| SUNDAY 24 NOVEMBER 2019<br>The University of Waikato, Hamilton | |
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| 5.00 pm | **Registration**<br>*Venue: Lower Level, S Block* |
| **5.30 pm - 7.00 pm** | **Welcome Function**<br>*Venue: Industry Exhibition Area, Level 1, S Block* |

# DAY 1: MONDAY 25 NOVEMBER 2019

**The University of Waikato, Hamilton**

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|---|---|
| 8.00 am | **Registration**<br>*Venue: Lower Level, S Block* |
| **8.30 am - 9.20 am** | **Conference Opening and Plenary**<br>*Chair: Conference Convenor Peter Kamp*<br>*Venue: L.G.01, L Block* |
| 8.30 am - 8.35 am | Mihi Whakatau<br>***Wiremu Puke*** |
| 8.35 am - 8.40 am | Conference Convenor's Notices<br>***Peter Kamp*** |
| 8.40 am - 8.45 am | Conference Opening<br>***Professor Neil Quigley, Vice-Chancellor of The University of Waikato*** |
| 8.45 am - 8.50 am | Senior Editor: *New Zealand Journal of Geology and Geophysics*<br>***Kari Bassett***<br>***Proudly Sponsored by***<br>ROYAL SOCIETY TE APĀRANGI<br>EXPLORE \| DISCOVER \| SHARE |
| 8.50 am - 9.20 am | Earth Sciences for our future<br>***Gary Wilson***<br>***Proudly Sponsored by***<br>GNS SCIENCE TE PŪ AO |



# MONDAY

| 9.30 am - 10.30 am | **1A**<br>**Symposium 1: Earthquake Science**<br>*Venue: S.1.01*<br>*Chair: Emily Warren-Smith* | **1B**<br>**Symposium 9: Volcanology, Geochemistry and Petrology**<br>*Venue: S.1.02*<br>*Chair: Simon Barker* | **1C**<br>**Symposium 4: Lessons from Climates Past in Zealandia and Antarctica**<br>*Venue: S.1.04*<br>*Chair: Peter Barrett* |
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| 9.30 am - 10.00 am | Geometry causes temporal clustering of great earthquakes on a transform plate boundary fault<br>***Jamie Howarth***, *N Barth, S Fitzsimon, K Richards-Dinger, K Clark, U Cochran, R Langridge, K Berryman, R Sutherland* | How pyroclastic flows outsmart granular friction during volcanic eruptions<br>***Gert Lube***, *E Breard, E Brosch, J Jones, E Fullard, J Dufek* | #ClimateEmergency–What is it and what does the future hold?<br>***James Renwick***<br>*(presenting by Zoom)* |
| 10.00 am - 10.15 am | Co-seismic structural evolution of large-magnitude strike-slip ground ruptures ("Mole Tracks")<br>***Timothy Little***, *P Morris, M Hill, J Kearse, R Van Dissen, J Manousakis, D Zekkos, S Lawson* | Lessons from field-experimental studies of hydrothermal eruptions in the Taupo volcanic zone<br>***Geoffrey Lerner***, *AC Gallagher, C Montanaro, SJ Cronin, B Scheu, J Holzmueller* | Current glacier extent in the Southern Alps may be unprecedented in the Holocene<br>***Lisa Dowling***, *S Eaves, A Mackintosh, K Norton, B Anderson, A Hidy, A Lorrey, M Ryan, L Vargo, S Tims* |
| 10.15 am - 10.30 am | Three-dimensional co-seismic accommodation of ~9 m of displacement through a "Mole-Track" structure in a strike-slip earthquake<br>***Philippa Morris***, *T Little, M Hill, R Van Dissen, J Kearse, L Petherick, M Hemphill-Haley, K Norton, J Manousakis, D Zekkos* | A conduit filled with hydrothermal breccia and self-closing cracks reconstructed from ballistics from Whakaari (White island)<br>***Ben Kennedy***, *M Villeneuve, R Hilderman, A Farquhar, M Heap, S Mordensky, G Kilgour, A Jolly, B Christenson* | Tracking the demise of the Last Glaciation in the Southern Alps<br>***David Barrell***, *G Denton, A Putnam* |
| **10.30 am - 11.00 am** | **Morning Tea, Networking, Industry Exhibition**<br>*Venue: Industry Exhibition Area, Level 1, S Block* | | ***Proudly sponsored by*** |

| 11.00 am - 12.00 pm | **2A**<br>**Symposium 1: Earthquake Science**<br><br>*Venue: S.1.01*<br>*Chair: Emily Warren-Smith* | **2B**<br>**Symposium 9: Volcanology, Geochemistry and Petrology**<br><br>*Venue: S.1.02*<br>*Chair: Graham Leonard* | **2C**<br>**Symposium 4: Lessons from Climates Past in Zealandia and Antarctica**<br>*Venue: S.1.04*<br>*Chair: Chris Hollis* |
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| 11.00 am - 11.15 am | Historical surface rupture observations confirm relationship between curved slickenlines and the direction of rupture propagation<br>***Jesse Kearse**, Y Kaneko* | The Eclipse Programme - reducing uncertainty around future unrest and eruption in the Central Taupō volcanic zone<br>***Melissa Rotella**, C Wilson, G Leonard, G Lube* | Developments and challenges in paleo-ice sheet modelling to constrain past sea level<br>***Daniel Lowry*** |
| 11.15 am - 11.30 am | Detection of S-wave reflectors beneath aftershock area of the 2016 Kaikoura Earthquake<br>***Satoshi Matsumoto**, Y Kawamura, T Okada, M Matsuno, Y Lio, R Sibson, M Suzuki, S Bannister, M Savage* | The 2019 Taupō seismic swarms: magmatic, tectonic or both?<br>***Finnigan Illsley-Kemp**, SJ Barker, MK Savage, CJN Wilson* | Water chemistry and ice mechanics<br>***Rilee Thomas**, DJ Prior, G Kerr, S Fan, DL Goldsby, AJ Cross, TF Hager, M Negrini* |
| 11.30 am - 11.45 am | Velocity changes in Cook Strait following the 2016 Kaikōura Earthquake<br>***Katrina Jacobs**, M Savage* | Magma imaged beneath the Rotorua and Okataina Calderas with combined land and lake magnetotelluric data<br>***Ted Bertrand**, P Kannberg, S Constable, B Scott, W Heise, TG Caldwell* | Investigating hydro-isostasy as a driver of Holocene sea-level variability in Northland, New Zealand<br>***Alastair Clement**, PL Whitehouse* |
| 11.45 am - 12.00 pm | | Coupled eruptions in the Auckland Volcanic Field: Are we underestimating the threat to our city?<br>***Jenni Hopkins**, C Timm, LE McGee, MA Millet, F Hauff, CJN Wilson, GS Leonard* | What drove rapid terrestrial paleoenvironmental change in late Cretaceous New Zealand?<br>***Nicholas Powell*** |
| **12.00 pm - 1.00 pm** | **Lunch and Interest Group Meetings**<br>*Venue: Industry Exhibition Area, Level 1, S Block* | | |

# MONDAY

| 12.15 pm - 12.50 pm | | WOMEESA (Women in Earth and Environmental Sciences in Australasia) Lunchtime Session<br>*Venue: S.1.02* | Palaeontology and Fossil Records File Special Interest Group Meeting<br>*Venue: S.1.04* |
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| **1.00 pm - 2.45 pm** | **3A**<br>**Symposium 1: Earthquake Science**<br>*Venue: S.1.01*<br>*Chair: Katrina Jacobs* | **3B**<br>**Symposium 9: Volcanology, Geochemistry and Petrology**<br>*Venue: S.1.02*<br>*Chair: Simon Barker* | **3C**<br>**Symposium 4: Lessons from Climates Past in Zealandia and Antarctica**<br>*Venue: S.1.04*<br>*Chair: David Barrell* |
| 1.00 pm - 1.15 pm | Microphysical mechanisms behind giant earthquakes and seismic supercycles<br>***Andre Niemeijer**, MPA van den Enda, J Chen, J-P Ampuero* | SIMS as a Tool for obtaining sr isotopes in magmatic plagioclase: A case study at Okataina Volcanic Centre, New Zealand<br>***May Sas**, N Kawasaki, N Sakamoto, P Shane, G Zellmer, AJR Kent, H Yurimoto* | A multi-proxy paleoenvironment interpretation of the last glacial cycle (ca. 117 ka) and wavelet analysis from Lake Kai Iwi, Northland, New Zealand<br>***Gianna Evans**, P Augustinus, P Gadd, A Zawadzki, A Ditchfield, J Hopkins* |
| 1.15 pm - 1.30 pm | What forces move tectonic plates?<br>***Tomek Glowacki*** | What lies beneath? Reconstructing the primitive magmas fueling voluminous silicic volcanism using olivine-hosted melt inclusions<br>***Simon Barker**, M Rowe, C Wilson, J Gamble, S Rooyakkers, R Wysoczanski, F Illsley-Kemp, C Kenworthy* | Coupled atmosphere-ocean temperature changes in Southwest Pacific during the Antarctic Cold Reversal<br>***Shaun Eaves**, A Mackintosh, J Pedro, H Bostock, M Ryan, K Norton, B Hayward, B Anderson, F He, RS Jones, A Lorrey, R Newnham, G Scott, S Tims, M Vandergoes* |
| 1.30 pm - 1.45 pm | Relations between injection and acoustic emissions in critically-stressed wet sandstone<br>***Alexander Catalinac**, D Dempsey, M Pender, L Wang, G Kwiatek, G Dresen* | Volcanism of 'Middle Earth': The North Island Volcanic landscape between 3.0 And 0.9 Ma<br>***Adrian Pittari**, ML Prentice, OE McLeod, RM Briggs, KA Vincent, PJJ Kamp, M Danisik* | New Zealand Neogene climate: An overview<br>***Martin Crundwell*** |

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| 1.45 pm - 2.00 pm | Dual-Driven fault failure in the Lower Seismogenic Zone<br>***Richard Sibson*** | The origin of magma encountered during drilling of the hydrothermal Drill-hole KJ-39, Krafla, Iceland.<br>***Georgina Rule***, *A Nichols, B Kennedy, I Schipper, A Mortensen* | Beyond 2°C: Lessons from Early Paleogene Zealandia<br>***Chris Hollis***, *EM Crouch, EM Kennedy, CL Shepherd* |
| 2.00 pm - 2.15 pm | Triggering of a large and damaging earthquake (MW 5.5) by Hydraulic stimulation during the development of an enhanced geothermal system in Pohang, South Korea<br>***John Townend*** *, W Ellsworth, S Ge, D Glardini, T Shimamoto* | Volatiles in the HIMU mantle component and the efficiency of dehydration during subduction<br>***Alex Nichols***, *T Hanyu, K Shimizu, L Dosso* | **2.00 pm - 2.30 pm**<br>**Symposium 8: Ancient DNA and New Zealand's Quaternary History**<br>*Chair: Nicolas Rawlence* |
| 2.15 pm - 2.30 pm | Low-frequency earthquakes accompany deep slow-slip beneath the North Island of New Zealand<br>***Florent Aden-Antoniow****, W Frank, C Chamberlain, J Townend, L Wallace, S Bannister* | A Study of very long period volcanic earthquakes at Whakaari/White Island, New Zealand<br>***Iseul Park***, *A Jolly, I Lokmer, B Kennedy* | The Ancient DNA Revolution: How our understanding of the impacts of the Quaternary Ice Ages, and humans, on New Zealand's biodiversity is rapidly changing<br>***Nicolas Rawlence*** |
| 2.30 pm - 2.45 pm | Geothermal systems in the Taupō Volcanic Zone through earthquake analyses<br>*M Savage,* ***John Townend***, *S Sewell, C Hopp, S Mroczek, F Civilini, B Keats* | LP or VT signals? How seismic wave attenuation influences volcano seismicity signatures<br>***James Clarke***, *L Adam, K van Wijk, J Sarout* | Does Size Matter? Using osteology and ancient DNA to reconstruct extinct species diversity in New Zealand large geckos<br>***Lachie Scarsbrook****, RE Fordyce, NJ Rawlence* |
| **2.45 pm - 3.15 pm** | **Afternoon Tea, Networking, Industry Exhibition**<br>*Venue: Industry Exhibition Area, Level 1, S Block* | | |

# MONDAY

| 3.15 pm - 4.15 pm | 4A<br>**Symposium 1: Earthquake Science**<br>*Venue: S.1.01*<br>*Chair: Jesse Kearse* | 4B<br>**Symposium 9: Volcanology, Geochemistry and Petrology**<br>*Venue: S.1.02*<br>*Chair: Graham Leonard* | 4C<br>**Symposium 7: The Paleontological Archive**<br>*Venue: S.1.04*<br>*Chair: Ewan Fordyce* |
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| 3.15 pm - 3.30 pm | Paleoseismology of the Hyde Fault and Implications for episodic fault activity in the Otago Range and Basin Province<br>***Jonathan Griffin**, M Stirling, E Vanden Berg, D Barrell, R Nicolls, E Todd, N Wang* | Spatiotemporal relationships between two closely-spaced strombolian-style vents, Yasur, Vanuatu<br>***Benjamin Simons**, A Jolly, S Cronin, J Eccles* | A new species of fossil *Scutus* Montfort, 1810 (Gastropoda) from New Zealand<br>***Henry Gard**, D Lee* |
| 3.30 pm - 3.45 pm | Amount and width of surface rupture along the San Andreas fault in the 1906 San Francisco Earthquake, San Francisco Peninsula, California<br>***Alan Hull*** | Scales of geochemical variation among cross-arc basaltic stratovolcanoes in North Island: The Alexandra Volcanic Group<br>***Oliver McLeod**, RM Briggs, M Brenna, A Pittari* | "Dark ages" in the history of whales and dolphins<br>***R Ewan Fordyce**, FG Marx, Y Tanaka* |
| 3.45 pm - 4.00 pm | Foraminiferal proxies for distinguishing displaced turbidite sediment and in-situ hemipelagite<br>***Bruce Hayward**, A Sabaa* | Enigmatic supra-subduction zone dacite volcanoes in Northern New Zealand: Evidence for eruption of subduction-modified mantle melts facilitated by the Hauraki Rift?<br>***Jan Lindsay**, M Rowe, R Trumbull, T Howe, M Sas* | Paleoenvironmental reconstruction of an Early Miocene depositional environment at Mathesons Bay, Auckland, based on the skeletal composition of cool water carbonates<br>***Thomas Stolberger**, K Campbell, L Strachan, B Sp örli, A Jones* |
| 4.00 pm - 4.15 pm | Reconstructing sea-level rise from New Zealand's subsiding coastlines<br>***Daniel King**, R Newnham, R Gehrels, K Clark, A Rees* | Modelling internal triggering of rhyolite eruptions by geothermal cooling<br>***David Dempsey**, D Gravley, J Rowland* | Mid- Pleistocene paleoenvironmental reconstruction of the largest fossil forest in Auckland, New Zealand<br>***Nathan Collins**, K Campbell, P Augustinus* |

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| **4.15 pm - 5.10 pm** | **Poster Session A**<br>*Venue: Industry Exhibition Area, Level 1, S Block* | *Proudly Sponsored by*<br>NIWA Taihoro Nukurangi |
| **5.15 pm - 7.00 pm** | **Public Lecture**<br>**The Science of Sea-level change, Impacts and Management**<br>*Venue: L.G.01, L Block*<br>*Chair: Peter Kamp*<br>**Tim Naish**, Antarctic Research Centre, Victoria University of Wellington; Co-Leader of the NZ SeaRise Programme: 'Predicting Sea Level Rise for Aotearoa New Zealand'<br>**Rick Liefting**, Team Leader Regional Resilience and Environment, Waikato Regional Council<br>**Rob Bell,** Programme Leader - Impacts and Adaptation to Climate Change, National Institute of Water and Atmospheric Research Ltd (NIWA) | *Proudly Sponsored by*<br>NZ SEA RISE Te Tai Pari o Aotearoa<br>Waikato Regional Council Te Kaunihera ā Rohe o Waikato |

# DAY 2: TUESDAY 26 NOVEMBER 2019

**The University of Waikato, Hamilton**

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|---|---|---|---|
| **8.00 am** | **Registration**<br>*Venue: Lower Level, S Block* | | |
| **8.30 am - 10.30 am** | **5A**<br>**Symposium 11: Engineering Geology and Geotechnical Studies**<br>*Venue: S.1.01*<br>*Chair: Marc-Andre Brideau* | **5B**<br>**Symposium 9: Volcanology, Geochemistry and Petrology**<br>*Venue: S.1.02*<br>*Chair: Simon Barker* | **5C**<br>**Symposium 2: Hikurangi Subduction Margin**<br>*Venue: S.1.04*<br>*Chair: Philip Barnes, Dan Bassett* |
| 8.30 am - 8.45 am | **8.30 am - 9.00 am**<br>The NCTIR Project – Response, recovery and resilience of the North Canterbury Transport Corridor<br>***Richard Justice*** | A hidden volcano in the South Auckland Volcanic Field: Karaka Volcano<br>***Madison Hansen***, *A Pittari, BW Hayward* | **8.30 am - 9.00 am**<br>The Hikurangi subduction zone, the Blind (Wo)men, and the elephant: Numerical experiments to explore interactions between rheology, stress, and fluid pressure through space and time<br>***Susan Ellis***, *T Sun, A Beall, C Boulton, D Saffer, Fagereng A, L Wallace, S Davidson, F Ghisetti, P Barnes, J Morgan, D Barker, S Buiter, C Williams* |
| 8.45 am - 9.00 am | | Volcanic processes and emplacement mechanisms of the 1.6 Ma Ngaroma Eruption<br>***Chris Anne Ross***, *A Pittari* | |
| 9.00 am - 9.15 am | The anomalously old Bush Stream Rock Avalanche and its implications for landslide inventories<br>***Samuel McColl*** | Evidence for volcanic eruptions in speleothems — the Taupo 232 ± 10 CE recorded in a New Zealand stalagmite<br>***Nicholas Gampell***, *J Baker, S Barker, P Williams, A Borsato, S Frisia, J Hellstrom, R Drysdale, C Wilson, A French, A Hartland* | Imaging the plate coupling at the Hikurangi subduction margin, New Zealand<br>***Wiebke Heise***, *TG Caldwell, EA Bertrand, Y Ogawa, R Yoshimura, H Ichihara, SL Bennie, K Seki, Z Saito, Y Matsunaga, A Suzuki, T Kishita, Y Kinoshita* |

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| 9.15 am - 9.30 am | Evaluating the effect of discontinuities and textural heterogeneity in volcanic rock masses when upscaling lab seismic velocities to field measurements.<br>***Callum Cleary***, *B Kennedy, M Villeneuve, D Prior, A Jolly* | **9.15 am - 9.45 am**<br>**Symposium 10: Geochemistry**<br>*Chair: James Scott* | The Relationship Between forearc structure and geodetic locking along the Hikurangi Margin from SHIRE Seismic Data<br>***Dan Bassett***, *SH Henrys, DHN Barker, AF Arnulf, R Arai, S Kodaira, HJ van Avendonk, NL Bangs, G Fujie, Y Yamamoto, K Obana, JIT Hillman, SHIRE Team* |
| 9.30 am - 9.45 am | Dynamic site characterisation of the Waikato Basin using passive and active surface wave methods<br>***Seokho Jeong***, *A Cave, A Stolte, L Wotherspoon* | Terrestrial hot spring analogues for the origin of life? the role of mixing zones in hot springs at Tikitere, Lake Rotokawa, Parariki Stream, and Wai-O-Tapu, New Zealand<br>***Laura Penrose***, *K Campbell, M Rowe, M Van Kranendonk, J Havi, T Hamilton, C Sriaporn, K Handley, E Nakamura* | Upper-plate heterogeneity along the Southern Hikurangi Margin, New Zealand<br>***Stuart Henrys***, *D Eberhart-Philips, D Bassett, R Sutherland, D Okaya, M Savage, D Evanzia, T Stern, H Sato, K Mochizuki, T Iwasaki, E Kurashimo, A Seward, A Wech* |
| 9.45 am - 10.00 am | Zeolitic erionite in the Auckland region and implications for tunnelling and excavations<br>***Martin Brook***, *T-A Berry, P Black, K Dirks, J Salmond, G Steinhorn, L Adam, J Patel* | Research on Mars environmental evolution based on the comparative analysis of rock sedimentary environment<br>***Cuiying Zhou***, *Z Liu, LH Kong, L Yu, GJ Cui, W Huang* | Subduction margin re-development following mass-wedge failure – Ruatoria Re-Entrant, New Zealand<br>***Sam Davidson***, *JR Pettinga, A Nicol, P Barnes, G Lamarche, S Woelz* |
| 10.00 am - 10.15 am | Triggering of landslides in sensitive soils, Bay of Plenty, New Zealand<br>***Vicki Moon***, *W de Lange, T Manderson, T Robertson* | Extra-terrestrials Visit Auckland; characterisation of the 2004 Auckland meteorite<br>***James Scott***, *M Negrini, M Fitzgeraldi* | High resolution imaging of the South Hikurangi Subduction Zone, New Zealand, Using 2-D Full-waveform inversion<br>***Adnan Djeffal***, *I Pecher, S Singh, J Kaipio* |

# TUESDAY

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| 10.15 am - 10.30 am | Channel erosion and aggradation from extreme rainfall in steep catchments – The 2017 Roxburgh debris flows<br>***Ben Mackey*** | New Zealand, the natural laboratory: Using speleothem fluorescence to investigate soil DOM export in a prehumen continent<br>***Andrew Pearson,*** *A Hartland, J Hellstrom, BRS Fox, MH Vandergoes, BM Ward, RN Drysdale* | Gas venting at Kekerengu Ridge, Offshore Marlborough - fault controlled vent locations at an oblique convergent margin<br>***Bryan Davy,*** *J Hillman, G Crutchley, J Mountjoy* |
| **10.30 am - 11.00 am** | **Morning Tea, Networking, Industry Exhibition**<br>*Venue: Industry Exhibition Area, Level 1, S Block* | | |
| **11.00 am - 12.00 pm** | **6A**<br>**Symposium 11: Engineering Geology and Geotechnical Studies**<br>*Venue: S.1.01*<br>*Chair: Saskia de Vilder* | **6B**<br>**Symposium 10: Geochemistry**<br>*Venue: S.1.02*<br>*Chair: James Scott* | **6C**<br>**Symposium 2: Hikurangi Subduction Margin**<br>*Venue: S.1.04*<br>*Chair: Philip Barnes, Dan Bassett* |
| 11.00 am - 11.15 am | The importance of geological model development for bridge design: A Northland case study<br>***Briar Taylor-Silva,*** *K Kishore, B O'Loughlin, K Altinkaynak* | Detecting condensation corrosion in the Waitomo Glowworm Cave through $\delta^{13}C$ and $\delta^{18}O$ changes<br>***Jackson White,*** *A Hartland* | Characterising fluid flow processes associated with faults, gas hydrate systems and cold seep locations in the Southern Hikurangi Margin<br>***Jess Hillman,*** *K Kroeger, G Crutchley, S Watson, B Davy, J Mountjoy, E Solomon* |
| 11.15 am - 11.30 am | The Kimbrea Cutting: A closer look at the geology of the Hamilton hills<br>***Francesca Spinardi*** *, V Moon, A Pittari* | Redox-sensitive metals and $^{238}U/^{235}U$ isotope ratios in Furlo black shales: Constraining regional and global redox changes related to OAE 2<br>***Sophie Gangl,*** *C Stirling, H Jenkyns, W Preston, C Moy, M Clarkson, D Porcelli* | Seafloor pockmarks on the Chatham Rise: Their possible link to glacial cycles and the Subducted Hikurangi Plateau – an overview on current hypotheses<br>***Ingo Pecher,*** *B Davy, J Hillman, L Stott, R Coffin, A Prestage, P Rose, J Bialas* |

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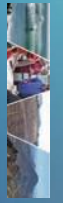
| 11.30 am - 11.45 am | 3D geological modelling of the Late Quaternary Hamilton Basin and revealing its secrets<br>***JacquiColeman,*** *ANewton, STilsley* | The rise of a giant: using clumped isotopes to constrain the hydrologic history of Lake Bonneville during the LGM<br>***John Mering,*** *L Santi, A Arnold, CWhicker, JLora, DIbarra, COviatt, A Tripati* | Paleoearthquakes recorded by marine terraces in the Northern and Central Hikurangi Margin<br>***NicolaLitchfield,*** *KClark, JMarshall, UCochran, JHamel, EMcKinney, CMiller, RMorgenstern, JMountjoy, C Mueller, A Palmer, C White, N Zohbe* |
| 11.45 am - 12.00 pm | Engineering geology characterisation of anthropogenic fill sites in the Wellington Region and their modelled performance during seismic shaking<br>***Marc-Andre Brideau,*** *CI Massey, J Carey, S de Vilder, B Lyndsell* | Passive treatment for elevated FE iron and AS arsenic in circum-neutral mine affected water<br>***Steph Hayton,*** *D Trumm, T Horton, J Pope, M Williams* | Deformation conditions in a Hikurangi Subduction Margin fault zone constrained by clumped isotope thermometry<br>***Carolyn Boulton,*** *IA Müller, M Mizera, TA Little, M Ziegler* |
| **12.00 pm - 1.00 pm** | **Lunch and Interest Group Meetings**<br>*Venue: Industry Exhibition Area, Level 1, S Block* | | |
| **12.15pm-12.50pm** | **GeoNet Users Meeting: Feedback and future initiatives Lunchtime Session**<br>*Venue: S.1.01* | **IAVCEI Organisational Committee Meeting**<br>*Venue: S.1.02* | **Royal Society Lunchtime Workshop Writing up your Thesis**<br>*Venue: S.1.04* |
| **1.00 pm - 2.00 pm** | **7A**<br>**Symposium 14: Global Geosciences**<br>*Venue: S.1.01*<br>*Chair: Peter Kamp* | **7B**<br>**Symposium 13: Geoscience and Society**<br>*Venue: S.1.02*<br>*Chair: Adrian Pittari* | **7C**<br>**Symposium 2: Hikurangi Subduction Margin**<br>*Venue: S.1.04*<br>*Chair: Philip Barnes, Dan Bassett* |
| 1.00 pm - 1.15 pm | Fundamental geological skills are essential<br>***Julie Palmer****, A Palmer, K Nemeth, C Rees* | Mining and mineral exploration: Public participation at an early stage in Finland, Germany and Spain<br>***Ludger Benighaus****, C Benighaus* | Testing the veracity of turbidite paleoseismology using the Kaikōura Earthquake-triggered turbidite<br>***Alan Orpin,*** *J Howarth, K Maier, S Nodder, L Strachan* |



## TUESDAY

# TUESDAY

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| 1.15 pm - 1.30 pm | Ocean acidification in the industrial era: Boron Isotope-pH proxy records from Pacific microatolls<br>***Oliver Knebel**, P Kench, G Foster, C Carvajal* | Geodiversity mapping as a tool for geoheritage management and planning<br>***Boglarka Nemeth**, K Nemeth, T Procter, T Farrelly* | Quantification of organic carbon transfer to the deep-sea by the Kaikōura earthquake turbidity current<br>***Scott Nodder**, J Howarth, A Orpin, J Turnbull, J Mountjoy, M Gibbs, D Leduc, K Maier, J Bilewitch, J Brown, S Bury, J Delgado, S Deppeler, G Frontin-Rollet, D Hulston, G Olsen, A Sabadel* |
| 1.30 pm - 1.45 pm | Early Pennsylvanian (carboniferous) sediment routing to the Ouachita Basin (Arkansas and Oklahoma, USA) based on detrital zircon U-Pb Aanalysis<br>***Isaac Allred**, M Blum* | Expanding the footprint of Orogneic gold: Trace elements in sulphides<br>***Harry Davies**, JM Palin, H Blakemore, D MacKenzie* | Where did you come from where did you go? Where did you come from, turbidite flow? Interpreting sediment transport on the Hawke Bay continental slope<br>***Sian Camp**, LJ Strachan, KL Maier, G Lamarche* |
| 1.45 pm - 2.00 pm | | Quarternary geology and hydrogeology of the Pourewa sub-catchment, Rangitikei, New Zealand<br>***Callum Rees**, JA Palmer, AS Palmer, R Singh* | From Subsurface to Outcrop – A Deep-Water Turbidite Analogue Case Study from the East Coast Basin, New Zealand<br>***Angela Griffin**, HEG Morgans, KJ Bland, DP Strogen* |
| 2.00 pm - 3.15 pm | **Geoscience Society of New Zealand Annual General Meeting**<br>*Venue: S.1.04* | | |
| **3.15 pm - 3.45 pm** | **Afternoon Tea, Networking, Industry Exhibition**<br>*Venue: Industry Exhibition Area, Level 1, S Block* | | |

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|---|---|
| 3.45 pm - 5.15 pm | **Poster Session B** *Proudly Sponsored by* NIWA Taihoro Nukurangi<br>*Venue: Industry Exhibition Area, Level 1, S Block* |
| 7.00 pm - Midnight | **Conference Dinner and Awards Presentation**<br>*Master of Ceremonies: Geoff Kilgour*<br>*Geoscience Society of New Zealand President - Awards Presentation*<br>*Dinner Theme: The Periodic Table*<br>*Transfers: Coaches depart promptly at 6.30pm from outside Gate 4, Hillcrest Road. Coaches return at 10.15pm, 11.00 pm and 11.30 pm*<br>*Venue: Vilagrad Winery, Ohaupo* |

# DAY 3: WEDNESDAY 27 NOVEMBER 2019

**The University of Waikato, Hamilton**

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| **8.00 am** | **Registration**<br>*Venue: Lower Level, S Block* | | |
| **8.30 am - 10.30 am** | **8A**<br>**Symposium 3: Natural Hazards And Resilience To Nature's Challenges**<br>*Venue: S.1.01*<br>*Chair: Caroline Orchiston*<br>RESILIENCE TO NATURE'S CHALLENGES · Kia manawaroa – Ngā Ākina o Te Ao Tūroa · National SCIENCE Challenges | **8B**<br>**Symposium 6: Cretaceous-Cenozoic Sedimentary Basins**<br>*Venue: S.1.02*<br>*Chair: Mac Beggs* | **8C**<br>**Symposium 12: Technological and Computational Innovations in the Geosciences**<br>*Venue: S.1.04*<br>*Chair: Lauren Vargo* |
| 8.30 am - 9.00 am | Field survey and preliminary hydrodynamic modelling of the tsunami generated by the 22 December 2018 eruption of Anak Krakatoa Volcano<br>***Jose Borrero*** *(presenting on behalf of the International Tsunami Survey Team)* | Zealandia-wide palinspastic paleogeography from the mid-Cretaceous to Pliocene<br>***Dominic Storgen****, HC Seebeck, KJ Bland, BR Hines* | Software engineering for multi-scenario modelling and machine learning in tsunami science: Do we need it?<br>***Christof Mueller****, X Wang, B Lukovic, A Gusman, D Burbidge, W Power* |
| 9.00 am - 9.15 am | Tectonic and geomorphic controls on the distribution of submarine landslides across active and passive margins, Eastern New Zealand<br>***Sally Watson****, JJ Mountjoy, GH Crutchley* | How old are the oldest sedimentary rocks in Deepwater Taranaki?<br>***Christopher Uruski*** | A neural network approach to real-time volcano monitoring using doppler radar data<br>***Daniel Uhle****, M Hort, J Lüttgau, J Walda, L Scharff* |
| 9.15 am - 9.30 am | Tsunami forecasting with assimilation of tsunami data on dense arrays: The 2009 Dusky Sound, New Zealand, Tsunami<br>***Aditya Gusman****, A Sheehan, K Satake* | Influence of pre-existing basement fabric on the formation of rift fault systems in the Great South Basin<br>***Tusar Sahoo****, GH Browne, A Nicol* | A semi-automated adjoint tomography workflow applied to New Zealand's North Island<br>***Bryant Chow****, Y Kaneko, R Modrak, C Tape, J Townend* |

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| 9.30 am - 9.45 am | Extensive landscape modification from an immense landslide tsunami on Taan Fiord, Alaska, USA<br>***Colin Bloom***, *B MacInnes, B Higman, D Shugar* | Greymouth Basin: Extensional or transtensional rift?<br>***Kari Bassett***, *M Maitra* | Geological mapping from aerial surveys using LiDAR from an onboard-piloted aircraft survey and digital surface models from a remotely piloted aerial system<br>***Matthew Hill***, *S Ellis, T Little* |
| 9.45 am - 10.00 am | Seiche effects in Lake Tekapo New Zealand in an Mw8.2 alpine fault earthquake<br>***Xiaoming Wang***, *C Holden, WL Power, JJ Mountjoy, Y Liu* | Sediment provenance adjacent to the Australian–Pacific plate boundary: Preliminary results from the Murchison Basin<br>***Matt Sagar***, *K Higgs, D Strogen, G Browne, K Bland, D Seward* | A hydrochemically guided landscape classification system for modelling spatial variation in multiple water quality indices: process-attribute mapping<br>***Clinton Rissmann***, *LK Pearson, M Beyer, MA Couldrey, JL Lindsay, AP Martin, WT Baisden, TJ Clough, TW Horton, JG Webster-Brown* |
| 10.00 am - 10.15 am | Combining slope stability and mass flow models to forecast debris avalanche hazard at Mt Ruapehu<br>***Stuart Mead***, *G Kereszturi, C Miller, L Schaefer* | Ihungia Formation in southern Hawke's Bay: A record of plate boundary processes within the early Hikurangi subduction margin<br>***Kyle Bland***, *HEG Morgans, H Harvey, DP Stogen* | A field-based university entrance qualification underpinned by earth science<br>***Tony Jones*** |
| 10.15 am - 10.30 am | Millennial-scale slip rate variations on major strike-slip faults in central New Zealand and examples of potential resulting impacts on hazard estimation<br>***Russ Van Dissen***, *E Abbott, R Zinke, D Ninis, JF Dolan, TA Little, EJ Rhodes, NJ Litchfield, AE Hatem* | Mass transport deposits from northwest New Zealand: What can they tell us about the past and future evolution of Zealandia?<br>***Suzanne Bull***, *G Browne, M Arnot, K Bland, L Strachan* | Making the micro macro: Using 3D printed pollen models for teaching<br>***Katherine Holt*** |
| **10.30 am - 11.00 am** | **Morning Tea, Networking, Industry Exhibition**<br>*Venue: Industry Exhibition Area, Level 1, S Block* | | |

## WEDNESDAY

# WEDNESDAY

| 11.00 am - 12.00 pm | **9A**<br>**Symposium 3: Natural Hazards and Resilience to Nature's Challenges**<br>*Venue: S.1.01*<br>*Chair: Jo Horrocks* | **9B**<br>**Symposium 6: Cretaceous-Cenozoic Sedimentary Basins**<br>*Venue: S.1.02*<br>*Chair: Suzanne Bull* | **9C**<br>**Symposium 12: Technological and Computational Innovations in the Geosciences**<br>*Venue: S.1.04*<br>*Chair: Martha Savage* |
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| 11.00 am - 11.15 am | An end-user perspective: The importance of natural hazard research that meets local government needs and is accessible to all<br>***Sophie Marsh**, R Liefting* | The Southern Taranaki Basin in four dimensions: structural and sedimentological change and rapid petroleum system evolution<br>***Karsten Kroeger**, H Seebeck, GP Thrasher, M Arnot, S Bull, P Viskovic* | **11.00am - 11.30am**<br>Creating links in the lab: A new integrated approach to interpreting scale-dependent datasets<br>***Carolyn Boulton**, AR Niemeijer, L Adam, CD Menzie* |
| 11.15 am - 11.30 am | Hazard and impact scenario development for silicic volcanoes in New Zealand<br>***Geena Campbell**, TM Wilson, GS Leonard, B Kennedy, T Davies, BJ Scott, CJN Wilson* | Widespread hydrothermal effects in Southern Taranaki Basin – a possible explanation<br>***Mac Beggs**, J Newman, A Bischoff, N Smith, D Gravley* | |
| 11.30 am - 11.45 am | The National Geohazards Monitoring Centre: Operations and event responses<br>***Connor Rapley**, HJ Godfrey, MP Banks, RK Dohig, A Fromont, M Helliwell, A Legenkyy, JDB McClintock, SO'Hagan, G Potaka, KM Presow, R Pritchard-Thorsen, R Tate, A Thomas-Long, E Watson, KR Wright, B Wylie-Cheer, C Zirk* | Are Milankovitch cycles evident in the gamma ray logs of Late Oligocene mixed siliciclastic-carbonates of Tikorangi Formation, Taranaki Peninsula, New Zealand?<br>*JF Read, ML i, LA Hinnov,*<br>***Campbell Nelson**, SD Hood* | Distributed optical fibre temperature and strain sensing to 893 m depth in the Alpine Fault hanging-wall<br>*N Broderick, K van Wijk, J Loveday, S Haneef, **John Townend**, R Sutherland* |

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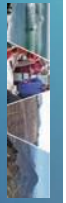
| 11.45 am - 12.00 pm | A new geomorphological map of Tauranga City and the application for natural hazard assessments<br>***Kim Altinkaynak, Hamish McEwan,*** *R Griffiths, J Russell, BO'Loughlin, D Milner, S Raynor, J Beetham, M Buob,* | Acoustic investigations of pockmarks and submarine groundwater discharge in gaseous muddy sediments<br>***Jasper Hoffmann,*** *J Schneider von Deimling, J Schröder, M Schmidt, P Held, J Scholten, G Crutchley, A Gorman* | Near-real-time matched-filtering for the development of dense earthquake catalogues during sequences of seismicity in New Zealand<br>***Calum Chamberlain,*** *J Townend, M Gerstenberger* |
| **12.00 pm - 1.00 pm** | **Lunch and Interest Group Meetings**<br>*Venue: Industry Exhibition Area, Level 1, S Block* | | |
| **12.15 pm - 12.50 pm** | **Sedimentology Special Interest Group Meeting**<br>*Venue: S.1.01* | | **LAVA NZ Special Interest Group Meeting**<br>*Venue: S.1.02* |
| **1.00 pm - 2.30 pm** | **10A**<br>**Symposium 3: Natural Hazards and Resilience to Nature's Challenges**<br>*Venue: S.1.01*<br>*Chair: Richard Smith* | | **10B**<br>**Symposium 5: Understanding Zealandia - Lithosphere Structure and Deformation**<br>*Venue: S.1.04*<br>*Chair: Carolyn Boulton* |
| 1.00 pm - 1.15 pm | Coastal zone management, a case for integrating economic impact modelling and robust decision making with scenario planning<br>***Ashton Eaves,*** *P Kench, G McDonald, M Dickson* | | **1.00 pm - 1.30 pm**<br>Boots, hammer and compass: Navigating field work in our changing landscape<br>***Julie Rowland*** |
| 1.15 pm - 1.30 pm | Tsunami hazards of the Ross Sea, Antarctica<br>***William Power,*** *A Gusman, X Wang, D Burbige, B Lukovic, J Black* | | |
| 1.30 pm - 1.45 pm | Impact of tephra fall to buildings on Ambae Island, Vanuatu from the 2017-2018 eruption period of Manaro Voui Volcano, Ambae Island, Vanuatu<br>***Ame McSporran,*** *S Jenkins, T Wilson, C Stewart, G Leonard, S Cevuard, E Garaebiti, G Campbell, S Dellow, G Kilgour, M Rowe* | | Simplifying complexity: A tectonic map of Zealandia/Te Riu-a-Māui<br>***Nick Mortimer,*** *B Smith Lyttle, J Black* |



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| 1.45 pm - 2.00 pm | How to cope with increasing erosion issues due to more frequent heavy rainfall events in sub-catchments in the Upper Waikato?<br>***Phil Mourot**, A Kirk, D Nickel, S Catley* | Microstructural evolution of the mantle beneath West Otago and its relationship to the Alpine Fault<br>***Yilun Shao**, D Prior, J Scott, S Kidder, M Negrini* |
| 2.00 pm - 2.15 pm | Transforming rural value chains in the 'Top of the South', New Zealand<br>***Joanna Fountain**, N Cradock-Henry* | Inversion history of the Northern Tasman Ridge, Taranaki Basin, New Zealand: Implications for petroleum migration and accumulation<br>***Hannu Seebeck**, GP Thrasher, GP Viskovic* |
| 2.15 pm - 2.30 pm | | Timing (Piripauan) of the end of Cretaceous subduction in New Zealand<br>***Peter Kamp**, D Bridgewater, G Xu* |
| **2.30 pm - 3.00 pm** | **Conference Closure**<br>*Venue: S.1.04* | |

# Field Trips

**All depart from the University of Waikato, Gate 3b, Silverdale Road, Hillcrest at 8.30 am**

| King Country Basin | Hamilton Basin | Mt Pirongia | Waitomo |
|---|---|---|---|
| 2 Day: Thursday 28 and Friday 29 November | 1 Day: Thursday 28 November | 1 Day: Thursday 28 November | 1 Day: Thursday 28 November |
| Leader: Peter Kamp | Leaders: Vicki Moon<br>Francesca Spinardi | Leaders: Adrian Pittari<br>Oliver McLeod | Leader: Adam Hartland |
| Depart: 8.30 am Thursday<br>Estimated return: 6.00 pm Friday | Depart: 8.30 am<br>Estimated return: 5.00pm | Depart: 8.30 am<br>Estimated return: 5.00 pm | Depart: 8.30 am<br>Estimated return: 5.00 pm |

# POSTER SESSION 1

## Sunday 24 November and Monday 25 November 2019

| Poster Board | Paper Title |
|---|---|
| 1 | Repeating earthquakes around the Raukumara Peninsula, North Island, New Zealand<br>***Laura Hughes**, C Chamberlain, J Townend* |
| 2 | Comparing and contrasting the 9th June and 12th August 2019 M5.5 Fiordland Earthquakes: Preliminary insights from DWARFS<br>***Emily Warren-Smith**, J Townend, C Chamberlain* |
| 3 | Spatiotemporal change of source parameters of repeaters due to the afterslip of the 2011 Tohoku-Oki earthquake, NE Japan<br>***Kazuya Tateiwa**, T Okada, T Kono, N Uchida* |
| 4 | Incorporating microcracks into EBSD-based finite element modelling of the Alpine Fault mylonites, New Zealand<br>***Jirapat Charoensawan**, L Adam, V Toy, M Ofman* |
| 5 | Effect of the Kaikōura Earthquake on stress in and around the ruptured region: A noise cross correlation approach<br>***Megan Kortink**, M Savage, T Okada, S Matsumoto, Y Iio, K Jacobs* |
| 6 | Paleoseismology of the NW Cardrona Fault, Central Otago<br>***Ella van den Berg**, M Stirling, D Barrell* |
| 7 | Stress tensor inversion in focal area of the 2016 Mw7.8 Kaikoura Earthquake, New Zealand (3)<br>***Miu Matsuno**, T Okada, S Matsumoto, Y Kawamura, Y Iio, T Sato, S Bannister, J Ristau, M Savage, C Thurber, R Sibson* |
| 8 | 3D geological modelling of the Upper Hutt basins to provide an understanding of local ground shaking hazard.<br>***Matthew Hill**, A Kaiser* |
| 9 | In situ laser ultrasonic measurements for understanding the elastic properties and temperature dependence of Alpine Fault rocks in the shallow crust<br>***Jonathan Simpson**, K van Wijk, L Adam* |
| 10 | Characteristic of fault form in the focal area of the 2016 Mw7.8 Kaikoura Earthquake inferred from high precision aftershock distribution<br>***Yuta Kawamura**, S Matsumoto, T Okada, M Matsuno, Y Iio, T Sato, S Bannister, M Savage, C Thurber, R Sibson* |
| 11 | S-wave reflectors beneath the earthquake swarm in the Yonezawa–Kitakata area, NE Japan<br>***Manami Suzuki**, T Okada, A Hasemi, T Matsuzawa, N Umino, T Nakayama, N Tsumura, T Yamanaka, Group for the aftershock observations of the 2011 off the Pacific of Tohoku Earthquake* |

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| **12** | Models of subsurface rupture of the Humps-Leader Fault System during the Kaikōura Earthquake<br>***Tabitha Bushell**, A Nicol, J Khajavi, J Pettinga, T Stahl* |
| **13** | Micro-analytical insights into young rhyolitic eruptions from the Taupō Volcanic Zone, New Zealand<br>***Hannah Elms**, C Wilson, S Barker, B Charlier, M Myers, P Wallace* |
| **14** | Topographic controls and hazards associated with a large volume pyroclastic flow deposit, the 1.2 Ma Ongatiti Ignimbrite<br>***Elham Yousefzadeh**, A Pittari, DJ Lowe* |
| **15** | Analytical modelling of tsunamis generated by underwater volcanic eruptions<br>***Natalia Lipiejk**, CN Whittaker, E Lane, W Power* |
| **16** | Numerical and experimental approach to modelling pyroclastic flow generated tsunamis<br>***Lily Battershill**, N Lipiejko* |
| **17** | Towards a comprehensive tephrostratigraphic framework for Quaternary rhyolitic volcanism in New Zealand: Employing cryptotephra methods to find the hidden eruptions<br>***Jenni Hopkins**, R Wysoczanski, A Orpin, D Seward, MN Cagatay, S Kutterolf, S Davies, N Kukowski, and the HSM Paleoseismicity Team* |
| **18** | Developing a major and trace element geochemical reference set for New Zealand Quaternary rhyolitic tephra deposits<br>*J Hopkins, **Janine Bidmead**, RJ Wysoczanski, DJ Lowe, BJ Pillans* |
| **19** | Characterising basaltic tephras erupted from mid-holocene Mounts Gambier and Schank, South Australia, and associated soils (ANDISOLS)<br>***David Lowe**, OE McLeod, MJ Sheard, GJ Churchman* |
| **20** | The dynamics and sedimentation of volcanic plumes in supervolcano eruptions<br>***Sarah Tapscott**, G Lube, C Wilson, L Fullard* |
| **21** | The interactions between pyroclastic density currents and topography: Results from a first large-scale experiment<br>***Lucas Corna**, G Lube, E Brosch, J Jones* |
| **22** | Monitoring and imaging the Taupō Volcano: A new seismometer network around the lake<br>***Elenaor Mestel**, F Illsley-Kemp, M Savage, C Wilson, B Smith* |
| **23** | Long -term risk management strategies for rhyolitic unrest and eruption<br>***Rodrigo Calderón**, T Wilson, G Leonard* |
| **24** | Using trace element modelling to constrain the formation of rare earth element rich carbonatites in the Alpine Dyke Swarm<br>***Rilee Thomas**, M Brenna, JM Scott, M Negrini, CI Schipper, M Palmer, PJ le Roux* |
| **25** | The most violent phreatomagmatic explosive eruption of the Arxan-Chaihe Volcanic Field (ACVF) in NE China, could also be one of the youngest?<br>***Boxin Li**, K Németh, A Palmer, J Wu, J Palmer, J Procter, C Sun* |



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| **26** | Elastic and magnetic properties of hydrothermally altered volcanic rocks<br>***Shreya Kanakiya**, L Adam, MC Rowe, G Turner, J Lindsay* |
| **27** | The dynamics and stability of large Plinian plumes – investigating vertical and lateral variations in the 232CE Hatepe Plinian deposit<br>***Hannah Walters**, G Lube, C Wilson* |
| **28** | Contrasting evolutionary histories of the Taupō-Reporoa Basin and Western Taupō Rift<br>***Colin Wilson**, I Chambefort, G Leonard, K Mauriohooho, S Milicich, M Rosenberg, J Rowland, P Villamor* |
| **29** | New perspectives from mapping and high-resolution 40Ar/39Ar dating of Tongariro Volcano, New Zealand: Implications for stratovolcano lifecycles and glacio-volcanic interactions<br>*L Pure, **Colin Wilson**, D Townsend, G Leonard, A Calvert, R Cole, C Conway, J Gamble* |
| **30** | Short and long timescales of magmatic processes at Whaakari/White Island<br>***Geoff Kilgour**, C Mandon, C Conway, K Saunders* |
| **31** | Spatiotemporal variations in eruption style, magnitude and vent morphology at Yasur Volcano, Vanuatu: Insights into the conduit system<br>***Benjamin Simons**, S Cronin, J Eccles, M Bebbington, A Jolly* |
| **32** | Mechanical interactions between rifting, silicic mush and intrusion of melt bodies in the Taupo Volcanic Zone<br>***Susan Ellis**, F Illsley-Kemp, P Villamor, M Savage, G Kilgour, S Barker, I Hamling, D Dempsey, S Bannister* |
| **33** | The volcanic geology of Taupō Volcanic Zone: 1:120,000 scale map and bulletin<br>***Graham Leonard**, D Townsend, C Wilson* |
| **34** | Lithium mineral potential modelling in the Taupo Volcanic Zone.<br>*R Turnbull, **Matthew Hill**, R Morgenstern, M Rosenberg* |
| **35** | The application and limitations of hyperspectral imaging for surface alteration mapping: A case study of Pinnacle Ridge, Mt Ruapehu, New Zealand.<br>***Abbey Douglas**, B Kennedy, L Schaefer, G Kereszturi* |
| **36** | New ashfall forecasts for New Zealand<br>***Yannik Behr**, N Deligne, R Trancoso, C Davis, T Hurst, B Peng, D Dooley* |
| **37** | Three-dimensional architecture and reservoir potential of a lava flank, NE Lyttleton Volcano, Banks Peninsula<br>***Marcos Rossetti**, A Bischoff, B Kennedy, M Villeneuve, D Gravley* |
| **38** | A window into Magmatic Time (340 – 25 ka): How magma systems reorganised between supereruptions in the North Taupō Area<br>***Kate Mauriohooho**, C Wilson, G Leonard, I Chambefort, M Rosenberg* |
| **39** | Deciphering Southwest Pacific Eocene temperature proxy mismatches<br>***Chris Hollis**, EM Crouch, T Reichgelt, EM Kennedy, JG Prebble, DR Greenwood, BDA Naafs, GN Inglis, RD Pancost, JI Raine* |

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| **40** | Evidence of large explosive volcanic eruptions from New Zealand in Antarctica<br>***Stephen Piva**, R Newnham, S Barker, C Wilson, L Carter* |
| **41** | Active sedimentary processes in a detached canyon on the Wilkes-Adélie Land continental margin, Eastern Antarctica<br>***Anthony Shorrock**, L Strachan, H Bostock* |
| **42** | Characterising the Quaternary stratigraphic infill of Dunedin<br>***Oliver Rees**, AR Gorman, CR Riesselman* |



# POSTER SESSION 2

## Tuesday 26 November and Wednesday 27 November 2019

| Poster Board | Paper Title |
|---|---|
| 1 | A new map of New Zealand's offshore sedimentary basins<br>***Kyle Bland**, DP Strogen, GPD Viskovic, MJ Arnot, TR Sahoo, HC Seebeck, R Kellett, GP Thrasher, H Zhu, S Bull* |
| 2 | Defining the basal unconformity of the Waitemata-Northland Basin offshore and onshore<br>***Tegan Lawrence**, L Strachan, J Lee, M Hill, B Davy, T Howe, E Twort* |
| 3 | Potential of buried volcanoes and associated sedimentary facies as hydrocarbon reservoirs<br>***Jessica Fensom**, K Bassett, C Reid, A Nicol, A Bischoff* |
| 4 | Multi-attribute seismic analysis for volcanic facies identification: Kora Volcano, Taranaki Basin<br>***Gabriel Meliato**, K Bassett, A Nicol* |
| 5 | Constructing an high-resolution stratigraphic framework of a buried volcano: A case-study from the Kora Volcano, Taranaki Basin, New Zealand<br>***Huafeng Tang**, AP Bischoff, HF Wang, M Rossetti, A Nicol, B Kennedy* |
| 6 | Lithospheric strength in New Zealand from thin-sheet modelling<br>***Hamish Hirschberg**, R Sutherland, S Lamb, MK Savage* |
| 7 | The new 1:50 000 scale GIS dataset and map of the Hyde-Macraes Shear Zone, Otago, New Zealand: a progress report<br>***Adam Martin**, AH Allibone, H Blakemore, CC Blundell, SC Cox, D Craw, S Doyle, RL Kellett, DJ MacKenzie, N Mortimer, T Ritchie, TR Sahoo, B Smith Lyttle, S Stephens* |
| 8 | Crucial metals of Zealandia's Ultramafics; Ni, Co, Cu & Zn in exposed mantle rocks<br>***Stephanie Junior**, J Scott, Y Luo, DG Pearson, D Patterson* |
| 9 | Biomonitoring of New Zealand's marine environment using trace element analysis of Crustacea<br>***Richard Wysoczanski**, MR Handler, R Peart, K Schnabel, A Davies, GE Frontin-Rollet, C Hickey* |
| 10 | The geochemical fingerprints of human impact on urban Dunedin soils<br>*R Turnbull, **Adam Martin**, K Rogers, M Rattenbury* |
| 11 | Amphipods as biomonitors of marine coastal environments: a Chatham Island case study<br>*C Seabrook, **Monica Handler**, R Peart, RJ Wysoczanski, AML Davies* |

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| **12** | Syntectonic carbonate veins reveal Late Oligocene initiation of emplacement of the East Coast Allochton, New Zealand<br>***John Mering**, S van de Lagemaat, PJJ Kamp, B Andrew* |
| **13** | Management of high sulphate water from orogenic gold mine waste rock<br>***Erin Weightman**, D Craw, C Rufaut* |
| **14** | Using pH-controlled sediment leaching experiments to assess the biotoxic impacts of ocean acidification: a proof of concept.<br>***Grace Frontin-Rollet**, C Hickey, BE Frontin-Rollet, MR Handler, RJ Wysoczanski, R Peart, A Albert, M Rendalls, H van der Elst* |
| **15** | Monitoring slope failures along the southern Kaikōura transport corridor, New Zealand<br>***James Stringer**, M Brook* |
| **16** | Engineering geophysical investigation of coseismic landslides from the 2016 Kaikōura Earthquake<br>***Matt Strain**, C Gasston, M Brook* |
| **17** | Engineering geological properties of martian rock using geological strength index<br>***Ryan Lewis**, M Brook* |
| **18** | Late Quaternary geology and geomorphology along the Waikato River from Cambridge to the Narrows<br>***Ewan Ross**, Z Lyon, S Tilsley* |
| **19** | 3-D subsurface geology for the Dunedin Urban Geological Map<br>***David Barrell**, P Glassey, B Smith Lyttle* |
| **20** | Analysis of the Alpine Gardens Landslide and Mill's Creek Debris Fan, Fox Glacier Valley<br>***Saskia de Vilder**, C Massey, G Archibald, R Morgenstern* |
| **21** | Glacial overdeepenings in the Southern Alps: A review<br>***Shaun Eaves**, L Dowling* |
| **22** | Geophysical and geochemical constraints on the regional hydrogeology of the Banff Hot Springs, Canada.<br>***Thomas Wilson**, R Lauer, M Hayaski* |
| **23** | Charcoal layers in the sand: Prehistoric landscape modification in the Manawatū sand country<br>***Katherine Holt**, D Parker, A Palmer, J Procter, R Warrington* |
| **24** | Cenozoic continental tectonics in North-Western Ross Sea, Antarctica<br>***Fred Davey*** |
| **25** | A time-dependent inversion of onshore GNSS time series data for the March - May 2019 slow slip event at the Hikurangi Subduction Zone<br>***Katie Woods**, L Wallace, M Savage, S Webb, D Chadwell, Y Ito, K Mochizuki, C Williams, I Hamling* |



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| **26** | Analysis of deep marine active sedimentary processes within sediment starved mini-basins on the Hikurangi Margin, New Zealand.<br>***Emily Twort**, LJ Strachan, KL Maier, J Hopkins* |
| **27** | STUDIES of seismic velocities in subduction zones from continuous OBS data<br>***Weiwei Wang**, M Savage, B Fry, T Stern, S-H Hung, Y Luo, P-YP Lin, H-Y Yang, B-Y Kuo* |
| **28** | Shear wave velocity structure along Hikurangi Forearc from converted waves<br>***Pasan Herath**, TA Stern, MK Savage, D Bassett, S Henrys* |
| **29** | Distinguishing turbidite tails from background sedimentation on the Hikurangi Margin and its implications for dating turbidites<br>***Stephanie Tickle**, J Howarth, K Maier, JL Hopkins, A Orpin, LJ Strachan, HC Bostock, B Hayward* |
| **30** | Along-strike structure of the Hikurangi margin from SHIRE seismic reflection data<br>***Dan Barker**, D Bassett, S Henrys, N Bangs, H Van Avendonk, A Gas* |
| **31** | Introducing the National Geohazards Monitoring Centre Te Puna Mōrearea I Te Rū<br>***Holly Godfrey**, CMJ Rapley, MP Banks, RK Dohig, A Fromont, K Gledhill, M Helliwell, A Legenkyy, JDB McClintock, SO'Hagan, G Potaka, KM Presow, R Pritchard-Thorsen, R Tate, A Thomas-Long, E Watson, K R Wright, B Wylie-Cheer, C Zirk* |
| **32** | Slow slip through a machine learning lens<br>***Franco Vega Mercado**, L Wallace, C Williams, E D'Anastasio, C Mueller* |
| **33** | Use of UAV for geotechnical assessment<br>***Chris Pevreal*** |
| **34** | Rayleigh wave maps of the crust in the Auckland Volcanic Field from ambient seismic noise.<br>***Josiah Ensing**, K van Wijk, B Spörli* |
| **35** | Automatically identifying submarine landslide scars on multibeam data – an attempt<br>***Susi Woelz**, SJ Watson, C Mueller* |
| **36** | Ramped pyrolysis radiocarbon dating at the Rafter Radiocarbon Laboratory<br>***Catherine Ginnane**, J Turnbull, B Rosenheim, S Reeve, J Thompson* |
| **37** | Ngā kōrero mai i ngā wā o mua - Stories from a distant past revealed by the National Paleontological Collection<br>***Marianna Terezow**, H Gard* |
| **38** | Geological investigation of the Ohui Epithermal Au-Ag prospect using applied geophysical and geochemical methods, Hauraki Goldfield, New Zealand<br>***Gina Swanney**, L dam, J Rowland, SJ Cronin, C Montanar, GA Lerne* |