



# Otago Spotlight Series Cancer Research

Tuesday 20 October, 2015  
9.00am – 3.30pm  
Nordmeyer Lecture Theatre  
University of Otago, Wellington

# Welcome

Tēnā koutou kātoa. I would like to extend a very warm welcome to the Otago Spotlight Series: Cancer Research Symposium. This is the first event in a series at which we will showcase the research strengths in the health sciences at the University of Otago. We are proud to share our world-class cancer research with you today.

The Division of Health Sciences at the University of Otago has an enviable reputation for research excellence and innovation. Our ground-breaking research underpins many advances in health policy and practice and the understanding of health and disease, both here in New Zealand, and globally.

Otago has significant depth and breadth in cancer research. Our staff are leaders in the fields of cancer epidemiology, control and prevention, risk prediction, cancer genetics, and the development of new diagnostics and treatments. We have expertise in health inequalities and in Māori and Pacific health, and are dedicated to undertaking research relevant to New Zealand's unique population groups.

Reducing the burden of cancer is a key priority for New Zealand. This can only be achieved by partnering with stakeholders and communities, and generating world-class research, and translating our research findings into innovative health policy, practice and technologies.

Today, stakeholders will have the chance to meet with researchers and to discuss the future of cancer research in New Zealand – its needs and its priorities.

I am sure you will be inspired by the day's presenters and I encourage you to provide us with feedback on the day and what you see as key priorities for cancer research in New Zealand.

Thank you to our speakers and attendees and I look forward to many more fruitful interactions in the future.



Professor Peter Crampton

PRO-VICE-CHANCELLOR  
DIVISION OF HEALTH SCIENCES  
UNIVERSITY OF OTAGO

# Cancer Research at Otago: Setting the Scene

Cancer originates and evolves through the blind power of natural selection, driving cell survival and growth at the expense of the whole organism – all in the abbreviated, precious interval of a lifetime. Although this evolutionary drive that leads to cancer is relentless and indiscriminate, humankind is unwilling to simply accept it as the price we pay for life. Why do we resist? Because the disease is cruel in its unpredictability and timing, uniting us in a fundamental need to protect ourselves and our families. The only way for society to achieve this desired protection is through continued research into cancer's causes, consequences, prevention strategies and treatments.

Research provides many opportunities to reduce cancer's impact on our lives, ranging from the identification of lifestyle and genetic risk factors, to early diagnosis, better treatment and improved patient management and support. The University of Otago leads research into New Zealand's national cancer priorities and the challenges of delivering better, more equitable care into our own health system. The University also excels in fundamental and translational cancer research, strengthening New Zealand's connectedness to the international research community and providing a conduit for the more rapid adaption of global knowledge to New Zealand patients.

Today's lectures will give you a snapshot of cancer research being carried out at the University of Otago by both established scientists and the next generation of emerging young researchers. The lectures address questions from across the disease continuum and provide examples of our progress in prevention, individual risk prediction, the development of well tolerated new treatments, psycho-social patient support and the logistics of delivering affordable, equitable patient care in a tightly constrained healthcare system.

Thank you for attending today and we value any input you might wish to share with us.



Professor Parry Guilford

CENTRE FOR TRANSLATIONAL CANCER RESEARCH  
DEPARTMENT OF BIOCHEMISTRY  
UNIVERSITY OF OTAGO

# Programme

9.00-9.15am Mihi

## Session One

- Chair:** A/P Di Sarfati (Public Health, University of Otago, Wellington)
- 9.15-9.30 Professor Parry Guilford (Biochemistry, Otago School of Medical Sciences)  
**Overview**
- 9.30-9.50 Dr Rose Richards (Preventive and Social Medicine, Dunedin School of Medicine)  
**What does the public know about preventing cancer?**
- 9.50-10.10 A/P Sarah Young (Pathology, Dunedin School of Medicine)  
**Vaccinating against cancer**
- 10.10-10.30 Dr Logan Walker (Pathology, University of Otago Christchurch)  
**Genetic health for personalised cancer care and prevention**
- 10.30-10.55 **Morning Tea**

## Session Two

- Chair:** A/P Sarah Young (Pathology DSM)
- 10.55-11.15 Prof Antony Braithwaite (Pathology, Dunedin School of Medicine)  
**The gene that stops cancer**
- 11.15-11.35 Dr Heather Cunliffe (Pathology, Dunedin School of Medicine)  
**Molecularly-informed treatment strategies in breast and ovarian cancer**
- 11.35-11.55 Dr Khaled Greish (Pharmacology & Toxicology, Otago School of Medical Sciences)  
**Transforming existing drugs: One more step in the fight against cancer**
- 11.55-12.20 Professor Parry Guilford (Biochemistry, Otago School of Medical Sciences)  
i) Finding cancer's vulnerabilities and  
ii) The Healthier Lives National Science Challenge: the rapid response to cancer progression
- 12.20-1.00pm **Lunch**

## Session Three

- Chair:** Prof Parry Guilford (Biochemistry OSMS)
- 1.00-1.25 Prof Tony Blakely and Dr Nisha Nair (Public Health, University of Otago, Wellington)  
**Health gain and cost-effectiveness in cancer prevention and management**
- 1.25-1.45 Dr Chris Jackson (Medicine, Dunedin School of Medicine)  
**Improving patient outcomes in colorectal cancer care**
- 1.45-2.05 A/P Di Sarfati (Public Health, University of Otago, Wellington)  
**Cancer, comorbidity and care**
- 2.05 -2.25 Dr Jason Gurney (Public Health, University of Otago, Wellington)  
**Inequalities in testicular cancer**
- 2.25-2.45 Students present their work
- 2.45-3.05 Dr Patries Herst (Radiation Therapy, University of Otago, Wellington)  
**Reducing skin damage in radiation therapy**
- 3.05-3.25 Dr Richard Egan (Preventive and Social Medicine, Dunedin School of Medicine)  
**Psycho-social-spiritual dimensions of care**
- 3.25-3.45 Discussion and wrap up of the day
- 3.45 **Afternoon Tea**
- 4.15pm Taxis depart for 5.15 pm flights to Dunedin and Christchurch

# Contribute your views on Cancer Priorities

The Healthier Lives National Science Challenge is a national research collaboration dedicated to achieving healthier lives for all New Zealanders. The key to this is delivering the right prevention to the right population and the right treatment to the right patient.

Healthier Lives is working on the prevention and treatment four of New Zealand's main non-communicable diseases:

- Cancer
- Cardiovascular disease
- Diabetes
- Obesity

Together, with others working in these fields, we will contribute to New Zealand's commitment to achieving the World Health Organisation goals of:

- Reducing the health burden of non-communicable diseases by 25% by 2025
- Reducing health inequalities between populations by 25% by 2025

We plan to do this in partnership with stakeholders and communities by generating world-class research, and translating our research findings into innovative health policy, practice and technology, designed for New Zealand's unique communities.

Contribute your views on cancer priorities for New Zealand:

Email: [healthier.lives@otago.ac.nz](mailto:healthier.lives@otago.ac.nz)

# Entries for the Student Poster Competition

POSTER NUMBER	TITLE, AUTHOR, DEPARTMENT
1	<p>COLONOSCOPY REFERRAL CRITERIA IN FASTER CANCER TREATMENT PATHWAY FOR PATIENTS AT SOUTHERN DISTRICT HEALTH BOARD <b>Aisyah Ibrahim<sup>1,3</sup>, Christopher Jackson<sup>1,3</sup>, Sarah Derrett<sup>2</sup>, Ari Samaranayaka<sup>2</sup></b> <sup>1</sup>Southern Blood and Cancer Service, Southern District Health Board; <sup>2</sup>Department of Preventive and Social Medicine, Dunedin School of Medicine; <sup>3</sup>Department of Medicine, Dunedin School of Medicine</p>
2	<p>ESTIMATING THE EFFECT OF RECENT SERIOUS MENTAL ILLNESS ON BREAST CANCER SURVIVAL <b>Ruth Cunningham<sup>1</sup>, Diana Sarfati<sup>1</sup>, James Stanley<sup>1</sup>, Debbie Peterson<sup>2</sup>, Sunny Collings<sup>2</sup></b> <sup>1</sup>Department of Public Health; <sup>2</sup>Department of the Dean, University of Otago, Wellington</p>
3	<p>DEVELOPMENT AND IMPLEMENTATION OF A RADIATION TREATMENT PLANNING TEACHING MODULE UTILISING AN IMMERSIVE 3D SIMULATION SYSTEM <b>Aidan Leong, Paul Kane, Ptries Herst</b> Department of Radiation Therapy, University of Otago, Wellington</p>
4	<p>MARS SPECTRAL IMAGING OF NANO-PARTICLES AS A NEW MODALITY FOR DETECTING CANCER <b>Mahdieh Moghiseh<sup>1</sup>, Anthony Butler<sup>1,2</sup>, Nigel Anderson<sup>1</sup>, Phil Butler<sup>2</sup></b> <sup>1</sup>Radiology and Centre for Bioengineering and Nanomedicine, University of Otago, Christchurch; <sup>2</sup>Department of Physics, University of Canterbury, Christchurch</p>
5	<p>THE ROLE OF ASCORBATE IN CONTROLLING HYPOXIA FACTORS IN RENAL CELL CARCINOMA <b>Christina Ernst<sup>1</sup>, Elisabeth Phillips<sup>1</sup>, Helen Morrin<sup>1,2</sup>, Margreet Vissers<sup>3</sup>, Bridget Robinson<sup>1,4</sup>, Gabi Dachs<sup>1</sup></b> <sup>1</sup>Mackenzie Cancer Research Group, Department of Pathology, University of Otago, Christchurch; <sup>2</sup>Cancer Society Tissue Bank, Christchurch; <sup>3</sup>Centre for Free Radical Research, Department of Pathology, University of Otago, Christchurch; <sup>4</sup>Oncology Services, CDHB</p>
6	<p>ENDOPLASMIC RETICULUM STRESS IS ASSOCIATED WITH THE MODULATION OF APOPTOSIS-ASSOCIATED UNFOLDED PROTEIN RESPONSE GENES IN ORAL SQUAMOUS CELL CARCINOMA <i>IN VITRO</i> <b>Benedict Seo, Dawn Coates, Greg Seymour, Alison Rich</b> Sir John Walsh Research Institute, Faculty of Dentistry, University of Otago</p>
7	<p>THE EFFECTS OF TUMOUR VESICLES ON CANCER METASTASIS <b>Morad-Remy Muhsin<sup>1</sup>, Amy Dunn<sup>1</sup>, Sarah Saunderson<sup>1</sup>, Jim Faed<sup>2</sup>, Alex McLellan<sup>1</sup></b> <sup>1</sup>Department of Microbiology and Immunology, Otago School of Medical Sciences; <sup>2</sup>Department of Pathology, Dunedin School of Medicine</p>
8	<p>A NEW ARYL ALLYL ETHER BASED STABLE AND TUNABLE RELEASE ENABLED SELF-IMMOLATIVE LINKERS FOR TUMOUR-TARGETED PRODRUG THERAPY <b>Siddharth Matikonda Sai, Jessic Fairhall, Allan Gamble</b> School of Pharmacy, University of Otago</p>
9	<p>INTERLEUKIN-17 INDUCES MATRIX METALLOPROTEINASE ACTIVATION AND INVASION IN ORAL CANCER <b>Avadhoot Avadhani, Trudy Milne, Gregory Seymour, Alison Rich</b> Sir John Walsh Research Institute, Faculty of Dentistry, University of Otago</p>
10	<p>THE DISCOVERY OF NOVEL SYNTHETIC LETHAL COMPOUNDS FOR THE TREATMENT OF E-CADHERIN DEFICIENT TUMOURS <b>Henry Beetham, Augustine Chen, Andrew Single, Bryony Telford, Parry Guilford</b> Cancer Genetics Laboratory, Department of Biochemistry, Otago School of Medical Sciences</p>

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- 11 REVERSIBLE ADJUVANT CONJUGATION TO A MODEL TUMOUR ANTIGEN ENHANCES CD4+ AND CD8+ T-CELL PROLIFERATION *IN VITRO*  
**Katrin Kramer<sup>1,2</sup>, Sarah Young<sup>2</sup>, Greg Walker<sup>1</sup>**  
<sup>1</sup>School of Pharmacy, University of Otago; <sup>2</sup>Department of Pathology, Dunedin School of Medicine
- 12 TWO HEADS ARE BETTER THAN ONE: DENDRITIC CELLS AND B CELLS ENHANCE THE ANTI-TUMOUR IMMUNE RESPONSE COMPARED WITH DENDRITIC CELLS ALONE  
**Melanie Grant<sup>1</sup>, Chris Jackson<sup>2</sup>, Sarah Young<sup>1</sup>**  
<sup>1</sup>Department of Pathology, Dunedin School of Medicine; <sup>2</sup>Department of Medicine, Dunedin School of Medicine
- 13 DOES A VARIANT OF THE TUMOUR SUPPRESSOR P53 PLAY A ROLE IN TUMOUR METASTASIS?  
**Imogen Roth<sup>1</sup>, Hamish Campbell<sup>2</sup>, Carina Rubio<sup>2</sup>, Claire Vennin<sup>3</sup>, Michelle Wilson<sup>1</sup>, Anna Wiles<sup>1</sup>, Gail Williams<sup>1</sup>, Paul Timpson<sup>3</sup>, Michael Berridge<sup>4</sup>, Nicholas Fleming<sup>1</sup>, Margaret Baird<sup>1</sup>, Antony Braithwaite<sup>1,2</sup>**  
<sup>1</sup>Department of Pathology, Dunedin School of Medicine; <sup>2</sup>Children's Medical Research Institute, University of Sydney, Australia; <sup>3</sup>The Garvan Institute of Medical Research, Sydney, Australia; <sup>4</sup>Malaghan Institute for Medical Research, Wellington
- 14 SCREENING FOR PREDISPOSITION FOR GASTRIC CANCER IN MĀORI  
**Christopher Hakkaart, Parry Guilford**  
Department of Biochemistry, Otago School of Medical Sciences
- 15 A SYNERGISTIC SYNTHETIC LETHAL DRUG COMBINATION FOR THE TREATMENT OF E-CADHERIN-DEFICIENT TUMOURS  
**Andrew Single, Augustine Chen, Parry Guilford**  
Cancer Genetics Laboratory, Department of Biochemistry, Otago School of Medical Sciences
- 16 CROSS-PRESENTING DCS ARE NECESSARY FOR ANTI-TUMOUR IMMUNOTHERAPY BY M.SMEGMATIS AND MONOSODIUM URATE CRYSTALS  
**Connie Gilfillan<sup>1,2</sup>, Sabine Kuhn<sup>3</sup>, Evelyn Hyde<sup>1</sup>, Klaus Karjalainen<sup>4</sup>, Christiane Ruedl<sup>4</sup>, Brett Delahunt<sup>2</sup>, Franca Ronchese<sup>1</sup>**  
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# Attendees

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