

**Connecting Through Change**  
New Zealand Antarctic Science Conference  
&  
Snow and Ice Research Group "Understanding Mountain Climate II"  
*9-13 February 2021*  
*University of Canterbury Student's Association, Otautahi Christchurch*

**Draft Programme (version 14 January 2021)**

**Tuesday 9 February**

**Antarctic Science Conference**

<b>start</b>	<b>end</b>	<b>Item</b>	<b>Venue</b>
9:30	10:00	Registration desk open	Entrance
10:00	12:00	Workshop - <i>Connecting Antarctic Science and Policy</i>	Bentleys
12:00	12:45	Lunch	Ti Kouka
12:45	14:15	Workshop - <i>Media Magic: Tricks for clever communicators</i>	Bentleys
14:30	17:00	Workshop - <i>Integrating Mātauranga Māori with western science</i>	Bentleys
17:00	19:00	Icebreaker	Ti Kouka
19:00	21:00	Public Talks (by ticket only - will be available via EventBrite)	Great Hall

## Wednesday 10 February

### Antarctic Science Conference

start	end	Item	Venue	length
7:30	8:30	Registration desk open	Entrance	
8:30	8:45	Mihimihi, Welcome	Ngaio Marsh	
8:45	9:15	Keynote - Pat Langhorne	Ngaio Marsh	
9:15	10:45	<b>Session - <i>Ice-Ocean Interactions and Sea Ice Processes</i></b>	Ngaio Marsh	
		<i>Wolfgang Rack - Sea ice thickness in the Western Ross Sea</i>		10
		<i>Gemma Brett - Satellite altimetry detection of ice shelf-influenced fast ice</i>		3
		<i>Pat Langhorne - How thick is the land-fast sea ice along the Victoria Land coast?</i>		3
		<i>Ruzica Dadic - The MOSAiC Expedition and the Importance of Snow on Sea Ice</i>		10
		<i>Holly Winton - Ice core biomarker constraints on past sea ice and productivity change in the Ross Sea</i>		3
		<i>Greer Gilmer - Enhanced deepwater upwelling in the NW Ross Sea during the Early Holocene</i>		10
		<i>Mario Hoppmann (presented by Inga Smith) - What biologists and physical scientists need to know about platelet ice: the Southern Ocean's hidden ice</i>		3
		<i>Craig Stevens - The Other Reason We Should Care About the Oceans: Antarctica and Changing Global Thermohaline Circulation</i>		10
10:45	11:15	Morning tea	Ti Kouka	
11:15	11:45	Keynote - Christina Hulbe	Ngaio Marsh	

11:45	12:45	<b>Session - Rob Fenwick Memorial Session on Ice and Earth System Dynamics</b>	Ngaio Marsh	
		<i>Huw Horgan - Who wet the bed? Subglacial controls on ice stream dynamics - evidence for tidally forced hydrology beneath Kamb Ice Stream.</i>		10
		<i>Arran Whiteford - Observations of a deep basal channel at the Kamb Ice Stream</i>		3
		<i>Theo Calkin - Past and present sedimentation at Kamb Ice Stream Grounding Zone, Siple Coast, West Antarctica</i>		10
		<i>Matthew Tankersley - Sediment thickness and basement depths beneath the Ross Ice Shelf from aeromagnetic data</i>		3
		<i>Natalie Robinson - Ice Shelf Cavity Estuarine Hydrodynamics at the Kamb Ice Stream Grounding Line</i>		10
12:45	13:45	Lunch - APECS breakaway	Ti Kouka	
13:45	14:45	<b>Session - Rob Fenwick Memorial Session on Ice and Earth System Dynamics contd...</b>	Ngaio Marsh	
		<i>Nancy Bertler - Vulnerability of the Ross Ice Shelf and West Antarctica to future warming - Insights from the high resolution RICE ice core record</i>		10
		<i>Adam Martin - A continental-scale overview of the Antarctic mantle for better glacial isostatic adjustment (GIA) and heat flow modelling</i>		3
		<i>Shelley MacDonnell - Hidden water on the Müller Ice Shelf, Antarctic Peninsula</i>		3
		<i>Alanna Alevropoulos-Borrill - Mitigating future sea level rise through regrowth of the Amundsen Sea glaciers: is it possible and what will it take?</i>		10
		<i>Oliver Marsh (presented by Daniel Price) - Crevasse and Rift Detection in Antarctica from TerraSAR-X Satellite Imagery</i>		3
		<i>Christina Hulbe - Thwaites Glacier instability: A rougher bed delays its onset which then yields faster retreat</i>		3
14:45	15:00	Antarctic Science Platform Update (Nancy Bertler)		15

15:00	16:15	<b>Poster session - Ice-Ocean Interactions and Sea Ice Processes; Ice &amp; Earth System Dynamics; Atmosphere, Weather and Climate Dynamics/Afternoon tea</b>	Ti Kouka & Central Street
16:15	17:00	Update from Antarctica New Zealand	Ngaio Marsh
17:00	18:30	Student and Early Career Event	Bentleys
19:00	23:00	Conference Dinner	Transitional Cathedral

## Thursday 11 February

### Antarctic Science Conference

start	end	Item	Venue	length
8:00	8:35	Registration desk open	Entrance	
8:35	8:45	Welcome and Karakia	Ngaio Marsh	
8:45	9:15	Keynote - James Renwick	Ngaio Marsh	
9:15	10:45	<b>Session - Human Connections and Impacts</b>	Ngaio Marsh	
		<i>Priscilla Wehi - Research within Indigenous frameworks</i>		10
		<i>Christopher Stephens - Māori place names in Antarctica and the Southern Ocean</i>		3
		<i>Daniela Liggett - Antarctic research at a time of crisis: The impact of COVID-19 on the Antarctic research community</i>		3
		<i>Natasha Gardiner - The science-policy interface in an Antarctic Context</i>		10
		<i>Craig Cary - The Dry Valley Ecosystem Resilience (DryVER) Programme: results and final outputs</i>		3
		<i>Clive Howard-Williams - Environmental classification of lentic aquatic ecosystems of the McMurdo Dry Valleys: Implications for management</i>		10
		<i>Richard Levy - Te tai pari o Aotearoa - Future Sea Level Rise around New Zealand's Dynamic Coastline</i>		10
		<i>Adam Martin - Volcanic hazard and impact assessment for air traffic and the Scott Base redevelopment, Antarctica</i>		3
		<i>Craig Rodger - K060 Supported Space Weather Research</i>		3

## Thursday 11 February

### Snow and Ice Research Group

start	end	Item	Venue	length
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10:45	11:15	Morning tea	Ti Kouka	
11:15	12:45	<b>Session - Marine Life in the Ross Sea and Beyond</b>	Ngaio Marsh	
		<i>Matt Pinkerton - Ross Sea Research and Monitoring Programme (Ross-RAMP): How can we tell if the world's largest Marine Protected Area is effective?</i>		10
		<i>David Bowden (presented by Vonda Cummings)- Seabed habitats and fauna of the Ross Sea: exploring the boundaries of the MPA</i>		10
		<i>Sarah Bury - Southern Ocean isoscaples inform spatio-temporal biogeochemical processes, trophic ecology and animal movements</i>		10
		<i>Matt Pinkerton - Food-web structure of the Ross Sea: combining stable isotopes and mass-balance modelling to understand ecosystem dynamics</i>		3
		<i>Erik Behrens - Modelling dispersal of Antarctic toothfish eggs and larvae in the Ross and Amundsen Seas – The impact of sea-ice, ocean currents and larval behaviour</i>		3
		<i>Michelle La Rue - First circum-Antarctic assessment of population and habitat of an important Southern Ocean indicator, the Weddell seal</i>		10
		<i>Giacomo Giorli - Seasonal Acoustic Detection of Sperm Whales in the Ross Sea</i>		3
		<i>Emma Carroll - Uncertain seas: southern right whale foraging ecology in an era of climate change</i>		3
12:45	14:00	<b>Poster session/Lunch - Human Connections and Impacts; Ecosystems in a Changing Environment; Marine Life in the Ross Sea and Beyond</b>	Ti Kouka & Central Street	
14:00	15:30	<b>Session - Ecosystems in a Changing Environment</b>	Ngaio Marsh	
		<i>Drew Lohrer - Climate cascades affect coastal Antarctic seafloor ecosystem functioning</i>		10

13:30	13:40	Welcome and housekeeping	Bentleys	
13:40	14:20	<b>Session - Alpine hydrology, hazards, and ecosystems</b>	Bentleys	
		<i>Simon Cox - Accelerated slope response in a destabilized alpine landscape</i>		20
		<i>Aubrey Miller - Snow avalanche hazards in Aotearoa New Zealand: Using extreme events from the past to plan for the future</i>		20

	<i>Ashley Currie - Sea-ice dynamics drives benthic microbial community composition and functional potential at two contrasting sites in McMurdo Sound, Antarctica.</i>	3
	<i>Alexis Marshall - Illuminating ecosystem processes that shape Ross Ice Shelf habitats through the lens of the benthic microbial community</i>	10
	<i>Maria Monteiro - Using a tropically simple polar desert to validate a space-for-time approach to study microbial responses to future climatic change.</i>	10
	<i>Clare Beet - Fine-scale genetic diversity associated with contrasting thermal tolerances between populations of Antarctic collembolan, Gomphiocephalus hodgsoni</i>	3
	<i>Pluto Liu - Genetic / genomic resources for biogeographic research in Antarctica</i>	3
	<i>Frances Perry - Will temperate (New Zealand) marine intertidal species be able to survive in a warmer Antarctica?</i>	3
	<i>Christopher Horvat - Insights on ecology under Antarctic sea ice from new remote sensing and modeling techniques.</i>	10
15:30	16:00 Afternoon tea	Ti Kouka
16:00	16:30 Awards and Conference Wrap Up	Ngaio Marsh
16:30	17:30 The George Denton Plenary Presentation (by Aaron Putnam).Introduced by David Barrell (GNS)	Ngaio Marsh

14:20	15:40 <b>Session - Glacier-climate connections</b>	Bentleys
	<i>Todd Redpath - Monitoring the presence and persistence of particulate impurities on New Zealand Glaciers using VENμS satellite imagery</i>	20
	<i>Oliver Wigmore - Mapping debris thickness over Haupapa/Tasman Glacier with thermal drone and satellite imagery.</i>	20
	<i>Shaun Eaves - Holocene climate change as told by New Zealand glaciers</i>	30
15:30	16:30 Afternoon tea	Ti Kouka
16:30	17:30 The George Denton Plenary Presentation (by Aaron Putnam).Introduced by David Barrell (GNS)	Ngaio Marsh
17:30	SIRG Icebreaker	Bentleys

## Friday 12 February

### Antarctic Science Conference

start	end	Item	Venue
8:30	12:00	Workshop: <i>New Zealand Antarctic and Southern Ocean science strategy</i>	Ti Kouka
10:00	10:30	Morning tea	Ti Kouka
10:30	12:00	Workshop contd...: <i>New Zealand Antarctic and Southern Ocean science strategy</i>	Ti Kouka
12:00	12:45	Lunch	Ti Kouka
12:45	15:15	Workshop: <i>Antarctic Research – Planning for Disruption</i>	Ti Kouka

## Friday 12 February

### Snow and Ice Research Group

start	end	Item	Venue	length
8:50	9:00	Welcome and housekeeping	Bentleys	
9:00	10:00	<b>Session - Glacier-climate connections contd.</b> <i>Jono Conway - Cloud forcing of surface energy balance in diverse mountain glacier environments</i>	Bentleys	20
		<i>Heather Purdie - Rolleston Glacier: First decade of mass balance measurement and the implications of climate change on mass balance monitoring</i>		20
		<i>Nariefa Abraham - An examination of the surface energetics controlling the recent and dramatic loss of ice on Brewster Glacier</i>		20
10:00	10:30	Morning tea	Upstairs foyer	
10:30	12:00	<b>Session - Glacier-climate connections contd.</b> <i>Keynote: Lauren Vargo - Measuring New Zealand glacier change from aerial images</i>	Bentleys	30
		<i>Ruzica Dadic - Wind Driven Snow Distribution on Brewster Glacier, NZ</i>		20
		<i>Pascal Sirguey - Going, going, gone! Reconstructing the reconstruction of Brewster Glacier mass balance record 1977-2018</i>		20
		<i>Discussion: Glacier observations and monitoring</i>		20
12:00	13:00	Lunch	Upstairs foyer	

15:15

Close

13:00	13:50	<b>Session - Alpine hydrology, hazards, and ecosystems</b> <i>Keynote: Warren Chinn - Tracking the snow line: Responses to climate change by New Zealand alpine invertebrates</i> <i>Rasool Porhemmat - Rain-on-Snow in the Southern Alps: hydrometeorology and impacts</i>	Bentleys	
				30
13:50	15:00	<b>Session - Glacier-climate connections contd.</b> <i>Jim Salinger - The impacts of the 2017/18 and 2018/19 heatwaves on Southern Alps glaciers</i> <i>Nicolas Cullen - Building a multi-scale modelling and observational framework to assess the impact of extreme weather events in the Southern Alps</i> <i>Discussion: Impacts and Extremes</i>		20
				20
15:00	15:30	Afternoon tea	Upstairs foyer	
15:30	17:30	<b>Session - Alpine hydrology, hazards, and ecosystems contd.</b> <i>Tim Kerr - Winter Snow storage is a poor predictor of spring streamflow: two case studies from the Southern Alps.</i> <i>Joanna Borzecki - The impact of glacier retreat on long-term water availability in the Waitaki Catchment, New Zealand</i> <i>Shelley MacDonell - The hydrological role of rock glaciers in an Andean desert</i> <i>Shane Bilish - Managing water resources in marginal snow environments</i> <i>Christian Zammit - Climate change impacts on snow and ice resource to support decision making: How precise do we need to be?</i>	Bentleys	
17:30	18:30	Closing remarks		
18:30		BBQ dinner		



**Saturday 13 February**

**Snow and Ice Research Group**

**start end Item**

8:30 18:00 2021 SIRG field trip: *an exploration of the glacial history in the Waimakariri area*