

# Establishment of a National Eye Research and Clinical Centre will thrust New Zealand into premier research position

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New Zealand is poised to become a leading world centre for both vision research and education. In the most exciting development in vision science since the creation of a trio of Chairs at the University of Auckland over the last eight years [Maurice Paykel Chair of Ophthalmology (1999), Robert Leitch Chair of Optometry (2002), and the W&B Hadden Chair of Ophthalmology and Translational Vision Research (2005)], it will involve close collaboration between Ophthalmology, Optometry and Molecular Vision.

On Friday 16<sup>th</sup> March, a preliminary Memorandum of Understanding (MOU) was signed at the University of Auckland by Professor Charles McGhee (Ophthalmology), Professor Michael Kalloniatis (Optometry and Vision Science) and Associate Professor Paul Donaldson (Molecular Vision Laboratory) to establish a National Eye Research & Clinical Centre (Institute) - the NERCC. The purpose of this centre is to consolidate and formalise working relationships between Departments of Ophthalmology, Optometry and Vision Science, and the Molecular Vision Laboratory (Department of Physiology) and other interested groups to provide collaborative educational, clinical and research expertise, and associated resources, of the highest level for the benefit of all New Zealanders, in a University of Auckland based Institute.

Due to economy of scale, such a large multi-disciplinary centre will foster interdepartmental relations and collaborations on a more formal basis and create significant academic, teaching and clinical resource benefits for New Zealand. The individual Departments already have substantial international standing; however, consolidation of some of these groupings will undoubtedly push Auckland into the premier research position in Australasia and promote it as a leading world centre for both vision research and education. In addition, extensive national and international collaborations already exist in the clinical, research and educational spheres and the NERCC will serve as a focus to strengthen these relationships across New Zealand and with a number of Australian, American and European based centres.

The NERCC will promote high quality multi-disciplinary education at undergraduate, doctorate, and postgraduate professional levels and create appropriate additional masters and PhD opportunities in the area of ophthalmology/optometry/visual sciences. Research will involve extensive collaboration within the University of Auckland, and in conjunction with major clinical centres including Auckland District Health Board, Auckland Eye, Eye Institute, Milford Eye Clinic, Retina Specialists and Eye Doctors at Ascot Hospital – these centres already being associated via academic and honorary academic staff. Research and creative work will be increased by: greater research opportunities, broader access to research funding, intake of post-graduate research students, completion of masters and PhDs, and by building an eminent core of specialist clinician-scientists (ophthalmologists and optometrists) and laboratory scientists working in collaboration.

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Interestingly, since 2000 the number of ophthalmologists in New Zealand with a higher research degree has grown from 3% to approaching 10% and there has been a dynamic growth in the number of MD/PhD candidates registered in Ophthalmology, Optometry and Molecular Vision laboratories and these developments underpin the research development of the NERCC.

The preliminary MOU confirms that the NERCC will initially encompass 109 clinicians and scientists working in the eye health and vision science arena. Between them, these diverse research groups have already raised more than \$16.5 million since 2000 to pursue research projects. This considerable, hard-won, research funding coupled with highly focussed and dedicated teams has resulted in more than 400 peer-reviewed scientific papers and chapters as well as several books.



Sue Raynel, the newly appointed Research and Development Manager, Department of Ophthalmology.

“The cementing of relations between the research teams that will be the bedrock of the NERCC will make us both the most diverse clinical and vision research unit in Australia and New Zealand and also the most successful in terms of realisation of research potential – particularly in terms of our scientific publication record. Inevitably in a country the size of New Zealand there are economies of scale and to bring more than 100 individuals interested in the management of eye disease and the pursuit of visual science under one banner produces a dynamic powerhouse which we shall build upon,” said Professor McGhee.

In a national sense the NERCC looks forward to growing its research and teaching links with the established centres in Christchurch, Dunedin and Waikato as well as the evolving department in Wellington.

New Zealand College of Ophthalmologists, the New Zealand Association of Optometrists, the New Zealand National Eye Bank etc. to provide appropriate education, both for the public and healthcare professionals to maximise the opportunity to avoid preventable visual impairment and blindness,” said Sue Raynel.



An auspicious occasion following the signing of the Memorandum of Understanding to establish a National Eye Research & Clinical Centre are from left: Professor Charles McGhee representing Ophthalmology, Professor Michael Kalloniatis representing Optometry and Vision Science and Associate Professor Paul Donaldson representing Molecular Vision Laboratory.

There is wide agreement within the group that it is envisaged that broader community collaboration will be a major role of the NERCC, in terms of engaging with the public and eye health care providers/government and also liaising with the pharmaceutical, surgical and eye care industry. In an important development, Professor Colin Green, Department of Ophthalmology, a key leader in the development of the NERCC has recently launched bio-technology based companies in both New Zealand and the USA. These companies will capitalise on his New Zealand based research into wound healing. This has already resulted in an investment of USA\$20 million (NZ\$26 million) dollars in these companies and the prospect of USA Food and Drug Administration (FDA) phase I and phase II ocular surgery studies commencing at one or more sites in New Zealand. It is anticipated that the recently announced Faculty of Medical and Health Sciences multi-million dollar plans to extend the Grafton Campus and provide state of the art clinical research facilities will also facilitate additional clinical studies.

The Dean of the Faculty of Medical and Health Sciences, Professor Iain Martin, said he is excited with the prospect of creating the NERCC. He said it would contribute to Auckland’s standing in the world of research.

“The Centre brings together several groups with outstanding track records in basic and applied vision research to create a unit of international stature. It is no coincidence that this is occurring within New Zealand’s leading research University and it will continue to build this reputation; the Universities’ Biomedicine ranking is currently 26th in the world (Times Higher Education Supplement),” he said.

Whilst there are many researchers and clinicians involved in this development, Professor Martin said he must pay particular tribute to Professor McGhee who has amazing foresight and other exceptional attributes.

“His drive and energy have seen this concept of linking Ophthalmology, Optometry and research Scientists together grow to the point where the NERCC can become a reality. Under Charles’s leadership the Department of Ophthalmology has grown from just 4 individuals to a dynamic team of more than 45 in just 7 years,” he said.

Professor McGhee has been working on the basic concept for the NERCC for five years but has been focused on making it happen for the past three years. It has taken an enormous amount of energy over this time to bring the project about. When he first arrived in New Zealand he said a collaborative arrangement between ophthalmology and optometry was mooted as a possibility.

“Before it could happen, several key elements had to fall into place to achieve a critical mass and make it a working possibility. Some of the many factors included: the appointment of Colin Green to the W&B Hadden Chair of Ophthalmology and Translational Vision Research and the momentum of a larger, more diverse Department of Ophthalmology. In addition to this has been the rapid expansion of vision research and ocular therapeutics under Michael Kalloniatis plus the increasingly successful and diversifying research of Paul Donaldson’s molecular vision group. On top of this we needed the strong support of the Faculty of Medical and Health Sciences, and the increased spirit of cooperation between all these groups over the last three years,” he said.

It is projected that as the NERCC becomes fully established that as many as 150 clinicians and scientists will collaborate nationally on diverse clinical, educational and research projects to reap benefits both at home and abroad.

“This level of collaboration in New Zealand between ophthalmologists, optometrists and scientists would have been considered impossible five to ten years ago, yet today it is a reality!” said Professor McGhee.