

Introduction

The Dodd-Walls Centre is a national Centre of Research Excellence involving five NZ universities, hosted by the University of Otago. Our research focuses on New Zealand's acknowledged strength in the fields of precision atomic and quantum optical physics, with our name drawn from two kiwi pioneers in these fields. Our research explores the limits of control and measurement at the atomic scale through the use of laser light, the generation and manipulation of light at its most fundamental, quantum level and the processing and physical nature of information in this quantum realm.

Our Mission is

- to create a research centre that is recognised as one of the world's leading organisations in the field of photonic and quantum technologies,
- to build upon the acknowledged strength of New Zealand in the areas of non-linear and quantum optics and precision atomic physics,
- to train and develop skilled staff and students to the highest international standards, and
- to help develop the high-tech industry sector, thus ensuring economic growth and continued career pathways in New Zealand.

Our Strategic Outcomes are

- **Increased scientific impact.** Enhance New Zealand's international scientific reputation by creating a centre that is recognised as one of the premier organisations in the field of photonic and quantum technologies, becoming a flagship for scientific excellence showcasing New Zealand innovation. The Centre's work will be sought for its innovation and expertise and make it a destination of choice for the world's best and brightest students.
- **Enhanced economic output.** Develop and expand New Zealand's high-tech industry sector, adding to the country's economic growth, via the successful application of photonic and quantum technologies and focused, concerted education and outreach to existing New Zealand industry regarding the advances these technologies can afford.
- **Stronger workforce.** Grow the pool of highly skilled New Zealand workers with the highest level of training, mentoring and hands-on experience with state-of-the-art photonic and quantum technologies research and development in our labs and in partnership with New Zealand industry.
- **Better careers.** Increase the number of high-quality, high-earning career pathways in New Zealand through the enhancement of existing high-tech businesses, and the creation of new ones and ensure these career pathways are opened more equitably for all New Zealanders through enhanced public engagement, outreach and education.
- **Improved decision-making.** Inform decision making processes of businesses and government through consultation and the sharing of consolidated knowledge of the science and technology of using light.
- **Improved scientific literacy.** An increased knowledge and use of science in society, especially by groups traditionally under-represented in science. Increased awareness of the benefits accrued through the support of research, the power of the scientific method and the importance of scientifically informed decision making.