

2010 NZMS COLLOQUIUM : TIMETABLE

Tuesday 7 December

8:00-8:45 **Registration** - St David foyer

St David Theatre

8:55-9:00 **Welcome**

9:00-9:55 **Plenary Session: Andre Nies** Interactions of computability and randomness

	<i>Seminar Room 1</i>	<i>Seminar Room 2</i>	<i>Seminar Room 3</i>	<i>Seminar Room 4</i>	<i>Seminar Room 5</i>	<i>Seminar Room 6</i>
10:00-10:30	Marston Conder Large groups on surfaces of given genus	Bill Barton Implementing the pleasure principle	Neil Watson A unifying definition of a subtemperature	Laurence Palk* Fluid flow and calcium dynamics in secretory epithelia	Anuj Bhowmik* Existence of a Radner equilibrium in infinite dimensional spaces	Fabien Montiel* Experimental validation of numerical models of wave interactions with sea-ice
10:30-11:00	John Curran A smallest complete group of odd order	Louise Sheryn/Megan Clark Collective dreaming: a school-university interface	Tom ter Elst Partial Gaussian bounds for degenerate differential operators	Emily Harvey* Designing experiments using mathematical models	Manfred Sauter* The Volterra operator as a *-algebra generator	Tim Williams Shear waves in elastic solids with microscopic imperfections or inclusions

11:00-11:30 **Morning Tea** - St David foyer

11:30-12:00	Edoardo Persichetti* Compact McEliece keys based on quasi-dyadic Srivastava codes	John Hannah Reflecting on teaching linear algebra	Claire Postlethwaite Bifurcations of heteroclinic cycles	Luke Fullard* Modelling the initiation of a hydrothermal eruption	Astrid an Huef Diagonals in C^* -algebras	Tertius Ralph The transient motion of a floating body
12:00-12:30	Steven Galbraith Hot topics in public key cryptography	Sepideh Stewart* A tactile innovative method of teaching introductory MCMC	Rod Gover Geometry of PDE and compactifications of Einstein geometries	Rachael Tappenden* Extensions of compressed sensing	Tuan-Yow Chien* Classifying harmonic frames up to unitary equivalence	Luke Bennetts Wave attenuation through multiple rows of scatters with differing periodicities
12:30-13:00	Kevin Broughan Recent advances in the perfect number problem	Judy Paterson Questions in lectures: ideas from the Datum project	Tatiana Evans Conditions for discreteness of groups of Möbius transformations	Agate Ponder-Sutton* Preliminary results of modelling Tradescantia fluminensis	Iain Raeburn Hilbert modules, orthonormal bases and Cuntz families	Michael Smith* Scattering by cavities of arbitrary shape in an infinite plate & vibration problems

13:00-14:00 **Lunch; HODs meeting** - Seminar Room, ground floor, Centre for Innovation

St David Theatre

14:00-14:55 **Plenary Session: Hamish Spencer** Using mathematical models to predict the evolution of genomic imprinting

	<i>Seminar Room 1</i>	<i>Seminar Room 2</i>	<i>Seminar Room 3</i>	<i>Seminar Room 4</i>	<i>Seminar Room 5</i>	<i>Seminar Room 6</i>
15:00-15:30	Gonzalo Aranda Pino Weakly regular and self-injective Leavitt path algebras	Graeme Wake Calculus from the past and at a distance	Gerrard Liddell Structure of Lie quadratics	Yousaf Habib* Corruption and remedies	Hung Pham Homomorphisms from Fourier algebras	Christopher Poulton Bandgaps in structured media 1: Helmholtz equation and photonic bandgaps
15:30-16:00	Shannon Ezzat* Representation growth and exceptional primes	Ernie Kalnins Quantum superintegrability on Euclidean spaces	Dan Popovici Limits of projective and Moishezon manifolds under holomorphic deformations	Stephen Joe Sobol' sequences with good' 2-dimensional projections	Sunanda Dixit* A study on differentiable submanifolds	Ross McPhedran Bandgaps in structured media 2: Navier & biharmonic equations etc.

16:00-16:30 **Afternoon Tea** - St David foyer

16:30-17:30 **Colloquium and NZMS AGM** - St David Lecture Theatre

17:30-19:00 **Poster Session & Colloquium Reception** - St David foyer

19:00 **Reflections on ICM 2010, India** Andre Nies - Seminar Room 1

Wednesday 8 December

St David Theatre

9:00-9:55 **Plenary Session: Jacqui Ramagge** Using linear algebra when you only have groups

10:00-10:30 **Morning Tea** - St David foyer

	<i>Seminar Room 1</i>	<i>Seminar Room 2</i>	<i>Seminar Room 3</i>	<i>Seminar Room 4</i>	<i>Seminar Room 5</i>	<i>Seminar Room 6</i>
10:30-11:00	Charles Semple Submodular functions & optimizing biodiversity variables	Peter Donelan Geometric Jacobians and the singularity locus of a regional manipulator	Michael Whittaker Poincaré duality for hyperbolic dynamical systems	Teeranush Suebcharoen A model for cell-growth with asymmetric cell division	David Gauld Jordan and Schoenflies in non-metrical analysis situs	Phil Weir* Applications of an FEM approach for the analysis of sea-ice hydroelasticity
11:00-11:30	Rod Downey Generic case decision problems	Mike Paulin Mechanical design for agility in the Otago Fishing Spider, <i>Dolomedes aquaticus</i>	Klas Modin Generalized Euler equations and image template matching	Robert McKibbin Modelling aerosol transport: dispersion coefficients & predicted ground deposits	Jiling Cao Wijsman convergence: topological properties and embedding	Hyuck Chung Flexural wave propagation in a semi-infinite floating plate under edge loading
11:30-12:00	Maarten McKubre-Jordens Real analysis in paraconsistent logic	Chyou Te-yuan Passive dynamic walking and control on level ground	Ben Whale Functional definitions of pseudo-Riemannian distance for noncommutative geometry	Graham Weir Impacts of macro- and nano-sized elasto-plastic particles with a large hard surface	Afshin Mardani A sufficient condition for topological spaces to be ω_1 squat	Mike Meylen The long and short of elastic wave interaction with platonic clusters

12:00-13:00 **Lunch; ANZIAM (NZ) AGM** - St David Lecture Theatre

13:00-17:30 **Excursion**

19:30 **Dinner (Bus at 18.30)**

Thursday 9 December

St David Theatre

9:00-9:55 **Plenary Session: Michael Eastwood** Invariant differential operators on the sphere

	<i>Seminar Room 1</i>	<i>Seminar Room 2</i>	<i>Seminar Room 3</i>	<i>Seminar Room 4</i>	<i>Seminar Room 5</i>	<i>Seminar Room 6</i>
10:00-10:30	Christopher Tuffley Intrinsic linking of n -complexes	Carlo Laing Bifurcations of lurching waves in a thalamic neuronal network	Bruce van Brunt A singular Sturm-Liouville problem arising from a cell growth model	Kamonwan Kocharoen Stability analysis of skeletal muscle model in myotonia and periodic paralysis	Satinee Lertprapai Population variance estimators of exponential distribution by MCDM method	Mike Atkinson Bubblesort, stacks and permutations
10:30-11:00	Nicholas Duncan Toposes in geometry	Kiri Pullar Signal transduction of electric fields in sharks: ampulla microstructure & FEM	Rua Murray Polynomial decay of correlations	Winston Sweatman Deformations while jet-stripping steel coatings	Alla Shymanska Modelling in charged particle optics using generating functions and MC methods	Heiko Dietrich Minimal conjugation families for finite groups

11:00-11:30 **Morning Tea** - St David foyer

11:30-12:00	Puntip Toglaw A model of GLP1-DPP4 interaction for glycemic improvement after surgery	Busayamas Pimpunchat Complete oxygen depletion from rivers due to pollution	Mihaly Kovacs Finite element approximation of the Cahn-Hilliard-Cook equation	Alex James Can beetles prove that God exists?	Ivo Siekmann MCMC estimation of Markov models for ion channels	Ben Martin Spherical buildings and the centre conjecture
12:00-12:30	Graham Donovan Modelling the asthmatic lung	Alona Ben-Tal The power of many: coupled pacemaker neurons in the pre-Bötzinger complex	Benjawan Rodjanadid Iterative method for common solutions of equilibrium and fixed point problems	Shaun Hendy Effective rate constants for nanostructured heterogeneous catalysts	Jeffrey Hunter Mixing and hitting in Markov chains	Robert Thompson Unmasked: the science of cloaking

St David Theatre

12:30-13:30 **Plenary Session: John Butcher** Taylor series - pure and simple: the order of numerical methods for ordinary differential equations

13:30 **Finish**