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Bionic eye in sight thanks to \$42 million

Leading Australian researchers have welcomed an announcement today by the Australian Government of \$42M in funding for the development of a bionic eye capable of restoring vision to the blind.

Bionic Vision Australia is a consortium including the University of Melbourne, the University of New South Wales, the Bionic Ear Institute, the Centre for Eye Research Australia and NICTA. The project is also supported by researchers from the Australian National University and the University of Western Sydney.

Bionic Vision Australia Chairman, Professor Emeritus David Penington AC says the consortium is honoured to have been selected by the Australian Research Council for this funding.

“This opportunity will allow our team to use its outstanding know-how and expertise to develop a functioning retinal implant that will deliver profound benefits to sufferers of degenerative vision loss such as retinitis pigmentosa and age-related macular degeneration,” he says.

Research Director of Bionic Vision Australia and Professor of Engineering at the University of Melbourne, Professor Anthony Burkitt, says the research program to develop a retinal implant is ambitious but that the expertise in the team makes it achievable.

The new device will use a video camera - fixed to a patient's glasses - to capture images which are then translated into electrical impulses that stimulate electrodes inserted into the retina. The resulting electrical impulses stimulate the same area of the retina usually activated by visual cues, and over time the patient learns to interpret these nerve signals as useful vision.

Professor Nigel Lovell from UNSW's Graduate School of Biomedical Engineering says this funding means life-changing bionic vision is now a step closer.

Head of the Macular Research Unit at the Centre for Eye Research Australia (CERA), and Professor of Ophthalmology at the University of Melbourne, Dr Robyn Guymer says the new device will provide a greater benefit for patients than existing bionic eyes. “This advanced bionic eye will not only provide

users with increased mobility and independence, but hopefully also enable them to recognize faces and read large print,” she says.

Professor Rob Shepherd, the Director of the Bionic Ear Institute, says that Australia has been a world leader in medical bionics with the development of the bionic ear. “The funding announced today by Senator Carr promises to continue our nation’s leadership in innovation, discovery and commercialization in medical bionics”, he says.

Chief Executive Officer of Australia’s Information and Communications Technology Research Centre of Excellence (NICTA) Dr David Skellern, says he is thrilled that NICTA will be applying its advanced microelectronics and visual signal processing expertise to the bionic eye device development program. NICTA will collaborate with other BVA members to develop the implant’s hardware, communications and visual processing system.

The first human implant is likely to occur in 2013 and take place at the Royal Victorian Eye and Ear Hospital in Melbourne.

