

visionary

AUTUMN 2017

Saving sight. Changing lives.



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\$750,000 from Google to fight endemic eye disease
Driverless vehicles for the vision-impaired
Sight Savers: Reasons for giving



5 minutes with... Prof Paul Baird

Professor Paul Baird is a Molecular Geneticist and Head of Ocular Genetics at CERA.

Why eye research?

I really like genetics—exploring DNA and working out how genes might cause disease. An opportunity came up at the Walter and Eliza Hall Institute to work with Professor David Mackey and his study on inherited glaucoma in Tasmanian families.

From there, I was introduced to CERA by Professor Robyn Guymer and developed an interest in diseases such as macular degeneration, myopia and keratoconus.

How have technological advancements impacted research in the last 10 years?

What we did ten years ago was very basic in terms of computer power and big data. Today, with modern technologies, researchers can work more efficiently so that we can fast-track the developments of breakthroughs to improve patients' quality of life much quicker. The pace of development is going to accelerate even further.

The advancements in the field of artificial intelligence, for example, allow us to glean more insights from data than we could have ever thought possible.

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Letter from the MD

Greetings!

2017 is off to a a busy start and I am excited and hopeful for the coming year.

Since our last Visionary there has been a whirlwind of activity at CERA, including our 20th anniversary celebration, the publication of the important results from the National Eye Health Survey (NEHS) and our \$750,000 research win at the Google Impact Challenge.

The NEHS, launched with Vision 2020 Australia in October, revealed the gap in vision health between Indigenous and non-Indigenous Australians.

The NEHS results are important because they are the first comprehensive national benchmark for eye health and will be the yardstick to measure progress in years to come.

Our fight against eye disease is being tackled from many directions. The promise of driverless vehicles is giving the vision-impaired new hope for more travel independence. One of the most promising areas of research is stem cells and your support of our research is helping to unlock some of the genetic keys to many devastating eye diseases.

We are all deeply grateful for the support you show us. I particularly enjoyed reading about our 'Sight Savers' on page 10, Edith Taylor, John Karlik and Tony and Judy van Bergen, who are among many who kindly make regular donations.

As always, thank you for your interest and support which is always appreciated and never taken for granted.

Sincerely,



Professor Jonathan Crowston
Managing Director
Centre for Eye Research Australia



The Macular Research Unit

Professors Tien Wong, Hugh Taylor AC, Jonathan Crowston



Mrs Margaret Ross AM, Mr Ian Ross and Ms Todaro

Drs Saidak, Du, Neo and Ms Woodhams

Ms Scaf and Ms McNeil

20 years of saving sight and changing lives

In November, the Centre for Eye Research Australia (CERA) celebrated 20 years of ground-breaking work into eye-related diseases and its evolution into one of the world's most important places for vision studies.

The milestone was commemorated with a celebration in Melbourne that brought together many researchers, staff, and supporters. A commemorative video about the history of CERA was launched at the event and can be found on our website.

"When we started in 1990 there were five people and I was the sixth," said CERA's inaugural Managing Director, Melbourne Laureate Professor Hugh Taylor AC.

"There was huge potential, so I thought let's pull together the hospital, the profession, the college and the associations advocating for the blind with the University and call it the Centre for Eye Research Australia," he said.

Today CERA has more than 155 researchers, staff, and postgraduate students. In 2015, the Centre published 192 research papers, conducted 19 clinical trials, and won 34 competitive grants totalling over \$4.8 million.

"The thing about research is that it gives us the opportunity of touching so many more lives, because if you find a better way to treat a condition... that's potentially going to have a positive impact on thousands or even millions of people's lives," said Associate Professor Lyndell Lim, Head, Clinical Trials Research Centre.

"The patient sits at the centre of all the research that we do," CERA Managing Director Professor Jonathan Crowston said.

"The new technologies that are allowing us to image the eye and measure the ocular function are going to have a major impact in our ability to diagnose and monitor eye disease.

"The eye is also a great indicator for other diseases such as dementia, Parkinson's and cardio-vascular diseases and will soon become an even more useful barometer of a person's general health."

When asked about his vision for CERA, Professor Crowston is very hopeful, "I'd like to see CERA have a tangible impact on combating eye disease, and that after another 10 years we could say we stopped even more people from losing their vision," he said.



Learn more about CERA and its achievements, watch the video: cera.org.au/2016/12/cera-celebrates-20-years

CERA researchers win \$750,000 to help end endemic eye disease in remote and regional communities

Last October, researchers from CERA won \$750,000 after competing in the finals of the 2016 Google Impact Challenge held in Sydney.

The prize money will go towards research for the creation of Vision@Home, an evidence-based software algorithm that provides a method for patients to test their eyesight anywhere there is access to a webcam and the Internet.



Google Impact Challenge winners

"I am thrilled our proposal received such a positive response from the competition judges and the general public," said Professor Mingguang He, Principal Investigator at CERA and Professor of Ophthalmic Epidemiology at the University of Melbourne.

"Our project is a simple hand-held solution for those who live far away from eye specialists and has the potential to help millions of people not only in Australia but worldwide. I also want to thank everyone who voted for our project and Google for their extraordinary generosity," said Professor He.

CERA's Project Lead and PhD candidate, Dr William Yan, presented the project to the Google judges and

after receiving the award said he was 'absolutely stoked' to win. "It is just sinking in," he said immediately after hearing the results.

"Now the goal is to create the solution and help those who can't easily get to treatment," Dr Yan said. "94% of blindness or vision loss in Indigenous Australians is preventable or treatable and Vision@Home will bring testing to areas with poor access and benefit groups with great potential for sight-saving interventions, including children, the elderly and Indigenous Australians. It can also be used overseas in remote locations."

The largest challenge to preventable eye disease is the lack of access to eye care services in primary healthcare settings, particularly in regional, remote, and Indigenous communities. The Australian Institute of Health and Welfare estimates over 600,000 Australians live with vision impairment, a number projected to increase to one million by 2024.

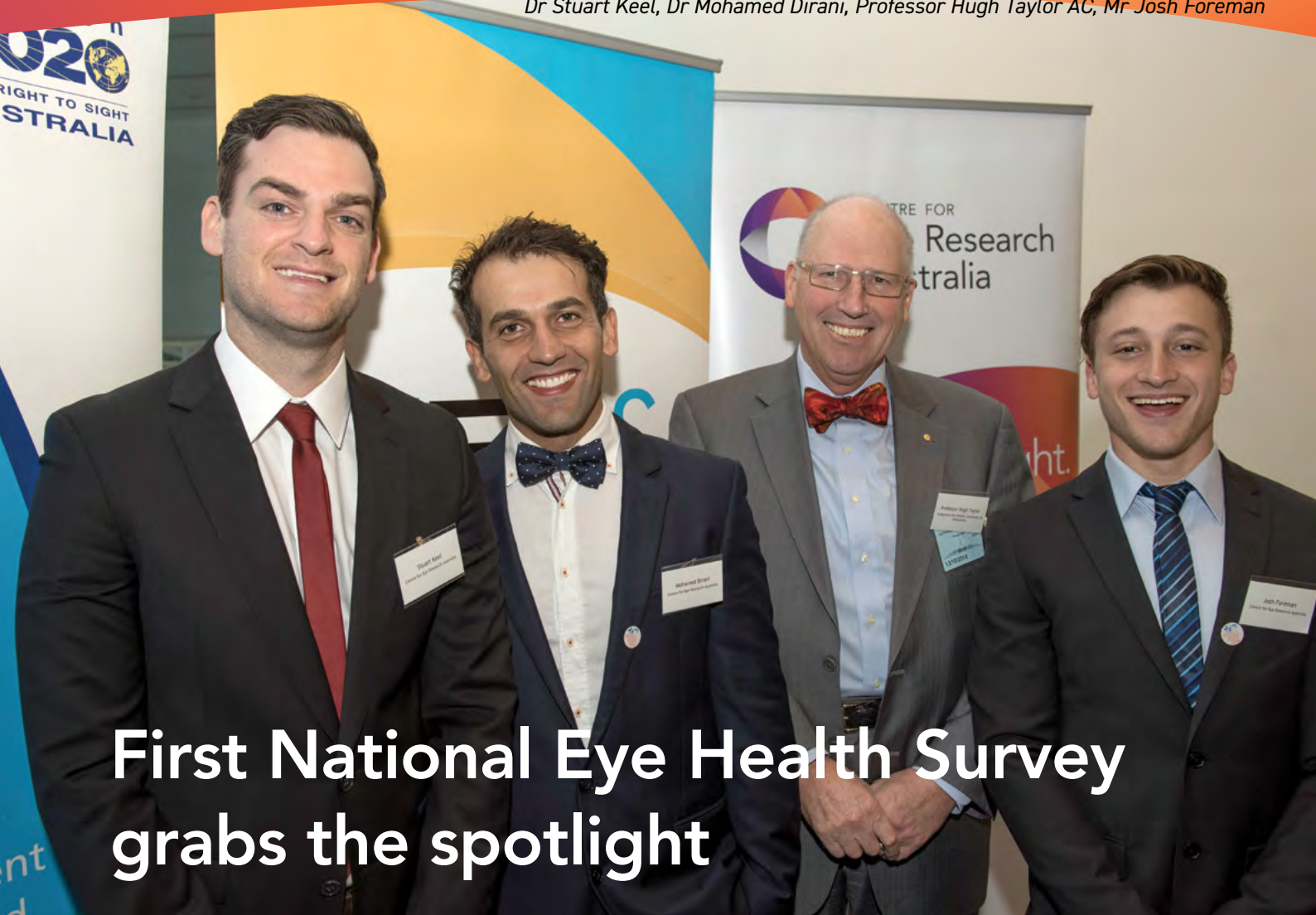
CERA plans to first trial the technology with post-operative patients from the Eye and Ear Hospital, with elderly and disability patients across Victoria, and in schools across Indigenous communities.



Dr William Yan



Listen to Dr Yan's pitch at the Google Impact Challenge finals: cera.org.au/2016/10/google-win-for-cera/



First National Eye Health Survey grabs the spotlight

The results of the much-anticipated National Eye Health Survey (NEHS) were released on World Sight Day this past October.

The comprehensive report provided a snapshot of the prevalence and causes of vision loss in a total of 4,836 Indigenous and non-Indigenous Australians.

Dr Mohamed Dirani, Principal Investigator at CERA, said the report was a milestone and that Australia is leading the way globally in producing high-quality results on the prevalence and major causes of vision loss.

"We are now well placed to develop and implement a follow up study to evaluate the impact of current and future eye health interventions," he said.

"The National Eye Health Survey has given us a detailed snapshot of the state of eye health in Australia. Of those with vision loss, at least 75% can be easily treated through spectacle correction or cataract surgery. It is important that we improve access to basic eye health services, particularly in regional and remote areas in Australia. Keep in mind that most vision loss caused by major eye conditions, such as diabetic eye disease, can be avoided with timely eye examinations."

The survey found that 13.60% of Indigenous Australians had a vision impairment some three times higher than that found in non-Indigenous Australians (4.57%). "We must continue our efforts to close the gap in Indigenous eye health," said Dr Dirani.

Vision 2020 Australia CEO, Carla Northam, commented that the survey findings support the need for eye health and vision care to remain a priority in Australia.

"Importantly, the National Eye Health Survey draws a line in the sand, providing the first truly national picture of eye health in Australia. Its findings will assist in the shaping of eye health policy, delivery of services and will provide a benchmark for monitoring progress towards reaching the World Health Organization's target of a 25 per cent reduction in the prevalence of avoidable blindness and vision impairment by 2019."

The results of the 2016 NEHS provide invaluable data for researchers and health policy makers to build into the future.



Download the report and listen to the podcast: cera.org.au/2016/10/first-national-eye-health-survey



Graduate Certificate in Eye Banking
– online program



Dr Graeme Pollock



World's first professional qualification course for eye bankers

The Centre for Eye Research Australia (CERA) and the University of Melbourne are introducing the world's first professional qualifications course for eye bankers – the custodians of human tissue for eye transplant surgery.

"The international course has been developed in conjunction with sector partners the Eye Bank Association of Australia and New Zealand (EBAANZ) and Donatelifelife Australia," said Dr Graeme Pollock from CERA's Lions Eye Donation Service (LEDS), who leads the academic and teaching teams for the course.

"The course, placed within the University of Melbourne's Medical School (ranked by the Times Higher Education Supplement 2016 as the top university in Australia – with their Medical School in the top 10 in the world), will leverage from the accumulated knowledge and expertise of our system and from leading world experts in the field," he said.

The genesis of the course is the growing sophistication and technical advancement of the sector combined with an international call for education at a higher level and for professional minimum qualifications.

The course is ideal for those new to eye banking and those working in relevant sectors wishing to improve their knowledge and skills.

"Graduates will transition beyond the fundamentals of eye banking and emerge as knowledgeable professionals and eye tissue custodians. They will develop skills that can be applied to all stages of eye tissue management including donor selection and recovery, recipient donor management, tissue examination and legal and regulatory requirements," said Dr Pollock.

The online course, international in content, is designed in two parts: a one subject Specialist Certificate minimal qualification (one 12-week semester) with the option to continue towards the Graduate Certificate level (two additional subjects).

Both courses are now accepting applications and the Specialist Certificate course work will start in September 2017.

Enquire today! Please contact Ms Heather Machin on 03 9929 8377 or Dr Graeme Pollock on 03 9928 8709



Steve and Sandy

CERA looks to the promise of driverless vehicles for the vision-impaired

The Centre for Eye Research Australia (CERA) is looking to collaborate with companies, industry and peak bodies in the development of autonomous vehicle systems.

"Australia's rapidly aging population and increasing incidence of diabetes means that vision-loss is likely to become one of the most prevalent disabilities in Australia," said CERA Managing Director, Professor Jonathan Crowston. "Access to mobility services for the vision-impaired will become an urgent priority to maintain quality of life and full community participation."

CERA is proposing a project to assist in the development, implementation, and promotion of autonomous vehicle systems for the vision-impaired.

"We can bring value to the enhancement of these systems in a myriad of ways, from our deep knowledge of the needs of the vision-impaired to our ability to leverage our position affiliated with a top university to harness expertise in the medical, legal, and engineering fields," said Professor Crowston.

Developing systems and enhancements to meet the needs of the vision-impaired will have the added benefit of improving the utility and value of driverless systems for all travelers.

"Now is the time to progress such an initiative and I have asked Steve Hurd, Councillor for the Glenferrie Ward of The City of Boroondara, to coordinate and lead this project as an Honorary Fellow," said Professor Crowston.

Steve, who was born legally blind, holds degrees in both Law and Arts and has held various legal and advocacy positions. In addition to being a serving councillor, he has strong community and government connections and is passionate about the potential of autonomous vehicles.

The driverless vehicles now being designed and built will have huge implications for people who are blind and vision-impaired.

"It will be the biggest boost for independence, employment prospects, and social integration we have ever seen," added Steve.

CERA already has researchers active in areas relevant to the driverless vehicles. A recent research project, led by Professor Robyn Guymer developed a novel driving simulator assessment to determine the effect of early age-related macular degeneration on driving.



Learn more about the project, listen to a short podcast interview with Steve Hurd on our website: cera.org.au/category/news



INTEGRITY



UNITY



AGILITY



**MAKING A
DIFFERENCE**

What we value: Agility, Integrity, Unity, Making a Difference

This past February, CERA launched its organisation values to capture and define CERA's culture and what it represented to staff and students.

CERA's Head of People Development, Ms Julie Todaro, worked with a committee to develop a process to identify and define the four values of agility, integrity, unity and making a difference.

"Values are our identity and they support our vision and our mission, and what we want to achieve can be expressed in the way we work," she said.

The four values exemplify a form of self-governance to educate team members at CERA and describe what we aspire to be.

Ms Todaro explains the four values as follows:

"**Agility** is about being nimble. We work in a fast pace environment looking for solutions.

Integrity is crucial for research, as it's about not cutting corners but being the best we can be.

Unity is around teamwork – pitching in when needed, helping each other, supporting each other, and keeping each other safe.

Making a Difference is about never losing sight of the fact that the work we do is focused on making patients' lives better."

Ms Todaro is working towards building on the meaning of the values to have them resonate and translate to everyday work at CERA.

"I see the values evolving more into our everyday work, they will be more prominent visually and will become an important way of attracting and retaining talent, and will also help guide individual performance."



Listen to Ms Julie Todaro speak more about the values, download her podcast on our website: cera.org.au/2017/03/podcast-our-values-agility-integrity-unity-and-making-a-difference

CERA researcher awarded prestigious Ramaciotti grant to improve cataract surgery outcomes

Associate Professor Lyndell Lim, Head of Clinical Trials Research at CERA, was one of five recipients of the 2016 Ramaciotti Health Investment Grants.

These important grants, worth up to \$150,000, are awarded to early career scientists to support translational health or medical research with a path to clinical application within five years.

Associate Professor Lim's main research interests are clinical studies in the field of uveitis and ocular immunology and diabetic retinopathy. Her team runs both investigator initiated and sponsored clinical trials that aim to find new treatments for a variety of ophthalmic disease.

Associate Professor Lim received a grant for research that will improve cataract surgery outcomes in patients with diabetic macular oedema.

"Cataracts and diabetic retinopathy are leading causes of vision loss in Australia and both conditions often co-exist," Associate Professor Lim said. "Determining the best treatment for patients with diabetes-related eye disease undergoing cataract surgery is a vital area for research and I am thrilled to have been awarded this grant."

Previous Ramaciotti award winners have developed the world's first cervical cancer vaccines and the cochlear implant. These awards highlight the significant impact that philanthropy can have on the wellbeing of millions of people.

The Ramaciotti Foundations are among the largest private contributors to biomedical research in Australia and have provided essential support to some of the nation's most remarkable scientists since 1970.

Professor Derek Hart of The University of Sydney led the Ramaciotti Scientific Advisory Committee which directed Perpetual, the trustee of the Clive and Vera Ramaciotti Foundations, in selecting the recipients.

Professor Hart said: "We had an extraordinarily difficult time selecting from the outstanding array of applicants. The five projects chosen are expected to make a major contribution in translating novel preclinical advances into clinical practice."

"We look forward to seeing the impact of the grants on these significant research undertakings."

This year's medal and grants bring the total funds distributed by the Ramaciotti Foundations to over \$57 million since 1970.



Learn more about Associate Professor Lyndell Lim: cera.org.au/about/principal-investigators/#lyndelllim

Associate Professor Lyndell Lim



CERA Sight Savers: Reasons for giving

As a non-for-profit organisation and charity, CERA relies on support from donors for essential aspects of research.

'Sight Savers' are a group of supporters who choose to give a regular ongoing donation either on a yearly, quarter, or monthly basis.

We asked our 'Sight Savers' what prompted them to make such a generous gesture of support.

John Karlik, who is 86, said he's had the "huge benefit" of having good eyesight all his life, and has only had a minor cataract procedure.

"I have prescription spectacles which I do not need to wear except for very difficult circumstances. I believe that life would not be worthwhile if I could not see, therefore I support research which improves the ability of a person's vision," he said.

Edith Taylor from Brunswick in Victoria also is grateful for her vision and wants to help others.

"Sight is very important to me, I think I could survive without other senses including my mobility better than I could without my sight."

"The research you are doing now in glaucoma and age-related macular degeneration is good. I think it is also important that you encourage young children to get their eyes checked."

Olive Hamilton wants to help as many people as possible to have the best possible sight and hopes her donation will lead to "... new creative and innovative ways at looking past less successful outcomes."

Tony and Judy van Bergen support CERA because their daughter worked as a researcher in glaucoma for almost ten years.

"We felt it logical to support her work, and will continue to do so," they said.

While Edith Taylor is a supporter of several charities, she continues to give priority to CERA as her charity of choice.

"CERA treats donors as adults, and doesn't send stacks of letters like some others do, and they invite you into lectures from time to time so you feel more involved."

Find out more about becoming a Sight Saver by contacting our Philanthropy Coordinator, Benjamin Nuttall Benjamin.nuttall@unimelb.edu.au or 03 9929 8426.



Listen to Edith's podcast:
bit.ly/2mAw1zF

Mrs Edith Taylor



Mr John Karlik



Bequests:

The gift that keeps on giving

What is a bequest and why would you leave one to CERA?

"A bequest is a gift left in a Will which can be targeted to an area of research interest," said Benjamin Nuttall, CERA's Philanthropy Coordinator.

CERA receives bequests from time to time and they are very gratefully received.

"The important thing about a bequest is that it continues the support a person gives after they pass on, and can make a huge difference," he said.

Just a few words in your Will therefore, can have a long-lasting and positive affect to people who have eye

disease in Australia as every dollar you give helps the research we do.

You might choose to leave a percentage of your estate, a specific amount of money, the whole or part of the residue, shares, or an ongoing donation through a perpetual trust. Big or small, every bequest helps us continue the work we do.

For more information contact: Benjamin Nuttall
Benjamin.nuttall@unimelb.edu.au or 03 9929 8426.

Find out more about how your donation helps CERA's research and how to leave a bequest:
cera.org.au/community/support-us/leave-a-gift-in-your-will

Vision regeneration research boosted by 2016 CERA Christmas appeal

The 2016 CERA Christmas appeal focussed on the story of Harry and Louis, young boys with Usher Syndrome, an inherited eye disease.

CERA Principal Investigators, Associate Professors Alice Pébay and Alex Hewitt, are spearheading cutting-edge stem-cell research targeting the treatment of genetic eye diseases such as retinitis pigmentosa, a genetic disorder that affect the retina's ability to respond to light.

Associate Professors Pébay and Hewitt received approximately \$60,000 to help progress their research from the CERA Christmas appeal. Their research has the potential to use skin cells from a patient's own body to regenerate damaged vision cells.

A big thank you to those who donated to our Christmas appeal and to Harry and Louis for their wonderful artworks!



Harry and Louis

2017



CENTRE FOR
Eye Research
Australia

What's on at CERA?

Please save these dates in your diary.

25
May

**Macular Degeneration
Information forum**

10.30am

31
May

**Scientific Exchange
& CERA awards**

5.30pm

8
June

**Glaucoma
Information forum**

10.30am

11
July

**Diabetic Retinopathy
Information forum**

5.30pm

17
Aug

**Stem Cell
Information forum**

10.30am

25
Oct

**2017 Gerard Crock
Lecture**

5.15pm

All are welcome at our community events, aimed at a general audience. We appreciate your gold coin donation to help cover the cost of running our information forums.

Contact us to book your seat now.

1300 737 757 | cera-rsvp@unimelb.edu.au | www.cera.org.au



For more information about our community events, please visit:
cera.org.au/events

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