

Gene experts unite to tackle disease

Researchers behind a \$40 million genomics research infrastructure say it will find new ways to tackle problems distinctive to the New Zealand population such as obesity, cancer and heart disease.

Professor Anthony Reeve, who is leading the collaboration, said new state-of-the-art equipment purchased under the scheme will give health researchers the capability to carry out projects on a larger scale and working together will avoid duplication.

The infrastructure brings together gene experts from the University of Otago, Massey University, The University of Auckland and AgResearch - a Crown Research Institute (CRI). It will receive \$40 million in Government funding over the next nine years, alongside parallel investment from collaborating institutions.

Professor Reeve, director of the University of Otago's Cancer Genetics Laboratory, said it will ensure New Zealand stays at the forefront in genomic research.

"New technologies and methodologies are emerging all the time. We need to keep pace with that change for the benefit of New Zealanders," he said.

"The infrastructure will provide New Zealand researchers with access to the significant equipment and expertise needed for large-scale genomics projects," he says.

Modern genomic technologies, which allow scientists to examine the structure and function of thousands of genes at a time, are considered vital to advancing research in health, agriculture, horticulture, biosecurity and biodiversity.

Professor Reeve, who heads a HRC-funded programme *Genetics and Epigenetics of Cancer*, said: "Knowledge of people's genetic make-up supports new solutions to problems that have genetic causes such as obesity, cancer and heart disease.

"In the same way, knowledge of the genetic make-up of animals and plants allows substantial improvement in product quality and productivity."

Each of the key institutions will bring different areas of expertise to the infrastructure.

As the lead institution, the University of Otago has expertise in all areas, including genome sequencing, bioinformatics and gene arrays, technology used to examine genetic variations. This is complemented by the strong expertise Massey University has in sequencing, genomics and bioinformatics, and the University of Auckland and AgResearch's expertise in genomics and bioinformatics.

The institutions also have complementary technologies which do different tasks.

The infrastructure is funded through the Ministry of Research, Science and Technology (MoRST).



Professor Anthony Reeve

Keywords:

- Genomics, genome sequencing, bioinformatics

Key facts:

- Genomics; high-throughput technologies which allow scientists to examine the structure and function of thousands of genes at one time
- The 'genomics revolution' has given scientists new tools to examine the genes of complex organisms

Aims of this research infrastructure:

- To ensure New Zealand stays at the forefront of genomic research and thus provide new ways to tackle problems distinctive to the population such as obesity, cancer and heart disease
- New infrastructure will bring together gene experts from the University of Otago, Massey University, The University of Auckland and AgResearch, enabling analysis of the large amounts of data generated by the new equipment facilities
- Collaboration of researchers and equipment investment will provide the ability to carry out projects on a larger scale and avoid duplication of research

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