

The Dodd-Wall Centre 6th Annual Symposium

General Information

Location

St Margaret's College is located on Leith Street, on the University of Otago Campus in Dunedin. A map can be found at:

<http://stmargarets.ac.nz/Information/Location/tabid/1927/language/en-GB/Default.aspx>

Internet

Wireless internet is available at St Margaret's for a charge. Details are in the St Margaret's Guest Room Information Sheet.

Catering during the conference

- Meals at St Margaret's are served in the dining room.
- For those staying at St Margaret's, breakfast is served from 7.30 a.m. – 9.00 a.m. and dinner is generally served from 5.20-6.15 unless otherwise specified in the Programme.
- Lunch times are specified in the Programme.

Session and Event Information

Sessions are held in the Valentine Common Room at St Margaret's College.

Notes to presenters

Please see the chair of each session before you are due to give your presentation to organize anything that will be needed. A laptop, laser pointer and data projector will be provided.

Poster Presentations and Social Hour

Poster boards will be located in the Valentine Common Room. Posters are numbered in the Programme below. Please put your poster up next to your poster number on the afternoon of Tuesday 6th December. Poster Boards will be moved apart during the poster session itself to allow more room for viewing.

A cash bar will be in operation during the poster session, and nibbles will be provided. Drinks are \$5.

Excursion:

We have booked space on the Taeiri Gorge Train Trip on Wed 7th December for those wishing to go on the excursion. There will be a van departing St Margaret's College at 2PM, and the trip goes from 2.30PM – 6.30 PM. Costs for the excursion, including transport to the train station, will be paid by those attending.

The Symposium dinner will be held at 7.30 PM at Etrusco, a 5 minute walk from the train station.

Symposium Dinner

The Symposium Dinner will be held on Wednesday 7th December at 7.30 PM at Etrusco, 8 Moray Place, near the Octagon in central Dunedin. A map will be provided.

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Programme schedule

Tuesday 6th December

Valentine Common Room, St Margaret's College

9.00-12.00 PI meeting (by invitation, agenda to be circulated separately)

12.00-1.00 Lunch, St Margaret's College Dining Room

1.00-1.15 Opening Address, Richard Blaikie, University of Otago and MacDiarmid Institute

Session 1: Quantum Optics Chair Scott Parkins, DWC

1.15	Crispin Gardiner, DWC	<i>Quantum technology, quantum optics, photonics and ultra cold atoms in NZ: How did we get where we are, and where are we going?</i>	45 min
2.00	David McAuslan, DWC	<i>Coherent Spectroscopy of Rare-Earth-Ion Doped Whispering Gallery Mode Resonators</i>	15 min
2.15	Young-Tak Chough, DWC	<i>Large Photon Number Sub-Poissonian States in a Cavity</i>	15 min

2.30-3.00 Afternoon Tea, Conservatory

Session 2: Photonics I Chair Rainer Leonhardt, DWC

3.00	Cather Simpson, DWC	<i>TBA</i>	30 min
3.30	Damian Carder, IRL	<i>Infrared photoluminescence from PbSe nanocrystals embedded in a silicon dioxide matrix</i>	15 min
3.45	Frederique Vanholsbeeck, DWC	<i>Biophotonics at the Physics Department of the University of Auckland</i>	15 min
4.00	Xinjie Song, DWC	<i>Design and Fabrication of Polymer Waveguides</i>	15 min
4.15	Yasar Kutuvantavida, IRL	<i>The Effects of Optical Intensity, Excited state Quenchers and Structural Modifications on the Photostability of Electro-Optic Chromophores</i>	15 min

4.30-4.45 Break

Session 3: Vortices

Chair Joachim Brand, Massey University

4.45	Ashton Bradley, DWC	<i>TBA</i>	15 min
5.00	Thomas Ernst, Massey University	<i>Quantum many-body dynamics of a bright matter-wave soliton</i>	15 min
5.15	Sam Rooney, DWC	<i>Finite temperature dynamics of persistent current formation</i>	15 min
5.30	Shih-Wei Su, Tsing Hua Univ	<i>Spontaneous crystallization of skyrmions and fractional vortices in the fast-rotating and rapidly-quenched spin-1 Bose-Einstein condensates</i>	15 min

5.30-6.45 Dinner at St Margaret's College Dining Room

**7.30-9.30 Poster session and social hour
Valentine Common Room**

Poster 1	Danny Baillie, DWC	<i>Critical temperature of cold bosons in optical lattices</i>
Poster 2	Russell Bisset, DWC	<i>TBA</i>
Poster 3	Young-Tak Chough, DWC	<i>TBA</i>
Poster 4	Joseph Towers, DWC	<i>Ultra-Cold Bose Gas in a Disordered 2D Optical Lattice</i>
Poster 5	Jaritz Gabriele, Massey University	<i>Stability of vortices and dark solitons in linearly coupled Bose-Einstein condensates</i>
Poster 6	Oleksandr Fialko, Massey University	<i>Quantum tunneling of a vortex between two pinning potentials</i>
Poster 7	Simon Coop, DWC	<i>TBA</i>
Poster 8	Yin H Fung, DWC	<i>Determining atom number inside a high density microtrap</i>

Poster 9	Amita Deb and Bianca Sawyer, DWC	<i>Site-selective loading of an ultracold atom collider</i>
Poster 10	Jae Kyung Jang, DWC	<i>Passive Brillouin suppression in fiber ring cavities</i>
Poster 11	Norman Lippok, DWC	<i>Depth-ambiguity free or polarization sensitive optical frequency domain imaging using the Pancharatnam - Berry phase</i>
Poster 12	Callum MacDonald, DWC	<i>Helicity of the circular polarized light backscattered from biological tissues influenced by optical clearing</i>
Poster 13	Sam Botting, DWC	<i>Imaging of the micro-vascular bed in mouse and human skin using Optical Coherence Tomography</i>
Poster 14	Alex Doronin, DWC	<i>Online CUDA-accelerated Monte Carlo modelling tool for the needs of biophotonics and optical diagnostics</i>
Poster 15	Karin Jentoft, Helmholtz Zentrum Munchen, Germany	<i>Seeing More: Optical Parameters from Diffuse Reflectance Measurements</i>
Poster 16	Alberto Cetoli, Massey University	<i>Bose glass transition in quasiperiodic lattices</i>

Wed 7th December

Valentine Common Room, St Margaret's College

9.00-10.00 Invited Talk: Andrew Truscott, Australian National University,
Correlations: What they tell us about quantum gases

10.00-10.30 Morning tea, Conservatory

Session 4: Experimental Atomic Physics Chair: Mikkel Andersen, DWC

10.30	Maarten Hoogerland, DWC	<i>Quantum statistics in a Gaussian Potential</i>	30 min
11.00	Sam Ruddell, DWC	<i>Calorimetry of Bose-Einstein condensates</i>	15 min
11.15	Ana Rakonjac, DWC	<i>Cold Collisions and More</i>	15 min

11.30	Simon Coop, DWC	<i>A Simple Atom Interferometer</i>	15 min
11.45	Alicia Carpentier, DWC	<i>Filamentation Instability in Low Power Regime</i>	15 min

12.00-1.00 Lunch, St Margaret's College Dining Room

Excursion: Taeiri Gorge Train Trip

2.00PM Leave St Margaret's for Railway Station (train departs 2.30PM, arrives back at 6.30PM)

Symposium Dinner

7.30PM Etrusco Restaurant (8 Moray Place, 1 block from Octagon and 4 blocks from Train Station; map available)

Thursday 8th December

Valentine Common Room, St Margaret's College

Session 5: Biophotonics

Chair: Frederique Vanholsbeeck, DWC

9.00	Vasilis Ntziachristos, Helmholtz Zentrum Munchen, Germany	<i>TBA</i>	30 min
9.30	Jason Kuo, DWC	<i>Optrode and Monte Carlo Simulations</i>	15 min
9.45	Evgeny Bogomolny, DWC	<i>Early detection of cancerous transformation using Attenuated Total Reflectance (ATR) spectroscopy and multivariate analysis</i>	15 min
10.00	Alex Doronin, DWC	<i>Online CUDA accelerated photon migration modeling for the needs of biophotonics and optical diagnostics</i>	15 min

10.15-10.45 Morning tea, Conservatory

Session 6: Properties and Probes of ultra-cold gases
Chair: David Hutchinson, DWC

10.45	Blair Blakie, DWC	<i>DSMC Theory for an Ultra-Cold Atomic Collider</i>	30 min
11.15	Alberto Cetoli, Massey University	<i>Bose glass transition in quasiperiodic potentials</i>	15 min
11.30	Rob Ballagh, DWC	<i>Probing the state of a repulsive 1D Bose gas by light scattering</i>	15 min
11.45	Andrew Martin, DWC	<i>Fully anisotropic Bogoliubov calculations of a dipolar Bose-Einstein condensate</i>	15 min
12.00	Sam Cormack, DWC	<i>Dipolar BEC Calculations with Exchange Interactions</i>	15 min
12.15	Russel Bisset, DWC	<i>The Dipolar Bose Gas: Stability at Finite Temperature</i>	15 min

12.30-1.30 Lunch, St Margaret's College Dining Room

1.30-2.30 Invited talk: Richard Blaikie, University of Otago and MacDiarmid Institute,
Enhanced Near-field Imaging using Surface Plasmons and other Resonant Reflection Phenomena

2.30-3.00 Afternoon tea, Conservatory

Session 7: Photonics II **Chair: Jevon Longdell, DWC**

3.00	John Harvey, DWC	<i>TBA</i>	45 min
3.45	Stuart Murdoch, DWC	<i>High-power and high-conversion efficiency $\chi(3)$ fiber optical parametric oscillators.</i>	15 min
4.00	Yiqing Xu, DWC	<i>Temporal Symmetry Breaking Instability in a Synchronously-Pumped Passive Fibre Ring Cavity</i>	15 min

5.20-6.15 Dinner at St Margaret's College Dining Room