

## Australian Bionic Eye in view

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The development of a locally developed bionic eye is a step closer to becoming a reality as a result of Australian Government funding announced this week.

Bionic Vision Australia will receive \$42 Million over four years for the development of this life-changing technology. The consortium members are the University of Melbourne, the Bionic Ear Institute, NICTA, the Centre for Eye Research Australia and the University of New South Wales.

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.

Professor Iven Mareels, Dean of the Melbourne School of Engineering at the University of Melbourne, indicated the \$42 Million funding to Bionic Vision Australia would allow the University to team up with leading researchers from several disciplines to develop the most advanced retinal implant ever developed.

"The Melbourne School of Engineering, NICTA's Victoria Research Laboratory and the Bionic Ear Institute started a dialogue in 2006 to overview the current state of retinal implant development globally. We made the assessment that by bringing together leading capabilities available in Australia we could realistically develop the most advanced retinal implant and indeed leapfrog the international competition. The Australian Government's decision will give us and our collaborators in Bionic Vision Australia a chance to realise that vision", he said.

"The University of Melbourne will be making fundamental contributions to the development of the retinal implant. In particular it will contribute its expertise in bioengineering and in the development of nanoscale electrodes that will interface with the retina as well as its strengths in signal processing and systems engineering which will be key in getting the image to stimulation transformation to work for the brain."

The University of Melbourne was instrumental to the development of the bionic ear in the 1970's and we are excited at the prospect that it will also be a participant in another iconic project for the nation", he said.

Professor Rob Shepherd, Director of the Bionic Ear Institute, said the funding decision would have wider benefits for Australia.

“Australia has been a world leader in medical bionics with Cochlear Ltd’s ground breaking 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 said.

“The Bionic Ear Institute is developing medical bionics into a research platform that will spin-off implantable devices for a variety of neurological disorders. The funding announced by Senator Carr today is an important part of developing that research platform”, said Institute director, Professor Shepherd.

“This is an exciting boost to medical bionics funding in Australia and offers great hope for the many vision impaired Australians to live more independent lives”, he said.

Professor Rob Evans, Managing Lab Director and Director of NICTA’s Victoria Research Laboratory, expressed his delight at the bionic eye funding, and NICTA’s contribution.

“NICTA was established by the Australian Government to develop and utilize Australia’s expertise in engineering and computing for the benefit of the nation. Our involvement in the bionic eye project will demonstrate how breakthrough innovative technology can be applied to such a worthy goal as restoring sight”, he said.

“NICTA’s world-leading microelectronics expertise in designing advanced integrated circuits will bring to Bionic Vision Australia the opportunity to develop an implant chip which wirelessly transfers data to and from the eye to an external camera and an external processor. Moreover, the implant will also be powered wirelessly”, he said.

The first human implant is expected during 2013, with the surgical procedure and clinical studies to be conducted at Melbourne’s Royal Victorian Eye and Ear Hospital.

The ICT for Life Sciences Forum congratulates the Australian Government in having the foresight to fund such important and exciting research, and wishes the Bionic Vision Australia consortium every success in the years to come.