

Annual Conference 2024  
 25<sup>th</sup> - 29<sup>th</sup> November | University of Otago - Ōtepoti Dunedin



## Monday, 25 November 2024

([Pre-conference Workshops](#))

12.00 – 14:15	<b>Building a Framework for Earthquake Catalogues in Aotearoa New Zealand</b> University of Otago Ōtākou Whakaihu Waka <b>Leaders:</b> Kenny Graham, Jonathan Hanson (GNS Science) and Calum Chamberlain (VUW)
14:30 – 16.45	<b>New Zealand Community Velocity Model</b> University of Otago Ōtākou Whakaihu Waka <b>Leaders:</b> Sanjay Bora, Donna Eberhart-Phillips, Russ Van Dissen (GNS Science) and Brendon Bradley (University of Canterbury)
16.00 - 19.00	<i>ISB Link Foyer (Information Services Building)</i> <b>Registration Desk Open</b>
17.00 - 17.30	<i>Castle 2 Lecture Theatre</i> <b>Mihi Whakatau</b>
17:30 – 19:00	<i>ISB Link Foyer</i> <b>Icebreaker Reception</b>
19:30 - Late	<i>Moons Restaurant and Bar</i> <b>Early Career Catch-up</b>

## Tuesday, 26 November 2024

08:00 – 17.30	<i>ISB Link Foyer</i> <b>Registration Desk Open</b>		
08.45 - 09.30	<i>Castle 2 Lecture Theatre</i> <b>Opening Ceremony</b>		
09.30 - 10.00	<i>Castle 2 Lecture Theatre</i> <b>Plenary Speaker</b> How I stopped catastrophising and learned to think differently about climate tipping points: Dynamics of the marine ice sheet instability on Thwaites Glacier, West Antarctica - <b>Christina Hulbe, University of Otago</b>		
10.00 - 10.30	<b>Morning Tea - ISB Link Foyer</b>		
	<i>Castle 2 Lecture Theatre</i>	<i>Castle 1 Lecture Theatre</i>	<i>Burns 1 Lecture Theatre</i>
<b>10.30 – 12.00</b>	<b>1.A Ensuring Invaluable Scientific Observations are Obtained Pre- and During the Next Alpine Fault Earthquake</b> <i>Session Convenors: Phaedra Upton, Kate Clark, Sigrún Hreinsdóttir, Emily Warren-Smith, GNS Science</i>	<b>1.B Geoscience Education, Outreach and Communication</b> <i>Session Convenors: Sophie Briggs, University of Otago; Kate Pedley, University of Canterbury, Faye Nelson, University of Otago</i>	<b>1.C Underwater Geosciences</b> <i>Session Convenors: Dr Alan Orpin, NIWA; Dr Sally Watson, NIWA/University of Auckland</i>
10.30 - 10.45	Keynote Past, present, and future earthquakes on the Alpine Fault: what lies beneath and what lies ahead? - <b>John Townend, Victoria University of Wellington</b>	A Geoethical Vision for Aotearoa New Zealand - <b>Matthew William Hughes, University of Canterbury</b>	Cyclic Erosion and Infill of the Waitaki Canyon, Offshore Otago - <b>Glenn Thrasher, GNS Science</b>
10.45 - 11.00	Exploring Future Alpine Fault Earthquakes Using Ambient Seismic Noise Analysis - <b>Ilma Del Carmen Juarez Garfias, Victoria University of Wellington (student)</b>	Redefining Geoscience through Photovoice - <b>Emily Pasek, Michigan State University (student)</b>	Near-bed sediment and organic carbon transport in Kaikōura Canyon and Hikurangi Channel - <b>Scott Nodder, NIWA Taihoro Nukurangi</b>
11.00 - 11.15	Enriching the Alpine Fault paleoseismic record using curved slickenlines to constrain paleo-epicenters - <b>Nicolas Barth, University of California, Riverside</b>	Maximising geoscience for societal benefit through evaluation of impact - <b>Victoria Miller, GNS Science</b>	Multi-proxy Provenance Analysis of the Pleistocene-Recent Giant Foresets Formation, Taranaki Basin, Aotearoa New Zealand - <b>Glenn Sharman, University of Arkansas</b>
11.15 - 11.30	Southern Alpine Fault segmentation and potential earthquake ruptures - <b>Philip Barnes, NIWA</b>	Advancing uncertainty communication of the scientific model- Using 'Uncertainty Doughnut' - <b>Annal Dhungana, Massey University (student)</b>	Overcoming the challenges in marine pollen records to create long records of past vegetation and climate - <b>Laura McDonald, The University of Auckland (student)</b>

11.30 - 11.45	Opportunities for integrated multi-discipline monitoring of New Zealand's Southern Alps - <b>Calum Chamberlain, Victoria University of Wellington</b>	Interactive tools for the communication of the temporal and spatial distribution of disaster literature in British Columbia, Canada - <b>Charlotte Milne, Institute for Resources, Environment, and Sustainability (UBC)</b> (student)	Decoding the Deep: Automated Signal Classification in OBS Data – The RUMBLE Project - <b>Christof Mueller, GNS Science</b>
11.45 - 12.00	<u>Keynote</u> Modelling the next Alpine Fault earthquake: Why measurements matter - <b>Carolyn Boulton, Te Herenga Waka Victoria University of Wellington</b>	Discovering 'The Secrets of Rocks' and lessons from other outreach projects in Chile - <b>Javiera Ruz-Ginouves, University of Otago</b> (student)	Unravelling the sediment signature of the lake tsunami: the potential of lake sediment records to reconstruct magnitude and frequency - <b>Katie Hughes, Victoria University of Wellington</b> (student)
12.00 - 13.30	<b>Lunch and SIG Meetings- ISB Link Foyer</b>		
	Castle 2 Lecture Theatre	Castle 1 Lecture Theatre	Burns 1 Lecture Theatre
12.30 - 13.20	<b>SIG Meeting</b> <b>GeoNet Programme Update</b> <b>Led by: Elizabeth Abbott, Jonathan Hanson, Elisabetta D'Anastasio and the GeoNet Team (GNS Science)</b>	<b>SIG Meeting</b> <b>GSNZ Proposed Awards Portfolio - Feedback Session</b> <b>Led by Sam McColl (GSNZ President)</b>	<b>SIG Meeting</b> <b>Geoethics Special Interest Group</b> <b>Led by: Matthew Hughes (University of Canterbury)</b>
	Castle 2 Lecture Theatre	Castle 1 Lecture Theatre	Burns 1 Lecture Theatre
13.30 - 14.45	<b>2.A Ensuring Invaluable Scientific Observations are Obtained Pre- and During the Next Alpine Fault Earthquake</b> Session Convenors: <i>Phaedra Upton, Kate Clark, Sigrún Hreinsdóttir, Emily Warren-Smith, GNS Science</i>	<b>2.B Geoscience Education, Outreach and Communication</b> Session Convenors: <i>Sophie Briggs, University of Otago; Kate Pedley, University of Canterbury, Faye Nelson, University of Otago</i>	<b>2.C Changing Landscapes; Surface Process Dynamics, Evolution, and Impacts</b> Session Convenors: <i>Sam McColl, GNS Science; Katie Jones, GNS Science; Kevin Norton, Victoria University of Wellington; Sean Fitzsimons, University of Otago; David Barrell, GNS Science</i>
13.30 - 13.45	Complex fault traces on the northern Alpine Fault, Aotearoa New Zealand: roles of fault interactions and structural maturity in influencing earthquake ground surface rupture patterns - <b>James La Greca, The University of Melbourne</b> (student)	5 Minute: Volcano - Designing Educational Games about Geological Disaster Risks with and for New Zealand Classroom - <b>Kieron Wall, University of Canterbury</b> (student)	Scratching the surface: A catalogue of recognised human impacts across New Zealand's nearshore marine/freshwater environments - <b>Sam Davidson, NIWA</b>
13.45 - 14.00	Determining the best core location to develop long lacustrine paleoseismic records - <b>Adelaine Moody, Victoria University of Wellington</b> (student)	Digital technologies coupled with practical and field experiences can enhance the ability of Geology students to practice 3D spatial skills - <b>Kate Pedley, University of Canterbury</b>	Impact of landscape evolution on the ocean circulation and glaciation: A forward modelling of basin and landscape dynamics, northern Barents Sea, Norwegian Arctic - <b>Amando Lasabuda, The University of Sydney</b>
14.00 - 14.15	Did the most recent surface-rupturing earthquake on the Alpine Fault occur in 1717 AD? - <b>Sophie Newsham, University of Canterbury</b> (student)	Integrating real and virtual field experiences for geoscience education - <b>Virginia Toy, Johannes Gutenberg Universität-Mainz</b>	How accurate are benthic foraminifera as a proxy for estimating coseismic subsidence? - <b>Bella Partington, University of Canterbury</b> (student)

14.15 - 14.30	Sediment cascades following Alpine Fault earthquakes: observations from the past inform future research prospects - <b>Jamie Howarth, Victoria University of Wellington</b>	Mine geology experiential learning as we charge towards Net Zero: fieldtrip to 2 operating open-cast mines - <b>Martin Brook, University of Auckland</b>	Unravelling the Vertical Land Motion and Relative Sea Level Rise in Sumatra, Indonesia - <b>Maritsa Faridatun Nisa - University of Otago (student)</b>
14.30 - 14.45	Surface rupture, displacement, and river avulsion impacts during the next large alpine fault earthquake - <b>Rob Langridge, GNS Science</b>	Education of the next generation of geotechnical engineering and engineering geology professionals in New Zealand - <b>Christoph Kraus, NZGS and Beca Ltd</b>	Climate of the tropical South Pacific during the Last Glacial Period: Insights from the speleothem archives - <b>Gavin Holden, Victoria University of Wellington (student)</b>
14.45 - 15.00	<b>(Short Break)</b>		
	<i>Castle 2 Lecture Theatre</i>	<i>Castle 1 Lecture Theatre</i>	<i>Burns 1 Lecture Theatre</i>
<b>15.00 – 16.00</b>	<b>3.A Applied Geosciences: Geotechnical, Resources and Technologies</b> Session Convenors: Nick Mortimer, Donna Eberhart-Phillips, GNS Science	<b>3.B Urban Geosciences</b> <i>Session Convenor: David Barrell, GNS Science</i>	<b>3.C Changing Landscapes; Surface Process Dynamics, Evolution, and Impacts</b> <i>Session Convenors: Sam McColl, GNS Science; Katie Jones, GNS Science; Kevin Norton, Victoria University of Wellington; Sean Fitzsimons, University of Otago; David Barrell, GNS Science</i>
15.00 - 15.15	Mineral Resource Estimation for gold mining at Macraes Mining Area, Hyde-Macraes Shear Zone, Otago, New Zealand - <b>Matthew Grant, OceanaGold</b>	Rediscovering the Past: Unveiling the Geological Legacy of the Albert Park Volcano, Auckland City - <b>Steven Price, Riley Consultants Ltd</b>	Detecting mass movements in alpine regions using infrasound - <b>Leighton Watson, University of Canterbury</b>
15.15 - 15.30	Sustainable Remediation of Gasworks Site in Masterton, New Zealand - <b>Ben Keet, Geo &amp; Hydro - K8 Ltd</b>	Identifying concealed structures in urban areas: Insights from Tāmaki Makaurau-Auckland, Aotearoa-New Zealand - <b>Jan Lindsay, University of Auckland</b>	Post-glacial capture of Lake Wakatipu by the Kawarau River and rapid incision of slot gorges downstream: Implications for landslide failure and outbreak floods - <b>John Youngson, Youngson Geoscience Consultants</b>
15.30 - 15.45	Carbon dioxide removal potential of New Zealand river catchments under enhanced rock weathering applications - <b>Sourajit Sahoo, University of Waikato (student)</b>	Avoiding fault: Two decades of surface fault rupture hazard management on the Ostler Fault, Twizel, South Canterbury - <b>Helen Jack, Environment Canterbury</b>	Evolution of the Leader River in Response to a Landslide Dam, Triggered by the 2016 Mw 7.8 Kaikōura Earthquake - <b>Anna McCarthy, University of Canterbury (student)</b>
15.45 - 16.00	Improving Eruption Forecasting Through Transfer Machine Learning: A Global Approach Utilizing Models Trained on 24 Volcanoes - <b>Alberto Ardid, University of Canterbury</b>	Dunedin City's Shallow Groundwater and Multi-Hazard Flood Forecasts as Sea-Levels Rise - <b>Simon Cox, GNS Science</b>	A Sand Balance Model of the Lower Rangitata River - <b>Justin Rogers, University of Canterbury (student)</b>
16.00 - 17.30	<i>ISB Link Foyer</i> <b>Poster Session and Afternoon Tea</b>		
18.30 – 21.00	<b>Night at the Museum</b> Toitu Otago Settlers Museum		

# Wednesday, 27 November 2024

08.00 – 17.00	<i>ISB Link Foyer</i> <b>Registration Open</b>		
	<i>Castle 2 Lecture Theatre</i>	<i>Castle 1 Lecture Theatre</i>	<i>Burns 1 Lecture Theatre</i>
<b>09.00 – 10.30</b>	<b>4.A Earthquake Science from Intraplate to Interplate</b> <i>Session Convenors: Mark Stirling, University of Otago; Ting Wang, University of Otago; Genevieve Coffey, GNS Science</i>	<b>4.B Evolution of the New Zealand Biota: In Honour of R. Ewan Fordyce</b> <i>Session Convenors: Daphne Lee, University of Otago; Daniel Thomas, University of Auckland</i>	<b>4.C Magmas and Volcanoes of Zealandia and Beyond</b> <i>Session Convenors: Marco Brenna, James White, Jie Wu, University of Otago</i>
09.00 - 09.15	<b>Keynote</b> Enhanced earthquake detection enables advancements in our understanding of earthquake physics - <b>Calum Chamberlain, Victoria University of Wellington</b>	<b>Keynote</b> Chimaeroids to Carcharodon: Ewan Fordyce's Contributions to Expanding the New Zealand Fossil Record of Chondrichthyans and Bony Fishes - <b>Michael Gottfried, Michigan State University</b>	<b>Keynote</b> The skirmish between arc and intraplate magma below Karioi – a stratigraphic perspective - <b>Oliver Emerson McLeod, Waikato Regional Council</b>
09.15 - 09.30	The southern extent of active Hikurangi subduction: insights from seismicity catalogues - <b>Daria Batteux, University of Canterbury (student)</b>	Landon Series Biostratigraphy - Developments over the last few decades and Ewan Fordyce's role in shaping our understanding of Zealandia's Oligocene Epoch - <b>Marcus Richards, Stay at Home Parent</b>	
09.30 - 09.45	Seismicity and moment tensors from a dense deployment spanning slow slip earthquakes near Pōrongahau, central Hikurangi margin - <b>Martha Savage, Victoria University of Wellington</b>	Winners and losers in the New Zealand flora since the Miocene: the effects of changing climate on vegetation in southern Zealandia - <b>Tammo Reichgelt, University of Connecticut</b>	What happened here? Mapping and re-interpreting the volcanic rocks underlying Dunedin - <b>Graham Leonard, GNS Science</b>
09.45 - 10.00	<b>Keynote</b> Statistical insights regarding the relationship between seismicity and slow slip events in the Hikurangi Subduction Zone - <b>Jessica Allen, University of Otago (student)</b>	Cenozoic fossil wood records of extinct and extant angiosperm tree lineages from southern Zealandia - <b>Mathew Vanner, University of Otago</b>	Hot and cold storage within a long-lived crystal mush beneath the Dunedin Volcano - <b>Ayla Stenning, University of Otago (student)</b>
10.00 - 10.15	Recurrence Patterns of Shallow Hikurangi SSEs Change Along the Strike of the Margin and after 2016 Mw7.8 Kaikoura Earthquake - <b>Andrea Carolina Perez Silva, University of Otago</b>	Eocene spiny fruits and seeds from the Waihao Greensand, New Zealand - <b>John Conran, The University of Adelaide</b>	Conduit establishment and evolution at Taranaki Mounga - <b>Henry Hoult, University of Canterbury (student)</b>
10.15 - 10.30	Deep and clustered microseismicity at the peripheral edge of southern New Zealand's plate boundary: results from the Southland Otago Seismic Array (SOSA) - <b>Jack Williams, University of Otago</b>	100 years of spore-pollen biostratigraphy in New Zealand: progress and possibilities - <b>Ian Raine, GNS Science</b>	Unravelling the story of Kuwae, Vanuatu, in Stratigraphy, Bathymetry, and Geochemistry - <b>Sönke Stern, University of Auckland (student)</b>
10.30 - 11.00	<b>Morning Tea - ISB Link Foyer</b>		
	<i>Castle 2 Lecture Theatre</i>	<i>Castle 1 Lecture Theatre</i>	<i>Burns 1 Lecture Theatre</i>



<b>11.00 – 12.30</b>	<b>5.A Earthquake Science from Intraplate to Interplate</b> <i>Session Convenors: Mark Stirling, University of Otago; Ting Wang, University of Otago; Genevieve Coffey, GNS Science</i>	<b>5.B Evolution of the New Zealand Biota: In Honour of R. Ewan Fordyce</b> <i>Session Convenors: Daphne Lee, University of Otago; Daniel Thomas, University of Auckland</i>	<b>5.C (part 1) Magmas and Volcanoes of Zealandia and Beyond</b> <i>Session Convenors: Marco Brenna, James White, Jie Wu, University of Otago</i>
11.00 - 11.15	One tune, many tempos: Faults trade off slip in time and space to accommodate relative plate motions - <b>Russ Van Dissen, GNS Science</b>	New insights into the fossil record of sea pens (Octocorallia) based on a new find from the mid-Cretaceous of New Zealand - <b>Alexey Ippolitov, Victoria University of Wellington (student)</b>	Measuring a volcano's breath: Young volcanic plume emissions reveal elevated magmatic degassing amidst a long heating cycle of a hyper-acidic volcanic crater lake (Mt. Ruapehu) - <b>Marco Rebecchi, Te Herenga Waka-Victoria University of Wellington (student)</b>
11.15 - 11.30	Progress towards untangling earthquake sources in the Central Hikurangi Subduction Zone: Holocene marine terraces between Clifton and Waimārama - <b>Nicola Litchfield, GNS Science</b>	Size trends in Zealandian Mesozoic Brachiopods - <b>Donald MacFarlan, Independent</b>	Linking hydrothermal alteration to rock mechanics: comparative analysis of andesitic volcanoes in Aotearoa - New Zealand - <b>Maia Kidd, Massey University (student)</b>
11.30 - 11.45	Late Quaternary activity of the Pisa Fault, Otago - <b>Mark Stirling, University of Otago</b>	Unlocking the secrets of ancient predation: A study of fossil drill holes and crustacean damage in invertebrates from a rocky shore ecosystem, Cosy Dell, Southland - <b>Yutong Wu, University of Otago (student)</b>	The Volcanic Lakes of Te Ahi Tupua (Central Taupō Volcanic Zone, Aotearoa New Zealand) - <b>AJ Marshall, Te Herenga Waka-Victoria University of Wellington (student)</b>
			<b>5.C (part 2) Understanding Diverse Volcanic Processes</b> <i>Session Convenors: Eleanor Mestel, Finnigan Illsley-Kemp, Simon Barker, Stephen Piva, Te Herenga Waka Victoria University of Wellington; Sigrún Hreinsdóttir, GNS Science Te Pū Ao</i>
11.45 - 12.00	Structural controls on the geometries and displacements of Kaikōura Earthquake fault ruptures - <b>Andy Nicol, University of Canterbury</b>	Fossil arthropods from Zealandia reveal a complex ecological and biogeographic history - <b>Daphne Lee, University of Otago</b>	Recent inflation episodes beneath Taupō Volcano - <b>Sigrún Hreinsdóttir, GNS Science</b>
12.00 - 12.15	How greywacke faults heal: Results from hydrothermal friction experiments - <b>Carolyn Boulton, Te Herenga Waka Victoria University of Wellington</b>	Potential new turtle species from the Neogene of North Canterbury, New Zealand - <b>Morne Wium, Canterbury University (student)</b>	Fibre optic sensing of earthquakes at Ruapehu - <b>Leighton Watson, University of Canterbury</b>
12.15 - 12.30	Geometries and slip rates of recently discovered active faults in Taranaki - <b>Matt Parker, University of Canterbury</b>	The University of Otago Geology Museum fossil database - <b>Jeffrey Robinson, University of Otago</b>	Monitoring Volcanic Degassing at Ruapehu - <b>Agnes Mazot, GNS Science</b>
12.30 - 14.00	<b>Lunch and SIG Meetings - ISB Link Foyer</b>		
	<i>Castle 2 Lecture Theatre</i>	<i>Castle 1 Lecture Theatre</i>	<i>Burns 1 Lecture Theatre</i>

13.00 - 13.50	<b>SIG Meeting</b> <b>Kickstarting a Seismology Special Interest Group</b> <i>Led by: Matt Gerstenberger, Kiran Kumar Thingbaijam (GNS Science), Jack Williams (University of Otago)</i>	<b>SIG Meeting</b> <b>GeOID SIG Meeting</b> <i>Led by: Jenny Stein (Massey University)</i>	<b>SIG Meeting</b> <b>Friends of Pleistocene Special Interest Group</b> <i>Led by: David Barrell (GNS Science)</i>
	Castle 2 Lecture Theatre	Castle 1 Lecture Theatre	Burns 1 Lecture Theatre
<b>14.00 – 15.30</b>	<b>6.A Earthquake Science from Intraplate to Interplate</b> <i>Session Convenors: Mark Stirling, University of Otago; Ting Wang, University of Otago; Genevieve Coffey, GNS Science</i>	<b>6.B Evolution of the New Zealand Biota: In Honour of R. Ewan Fordyce</b> <i>Session Convenors: Daphne Lee, University of Otago; Daniel Thomas, University of Auckland</i>	<b>6.C Understanding Diverse Volcanic Processes</b> <i>Session Convenors: Eleanor Mestel, Finnigan Illsley-Kemp, Simon Barker, Stephen Piva, Te Herenga Waka Victoria University of Wellington; Sigrún Hreinsdóttir, GNS Science Te Pū Ao</i>
14.00 - 14.15	Geophysical imaging of the Paeroa Fault: Insights from a dense nodal seismic array - <b>Brook Keats, GNS Science, Wairakei Research Centre</b>	A bite of evolution: elucidating cetacean evolutionary history through their teeth - <b>Carolina Loch, University of Otago</b>	Cracks and Thermal Flow: Thermo-structural Analysis at Maunga Kakaramaea, Waiotapu Geothermal Field - <b>Gerd Sielfeld, University of Auckland</b>
14.15 - 14.30	An integrated 3D "interseismic" GNSS velocity field, updated strain-rate maps, and geodetic slip-deficit-rate models for Aotearoa New Zealand, plus some questions - <b>Chris Rollins, GNS Science</b>	The oldest New Zealand sea lion - <b>Felix Georg Marx, Museum of New Zealand Te Papa Tongarewa</b>	A Summary and Interpretation of The Recent Potential Field and Carbon Dioxide Gas Flux Data of Rangitoto Volcano, Auckland Volcanic Field - <b>Alutsyah Luthfian, The University of Auckland (student)</b>
14.30 - 14.45	Cataloguing and promoting the use of paper records in the national earthquake information database - <b>Paul Viskovic, GNS Science</b>	A New Diving Pliocene Ardenna Shearwater (Aves: Procellariidae) from New Zealand - <b>Alan Tennyson, Museum of New Zealand Te Papa Tongarewa</b>	Investigating conditions for phreatic volcanic eruptions with comparison to Whakaari volcano, New Zealand - <b>Sophie Pearson-Grant, GNS Science</b>
14.45 - 15.00	New Zealand National Seismic Hazard Model Revision 2022: Hazard changes with respect to NZ NSHM 2010 - <b>Sanjay Bora, GNS Science</b>	Ancient mitogenomes and morphometrics reveal a new species of extinct large insular shelduck from Rēkohu Chatham Islands - <b>Nic Rawlence, University of Otago</b>	Better shape up! The impact of irregular shape in numerical modelling of volcanic bombs - <b>Amilea Sork, University of Canterbury (student)</b>
15.00 - 15.15	The 2022 New Zealand National Seismic Hazard Model applied in the Wellington Basin - <b>Anna Kaiser, GNS Science</b>	Kyeburn Moa Footprints and the Maniototo Conglomerate - <b>Kane Fleury, Tūhura Otago Museum</b>	Insights into rapidly transitioning eruptions at Ambrym volcano (Vanuatu, SW Pacific) through melt inclusions from the 1913 Hospital Tuff - <b>Kristen Lewis, University of Canterbury (student)</b>
15.15 - 15.30	Empirical validation of physics-based ground motion modelling in Wellington Basin: Insights on Basin Amplification - <b>Duo Li, GNS Science</b>	Fossil footprints from the rohe of Ngāti Whātua o Kaipara are educational assets - <b>Daniel Thomas, University of Auckland</b>	Magmatic processes and the obsidians of Tūhua (Mayor Island) - <b>Frankie Haywood, University of Bristol (student)</b>
15.30 - 17.00	<b>Poster Session and Afternoon Tea - ISB Link Foyer</b>		

17.00 - 18.00	<b>GSNZ AGM - Castle 2 Lecture Theatre</b>
19.00 - late	<b>“It's Always Sunny in Dunedin” Awards Dinner</b> Business School, University of Otago Ōtākou Whakaihu Waka

## Thursday, 28 November 2024

08.00 – 15.00	<i>ISB Link Foyer</i> <b>Registration Desk Open</b>		
	<i>Castle 2 Lecture Theatre</i>	<i>Castle 1 Lecture Theatre</i>	<i>Burns 1 Lecture Theatre</i>
<b>09.00 – 10.30</b>	<b>7.A Preparation for the Next Big Quake Rapid Response Science, Cascading Hazard &amp; Scenario Development</b> <i>Session Convenors: Anna Kaiser, GNS Science; Caroline Orchiston, University of Otago; Elena Manea, GNS Science</i>	<b>7.B Future-Proofing Energy and Minerals: Geoscience in the Low-Emissions Era</b> <i>Session Convenors: David Dempsey, University of Canterbury; Ludmila Adam, University of Auckland; Jess Hillman, NIWA</i>	<b>7.C Great Southern Land (and Ocean): Research from Antarctica and the Southern Ocean</b> <i>Session Convenors: Greer Gilmer, GNS Science; Meghan Duffy, University of Otago</i>
09.00 - 09.15	Exercise Rū Whenua: Building an Alpine Fault earthquake scenario for a national-scale emergency management exercise - <b>Tom Robinson, University of Canterbury</b>	<b>Keynote A minerals strategy for New Zealand - Richard Garlick, MBIE</b>	<b>Keynote Structure and mechanics of the McMurdo Ice Shelf: news from the K062 field camp - David Prior, University of Otago</b>
09.15 - 09.30	Developing The GNS Incident Management System in Preparation for Rū Whenua and The Next Large Earthquake - <b>Gerry Blair, GNS Science</b>	New Zealand’s mineral resources for the low carbon emissions future - <b>Tony Christie, GNS Science</b>	
09.30 - 09.45	Spatio-Temporal Variability in Disaster Exposure: Insights from the Alpine Fault Earthquake Scenario (Rū Whenua) - <b>Mat Darling, University of Canterbury (student)</b>	<b>Keynote Resourcing the future: changing the concept of ore - Julie Rowland, University of Auckland</b>	Estimating Marine Ice Thickness Beneath the Amery Ice Shelf from Airborne Radio-Echo Sounding - <b>Lijuan Wang, Tongji University (student)</b>
09.45 - 10.00	From Science to Operation within the Rapid Characterisation of Earthquake and Tsunami (RCET) Program - <b>Jen Andrews, GNS Science</b>		Comparing 2D and 3D models of Antarctic ice shelf rift fronts - <b>Martin Forbes, Otago Polytechnic</b>



10.00 - 10.15	Improving Earthquake Forecasting in New Zealand: The Development and Implementation of the Hybrid Forecast Tool (HFT) - <b>Kenny Graham, GNS Science</b>	Brine-reactivity for studies of injecting CO2 and H2 in New Zealand Rocks – <b>Ludmila Adam, University of Auckland</b>	Glacial-interglacial uranium isotope systematics of coccolithophore from the Southern Ocean: New insights for ocean temperature, pH, carbonate ion concentration and redox reconstructions - <b>Marie Hennequin, The University of Otago (student)</b>
10.15 - 10.30	Operational Template-Matching for Rapid Aftershock Analysis and Source Characterisation - <b>Emily Warren-Smith, GNS Science</b>	Understanding geophysical properties of fluids for monitoring a CCS project at the Kapuni field - <b>Steve Morice, Todd Energy</b>	Pleistocene paleoenvironmental reconstructions from the Pacific Sector of the Antarctic Circumpolar Current: Diatom and sediment geochemistry proxies from IODP 383 Site U1539 - <b>Meghan Duffy, University of Otago (student)</b>
10.30 - 11.00	<b>Morning Tea - ISB Link Foyer</b>		
	<i>Castle 2 Lecture Theatre</i>	<i>Castle 1 Lecture Theatre</i>	<i>Burns 1 Lecture Theatre</i>
<b>11.00 – 12.30</b>	<b>8.A Preparation for the Next Big Quake Rapid Response Science, Cascading Hazard &amp; Scenario Development</b> <i>Session Convenors: Anna Kaiser, GNS Science; Caroline Orchiston, University of Otago; Elena Manea, GNS Science</i>	<b>8.B Future-Proofing Energy and Minerals: Geoscience in the Low-Emissions Era</b> <i>Session Convenors: David Dempsey, University of Canterbury; Ludmila Adam, University of Auckland; Jess Hillman, NIWA</i>	<b>8.C Great Southern Land (and Ocean): Research from Antarctica and the Southern Ocean</b> <i>Session Convenors: Greer Gilmer, GNS Science; Meghan Duffy, University of Otago</i>
11.00 - 11.15	Waikato Region Hikurangi Subduction Zone Consequence Planning - <b>Whitney Mills, Waikato Regional Council</b>	Geological assessment of underground hydrogen storage prospectivity, Taranaki Basin: a multi-criteria decision-making approach - <b>Dominic Paul Strogon, GNS Science</b>	Magnetic fabric analysis of laboratory deposited sediments to investigate paleo Antarctic Bottom Water velocity - <b>Natalie-Jane Reid, University of Otago (student)</b>
11.15 - 11.30	Comprehensive physics-based multi-hazard and multi-risk modelling for Aotearoa New Zealand: a progress report - <b>Bill Fry, Te Pū Ao</b>	Correlation or causation? Influences of topography, heat sources, and geology on regional-scale geothermal fluid flow in the Taupō Volcanic Zone, New Zealand - <b>Sophie Pearson-Grant &amp; Lucy Carson, GNS Science</b>	Linking oceanographic-driven sediment and organic carbon flux to geologic records in Antarctic submarine canyons - <b>Jess Hillman, NIWA</b>
11.30 - 11.45	A National Probabilistic Coseismic Displacement Model for Aotearoa New Zealand - <b>Andy Howell &amp; Jack McGrath, University of Canterbury</b>	Achieving Carbon Neutrality in Geothermal Energy: A Model for High-Emission Industries - <b>Eylem Kaya, University of Auckland</b>	<b>9.C Mountains to Sea Research in Fiordland</b> <i>Session Convenor: Greer Gilmer, GNS Science</i>
	<b>9.A Tsunamis in the Southwest Pacific – Monitoring, Evaluation, Response and Mitigation</b>	<b>9.B Regional and General Geology: In Honour of Jane Forsyth</b> <i>Session Convenor: Nick Mortimer, GNS Science</i>	Over the misty mountains – Fiordland’s climatic development during the Holocene - <b>Julian Eschenroeder, University of Otago (student)</b>

	<i>Session Convenors: William Power, Craig Miller, Jonathan Hanson, Jean Roger, GNS Science</i>		
11.45 - 12.00	24/7 Monitoring and Rapid Response to Tsunamigenic events in Aotearoa - <b>Heather J Rawcliffe, GNS Science</b>	<u>Keynote</u> A sub-Quaternary geological map, Te Waipounamu South Island and Rakiura Stewart Island - <b>Mark Rattenbury, GNS Science</b>	Carbon Loss from Earthquake-Induced Landslides in Fiordland - <b>Charles Cox, University of Otago</b> (student)
12.00 - 12.15	Constraining Tsunamigenic Earthquake Sources: Integrating Array Seismological Methods with the W-Phase Solution for Improved Far-Field Tsunami Warning - <b>Amin A. Naeini, University of Auckland</b> (student) & <b>Bill Fry, GNS Science</b>	On the origin of tremolite in New Zealand nephrite (including Pounamu)- <b>Mike Palin, University of Otago</b>	Assessing Carbon Storage Capacities in Fiordland Fjords: Insights from high-resolution seismic imaging - <b>Ellen Unland, University of Otago</b> (student)
12.15 - 12.30	Earthquake cycle models of the Hikurangi-Kermadec and Tonga-Vanuatu subduction zones - <b>Yi-wun Mika Liao, GNS Science/University of Canterbury</b> (student)	The sedimentology, stratigraphy and geochemistry of the Waipara Greensand- <b>Ted Spinks, University of Canterbury</b> (student)	The secrets of sequestration: Assessing the modern carbon stocks in Tamatea / Dusky Sound - <b>Luke Whibley, University of Otago</b> (student)
12.30-13.30	<b>Lunch - ISB Link Foyer</b>		
	<i>Castle 2 Lecture Theatre</i>	<i>Castle 1 Lecture Theatre</i>	<i>Burns 1 Lecture Theatre</i>
13.30 - 14.30	<b>10.A Tsunamis in the Southwest Pacific – Monitoring, Evaluation, Response and Mitigation</b> <i>Session Convenors: William Power, Craig Miller, Jonathan Hanson, Jean Roger, GNS Science</i>	<b>10.B Regional and General Geology: In Honour of Jane Forsyth</b> <i>Session Convenor: Nick Mortimer, GNS Science</i>	<b>10.C Mountains to Sea Research in Fiordland</b> <i>Session Convenor: Greer Gilmer, GNS Science</i>
13.30 - 13.45	Five years of tsunami monitoring with the New Zealand DART network: detections, issues & perspectives - <b>Jean Roger, GNS Science</b>	New Zealand's earliest geological maps and the argument they generated between Hochstetter and Heaphy - <b>Bruce W. Hayward, Geomarine Research</b>	Mountains to sea in 3D: Fiordland plutonic block is key to the southern South Island New Zealand Plate Boundary - <b>Donna Eberhart-Phillips, GNS Science</b>
13.45 - 14.00	Database Development for Volcanic Tsunami Threat Levels - <b>Aditya Gusman, GNS Science</b>	Deformation history of the Waimea-Flaxmore Fault System in Nelson-Tasman Bay (New Zealand): implications of alternative restorations - <b>Francesca Ghisetti, Terrageologica</b>	Fiordland saltmarshes: sediments, salinity, and vegetation - <b>Peter Johnson, Manaaki Whenua Landcare Research</b>
14.00 - 14.15	The National Tsunami Hazard Model - 2021 Update and Example Applications – <b>William Power, GNS Science</b>	Structural reinterpretation of the McKee field using a thrust-fault growth and linkage model – <b>Lawrence Grant-Woolley, Todd Energy</b>	The impact of land dynamics on the terrestrial carbon cycle in Fiordland - <b>Elizabeth Keller, GNS Science</b>

14.15 - 14.30	Tsunami Hazard from Afar: Implications for Aotearoa New Zealand - <b>Aisling O'Kane, University of Canterbury</b>	Tectonic evolution of the east Yilgarn craton, Western Australia - <b>Sarah Jones, SJGeology Ltd</b>	Where does the carbon go? Reconciling atmospheric observations, surface observations, and lateral transport of carbon in Fiordland - <b>Jocelyn Turnbull, GNS Science</b>
14.30 - 15.00	<i>Castle 2 Lecture Theatre</i> <b>Closing Ceremony</b> <b>Student Presentation Awards</b> <b>NZJGG Prize Giving presented by the Royal Society</b> <b>Photo Competition Awards presented by Tourism New Zealand</b>		

## Friday, 29 November 2024

(Field Trips)

<b>Starts</b> Thursday at 15.30. <b>Ends</b> Friday at 16.00	<b>Explore the Stories of New Zealand's First UNESCO Global Geopark – Two Day Field Trip</b> Thursday 28th and Friday 29th November <b>Leader:</b> Sasha Morriss (Waitaki Whitestone Geopark)
09.00 – 16.30	<b>A Geological Tour through Dunedin's Landscape and Scenery</b> Friday 29th November <b>Leaders:</b> David Barrell & Nick Mortimer (GNS Science)
09.30 – 16.30	<b>Akatore Fault Earthquake Geology: Otago's Most Active Fault</b> Friday 29th November <b>Leader:</b> Mark Stirling (University of Otago)
08.30 – 15.00	<b>Dunedin's Challenge with Sea Level Rise</b> Friday 29th November <b>Leader:</b> Simon Cox (GNS Science)
08.00 – 15.00	<b>Dunedin's Volcanic Geology</b> Friday 29th November <b>Leaders:</b> Ayla Stenning, Marco Brenna, Rachael Baxter, Dante Frean, James White (University of Otago)
09.00 – 15.00	<b>Geology Along Te Aka Ōtakou/Otago Harbour Cycleway</b> Friday 29th November <b>Leaders:</b> Greer Gilmer (GNS Science) & Sophie Briggs (University of Otago)