

Florey Medal

Gene therapy tackles leading cause of blindness in the elderly

The pioneering scientist behind a potential new gene therapy treatment for a leading cause of blindness has won national recognition for her work.

Professor Elizabeth Rakoczy has been awarded the 2017 CSL Florey Medal for significant lifetime achievement in biomedical science and/or human health advancement. She joins an elite list of past Florey Medallists including Nobel Laureates Barry Marshall and Robin Warren, Ian Frazer and Graeme Clark.

Professor Rakoczy, head of the Lions Eye Institute's Molecular Ophthalmology research group, helped develop a new gene therapy for wet age-related macular degeneration (wet AMD), which leads to rapid vision loss and affects more than 110,000 older Australians.

Wet AMD occurs when there is an overproduction of the protein vascular endothelial growth factor (VEGF) in the retina. VEGF helps support oxygen supply to tissue when circulation is inadequate. When too much VEGF is produced it can cause disease, including blood vessel disease in the eye.

Current treatment for wet AMD is intensive and intrusive – involving regular injections of anti-VEGF drugs that limit production of the protein.



Federal Health Minister Greg Hunt congratulates Professor Rakoczy at the Florey Medal presentation (Photo credit: AAMRI/Brad Cummings Photography)

“The new gene therapy promises to replace monthly injections with a one-off treatment,” Professor Rakoczy said.

“The gene therapy involves a single injection of a modified and harmless version of a virus containing a specific gene that stimulates supply of a protein which then blocks over-production of VEGF. The eye becomes a ‘bio-factory’ – producing its own treatment for wet AMD.”

The gene therapy is not commercially available yet but Professor Rakoczy hopes that in the future, millions of people suffering from wet AMD will be able to have single injection therapy to control their condition.

Continued on next page...

RANZCO showcases latest advances in eye care



LEI Managing Director Professor David Mackey hosted a discussion with Professor Fiona Stanley and Professor Fiona Wood at the RANZCO Congress in Perth

Eye doctors from all over Australia and the world converged on Perth late last year for the 49th RANZCO Congress.

Co-convened by the LEI's Dr Fred Chen and Dr Angus Turner, the congress showcased the latest advances in eye care and provided an opportunity for professional development and networking.

One of the highlights of the four-day event was "Challenges for women in leadership", a

discussion with child and maternal health expert Professor Fiona Stanley and burns specialist Professor Fiona Wood, moderated by LEI Managing Director Professor David Mackey.

The Lions Outback Vision Van was available for tours and proved to be a major lure for delegates. Many also took time to tour the LEI as well as take in many of Perth's attractions.

The next RANZCO Congress will be held in Adelaide in 2019.



The Royal Australian and New Zealand College of Ophthalmologists

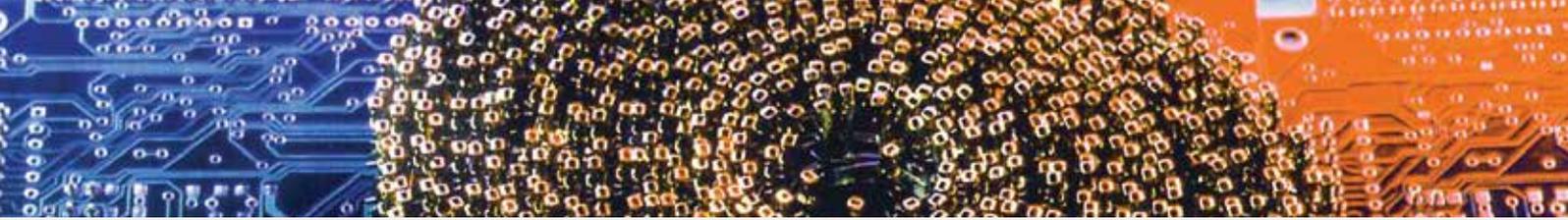
(RANZCO) is the medical college responsible for the training and professional development of ophthalmologists in Australia and New Zealand. RANZCO's mission is to drive improvements in eye health care through exceptional training, education, research and advocacy.

Florey Medal Continued from cover...

Professor Rakoczy said the gene therapy research could not have been possible without the support of a large number of scientists,

funding organisations and patients with wet AMD.

The gene therapy has been the subject of human trials run by Professor Ian Constable at the Lions Eye Institute (LEI).



Newly identified type of immune cells are first line of defence in body's fight against viral infection

New research has shown how a recently identified sub-set of immune cells act as the body's first responders to viral infection.

In collaboration with the Memorial Sloan Kettering Cancer Center in New York, LEI researchers found that tissue-resident type 1 innate lymphoid cells (ILC1s) serve an essential early role in fighting infection through rapid production of an important anti-viral protein.

The findings, published in the highly-prestigious journal *Cell*, challenge the belief that the body's immune response to viral infection is primarily dealt with by other well described immune cells.

The LEI's Dr Iona Schuster said ILC1s had only been identified and described in the last few years and their role in the immune response to viral infection had not been well understood until now.

"This paper is the first time we've managed to show that ILC1s play a really important role in the early response to viral infection," Dr Schuster said.

"They're like the foot soldiers, they are present in a tissue for immediate surveillance and when a virus comes in, following activation signals from

"This research is putting a missing piece in the puzzle that will lead to major changes in understanding and controlling viral infection and cancer."



Dr Iona Schuster is involved in ground-breaking research involving immune cell response

other cells in the tissue, they respond extremely fast and execute a previously unappreciated protective function.

"They help control viruses before the big guns – other immune lymphocytes known as natural killer cells and T cells – are recruited into battle to control the infection."

Dr Schuster said a better understanding of ILC1s could lead to better management of viral infection in future.

LEI Director of Research Professor Mariapia Degli-Esposti said ongoing studies were examining the role of this new cell population in responses to infection at other barrier sites, such as the eye, and were also investigating the role they play in response to malignancy.

"These are pioneering studies and the future is very exciting," she said.

Telehealth is improving eye care outcomes in remote Western Australia

The LEI's Lions Outback Vision is successfully using telehealth to make eye health delivery more efficient and accessible in remote parts of Western Australia.

Telehealth allows ophthalmologists, optometrists and other health professionals to use technology – typically real-time videoconferencing – to consult, screen, diagnose and book remote-area patients in for surgery.

Dr Angus Turner, McCusker Director, Lions Outback Vision (LOV), said the growth in telehealth consultations was having a positive impact on eye health outcomes in the bush.

“We have seen real engagement with telehealth services, with almost perfect attendance rates and very high patient satisfaction,” he said.

“In 2012, we conducted an average of 11 telehealth consultations each month. Last year, that number had risen to more than 100 per month.

“The evolution of telehealth has enabled the service we provide to move from pilot studies and novelty projects to an integrated daily service that has an impact by reducing waiting times, providing continuity of care and improving efficiency of outreach ophthalmology trips.

“All this leads to better outcomes for patients and improved satisfaction with the service.”

Local optometrists have been key to the success of the telehealth program, having the cameras and technology for excellent eye imaging as well as clinical skills to provide ocular assessment.

Over time, the nature of referrals to LOV ophthalmologists has changed from acute presentations to surgical referrals.

Surgical management has increased since 2012 and 50 per cent of patients are now being

directly listed for surgery as a result of telehealth consultations with three significant benefits:

- Eliminating the “wait for the waiting list” – often a one-year wait for outpatients prior to being placed on the surgery waiting list.
- Patients are getting better service, follow-up and improvement in visual outcomes.
- Primary health care is being more appropriately managed by optometry with less duplication of patient assessment.

Dr Turner said “The main driver for our team providing the telehealth service is that it saves many patients having to travel vast distances and allows access to eye care in a more timely manner.”



Associate Professor Angus Turner conducts a telehealth session with a patient

Acclaimed artist supports our vision with generous gift



Prominent artist Miriam Stannage has left a great legacy to Western Australian eye research through a generous bequest

It comes as no surprise that an artist would value her eyesight – but for acclaimed Western Australian artist Miriam Stannage, ideas about sight and seeing were also central themes in her work.

One of her earlier works was titled Mona Lisa with cataract – and later in her career she used surveillance cameras as a recurring theme.

Describing her work at the opening of a major exhibition, Professor Helen Ennis from the Australian National University’s Centre for Art History and Art Theory said: “... much of it appeared to be looking at me via various optical devices Miriam had attached to them (mirrors, cameras, sensors) and the insistent signage that we are being surveyed.”

Born in Northam in 1939, Miriam Stannage was married to fellow artist and UWA senior lecturer Tom Gibbons. They were part of an influential group of post-war artists that included Robert Juniper, Guy Grey-Smith and Brian McKay.

Miriam Stannage’s appreciation for the gift of sight is embodied in an extraordinary \$282,000 bequest to the LEI following her death in 2016. Her generous legacy will support the LEI’s vision to prevent and cure blindness and eye disease.

If you would like to find out more about how you could leave a gift in your Will for the LEI, please contact Future Vision Officer Gill Janson to request a copy of our Vision for the Future brochure on 9381 0738 or via email gilljanson@lei.org.au

Lions raise \$10,000 to support Ian Constable Chair

The Lions Save-Sight Foundation (LSSF) and Lions Clubs have made a \$10,000 contribution to the new Ian Constable Chair in Discovery and Translational Ophthalmic Science.

The money was presented by LSSF Chairman PCC Ambrose Depiazzi OAM to inaugural Chairman of the Lions Eye Institute PDG Dr Brian King AM MBE.

“With this donation, the LSSF and Lions Clubs continue to support sight saving initiatives in Western Australia,” Dr King said.

“They played a crucial role in the development of the LEI and have supported Ian Constable in his drive to prevent and cure blindness over his long and distinguished career.”

The Ian Constable Chair in Discovery and Translational Ophthalmic Science will focus on new treatments for major blinding diseases such as cataract and macular degeneration.

For further information on the Ian Constable Chair please contact Alisa Guillory on 9381 0708.



LSSF Chairman Ambrose Depiazzi presenting Dr Brian King with the donation cheque

Lions Lounge recognises remarkable support

In 1925, when Helen Keller urged Lions Clubs to join her in a “crusade against darkness”, she planted a seed that has yielded a rich harvest all over the world.

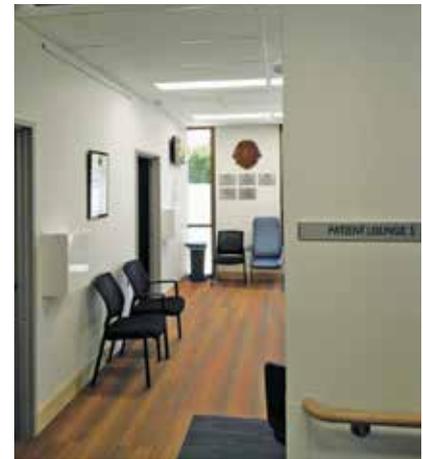
Lions Clubs of Western Australia created the Lions Save-Sight Foundation (LSSF) in 1970. The LSSF was set up to lead the development of world-class ophthalmic care and as a result, the Lions Chair of Ophthalmology was introduced in 1975 with Professor Ian Constable at the helm.

Professor Constable went on to create the LEI in 1983. Today, our large team of clinicians, medical professionals,

researchers and support staff continue to work tirelessly towards achieving our vision: to prevent and cure blindness and eye disease.

In recognition of the longstanding connection and support we continue to receive from Lions Clubs across Western Australia, we have created the Lions Lounge (patient lounge 1).

We would like to extend our thanks to the following Lions Clubs for proudly pledging their support to the LEI over the next three years as part of this initiative: Lions Club of Ballajura, Lions Club of Dardanup, Lions Club of Ellenbrook, Lions Club of



The Lions Lounge honours the support of Lions Clubs

Kojunup, Lions Club of Kwinana, Lions Club of Moora, Lions Club of Morley, and the LEI Lions Club of Perth.

We would also like to extend our thanks to other Lions Clubs that have shown their support with generous donations.

World Glaucoma Week



Glaucoma is the leading cause of irreversible blindness in the world.

It is an eye disease that is often associated with elevated intraocular pressure, in which damage to the eye (optic) nerve can lead to loss of vision and even blindness.

It usually causes no symptoms early in its course, at which time it can only be diagnosed by regular eye examinations.

Risk factors for glaucoma are:

- Age over 45 years
- Family history of glaucoma
- Diabetes
- History of elevated intraocular pressure
- Decrease in corneal thickness and rigidity

- Nearsightedness (high degree of myopia), which is the inability to see distant objects clearly
- History of injury to the eye

As a major collaboration between the World Glaucoma Association and the World Glaucoma Patient Association, a wide range of events are occurring all over the world for World Glaucoma Week from March 11-17.

The series of activities globally alerts people to have regular eye (and optic nerve) checks to detect glaucoma earlier, thus contributing to sight preservation. You can take part and learn more about World Glaucoma Week here: www.wgweek.net

Kate's story inspires generous giving

Kate didn't see it coming. But the early warning signs were there.

It wasn't until Kate's mother and grandmother had their eyes checked by an ophthalmologist that they learned of a rare genetic eye condition called retinitis pigmentosa.

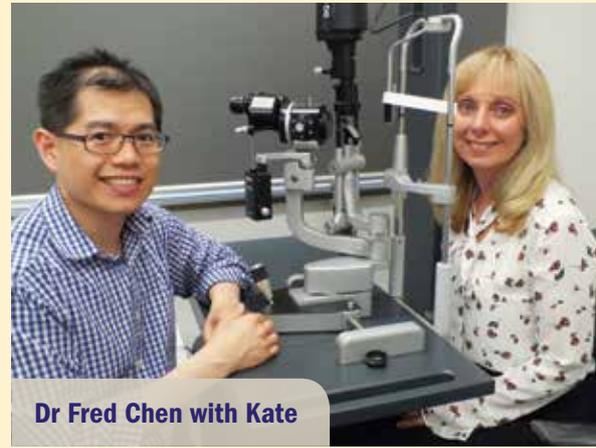
All the women in Kate's family have the same condition. Three generations. There is no cure for retinitis pigmentosa,

and treatments can only help symptoms.

And without a cure, it will continue.

Kate is participating in a clinical trial by Dr Fred Chen of the LEI. He and his team are researching inherited retinal diseases, including retinitis pigmentosa.

Your generous gifts in response to Kate's story have raised more than \$75,500 to fund



Dr Fred Chen with Kate

sight-saving research. We thank you for your generosity and your support.

You can read or watch Kate's full story on our website here: www.lei.org.au/donate/read-my-story/

Gold Nugget winner announced

A six ounce, \$12,500 gold nugget raffled to support retinal disease research at the LEI has been won by ticket holder 4837.

The nugget was raffled by Chris Morten, president of the Nannup Lions Club, who suffers from a rare form of retinal damage and has just five per cent of his sight.

The raffle raised over \$30,000 for Dr Carla Mellough's research,

which involves creating "retinal organoids" using stem cells.

She hopes to create new opportunities to prevent, treat and cure blinding diseases such as macular degeneration and other retinal degenerative diseases, which affect many thousands of Australian families.

Dr Mellough thanked Mr Morten. "Chris is a real

inspiration to me and the commitment and passion he has given to selling the tickets make me want to work even harder to find treatments and cures for retinal diseases," she said.

The draw was held on February 10 and the winner has been notified.

Privacy policy

Your Privacy: The Lions Eye Institute collects personal information about you in order to provide you with information and direct marketing materials in respect of our charitable objectives, and, unless you opt out or unsubscribe, may contact you in the future via post, email or phone. Our Privacy Policy www.lei.org.au/privacy-policy/ contains information about: (i) how we obtain, store and use, plus how you can access and correct your personal information; (ii) how you can lodge a complaint regarding the handling of your personal information; and (iii) how any complaint will be handled by the Lions Eye Institute. You may contact our privacy officer with any queries via email: enquiry@lei.org.au or mail: 2 Verdun Street Nedlands Western Australia 6009 or telephone: (08) 9381 0777. For queries about our Privacy Policy or to advise if you do not wish to receive future communications from the Lions Eye Institute, please call (08) 9381 0777.

The LEI is a not-for-profit organisation



Yes I want to save sight

Please accept my donation of: \$.....(Donations over \$2 are tax deductible)

Please find enclosed my Cheque Money Order OR, please debit my Mastercard American Express Visa

Card No: / / / Expiry Date: /

Cardholders Name: Signature:

Tax Receipt Details

Name:.....

Address:

Suburb:..... Postcode:.....

Telephone:

Email:

- I would be interested to learn more about how I can include the Lions Eye Institute in my Will.
- I have already provided for the Lions Eye Institute in my Will.
- Your donation saves sight. We recognise the generosity of our donors on our donor recognition board, on our website and in our annual report. Please tick here if you prefer not to be included in such recognition.

Your donation helps eradicate blindness

**Mail to:
Lions Eye Institute,
Reply Paid 62815
Nedlands WA 6009
(No stamp required)**