Breakthrough camera to improve detection of blinding eye disease and diabetes

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The most advanced technology for use in real-time detection and assessment of common blinding eye disease and general health disorders will soon be available to the world with stimulus funding provided for development by the Australian Government's CRC Program. The imaging technology of the breakthrough retinal camera is being developed by the Vision Cooperative Research Centre (Vision CRC) based in Sydney with international partners in Australia, US, China, India and Africa.

The world's first intelligent retinal camera will accurately and rapidly detect and eventually diagnose sight-threatening conditions such as diabetic retinopathy and glaucoma. The camera is being designed for ease of use in the most extreme environments so that it can be used by technical support staff and in the most remote and under-served locations, especially to close the gap in eye health in Australian Aboriginal communities.

CEO of Vision CRC and Brien Holden Vision Institute, Professor Brien Holden said today, "Medical devices of this nature are typically researched for use in affluent populations and aimed at high-end commercial returns. This Intelligent Retinal Camera (IRC) system will apply high resolution, multispectral imaging in an economic but high technology instrument that will be affordable and therefore accessible both in remote communities and in community health locations and professional offices throughout the world.

"Living in remote communities seriously disadvantages patients through lack of access to optometrists and ophthalmologists. The IRC will detect, measure and assess the potential for blinding disease thus preventing lengthy delay in getting treatment to those in need in marginalised communities. Aboriginal communities will be among the first to experience and benefit from this technology thanks to the funding from the Australian Government recently announced and the partnership with Aboriginal researchers and community health experts."

"Having spent the last 20 years researching and bringing to market and communities around the world, solutions for correcting refractive error, we are delighted that the Australian Government is backing our plan to piggyback onto the systems developed to deliver vision correction, the capacity to simply and effectively detect and manage blinding eye disease through retinal image analysis," Professor Holden said.

The imaging technology was first designed and developed by Professor Tom Cornsweet, a medical technology veteran and icon based in Arizona, US, in a social enterprise company Quantum Catch LLC that focuses on the design, manufacture, and sale of affordable, high-quality, user friendly automatic medical devices for

detection and screening of diseases. At a crucial stage of development of the retinal camera the Fred Hollows Foundation provided funding grants.

"The Vision CRC program has done what CRCs do best – bringing Australian and world leading scientists, technologists, engineers, social scientists and business people together to advance the social and economic benefit of Australia and the world," said Professor Holden.

"In this case it is a real dream team. We have brought together Tom Cornsweet, CEO Peter Galen and the team at Quantum Catch; world leading vision technologist, Professor Ho from the Brien Holden Vision Institute; the Institute's Public Health Division led by Amanda Davis in Sydney and Professor Kovin Naidoo from Durban, South Africa; the immense database and clinical research genius of Professor Mingguang He, from China's leading ophthalmology research Institute, the Zhongshan Ophthalmic Centre; our long-standing colleagues at the LV Prasad Eye Institute in India; and the best Australia has to offer through the Centre for Eye Research Australia's Professor Jonathan Crowston; Aboriginal eye health expert Professor Hugh Taylor; Sandra Bailey, CEO the Aboriginal Health and Medical Research Council of NSW and new participant Ninti One; all in one team to help unlock the future of health diagnostics.

"This is especially exciting as it is intended that post-CRC the infrastructure and systems will be in place to develop further diagnostics for many of the most difficult and intractable general health and eye conditions," he added.

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