

NZIP & PHYSIKOS 2021

CONFERENCE | 12 - 14 JULY

Queen Margaret College, Wellington

NZIP & PHYSIKOS 2021 Conference Programme

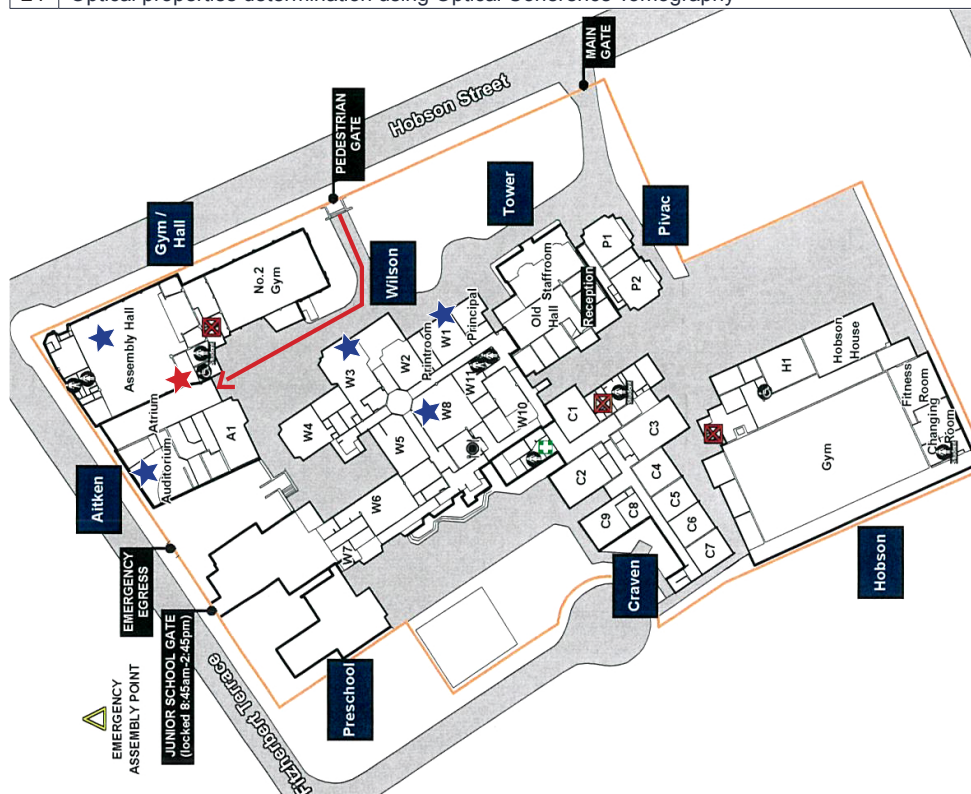
Monday 12 July				
8:00	Registration & exhibition open @ Queen Margaret College Atrium (53 Hobson Street, Wellington)			
9:20	Mihi Whakatau from Tū Temara, Te Herenga Waka Victoria University of Wellington (Hall) Welcome from Ehsan Mebahi, SHEADI, The Herenga Waka Victoria University of Wellington Chair: Natalie Plank, NZIP President			
9:40	Keynote: Cather Simpson, The University of Auckland			
10:20	Morning Tea + Exhibition (Atrium)			
Session A	Stream 1 Chair: James Storey (Hall)	Stream 2 Chair: Ben Mallett (Auditorium)	Stream 3 Chair: Delphine Mitchell (Classroom W1)	Stream 4 Chair: David Housden (Locations as below)
11:00	Whispering-Gallery Mode Lasing in Perovskite Nanocrystals Chemically Bound to Silicon Dioxide Microspheres Nathaniel Davis	Tailored coexistence of topological and nontopological Fermi-superfluid phases Kadin Thompson	PRESENTATION Online Stage One Physics Labs During Lockdown - Innovations and Evaluation Tristan O'Hanlon	WORKSHOP Thoughts on how teachers can help kids prepare for physics scholarship exam Dave Thrasher Location: Classroom W3
11:15	The luminescence of lanthanide-doped fluoroperovskites: establishing the energy levels of the lanthanides and their applications in radiation dose monitoring Joe Schuyt	Studying Nanoparticle Self-Assembly Using Numerical Energy Integrals Caleb Todd		
11:30	Radiation-induced valence conversion and sensitization of Eu ³⁺ emission in NaMgF ₃ nanoparticles Hellen Nalumaga	Towards understanding ultra-cold atom physics with quantum Monte Carlo, or beating exponential death by the law of large numbers Joachim Brand	PRESENTATION + DISCUSSION The Physics of Trees Simon Taylor	PRESENTATION Ministry of Education Review of Achievement Standards Henry Collette Location: Drama Room
11:45	Ion beam synthesis of embedded Pb nanoparticles Thomas Nott	$\mu 0$ Murray Early		
12:00	Ferromagnetic Ni _{1-x} Fex nanoparticle/polymer composite nanofibers produced by electrospinning Tehreema Nawaz	Current enhancement in commercial high-temperature superconductor tapes through heavy-ion irradiation Nick Strickland		
12:15	Lithographic techniques for fabrication of a spin injection and detection device exploiting ferromagnetic semiconducting Gadolinium Nitride Tane Butler	Variety really is the spice of life for a commercial measurement and calibration laboratory Lex Grubner		
12:30	Lunch + Exhibition (Atrium)			
13:45	Keynote: Tim Haskell (Hall) The experiences of someone who tried to use physics to help others Chair: Annette Koo			
	Capital Physicists Session: Science from across Wellington - Brought to you with support from Major Sponsor GNS Science Chair: Simon Granville (Hall)			
14:25	Andrea Bubendorfer , Callaghan Innovation A lifelong fascination with physics			
14:45	Jérôme Leveueur , GNS Science Applied magnetism at GNS Science: from nanosensors to electrical vehicle wireless charging			
15:05	Afternoon tea + exhibition (Atrium)			
	Plenary Session: Capital Physicists - science from across Wellington cont'd (Hall)			
15:30	Natalie Robinson , NIWA Forays into Frozen Oceans: How physics and the lure of discovery drew me to Antarctica			
15:50	Iman Soltanzadeh , MetService Weather Prediction @ MetService – Challenges and Opportunities			
16.10	Poster Presentation Session & Reception - Brought to you with support from Sponsor Victoria University of Wellington (Hall & Atrium) A chance to speak with poster presenters and enjoy drinks & nibbles with your colleagues to end the day.			
	Free Public Lecture – Brought to you with support from Event Partner Dodd-Walls Centre Chair: David Hutchison (Government Buildings Lecture Theatres, 55 Lambton Quay, Pipitea Campus, Room GBLT1)			
18.00	Cather Simpson Light, Sperm and Sustainability			
18:30	Tim Haskell From the banks of the Motu River to Haskell Strait Antarctica			

Tuesday 13 July				
8:00	Registration & exhibition open (Atrium, Queen Margaret College, 53 Hobson Street, Wellington)			
8:55	Day 2 Welcome (Hall) Plenary Session - Brought to you with the support of Major Sponsor The MacDiarmid Institute Chairs: David Housden & T. "Haggis" Henderson			
9:00	Keynote: Ben Ruck , Te Herenga Waka Victoria University of Wellington Angular momentum, quantum mechanics, and the problem of energy-hungry data centres			
9:40	Keynote: Craig Rofe , Te Atihaunui-ā-pāpārangī, Ngāti Rangī Āporo me Ārani (Apples and Oranges)			
10:20	Morning Tea + Exhibition (Atrium)			
Session B	Stream 1 Chair: Elke Pahl (Hall)	Stream 2 Chair: Tulasi Parashar (Auditorium)	Stream 3 Chair: Fiona Wolff (Classroom W3)	Stream 4 Chair: Andy Ross (Classroom W1)
11:00	Supersolid magnetic gases Danny Baillie	Space Physics and Space Weather Research at the University of Otago Craig Rodger	TALK Tuakana/Teina - Physics for Juniors Emily Hall	PRESENTATION Waiuku College Science Department IT journey through Microsoft Teams, OneNote, FORMS and Stream Doug Johnson
11:15	Miscibility and stability of dipolar bosonic mixtures Au-Chen Lee	Strategies for modelling plasma flow in a magnetoplasmadynamic space thruster with a high temperature superconducting applied field module Chris Acheson	TALK Te Ohu Rauemi Pūtaiao: Waka ama NCEA level 3 resource in Te Reo Māori Jordan Clarke	
11:30	The Next Generation of Quantum Droplets Joseph Smith	Observing transients in a simulated universe Max Briel	PRESENTATION + DISCUSSION Indigenous Physics: Some examples and contexts T. "Haggis" Henderson	PRESENTATION Aspects of quantum science in NZ for teachers Blair Blakie
11:45	Self-organization of vortex clusters in two-dimensional superfluid turbulence Sukla Pal	Kinetic simulation of ionospheric drag on small satellites Aidan Watson		
12:00	Experimental investigation of spin-entanglement between two atoms in an optical tweezer Poramaporn Ruksasakchai	Estimating Power Spectral Density Parameters of Stochastic Gravitational Wave Background for LISA Petra Tang	PRESENTATION + DISCUSSION Names of colleagues, students, places and concepts in Te Reo T. "Haggis" Henderson	PRESENTATION Lessons in interoperability from 19th century physicists Blair Hall
12:15	Atoms in front of a mirror: Time-delayed feedback in non-Markovian regime Mohammad Sadeghi	Implication of Chemically Homogeneous Evolution for BPASS models Sohan Ghodla		PRESENTATION + DISCUSSION 'Learning in depth': musings on Kieran Egan's proposal and its applicability in university-level physical sciences Baptiste Auguié
12:30	Robust adaptive simulations of expanding Bose-Einstein condensates Ashton Bradley	The most luminous supernovae: It takes two to tango Heloise Stevance		
12:45	Lunch + Exhibition (Atrium)			
Session C	Stream 1 Chair: Uli Zuelicke (Hall)	Stream 2 Chair: Dave Thrasher (Auditorium)	Stream 3 Chair: Sue Napier (Classroom W3)	Stream 4 Chair: Natalie Plank (Classroom W1)
14:00	Galaxy clusters as cosmological laboratories Yvette Perrott	WORKSHOP Otago First Year Programme and Scholarship Physics Blair Blakie, Paul Muir & Jonathan Squire	WORKSHOP Physics activities using a \$30 programmable BBC Micro:bit Denis Burchill	WORKSHOP Making Rainbow Inclusive Classrooms Jan Eldridge
14:15	Alien Melting Behaviour of Matter in Strong Magnetic Fields Elke Pahl		*Computers needed * Some supplied or bring your own.	
14:30	The expansion of the Universe: tensions, anomalies, and solutions David Wiltshire			
14:45	Probing the Highest-energy Objects in the Universe Jenni Adams			
15:00	Bus departs for MSL from Queen Margaret College			
15:30	MSL Site tours & reception - Brought to you with support from Event Partner MSL This visit will include nibbles & drinks. Bus transport is provided both ways.			
18:00	Bus departs for Te Papa/CBD			
19:00	Gala Dinner at Te Papa's Te Marae A fantastic night of dining together, awards, great conversation and to finish the night off... a band!			

Wednesday 14 July				
8:00	Registration & exhibition open (Atrium, Queen Margaret College, 53 Hobson Street, Wellington)			
8:55	Day 3 Welcome (Hall) Chairs: Joachim Brand & David Housden			
9:00	Keynote: Michael Johnston , Te Herenga Waka Victoria University of Wellington The role of epistemic considerations in the senior secondary physics curriculum			
9:40	Rutherford Talk: Bill Trompetter , GNS Science Evolution of Rutherford's ion beam science to applied research activities at GNS Science			
10:05	Neil Ashcroft Talk: Jeff Tallon , Te Herenga Waka Victoria University of Wellington The life and work of internationally distinguished physicist Neil Ashcroft			
10:30	Morning Tea + Exhibition (Atrium)			
Session D	Stream 1 Chair: Vedran Jovic (Hall)	Stream 2 Chair: Yvette Perrott (Auditorium)	Stream 3 Chair: John Bennet (Classroom W1)	Stream 4 Chair: Nathan Mehrrens (Labs W12/13)
11:00	Detecting minute defects in Silicon Spheres using Terahertz Micro-Resonators Rishabh Gandhi	All in balance? The fast ice in McMurdo Sound over 25 years and its connections to ocean, ice-shelf and atmosphere Maren Elisabeth Richter	WORKSHOP Farm Physics: some examples and contexts T. "Haggis" Henderson	WORKSHOP Making and learning with a compressed air cannon Doug Walker
11:15	Supercontinuum generation with compressed pulses from a SESAM mode-locked linear cavity laser Naveed Abbas	Modelling and Observation of Frazil Ice in Ice Shelf Water Nina Caldarella		
11:30	Shining from all sides: orientation-averaging the optical properties of nanoparticle assemblies Baptiste Auguie	Determining soft tissue components of atherosclerosis using MARS spectral photon-counting CT and its translation to patient scanning Emily Searle		
11:45	Spectroscopy of quantum-information candidate materials Mike Reid	Analysis of bone-metal interface using spectral photon-counting CT Maya Rajeswari Amma		
12:00	Low-threshold lasing in Ti:sapphire whispering-gallery laser Farhan Azeem	The connection between magnetic reconnection and plasma turbulence Tulasi Nandan Parashar	WORKSHOP Progression through NCEA physics - what knowledge best prepares students? Michael Johnston	TALK What's the point of physics practicals at school? Mark Standley
12:15	Thermal Noise and Fidelity in Electro-Optic Devices Sonia Mobassem			
12:30	Lunch + Exhibition (Atrium)			
13:20	General discussion about NZIP – All Welcome (Auditorium)			
Session E	Stream 1 Chair: Bob Buckley (Hall)	Stream 2 Chair: Nick Strickland (Auditorium)	Stream 3 Chair: Murray Chisholm (W1)	Stream 4 Chair: Sujata Rajagopal (W8)
14:00	Realisation of New Zealand's Diffuse Reflectance Scale Ellie Molloy	Ferrofluids and microfluidics: Magnetic forces and droplet impacts Amelia Cordwell	WORKSHOP Hands on way to teach river crossings Jennifer Gower	WORKSHOP Behind the scenes of building a new online physics course Andy Ross & Delphine Mitchell
14:15	Atomic radio receivers Susanne Otto	Ion Pipette Aspiration: A Soft Matter Characterization Technique Nicola Lacalendola		
14:30	GIC modelling of New Zealand's electrical transmission network Daniel Mac Manus	Spectral Imaging, Material Decomposition and Machine Learning Claire Chambers		
14:45	Design and Implementation of Plasmonic Surfaces for Ultra-Sensitive Biomedical Applications Mohammadrahim Kazemzadeh	Janus Spheres in Fluid Flow Sina Safaei	WORKSHOP Teaching Electricity by using Playdough Circuits Brenda MacKechnie	WORKSHOP Physics Fun - practical toys, demos, and experiments for teaching and learning Doug Walker & Andrew Sargent
15:00	Carbon nanotube network density and semiconducting purity in a biosensor platform Erica Happe	Use of synchrotron spectroscopy to develop materials for sensor and energy conversion applications Vedran Jovic	WORKSHOP Review of Achievement Standards – The big Ideas and Significant Learning in Senior Physics David Housden	
15:15	Drop Dynamics of non-Newtonian dairy solutions Ayoub Abdollahi	Defects mediated high Seebeck coefficient and power factor in transparent thermoelectric thin films Peter Murmu	Location: W8 Drama Room	
15:30	Afternoon tea (Atrium)			
16:00	Keynote: Surprise Speaker (Hall) Chair: Natalie Plank, NZIP President			
16:40	Conference Closing (Hall)			
17:30	Folk Music Physics: A revisit and a chance to share + Pub Quiz (Foxglove – 33 Queens Wharf) Leads: Haggis Henderson & Delphine Mitchell A participatory workshop on singing Physics songs with some time spent on how to write them too. Other musicians and their work encouraged and welcomed. A fun and sociable quiz is planned for after the workshop.			

POSTER PRESENTERS - A dedicated session will be held at 16:10 on Monday July 12th after the "Capital Physicists" Session in the Atrium. Refreshments will be provided.

Poster title	First Name	Last Name
1	Arya	Ambadiyil Soman
2	Farhan	Azeem
3	Murray	Bartle
4	Rodrigues	Bitha
5	Tony	Booth
6	Erica	Cassie
7	Shen	Chong
8	Shen	Chong
9	Sarthak	Choudhury
10	Tahlia	Crabtree
11	Holger	Fiedler
12	Jofferson	Gonzales
13	Matthew	Goodwin
14	Ashly	Jose
15	Martin	Markwitz
16	Nico	Mokus
17	Morten	Piibelegt
18	Maren Elisabeth	Richter
19	Joe	Schuyt
20	Odile	Smits
21	Jonathan	Squire
22	Max	Thomas
23	Jiazun	Wu
24	Mykola	Zlygostiev



Queen Margaret College
53 Hobson Street, Thorndon, Wellington.

★ Presentation rooms

★ Registration desk

W12/W13 is on first floor and delegates will be guided.

EVENT PARTNERS

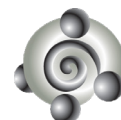


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