



CENTRE FOR
Eye Research
Australia

visionary

AUTUMN 2018

Saving sight. Changing lives.



Tanya Pejnovic and son Stefan

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5 minutes with... Grace Lidgerwood

PhD student

Have you always been interested in the eye?

I began my research career working in cancer research before moving into neuroscience. In 2013, I took up an exciting opportunity to work with renowned stem cell scientist, Associate Professor Alice Pébay at CERA and I have been working on retinal diseases ever since.

Tell us about your research

I am working on stem cells derived from patient skin biopsies, and using these to model retinal diseases. Studying these cells in the laboratory allows us to better understand diseases such as age-related macular degeneration. I am particularly interested in how lipids (fat molecules) may be affected in eye disease, and how we can target them in therapies.

What is the most important thing you have learnt about doing research?

Research can be very difficult with a lot of hurdles or complications along the way, but when you find something unique, or make a new discovery, it's such a rewarding feeling. Every little thing we discover helps to fill in the gaps in our knowledge and this is important in our quest to find cures and treatments for patients.

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Letter from the MD

As some of you may know by now, I have announced that 2018 will be my final year as Managing Director of the Centre for Eye Research Australia and Ringland Anderson Professor of Ophthalmology at the University of Melbourne.

It has been a pleasure to head CERA over the past ten years and I am proud of the work we have done in creating an exceptional basic science program to complement our clinical and population health research capacity, attracting world-class researchers to join us in tackling eye disease.

In this issue of Visionary, you can read about the latest news in glaucoma and population health research as well as community engagement initiatives such as the 25th Anniversary Lions Ride for Sight. At CERA, we believe in constantly striving to improve and develop, so the results from last year's Supporter Survey (page 5) will be very helpful in directing our efforts.

The Macular Vision Loss Support Society of Australia sadly wound up at the end of 2017 (page 8). I would like to personally thank the group members, and everyone who supports CERA via our appeals and donations – without you, our life-changing research would be impossible.

Sincerely,



Jonathan Crowston

Professor Jonathan Crowston
Managing Director
Centre for Eye Research Australia

P.S. I am very pleased to announce that our 10th Annual Gerard Crock Lecture in November will be presented by Professor Sir Peng Tee Khaw, Director of University College London's Institute of Ophthalmology. As a fellow glaucoma specialist and a mentor of mine, I am greatly looking forward to Sir Peng's presentation. I hope to see you there!

A new Managing Director on the horizon for CERA

Professor Jonathan Crowston has announced that 2018 will be his final year as Managing Director of CERA.

Professor Crowston took on the role of Managing Director in 2009. He was the driving force behind the development of CERA's basic science program, which complemented our existing clinical and population health research capacity. This led to the development of our three strategic research themes; Ageing Eye Disease, Vision Regeneration and Products and Pathways to Patients.

Under Professor Crowston's leadership, CERA also undertook two International Reviews of our research, governance and strategy, reinforcing our position as a world-class medical research institute and ensuring we are in the best position for continued future success.

"I want to thank everyone who has supported CERA so far on our journey to becoming Australia's leading eye research centre; a place

where clinicians, patients, researchers and industry come together to develop treatments and technologies that transform lives. With your help, we can continue to give more people with eye disease a chance to save or restore their sight," he said.

Former CERA Chair Mr Peter Nankivell said, "In addition to being a world-class researcher, Jonathan has embraced the challenges of being a Managing Director of a world-class research institute and was able to quickly identify that in today's world, medical research requires both sustainable and alternative funding streams. Jonathan has been pivotal in helping CERA embark on its own commercial initiatives, which will serve the organisation well for the future."

CERA's Board has commenced the global search and recruitment process for a new Managing Director of CERA and we expect to make an announcement in the coming months.



Read the full story:

www.cera.org.au/2018/02/a-new-managing-director-on-the-horizon-for-cera

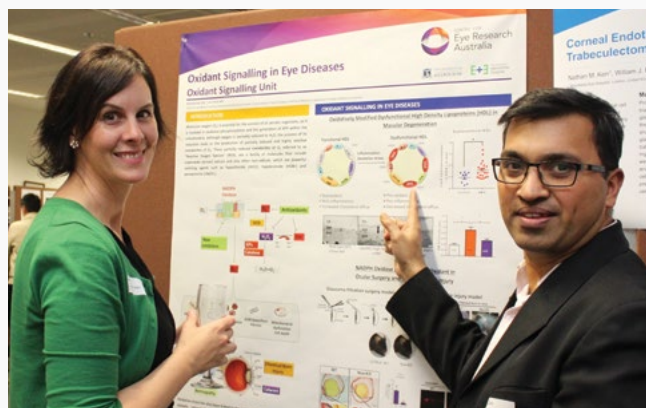
Vale Dr Hitesh Peshavariya (1976-2017)

One of CERA's brightest up-and-coming researchers, Dr Hitesh Peshavariya passed away suddenly on Saturday 7 October 2017, to the immense shock and sadness of his family, friends and workmates in Australia and overseas.

Principal Researcher and Head of the Oxidant Signalling group, Dr Peshavariya was a biochemist with over 15 years' experience in the fields of biochemistry, cellular and molecular biology and pharmacology.

He joined CERA in 2011, working with his mentor Professor Greg Dusting to establish CERA's Cytoprotection Pharmacology unit. In 2016, he was awarded a prestigious National Health and Medical Research Council (NHMRC) Project Grant to investigate a non-cytotoxic approach to reducing ocular fibrosis following glaucoma surgery.

Professor Jonathan Crowston shared his thoughts: "Hitesh was a very talented researcher and a much-loved member of the CERA community. This is a devastating loss for all of us here at CERA and I extend my deepest sympathy to Hitesh's family at this heart-breaking time."



Julie Todaro and Dr Hitesh Peshavariya



Keep your eyes safe in the sun

With parts of Australia experiencing a sweltering start to 2018, experts are reminding us to protect our eyes from harmful sun damage, especially around the water.

Ophthalmologist and CERA researcher, Dr Sukhpal Sandhu says people are often aware of the dangers that ultraviolet (UV) rays can cause to the skin but forget about the risks to their eyes.

"The reality is that UV radiation levels can be up to three times higher during Summer than in Winter," he said.

Too much UV exposure can lead to short-term irritation which is due to inflammation of the cornea. This photokeratitis or sunburn, is similar to snow blindness. Long-term effects can be more serious and include increased risk of cataracts, pterygium (fleshy overgrowth of the conjunctiva), macular degeneration and cancer.

The good news is that simply wearing a wide-brimmed hat and sunglasses that meet the Australian Standard reduces your eyes' exposure to UV rays by up to 98%.

"Many people don't realise that reflected sunlight, off the surface of water for example, can actually expose your eyes to UV radiation," explained Dr Sandhu. "So if you're sitting on the beach or by the pool, even in the shade, wear your hat and sunglasses.

CERA'S TOP EYE HEALTH TIPS

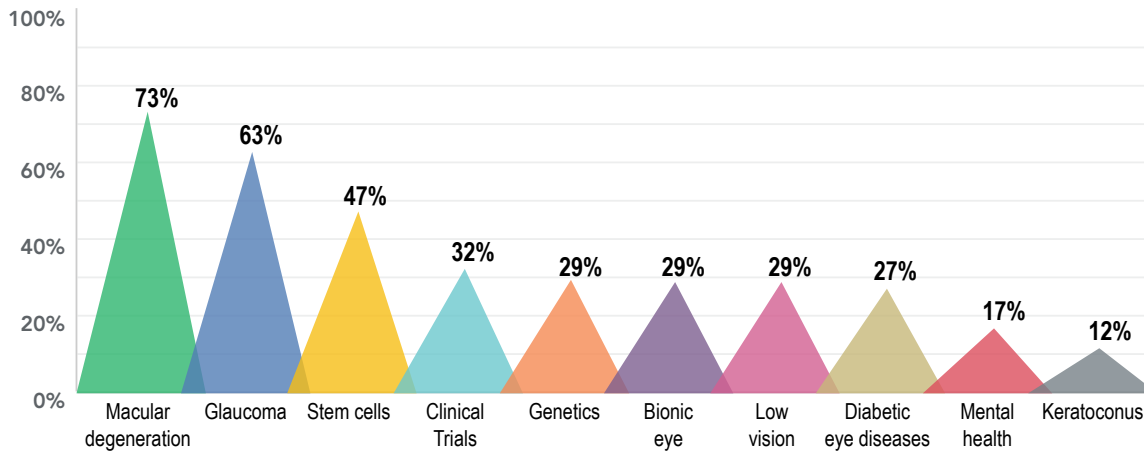
- Always wear a wide-brimmed hat as this alone can reduce UV radiation to the eyes by up to 50%.
- Wear sunglasses for better protection, especially those that are close-fitting, with a wrap-around style and meet or exceed the Australian Standard (AS/NZS1067:2003) (look for a lens category of 2, 3 or 4 on the swing tag). Some sunglasses are marked with an Eye Protection Factor (EPF) rating. EPF 9 or 10 exceeds the Australian Standard and blocks almost all UV radiation.
- Avoid sunglasses marked 'Fashion Spectacles' or toy sunglasses for children – these do not meet the Australian Standard and should not be used for sun protection.

2017 Supporter Survey results

In early 2017, more than 300 supporters generously took part in our Supporter Survey. The results of this survey, some of which are shared below, will allow us to continue to improve our communication and awareness activities around eye disease. Thank you to everyone who participated!

**Respondents were able to select more than one answer for some questions. Results will not equal 100%*

You told us the areas of CERA's research that interested you were:



92%

of you are affected by serious eye disease, or know someone who is

The area of eye research that was most interesting:



78%

New treatments and therapies



74%

Halting the progression of eye disease



62%

Early diagnosis



39%

Less invasive treatments

Why do you support eye research?

I am affected by eye disease



54%

I believe in CERA's work



64%

I care about medical research in general



70%

Someone close to me is affected by eye disease



41%

Your thoughts on CERA

"It is always interesting to attend your community information sessions and realise the advances being made in diagnosis and treatments, especially where technology has made such an impact on research."

"Eye research is so important to quality of life for many people, ongoing research is needed to continue to achieve this"

Find out about our latest research and treatments by joining our mailing list: www.cera.org.au



Australians' eye health at risk without early intervention

One million Australians have lost vision in one eye, with many at great risk of progressing to vision impairment in both eyes, according to a paper published in JAMA Ophthalmology.

University of Melbourne PhD candidate Mr Joshua Foreman from CERA said regular eye checks for people with unilateral vision loss (in one eye) are needed to prevent people progressing to bilateral vision loss and blindness (in both eyes).

Mr Foreman said, "Low vision or blindness in one eye can cause a loss of depth perception and impair visual fields, which makes patients more at risk of accidents, falls, injury and more reliant on carers."

The recent National Eye Health Survey has shown that many cases of unilateral vision loss are caused by diseases that commonly affect both eyes like cataracts and diabetic retinopathy. Patients with vision loss in one eye are at a higher risk of losing sight in both eyes from these diseases if there is no intervention. The good news is that a lot of these cases are avoidable.

If Australians want to prevent blindness from age-related eye disease, we must ensure people with unilateral vision loss are receiving regular examinations and treatment.

"This latest paper to come out of the data from the National Eye Health Survey provides further evidence to direct frontline eye health services to where we need them most," said CERA's Managing Director Professor Jonathan Crowston.

Common vitamin could stop glaucoma

A humble vitamin B3 supplement could be the key to treating one of the biggest causes of irreversible vision loss in the world.

Researchers from CERA are conducting a world-first human trial of an over-the-counter vitamin supplement to treat glaucoma, a disease of the optic nerve which affects 60 million people worldwide.

Professor Jonathan Crowston is the lead investigator of the study and Dr Flora Hui is the Research Fellow conducting the six-month clinical trial. They hope to prove that therapeutic use of high dosage vitamin B3 (nicotinamide) could support existing therapies for glaucoma, such as daily eye drops or in severe cases, surgery.

"Imagine your car's engine is running a bit rough and as a result, the car doesn't drive smoothly. If you top up the engine with oil, the car runs better, even though you haven't fixed the underlying problem," explains Dr Hui.

"Our study hopes to confirm that vitamin B3 can protect nerve cells from dying, in a similar way that adding oil to a faulty car engine can still allow it to run more smoothly," she concludes.

In 2017, a US research team led by Professor Simon W.M. John and Dr Pete Williams from the JAX laboratories in the USA, found that vitamin B3 given to glaucoma-prone mice prevented optic nerve degeneration and glaucoma. In fact, this treatment also reversed the negative effects of ageing in the mouse eye.

"Glaucoma currently has no cure and vision loss is generally thought to be irreversible. We were very excited by the findings from the USA and are now looking at the effect of vitamin B3 in glaucoma patients here in Melbourne," said Professor Crowston.

This research was made possible by the generosity of the Jean Miller Foundation, the Jack Brockhoff Foundation, The Marian & E.H. Flack Trust and the Ophthalmic Research Institute of Australia.



CERA is actively recruiting more patients and you can contact CERA to register as a volunteer on our website www.cera.org.au

Dr Flora Hui ►





Grant success for CERA researchers

CERA finished 2017 on a high with the announcement of several key competitive grants for our researchers. In October, the National Health and Medical Research Council (NHMRC) awarded CERA's Professor Paul Baird a five-year fellowship to pursue his research.

Professor Baird, Head of Ocular Genetics, leads a research team actively involved in international consortia which focus on the identification of genes and determinants involved in several major eye diseases including glaucoma, age-related macular degeneration, myopia and keratoconus.

In November, CERA researchers scooped the awards pool of the Ophthalmic Research Institute of Australia (ORIA) with five of our researchers awarded grants to support their work. CERA congratulates; Dr Raymond Wong, Dr Isabel Lopez Sanchez, Dr Thomas Edwards, Dr Flora Hui and Dr George Kong on their awards.

◀ Professor Paul Baird in the lab

Long-time supporters leave a 23 year legacy

For more than 23 years, the Macular Vision Loss Support Society of Australia Inc. (MVLSSA) has supported the work of Professor Robyn Guymer's macular research team.

"The MVLSSA has very generously enabled our research unit to take the explosion of knowledge which has taken place over the past two decades and deliver real benefits to people suffering from age-related macular degeneration (AMD) and those of risk at doing so in the future. The group should feel very proud to be part of the amazing advances made in the understanding and treatment of AMD," she said.

The group funded equipment for CERA including a GeneAmp System for genetic research into AMD and a Macular Integrity Assessment Machine, as well as contributing towards a novel nanosecond laser for the study of AMD.

(L-R) Mr Patrick Moore (President, MVLSSA), Professor Robyn Guymer and Ms Muriel Rutledge (Vice-President, MVLSSA).





CERA and WHO: working together to prevent blindness

Dr Andreas Mueller is Deputy Director of the World Health Organization Collaborating Centre (WHO CC) for Prevention of Blindness, based at CERA.

Q: What is the role of the World Health Organization (WHO) in tackling eye disease?

Visual impairment is more common among poor people, with an estimated 90% of affected people living in low and middle-income countries. The main causes are chronic eye diseases, affecting mostly older people. Importantly though, over 80% of visual impairment can be treated or prevented, hence is entirely avoidable.

A key role of the WHO is to provide leadership on matters critical to health, including on visual impairment as a public health problem. Activities may include evidence gathering to inform the development of guidelines and policies around eye care and technical support towards disease elimination programs. In October 2017, for instance, the WHO announced that Cambodia and Lao PDR have eliminated trachoma, which is the most common infectious cause of blindness in the world. The WHO supports various aspects of such elimination programs, including surveys, distribution of antibiotics and health promotion.

Q: If so much of eye disease is avoidable, why is it so prevalent?

Some countries lack the capacity to provide trained eye-care personnel, making services available only in urban centres, beyond the reach of people unable to travel far. Other countries may have sufficient personnel and infrastructure but services may be privatised and unaffordable

for those most in need. Consequently, WHO and government approaches to improve access to quality eye-care services differ among countries. However, some priority interventions such as reducing the backlog of unoperated cataract and increasing availability of optical services are relevant to most countries in our region.

Q: What are the biggest challenges to vision in the Asia-Pacific region?

Despite all efforts to reduce the prevalence of visual impairment, recent data predicts a steep increase in the number of people affected, particularly in Asia, due to growing and ageing populations. Asia faces the additional challenge of ever increasing levels of myopia (short-sightedness). It is predicted that one-third of the world's population (or 2.5 billion people) could be affected by myopia by the end of this decade.

Due to changes in lifestyles and diet, diabetes rates are fast increasing in the Asia-Pacific region. As a result, vision loss from diabetes represents a further growing challenge. Better systems to screen and treat diabetic eye disease are crucial to avoid blindness in millions of people.

An issue that is commonly neglected is the lack of support for people with irreversible visual impairment. Few low-vision and rehabilitation services are available, especially in low-and middle-income countries.



Read the full interview:

www.cera.org.au/2017/10/cera-and-who-working-together-to-prevent-blindness



25th Anniversary Lions Ride for Sight

This year marks the 25th Anniversary of the Lions Ride for Sight, which raises funds for CERA's vision research.

Last year's event raised a record \$60,000 – an outstanding result that made a tangible difference to CERA's researchers. We want to once again thank all the organisers, sponsors, riders and local Lions Clubs for their generosity and ongoing support.

The event held from 10 – 15 April is organised by Lions District 201V3 which is made up of members from Gippsland and the Mornington Peninsula in Victoria. The social bike ride includes 56 riders covering 400km to fundraise and have fun. The five-day course travels from Tidal River to Foster, then on to Wonthaggi, San Remo, Korumburra and finishes at Inverloch.

The riders hope to raise a record amount this year and take the total raised over the past 25 years to over one million dollars.

Tanya Pejnovic from CERA said, "After many years as a clinical orthoptist and then a Research Manager at CERA, I gained insight into how valuable research is to those affected by eye disease. Taking part in the Lions Ride for Sight gives me an opportunity to continue to support the important work that is being done by my colleagues. Stefan, my son, is joining the ride so we have both been training hard. I'm sure he is secretly scared I will be fitter and faster than him!"



Support Tanya and Stefan by donating:

<https://give.everydayhero.com/au/support-tanya-and-stefan-cycle-for-sight>



Become a 'Sight Saver' and create a better future for people living with eye disease

'Sight Savers' provide CERA with an ongoing and reliable income so researchers can plan ahead, safe in the knowledge they have secure funding to complete their work.

How it works:

CERA's 'Sight Savers' Program allows you to support eye research through regular and secure contributions from your credit card.

What you need to do:

- Nominate an amount to be charged to your credit card
- Choose the frequency of your donation – weekly, monthly, quarterly. (You can choose to opt out at any time)

As a 'Sight Saver' you will receive:

- An itemised gift receipt each June to assist with your tax return
- Our twice yearly Visionary magazine
- Preferential invites to our informative events with our researchers

For more information on becoming a 'Sight Saver' contact our Fundraising Coordinator, Elaine Levine on 03 9929 8424 or email elevine@cera.org.au

"I believe CERA's work is so important and wanted to help, in fact I wish I was able to give more"
- Pat Pither

Ms Pat Pither has been a long-time supporter of CERA and in 2010 she became a 'Sight Saver'.

Her interest in CERA began when she nearly lost her vision from a car accident.

Over the years Pat has attended several information days and community events, as well as keeping informed about eye research through CERA's regular newsletters and emails.



Support CERA's research, donate by phone 1300 737 757 or online www.cera.org.au

Enclosed is my donation of \$_____ (please specify amount).

<VISION2018A>

☐ Please find enclosed a cheque/money order (made payable to Centre for Eye Research Australia).

Please debit my credit card: ☐ VISA ☐ MASTERCARD

Card number: Expiry date: /

Name on card: _____ Signature: _____

Name: _____

Address: _____

Postcode: _____

Phone: _____ Email: _____

Please send me more information on:

- ☐ Becoming a 'Sight Saver' by making regular donations ☐ Leaving a gift to CERA in my Will
- ☐ Joining our mailing list to receive CERA updates on research and events

Thank you! Your gift of \$2 or more is tax deductible.

Please complete this form and return it to:

Centre for Eye Research Australia, Reply Paid 91268, EAST MELBOURNE VIC 8002

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CENTRE FOR
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2018



25th Anniversary Lions Ride for Sight

The Lions Clubs of Gippsland and the Mornington Peninsula in Victoria have been strong partners and supporters of CERA for 25 years. In that time, they have raised over \$900,000 to support life-changing research towards eliminating blindness. Read more about the 25th Anniversary Lions Ride for Sight on page 10.



What's on at CERA?

May

- **Scientific Exchange & CERA awards**
Wed 16 May, 5:30pm - 7:30pm
- **Age-related macular degeneration information forum**
Thurs 24 May, 10:30am - 12noon

July

- **Diabetic eye disease information forum**
Wed 11 July, 10:30am - 12noon

August

- **Stem cells information forum**
Thurs 16 Aug, 10:30am - 12noon

October

- **Glaucoma information forum**
Wed 10 Oct, 10:30am - 12noon

November

- **10th Annual Gerard Crock lecture**
Thurs 22 Nov, 5:15pm - 7:30pm

Let us know if you would you like a copy of our 2018 events calendar.

Everyone is welcome at our community events, aimed at a general audience. Check out our website for updates and more information.

Contact us to book your seat now:

☎ 03 9929 8424

✉ rsvp@cera.org.au

🌐 www.cera.org.au

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