottle for the day, sunscreen, camera, snacks, lunch (we may have time to stop for coffee/tea at some points).

Te Whanganui a Tara Wellington Harbour Seafloor Geology

The fieldtrip will involve several ~1-hour trips out on NIWA's research vessel RV Ikatere to look at submarine geological features in Te Whanganui a Tara Wellington Harbour. The vessel will operate NIWA's multibeam and sub-bottom profiling systems to provide information on the bathymetric and subsurface geology in the harbour, including images of active faults (Wellington and Aotea faults), seafloor freshwater seepage off Petone/Seaview and active current scour in the harbour entrance. The fieldtrip will showcase new shallow water geophysical techniques for characterising marine geological processes.

Leaders: Scott Nodder & Susi Woelz, NIWA
Timings: 09:00-10:00, 11:00-12:00 and 13:00-14:00. Followed by an optional ~ 1 hour tour at the NIWA Greta Point site for tours of the High-Performance Computing Facility and the NIWA Invertebrate Collection.
Meeting Location: Evans Bay Marina Wharf (517 Evans Bay Parade, Hataitai, Wellington 6021)
Additional Information: Snacks and drinks available on board the vessel. Lunch is NOT included Experience of small boats (10-12

Post-Conference Field Trips

FRIDAY 17TH NOVEMBER (continued)

m-length) and being on the water would be beneficial. Walk from Evans Bay marina wharf to the NIWA site is an easy 20-minute walk for 1.5 km northwards along Evans Bay Parade. Bring Water bottle, rain jacket, warm clothing, closed shoes, sunhat and glasses, personal sunscreen. NIWA will provide safety equipment (lifejackets, high visibility vests).

New Findings on Active Tectonics in the Central and Southern Wairarapa

The Wairarapa is one of the most complex active tectonics areas of Aotearoa and recent work has identified several previously unrecognised active faults and re-examined and dated tectonically uplifted marine terraces. After travelling over the impressive Remutaka Range we'll first visit some of the newly identified active faults near Carterton and discuss their activity and relationship to other nearby faults as well as implications for seismic hazard. Then we'll travel to the spectacular south coast and examine Pleistocene and Holocene marine terraces between Lake Ferry and Cape Palliser, discussing the likely source of uplift and implications for vertical land movements.

Leaders: Nicola Litchfield, Genevieve Coffey (GNS Science Te Pū Ao), Julian Thomson (Out There Learning).
Level of Fitness Required: Gentle, flat, walking for short distances, but time permitting, you may want to climb the 250 steps to the Cape Palliser Lighthouse!

Pick up: From Wellington Railway Station at 8:30am
Drop off: At Wellington Railway Station at 5pmAdditional Information: Lunch is NOT included.
Additional Information: Please BYO lunch or there are cafés near the Wellington Railway Station to buy some beforehand. The Wairarapa can have a range of weather conditions including strong wind. Please bring water bottle, warm clothes, rain jacket, sunscreen, sun hat.

Sedimentation on an Evolving Margin

This excursion explores the close linkage between basin tectonism and sedimentation in southeast Wairarapa. We will look at indicators of Cretaceous tectonism on the Gondwana margin, passive margin successions in the post-rift phase, the Cretaceous-Paleogene boundary, before delving into early stratigraphic indicators of Hikurangi margin subduction initiation and several instances of Neogene syn-tectonic sedimentation. Collectively, these sites tell the story of the evolution of the East Coast Basin, from subduction on the eastern Gondwana margin, to passive margin sedimentation, and the evolution of the modern Hikurangi convergent margin, all while exploring a diverse array of sedimentological features and stratigraphic events.

Leaders: Ben Hines, Cliff Atkins (VUW)
Level of Fitness Required: A moderate level of fitness is required; walking will include 1-to-2-

Post-Conference Field Trips

FRIDAY 17TH NOVEMBER (continued)

kilometre excursions, with some hills and some rocky shorefaces and stream beds encountered.

Pick up: Friday 17th November at 7am, from the Kelburn Parade bus stop , near Gate 3, Kelburn Campus Victoria University
Drop off: Drop off will be at 6-7pm on the evening of Friday the 17th of November. Drop off locations will be Wellington Railway Station, Kelburn Parade at Victoria University, and Wellington Airport by request.
Additional Information: Lunch is not included, please BYO or we will make a stop for you to buy sandwiches. Bring boots or sturdy footwear, rain jacket, beanie, sunhat, sunblock, water bottle.

Field Notes:

Conference Programme

SATURDAY 11 November 2023

09.00 - 15.00	*Walter Nash Centre, Taitā, Lower Hutt* **Earth Fest – Festival of Earth Science Public Open Day**

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!**

MONDAY 13 November 2023

Time	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**

Conference Programme

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* **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	*Cotton Lecture Theatre 122* **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**	*Maclaurin Lecture Theatre 102* **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 quantitative and qualitative similarities to shallow slow slip in subduction zones - **Noah Finnegan, University of California, Santa Cruz**	Airwave-tsunami source inversion using barometric pressure data for the 2022 Hunga Tonga – Hunga Ha'apai volcanic tsunami - **Aditya Gusman, GNS Science Te Pū Ao**	An updated geological map of the Dunedin urban area - **David Barrell, 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)

Conference Programme (Tuesday continued)

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!**

Conference Programme (Tuesday continued)

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**

Conference Programme (Tuesday continued)

14.45 - 15.00	**(Short Break)**		
15.00 - 16.00	*Maclaurin Lecture Theatre 103* **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	*Cotton Lecture Theatre 122* **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	*Maclaurin Lecture Theatre 102* **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)

Conference Programme (Tuesday continued)

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)**

Poster Abstracts
TUESDAY 14 NOVEMBER

Early Earthquake Warning and Rapid Response Science

P1.01	*Mr Amin Aghaee-Naeini*	From Point Sources to Spatio-Temporal Ruptures: Assessing Beamforming Potential for Characterizing Regional Tsunamigenic Sources
P1.02	Jen Andrews	Implementing real-time GNSS and G-FAST for rapid earthquake rupture characterisation in New Zealand
P1.03	*Mrs Solen Chanony*	Radiated energy estimations for New Zealand earthquakes
P1.04	*Mr Shao-jinn Chin*	Stress State and Earthquake Triggering on the Outer Rise of the Southern Vanuatu Subduction Zone, Southern New Caledonia
P1.05	Dr Caroline Francois-Holden	Urban Earthquake Early Warning for Aotearoa-New Zealand
P1.06	*Ms Hazel Fraser*	Use of Felt Rapid Reports as a reliable data source in the production of Earthquake Intensity Maps
P1.07	Mr Ciaran King	Accelerating Tsunami Simulation For Real Time Probabilistic Impact Forecasting
P1.08	*Miss Luce Lacoua*	Improving earthquake magnitude and location estimations for Tsunami Early Warning in New Zealand
P1.09	*Mr Rasika Nandana*	Performance of a National Earthquake Early Warning System for Aotearoa New Zealand Using a Synthetic Catalogue and Synthetic Seismograms
P1.10	Dr Marion Lara Tan	Technology adoption of an earthquake early warning system through a continuance intention model

Geoscience in the Built Environment

P1.11	Dr Simon C. Cox	Forecasting the future state of groundwater in Dunedin under sea level rise
P1.12	Professor Tim Stern	Urban Geophysics and Seismic Hazard Assessment in the Wellington CBD
P1.13	Dr Elena Manea	A high-resolution site amplification map for Wellington city
P1.14	Dr Saskia De Vilder	Landslide Planning Guidance: Reducing Landslide Risk through Land-Use Planning
P1.15	*Miss Ari Pola*	Engineering geological aspects of urban landslides in Gisborne, New Zealand

High-energy coastal hazard events in Aotearoa/New Zealand: records, processes and preparedness

P1.16	Luisa Hosse	Compounding Coastal Inundation Hazards and Losses in a Changing Climate
P1.17	Dr William Power	Tsunamis in Lake Taupo, New Zealand, on November the 30th 2022: observations, interpretation and implications.
P1.18	*Miss Emeline Wavelet*	Tsunami Early Warning System in New Zealand

Our changing landscapes; surface process dynamics, evolution, and impacts.

P1.20	Dr Andrew Neverman	Earthflow dynamics and sediment load contributions in the Haunui research catchment
P1.21	Ms Katie Jones	Geological controls on the mass balance of the 2016 Kaikōura earthquake

** Italic names are student posters*

Poster Abstracts
TUESDAY 14 NOVEMBER

P1.22	Associate Professor Kevin P. Norton	Assessing the Pliocene–Recent erosion history of the eastern Southern Alps using cosmogenic radionuclides, tracer techniques and grain size analyses
P1.23	Hannu Seebeck	A tectonic reconstruction model for Aotearoa-New Zealand from the mid-Late Cretaceous to the present day
P1.24	*Mrs Maritsa Faridatun Nisa*	An Initial Assessment of Vertical Land Motion in the Indonesian Archipelagoes
P1.25	Dr Ian Hamling	Towards an updated national VLM estimate for Aotearoa derived from Sentinel-1 PS-InSAR data
P1.27	Dr Adam P. Martin	Release Of The Geological Dataset Of The Hyde-Macraes Shear Zone And Waihemo Fault Zone Area, Northeastern Otago 1:50 000
P1.29	Dr Anya Leenman	Quantifying geomorphically effective floods with cloud computing and "big" data
P1.30	Dr Melody Whitehead	SWM: Stochastic Weather Model for precipitation-related hazard assessments
P1.31	*Miss Tabitha German*	Understanding Ice Dynamics through Natural Ice Air Bubbles and Their Deformation
P1.32	*Miss Lucy Davidson*	Viscoelastic deformation of natural ice from Priestley Glacier: implications for tidal deformation of ice shelves

The active volcanoes of Aotearoa – past, present, and future

P1.33	Dr Florent Aden-Antoniow	Sum – Product Networks for eruption forecasting
P1.34	Mr Yannik Behr	Seismo-Acoustic Monitoring (SAM) Toolbox
P1.35	*Wendel Broek*	Mt Charles, an oddity in the Waiareka-Deborah Volcanic Field
P1.36	*Mr William Buffett*	Receiver Function Imaging of Magma Chambers and Other Lithospheric Discontinuities beneath the North Island of Aotearoa
P1.37	*Nadine, P. Cooper*	Hydrous veins in the New Zealand mantle lithosphere and their implications for intraplate magmatism
P1.38	*Ms Michelle Fitzgerald*	Subterranean burst and jet experiments using compressed nitrogen and glass beads to simulate particle transport and eruptive processes of diatreme-forming volcanoes
P1.39	*Mr Dante Frean*	A shallow crypto-dome intrudes a vent-filling volcaniclastic deposit at Seacliff, Dunedin area; implications for the Dunedin Volcano and other intraplate volcanic centres
P1.40	*Mr Henry Hoult*	Conduit structure revealed by lithic clast variation at Taranaki Mounga
P1.41	Dr Sigrún Hreinsdóttir	Taupō Volcano 2022-23 inflation and unrest
P1.42	Dr Ery Hughes	VolFe: a thermodynamic framework to calculate equilibrium vapor-melt composition
P1.43	Jessica Schuler	The response of Taupō Volcano to the M7.8 Kaikōura Earthquake
P1.44	Dr Paul Jarvis	Characterising volcanic plume heights through the use of calibrated camera images
P1.45	*Ms Maia Kidd*	Determining volcanic rock porosity through reflectance spectroscopy

** Italic names are student posters*

Poster Abstracts
TUESDAY 14 NOVEMBER

P1.46	Geoff Kilgour	Backtracking magma pathways from the eruptive vents down through the Earth's crust to locate the melt source feeding the Auckland Volcanic Field
P1.47	Oliver Lamb	An assessment of seismic activity during the 2022-2023 unrest episode at Taupō volcano
P1.48	*Mr Alex Mattin*	Detecting the Ōruanui supereruption in Antarctic ice cores
P1.49	Dr Stuart Mead	Simulation of snow slurry lahar hazard at Ruapehu volcano
P1.50	*Mr Dagim Yoseph Mengesha*	Anisotropy Changes Before And After Eruption Of Whakaari/White Island Volcano
P1.51	*Eleanor R. H. Mestel*	Characterising the current magma reservoir beneath Taupō volcano with ambient noise and earthquake analysis
P1.52	Dr Masatoshi Ohashi	Textural implications for the magma mixing during the Waimihia eruption, Taupo
P1.53	*Miss Janki Prakash Patel*	Emerging Insights into the Geological Occurrence and Morphology of New Zealand Erionite
P1.54	*Ms Anna Perttu*	Large-Scale Experimental Pyroclastic Density Current (PDC) Seismoacoustic Observations
P1.55	*Rachelle Sanchez*	Unraveling the timescales and processes of hydrothermal alteration at Tongariro volcano, New Zealand
P1.56	*Ms Amilea Sork*	Understanding the dangers of large flying rocks around Ngāuruhoe: Quantifying the outsized ballistic ejecta from recent eruptions
P1.57	*Mr Daniel Sturgess*	Mapping CO2 outgassing over volcanic regions using hyperspectral imaging
P1.58	Dr Cindy Werner	CO2 Emissions of the Taupo Volcanic Zone and Complexities in Estimating Subaqueous Degassing

** Italic names are student posters*

Poster Abstracts
TUESDAY 14 NOVEMBER

Understanding climate and environmental change

P1.59	*Mr Timothy Anane*	Unravelling Surface Uv-B Variations Across The Maunder Minimum And Satellite Era Using Sporomorph Chemistry
P1.61	*Ms Clare Gorman*	Pleistocene stratigraphy of continental margin sedimentation adjacent to the Patagonian Andes
P1.62	*Miss Jessie Leigh Henwood*	The abundance and size distribution of tuaki/cockles within modern and historical near-shore habitats of upper Whakaraupō/Lyttelton Harbour, and relationships to sediment characteristics.
P1.63	Professor Robert Mckay	Orbital pacing of Wilkes Land East Antarctic Ice Sheet over the past 6 million years
P1.64	Dr Joseph Prebble	Antarctic environmental evolution from a pollen and biomarker compilation
P1.65	*Mr Jordan Riddell*	Lacustrine charcoal as a proxy for prehuman wildfires in Central Otago, New Zealand.
P1.66	Professor Claudine Stirling	Trace metal micronutrients: Regulating the Southern Ocean's carbon sink during the last glacial-interglacial cycle
P1.67	*Ms Shaelyn Estella Treffery Townend*	Understanding the ancient glacial history of Canterbury

** Italic names are student posters*

Conference Programme

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**

Conference Programme (Wednesday continued)

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**	

Conference Programme (Wednesday continued)

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 Grech Licari, Victoria University of Wellington Te Herenga Waka** (student)	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**

Conference Programme (Wednesday continued)

<table>
<tr><td>12.00 - 12.15</td><td colspan="2">A 20-year study of hydrothermal mineralization and 226Ra and 228Ra isotopes at Brothers volcano, Kermadec arc - Robert Ditchburn, GNS Science Te Pū Ao</td><td colspan="2">Characterising CCS opportunities: investigating how seismic resolution impacts interpretation of 3D seismic data using a synthetic depositional model - Michele D'Ath Woodd, SeisMomentum Ltd</td><td>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</td></tr>
<tr><td>12.15 - 12.30</td><td colspan="2">Hochstetter's Long Lost Auckland Diary – Bruce Hayward, Geomarine Research</td><td colspan="2">Spatial modelling to support carbon capture through enhanced rock weathering- Matthew Hill, GNS Science Te Pū Ao</td><td>Governance of Māori geoscience data - Mark Rattenbury, GNS Science Te Pū Ao</td></tr>
<tr><td>12.30 - 14.00</td><td colspan="5">Maclaurin Foyer
Lunch</td></tr>
<tr><td>13.00 - 13.45</td><td colspan="5">SIG Lunchtime Meetings</td></tr>
<tr><td></td><td>Cotton 216
GeoNet Programme Update
Catherine Ross; Jonathan Hanson; Elizabeth Abbott; Elisabetta D'Anastasio and the GeoNet Team</td><td>Cotton 118
Paleontology Special Interest Group
James Crampton, Victoria University of Wellington Te Herenga Waka</td><td>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</td><td>Maclaurin Lecture Theatre 102
Future Energy
Jess Hillman, GNS Science Te Pū Ao</td><td>Cotton 127
A Crowd of Communicators: GeOID + SCANZ
Jenny Stein, GNS Science Te Pū Ao</td></tr>
<tr><td>14.00 - 15.30</td><td colspan="2">Maclaurin Lecture Theatre 103</td><td colspan="2">Cotton Lecture Theatre 122</td><td>Maclaurin Lecture Theatre 102</td></tr>
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Convenors: Jess Hillman, GNS Science Te Pū Ao; Andrew La Croix, University of Waikato Te Whare Wānanga o Waikato</td><td>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</td></tr>
</table>

Conference Programme (Wednesday continued)

14.00 - 14.15	Episodic coastal uplift at Matatā: constraints from geology, geomorphology, and geodesy - **Jesse Kearse, Victoria University of Wellington Te Herenga Waka** (student) **& Ian Hamling, GNS Science Te Pū Ao**	Earth science, energy transition, reserves, exponential growth bias, and supply chains: our responsibility to advise - **Rupert Sutherland, Victoria University of Wellington Te Herenga Waka**	Temporal variations in seismic scattering structure during deep slow slip beneath the 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**

Conference Programme (Wednesday continued)

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!**		

Poster Abstracts
WEDNESDAY 15 NOVEMBER

Advances in Active Faulting and Earthquake Hazards

P2.01	*Mr Joshua Daglish*	A regional empirical approach for evaluating transport infrastructure exposure to fault displacement hazard.
P2.02	*Miss Ashleigh Vause*	Faulted Terraces and Recurrence Behaviour of the Pisa Fault
P2.03	Dr Genevieve Coffey	Ground truthing fault activity along the Wairarapa Coast using K/Ar thermochronology and biomarker thermal maturity
P2.04	Dr Jack Williams	A revised record of late Quaternary activity on the Settlement Fault, Otago, New Zealand
P2.05	*Ms Abigail Underwood*	Most recent rupture on the Boulder Creek Fault triggered bedrock landslides in the Nooksack watershed, Whatcom County, Washington, USA
P2.06	*Teik Jin Chua*	Geological mapping of Princess Bay, Wellington: using aerial surveying and structure from motion to determine earthquake habitats in greywacke bedrock
P2.07	*Miss Sarah Wright*	The Thermal Properties of the Central Alpine Fault, New Zealand
P2.08	*Mr Ilma Del Carmen Juarez Garfias*	Towards Understanding Ambient Seismic Noise on the Alpine Fault Region to Estimate Ground Shaking for a Future Alpine Fault Earthquake
P2.09	*Mr Cédric De Meyer*	Seismogenic Structures and Stress State of the Puysegur Subduction Zone (Fiordland)
P2.10	Dr Sandra Bourguignon	Preliminary tomographic image of Fiordland, New Zealand, from temporary seismic array data
P2.11	*Mr Mustafa R M Almassri*	Mapping crustal discontinuities using teleseismic P-wave coda autocorrelation: Application to Central Italy
P2.14	Dr Mojtaba Rajabi	Present-day stress pattern of New Zealand
P2.15	Dr Brook Tozer	Full waveform inversion reveals high-resolution crustal structure within the Southern Hikurangi Margin: Implications for physical conditions along the megathrust
P2.16	Dr Tomomi Okada	Stress and structural controls on S-wave polarization anisotropy in the focal area of the Noto Peninsula earthquake swarm in Japan
P2.17	Andrea Carolina Perez Silva	Detecting Hikurangi slow slip events through wavelet analysis of GNSS time series
P2.18	*Ms Yi-Wun Mika Liao*	The effect of frictional heterogeneity of earthquake cycle in subduction zones
P2.19	*Mr Stephen Kwong*	Using Deep Learning Algorithms to Create a Microseismicity Catalogue of the Pōrangahau Region to Understand SSE Episodicity
P2.20	*Daria Batteux*	Investigating the location of the active southern Hikurangi subduction using seismicity catalogues
P2.21	*Ms Jessica Allen*	Using statistical models to reveal anomalous spatio-temporal patterns in seismicity on the San Andreas Fault and Hikurangi Subduction Zone.
P2.22	Dr Finnigan Illsley-Kemp	Investigation into the March 2023 Kawerau seismic swarm

** Italic names are student posters*

Poster Abstracts
WEDNESDAY 15 NOVEMBER

P2.23	Dr Emily Warren-Smith	A Quantitative Assessment of GeoNet Earthquake Location Quality in Aotearoa New Zealand
P2.24	Miss Yaasameen Shalla	The Weird and The Wonderful of Aotearoa's Seismic Network
P2.25	Dr Muriel Naguit	GeoNet Strong Motion Network Review in Canterbury Region
P2.27	*Miss Codee-Leigh Williams*	Building an enhanced earthquake catalogue for Aotearoa: applying an automated workflow with cutting-edge machine learning methods to mine New Zealand's seismic data.
P2.28	*Mr Govinda Prasad Niroula*	Testing and Evaluation of Earthquake Rupture Simulation for New Zealand
P2.29	Dr Sepideh J Rastin	Recent developments in Medium-Term Earthquake Forecasting in New Zealand and Beyond

Data and Databases

P2.30	Mr Thomas Benson	What our data looks like in the cloud: the GeoNet perspective
P2.31	Mrs Elisabetta D'Anastasio	GeoNet Aotearoa New Zealand Station Metadata: Managing multidisciplinary instrument and deployment meta-data using a source code versioning system
P2.32	Dr Jonathan Hanson	How FAIR is GeoNet Data? How to assess FAIRness, and how to improve it

Geochemical tools and applications to reconstruct environmental and climate change, human impact and Earth history in New Zealand, Australia and Antarctica

P2.33	*Mr Liam Criglington*	WHY POUNAMU? USING U-PB DATING OF DETRITAL ZIRCONS TO BETTER UNDERSTAND THE TECTONOSTRATIGRAPHY OF THE OTAGO SCHIST.
P2.34	*Ms Megha Devakumar*	Metal isotope tracing of heavy metal pollutants.
P2.35	Dr Mario Krapp	How machine learning enhances our understanding of past Antarctic climate variations through GDGT proxies.
P2.37	Dr Adam P. Martin	GEOCHEMICAL ATLAS OF AOTEAROA NEW ZEALAND
P2.38	Dr Arola Moreras Marti	Microbial function characterisation of Maungaroa and Glendhu, two modern methane seeps from the Hikurangi convergent margin, New Zealand-Aotearoa
P2.39	Dr Sebastian Naeher	Calibrating glycerol dialkyl glycerol tetraethers (GDGTs) as paleoclimate indicators in New Zealand lakes
P2.40	Ms Lizette Reyes	USING SEDIMENT CORES TO UNDERSTAND THE ENVIRONMENTAL HISTORY OF AOTEAROA'S LAKES
P2.41	Dr Richard Wysoczanski	The chemical effect of preservation methods on crustacean body burden: Implications for biomonitoring and analysis of essential metals.

** Italic names are student posters*

Poster Abstracts
WEDNESDAY 15 NOVEMBER

Geoscience communication for influence, education and impact		
P2.42	Dr Joseph Prebble	GeoCamp and Tūhura Papatuānuku GeoNoho
P2.43	Mark Rattenbury	Geological map products for Aotearoa New Zealand
P2.44	*Mr Kieron Wall*	5 Minute: Volcano - Co-Designing Games about Geological Disaster Risks with and for Children
Geoscience for future energy: Navigating the path to a low-emissions future		
P2.45	Cécile Ducrocq	Investigation of the 2011-2019 temporal ground deformation changes of the Hellisheiði geothermal field, SW Iceland, using poroelastic models
P2.46	Dr Jess Hillman	Over a decade of hydrate research in Aotearoa, New Zealand – what have we learned?
P2.47	*Mr Jinjiang Liu*	Impact of molecular diffusion and mechanical dispersion on gas distribution during underground hydrogen storage
P2.48	*Mr Edward Yates*	Geometry and density of fractures in Taranaki seal rocks
On the precipice: the future of Geoscience education in Aotearoa New Zealand		
P2.49	Dr Faye Nelson	Tools and techniques for extending geoscience outreach into Early Childhood Education settings
P2.50	Dr Matthew Wood	New windows on the world – Part II: Extended reality experiences to support geoscience field trips
P2.51	Dr Jacob Young	From Picks to Pixels: Practicing Field Skills in Virtual Reality
To honour a Time Lord: geological time, Earth history and paleontology in memory of Alan Beu		
P2.52	Andrew F. Boyes	New Zealand Geological Timescale 2024
P2.53	Henry James Leonard Gard	Alan Beu's Comprehensive Catalogue of New Zealand Cenozoic Marine Mollusca
P2.54	Dr Dominic Strogen	Cretaceous sedimentation patterns in the Aotea Basin
P2.55	Ms Marianna Terezow	Updating our marine biodiversity inventory

** Italic names are student posters*

Poster Abstracts
WEDNESDAY 15 NOVEMBER

Towards culturally inclusive and responsive geoscience		
P2.56	Dr Oliver Emerson McLeod	A new geological map of Karioi Volcano
Underwater Geosciences		
P2.57	Dr Martin Crundwell	Biostratigraphically constrained Quaternary chronologies from the Hikurangi subduction margin of north-eastern Zealandia
P2.58	Dr Sam R. Davidson	A new perspective: Emerging opportunities in legacy DTIS imagery processing through photogrammetry
P2.59	*Ms Grace Frontin-Rollet*	Geochemical Seafloor Mapping of Offshore Bay of Plenty using a Machine Learning Approach.
P2.60	Dr Ron Hackney	Future DEEP: Future Drilling to Explore Earth's Past Workshop Report
P2.61	Dr Wiebke Heise	New 3-D resistivity models from the Hikurangi subduction margin
P2.62	Dr Sally Watson	The form and history of submarine canyons offshore Taranaki, New Zealand
P2.63	Dr Susi Woelz	Uncovering the Influence of Data Resolution on Quantifying Landslide Volumes
Volcanos around the world		
P2.64	*Miss Rachael Baxter*	Controls on repeated fountaining, crater excavation and vent shifting during early phases of the maar-forming Ubehebe eruption, Death Valley, California.
P2.65	*Mila Huebsch*	Insights into ascent conditions preserved in quenched pyroclasts from the 2021-2022 eruption of Hunga volcano, Tonga
P2.66	*Kristen Lewis*	Constraining Volatile Abundances in Vanuatu Volcanoes
P2.67	*Ms Javiera Andrea Ruz Ginouves*	Heating temperatures of muddy country rock during dike emplacement
P2.68	Professor Georg Zellmer	Origin of crystals in mafic to intermediate magmas from circum-Pacific continental arcs: transcrustal magmatic systems versus transcrustal plutonic systems

** Italic names are student posters*

Conference Programme

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* **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	*Cotton Lecture Theatre 122* **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	*Maclaurin Lecture Theatre 102* **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*** 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**

Conference Programme (Thursday continued)

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**		

Conference Programme (Thursday continued)

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)

Conference Programme (Thursday continued)

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**		

Conference Programme (Thursday continued)

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 Haʻapai 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**

Conference Programme (Thursday continued)

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

Time	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**

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The conference organising committee acknowledges and thanks the following sponsors and exhibitors for their generous support and involvement in this conference.

Their support has contributed towards our being able to provide a comprehensive programme of quality content and excellent value for all participants.

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EXHIBITOR

TE WHARE PŪTAIAO HOUSE OF SCIENCE

General Information

Audio

Hearing aid loops are available in all lecture theatres.

Bathrooms

Kelburn Campus has a large number of gender-neutral bathrooms. A list is available at the registration desk or from the VUW website: www.wgtn.ac.nz/students/student-life/communities/kahukura-rainbow-and-inclusion/all-gender-bathrooms#kelburn

Campus Security and Campus Care

If you need security help whilst on campus, please call 0800 842 8888 or 04 463 5398

COVID 19

Hand sanitiser, masks and COVID 19 RAT tests are available at the registration desk and you are encouraged to test daily. If your result is positive or you feel unwell, please do not attend the conference or any functions.

Exhibition and Sponsors

The conference would not be possible without the support of the sponsors and exhibitors and please show your support by visiting their stands. The exhibition is open at the following times:

Mon 13	16.00 – 19.00
Tues 14	08.00 – 17.30
Wed 15	08.00 – 17.00
Thur 16	08.00 – 14.00

Lunches

As outlined on the conference website; to maintain low registration fees, lunches will not be provided this year. You are welcome to BYO or we encourage you to support the cafes at Victoria University. Morning and afternoon teas will be served in the exhibition area.

Medical Assistance

Kelburn Campus has a pharmacy near Easterfiekd block and Gate 3.

Wellington Hospital is ~3.2 km away at 49 Riddiford Street, Newtown, 6021

Wellington Accident & Urgent Medical Centre (https://www.wamc.co.nz/) at 17 Adelaide Road, Mount Cook, Wellington. Ph: 04 384 4944.

Mobility

All areas of the venue are accessible using a wheelchair. Please see a campus map for wheelchair accessible routes.

Name Badges

Badge security is in place throughout the conference. Please always wear your badge to avoid being asked for identification.

General Information (continued)

Oral Presenters

Plenary and Keynote talks are 30 minutes. All other oral presentations must keep to 15 minutes which includes any time for Q & A plus transition to next presenter. To ensure smooth running of your presentation please check your slides with the student volunteer in the room that you will be presenting in, at least two breaks before you are due to present and please be in the room at least 15 minutes before your presentation starts.

Parking

Pay and Display parks are located along Waiteata Road. Prices range from $3.00 an hour to $11.00 a day (7 am–7 pm).

Photography, recordings, and social media by attendees

Still photography is permitted for personal and social media use unless indicated by the presenter. Try not to obscure anyone's view and do not use flash when taking photographs. Video and/or audio recordings are not permitted. Explicit permission of a parent or guardian is required for photography that include individuals under the age of 18. Open discussion about presentations given at GSNZ 2023 on social media is allowed unless indicated by the presenter. Include the name of the presenter so they get credit for their work if you share photographs of them or their slides/ poster.

Poster Presenters

Materials for hanging your poster can be collected from the registration desk. Posters will be displayed for the whole day on either Tuesday or Wednesday and please check the allocated day of your poster. Please put your poster up before morning tea on the day of your presentation and remove it after the afternoon Poster Session. You are asked to stand with your poster for the Poster Session so that people may converse with you about your work.

Public Transport

Metrolink Buses stop near Kelburn Campus. See the website Metlink.org.nz or download the App.

Quiet Room

TTR 106 has been set aside as a quiet room for work, study or time-out. Please do not use this room for meetings.

Registration and Information Desk

The registration desk is open at the following times for any enquiries, accounts payment and messages:

Mon 13	16.00 - 19.00
Tues 14	08.00 - 17.30
Wed 15	08.00 - 17.30
Thur 16	08.30 - 16.30

Social Responsibility

GSNZ 2023 is committed to providing a safe space for all conference atttendees and empowering diverse, equitable, inclusive, and accessible participation. At GSNZ 2023, a diverse, equitable, inclusive, and accessible environment is one where all community members and event attendees, whatever their age, education, ethnicity, gender, gender expression, gender identity, national origin, neurotype, race, religion, belief system, spiritual practice, sexual orientation, physical ability, physical appearance, body size, dietary preferences or other unique characteristics feel valued and respected. We respect and value diverse life experiences and heritages and strive to ensure that all voices are valued and heard.

Smoking & Vaping

Is not allowed inside the building.

General Information (continued)

Social Functions and Poster Sessions

If you have purchased social function tickets these are shown with an icon on your name badge. Where applicable, a drink ticket is attached to your name badge and you will need to show this for your complimentary drink. An Eftpos bar will also be available at all functions.

Special Dietary Requirements

If you indicated your dietary requirement during the online registration, this has been forwarded to the caterers. Depending on your requirement, the main food may be suitable for you or a labelled plate will be available. Please make yourself known to the catering staff who will assist or see the Registration Desk for assistance.

Wifi

1. Connect to 'WellingtonUniversityGuest' Wi-Fi
2. Open a web browser and navigate to the internet
3. Upon redirection to the Wellington University Wireless Portal page, press 'Don't have an account?'
4. Enter your email address and after reading the terms and conditions, tick the 'agree' box
5. Press 'Register', and then 'Sign On' to complete the sign in process
6. The screen will then display temporary login credentials which you can use on a maximum of 5 devices concurrently if you wish
7. Guest access will expire after 24 hours, though can be initiated again at any time

Geoscience 2023 Code of Conduct

GSNZ 2023 encourages the open expression and exchange of ideas - in an inclusive, supportive, and safe space - free from all forms of discrimination, retaliation, and harassment.

All attendees are required to adhere to the following Code of Conduct which covers all interactions at the conference.

Behaviour

Be respectful, considerate and inclusive. Make sure you listen to others and critique ideas not people. Promoting or participating in any form of bullying, harassment, or discrimination will not be tolerated. This includes, but is not limited to:

- Offensive comments (verbal, written, or any other form) related to gender, gender identity and expression, age, sexual orientation, disability, physical appearance or features, body size, race, ethnicity, or religion;
- Physical abuse;
- Deliberate intimidation, following, stalking, or harassive photography or recording;
- Sustained disruption of talks or other events;
- Inappropriate physical contact, sexual attention, or innuendo;
- Inappropriate use of nudity and/or sexual images.

Consequences and reporting

Anyone not complying with this code of conduct may be removed from GSNZ 2023 and other appropriate actions may be taken. If an attendee is not complying with this Code of Conduct, please contact the registration desk or email gsnz@confer.co.nz

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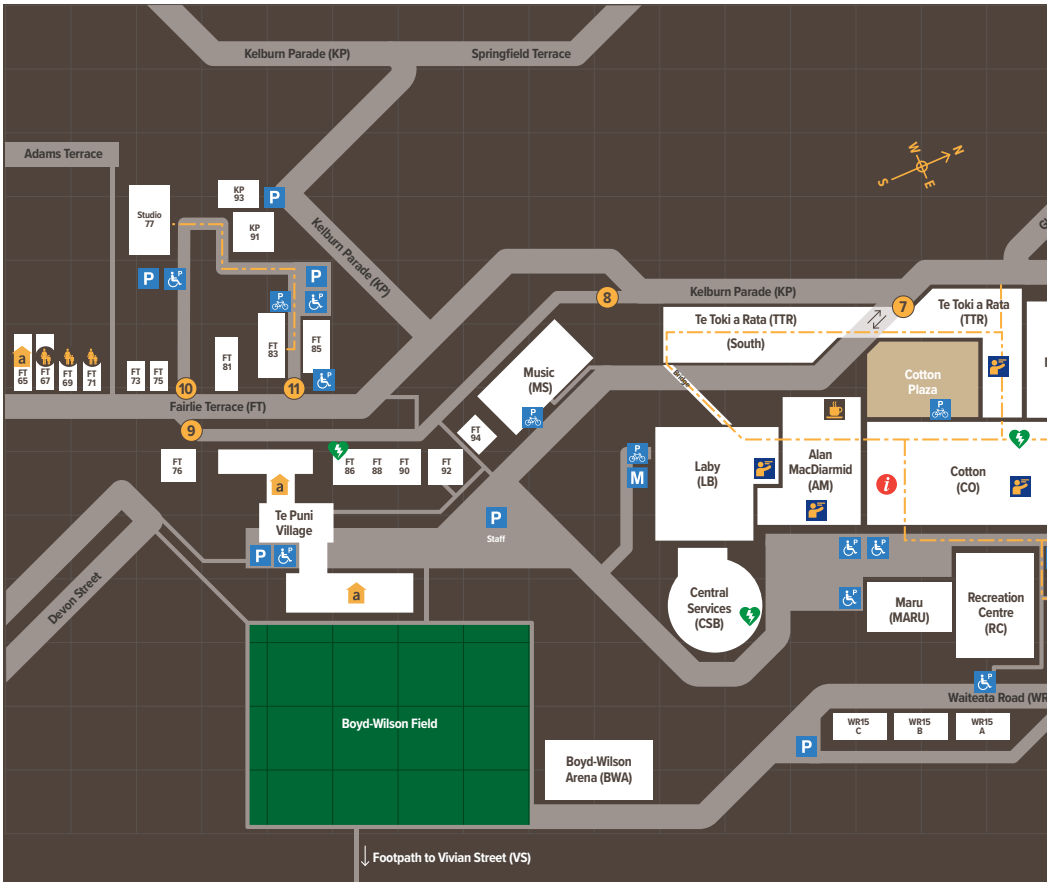
This Code of Conduct was adapted from the IAVCEI Scientific Assembly 2023 Code of Conduct, which benefited from the EGU General Assembly rules of conduct, AGU Meetings Code of Conduct, VMSG Code of Conduct for Meetings and Events, and GSA Events Code of Conduct.



2023

TE MAHERE WHENUA O TE HERENGA WAKA KI PUKEHĪNAU

KELBURN CAMPUS MAP

Kelburn Campus Key

This map identifies the location of buildings and facilities and the accessible routes that link them for people with disabilities.

- Main building
- (MS) Building code
- Student hall of residence
- Accessible route
- Gate
- Café
- Library
- Public transport stop
- Early childhood centre
- Lecture theatre
- Parking
- Motorcycle parking
- Mobility parking
- Bike rack
- Titoko—Student Service Centre
- Health services
- Automatic external defibrillator
- Te Amaru—Disability Services
- University Pharmacy

Campus Safety (Security)	04 463 5398
Te Herenga Waka—Victoria University of Wellington	0800 04 04 04

GSNZ 2024 Conference
25-29 NOVEMBER OTAGO UNIVERSITY

We look forward to seeing GSNZ members in Ōtepoti Dunedin for the 2024 annual conference, which will be held at the University of Otago from November 25-28th.

We can't guarantee the weather, but we can provide a welcoming and inclusive environment for the wider geoscience community to meet!

GSNZ 2024 Conference Committee:

Greer Gilmer, GNS Science Te Pū Ao, Co-convenor
Jack Williams, University of Otago, Co-convenor
David Barrell, GNS Science Te Pū Ao
Sophie Briggs, University of Otago
Solen Chanoy, University of Otago
Donna Eberhart-Phillips, GNS Science Te Pū Ao
Tatiana Goded, GNS Science Te Pū Ao
Helen Jack, Environment Canterbury
Luce Lacoua, University of Otago
Adam Martin, GNS Science Te Pū Ao
Ray Marx, University of Otago
Nick Mortimer, GNS Science Te Pū Ao
Faye Nelson, University of Otago
Will Oliver, University of Otago
Javieria Ruz Ginouves, University of Otago
James White, University of Otago

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UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND

Notes:

EMERGENCY INSTRUCTIONS
DIAL 0800 842 8888

PERSONAL EMERGENCY PLANNING

Being prepared for an emergency can help you and the people around you. Have a Personal Emergency Plan so you know what to do and can ensure you and your household are safe and well.

COMMUNICATIONS

Make arrangements on how to contact your household and where you will all meet if unable to return home.

PREPARATIONS

You will need to be self-sufficient for at least 3–5 days in a disaster. Assemble emergency survival items at home and work if possible. Recommended items include:

- essential medication
- 3–5 days' supply of water and non-perishable foods
- alternative lighting (torch, spare batteries, lightsticks)
- warm waterproof clothing and strong walking shoes
- battery-operated radio
- contact details for family.

FIRE

IF YOU DISCOVER A FIRE

- Operate the nearest fire alarm call point by breaking the glass and pressing the switch down
- Dial 0800 842 8888 and advise Campus Security
- Dial 111 and ask for Fire
- Use firefighting equipment only if you are confident and it is safe to do so

IF YOU HEAR CONTINUOUS SOUNDING OF THE FIRE ALARM

- DON'T linger—leave the building as quickly as possible
- DON'T attempt to return to your room
- DON'T run—keep calm
- DON'T use lifts—keep left on stairs
- DON'T return to the building until the all-clear is given
- ASSEMBLE at your assembly point and keep well clear of the building

EARTHQUAKE

DURING AN EARTHQUAKE

- Act quickly—**DROP** to the ground, get under **COVER**, and **HOLD** until the shaking stops
- If there is no cover, crouch on your knees on the floor away from windows and put your arms over your head and neck to protect them

AFTER AN EARTHQUAKE

- Stay inside and gather everyone in one place until it is safe to exit
- If you are in a multi-storey building, check the stairs before making your way to lower floors
- If you are in the stairwells, use emergency door release buttons to exit
- If your building is unsafe, evacuate. Take your belongings, beware of falling debris, and make your way to a large open space

TSUNAMI

Know where the nearest high ground is and how you will reach it. Plan to get as high up or as far inland as you can.

IF YOU ARE NEAR THE SEA AND

- feel a strong earthquake that makes it hard to stand up, or a weak rolling earthquake that lasts a minute or more
- see a sudden rise or fall in sea level
- hear loud and unusual noises from the sea

MOVE IMMEDIATELY to the nearest high ground or as far inland as you can. If evacuation maps are present, follow the routes shown.

SEVERE WEATHER

- Ensure all windows and doors are closed.
- If you have to move outdoors, be aware of flying debris.
- Report any damage or flooding to Campus Security on 0800 842 8888.

MEDICAL EMERGENCY

- Dial 0800 842 8888 and advise Campus Security.
- Dial 111 and ask for the Ambulance.
- Apply first aid if you are confident and it is safe to do so.

UTILITIES FAILURE

- Dial 0800 842 8888 and advise Campus Security.

SUSPICIOUS ACTIVITY

- Ensure your personal safety.
- Dial Campus Security 0800 842 8888.
- Provide description, location, and direction of travel of suspicious person(s) and Campus Security will investigate.

ACTIVE ARMED OFFENDER/SHOOTER

ESCAPE

- Where possible get out of area, if not hide. Advise others to do the same.
- Leave belongings behind, except mobile phone.

HIDE

- Find a safe place out of sight or behind a lockable door.
- Be quiet and silence your phone.
- Take opportunities to escape.

TELL

- Alert other staff and students when you are able to do so.
- From a safe location, dial 111 for Police, or alert Campus Security on 0800 842 8888.

VICTORIA UNIVERSITY OF WELLINGTON
TE HERENGA WAKA

DELEGATE DISCOUNTS

Business Events Wellington
WellingtonNZ.com

POQUITO

This little gem in the heart of Wellington is café by day and cocktail bar and live music venue by night.

For 20% discount use code: LOVEWELLY23 upon payment or show your conference lanyard.

MOJO MARKET LANE

This Wellington café institution has all the fixings to keep you nourished and caffeinated.

For 15% discount use code: LOVEWELLY23 upon payment or show your conference lanyard. Offer valid until 31 December 2023.

THE ARBORIST

A must see venue in Wellington offering a selection of nature inspired seasonal dishes and cocktails.

For 10% discount use code: LOVEWELLY23 upon payment or show your conference lanyard.

EL HORNO

Located in the heart of Courtenay Place, El Horno is famous for its fabulous cocktails, live music, and classic tunes.

For 10% discount use code: LOVEWELLY23 upon payment or show your conference lanyard.

LULU

Enjoy modern New Zealand cocktails & share plates that draw inspiration from traditional Pacifica flavours.

For 10% discount use code: LOVEWELLY23 upon payment or show your conference lanyard.

CAMBRIDGE HOTEL

Featuring hearty, good value breakfasts, lunches, and dinners. A great selection of local and international wines.

For 10% discount use code: LOVEWELLY23 upon payment or show your conference lanyard.

DRAGONS

Experience yum cha and community at this award-winning family-run restaurant.

For 10% discount use code: LOVEWELLY23 upon payment or show your conference lanyard. Use code 04888 for online discount on takeaway orders

PORTLANDER

A distinctive grillhouse specialising in high-quality cuts of meat with a stylish presentation.

For 10% discount show your conference lanyard or use code: LOVEWELLY23 upon payment

LOGAN BROWN

Logan Brown is an absolute must for anyone interested in contemporary Kiwi kai. Experience New Zealand at its best.

Complimentary bottle of craft beer or selected glass of premium wine when dining. Use the code: LOVEWELLY23

LIBERTY

Made by a talented team of chefs, the dishes at Liberty are full of flavour and made to be shared.

Complimentary selected cocktail or glass of premium wine when dining. Use the code: LOVEWELLY23

KARAKA CAFE

Karaka Café boasts some of the best Aotearoa cuisine and dishes. Try its signature version of a steamed/oven Hāngi.

For 10% discount use code: LOVEWELLY23 upon payment and show your conference lanyard.

PANHEAD TORY ST

Te Aro's Panhead offers 14 exclusive Panhead beers on tap, delicious food and a wide range of Gin & Tonics.

10% discount until 6pm. Use code: LOVEWELLY23 upon payment or show your conference lanyard. Offer valid until 30 November 2023.

HOT SAUCE

Expect the unexpected at this central city, Asian-fusion restaurant with his 20-years experienced Chef Koko Aung.

For 10% discount show your conference lanyard or use code: LOVEWELLY23 upon payment

MONSOON POON

Halal-friendly Southeast Asian fusion restaurant with a great selection of banquet menus available.

For priority bookings and complimentary hire of private dining room The Shangri-La Room, email wellington@monsoonpoon.co.nz or phone 04 803 3555 and quote Takina2023 and conference name



WellingtonNZ
DELEGATE DISCOUNTS

ZEALANDIA ECO-SANCTUARY TOUR

10% OFF DAY TOUR

See some of New Zealand's rarest native animals thriving in the wild and discover 80 million years of natural history.

For 10% discount on Zealandia By Day tour, use code:TAKINA10
Valid for online bookings until 31 October 2024
www.visitzealandia.com

TE PAPA TOUR

10% OFF GUIDED TOUR

The perfect way to get an overview of Te Papa's highlights, Māori treasures, and New Zealand history.

For 10% discount on Introducing Te Papa Tour, use code: TEPAPATOURS23
Valid for online bookings until 31 December 2023
www.tepapa.govt.nz

WĒTĀ WORKSHOP

20% OFF WORKSHOP TOUR

Visit the home of movie-making magic where Wētā Workshop crafts physical effects for some of the world's most renowned films and TV shows.

For 20% discount on adult tours, use code: EXPLOREWLG23
Valid for online bookings until 31 December 2023
www.wetaworkshop.com

WELLINGTON CHOCOLATE FACTORY

10% OFF FACTORY TOUR

Visit Wellington Chocolate Factory to learn all about the chocolate-making process, right from bean to bar, and make your own chocolate bars.

For 10% off any tour, use code: WLGNZ1
Valid for online bookings until 31 December 2023
www.wcf.co.nz

FREE ACTIVITIES

CITY GALLERY WELLINGTON
Enjoy captivating art from some of the world's leading artists.

PARLIAMENT BUILDINGS TOUR
Explore the Parliament buildings, learn about the Parliamentary process in New Zealand.

MOUNT VICTORIA LOOKOUT
Walk through historic pine forest an enjoy unbeatable views of the harbour and city.

WELLINGTON MUSEUM
Rated by Lonely Planet as one of their top 500 places on earth, New Zealand's national museum is a must-visit.

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Their support has contributed towards our being able to provide a comprehensive programme of quality content and excellent value for all participants.

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