NEWS FROM THE QLD EYE INSTITUTE FOUNDATION

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eyecure.

WELCOME.

Vision research has led to remarkable treatments for conditions affecting sight. Today's patients owe a great debt to scientists who've worked for years to bring medicines and technologies from the laboratory benchtop to working clinics and hospitals.

For this edition of Eyecure, we asked our ophthalmologists to share their thoughts on the most significant advances in eye care in recent years, describing what these breakthroughs mean for their patients. They offer some interesting insights.

To honour the science behind the treatments, this spring the Queensland Eye Institute Foundation is running a special appeal to replace a Microplate Reader. Every donation received from September to November will be directed towards purchasing this essential piece of laboratory equipment used in many experiments across our research projects.

Please enjoy this edition of Eyecure, which celebrates the link between vision science and better patient outcomes.

Professor Mark Radford
CEO and Executive Director
Queensland Eye Institute

Visiting French student Noé Bourgoin examining cells grown on a silk sericin gel in the QEI laboratory.

QUEENSLAND EYE INSTITUTE FOUNDATION

QEI'S FRENCH CONNECTION.

Students from Aix Marseille Université, Polytech Marseille, have been travelling to Brisbane to study at the Queensland Eye Institute (QEI) for more than ten years. A new memorandum of understanding, finalised in June, provides certainty for the internship program for another five years.

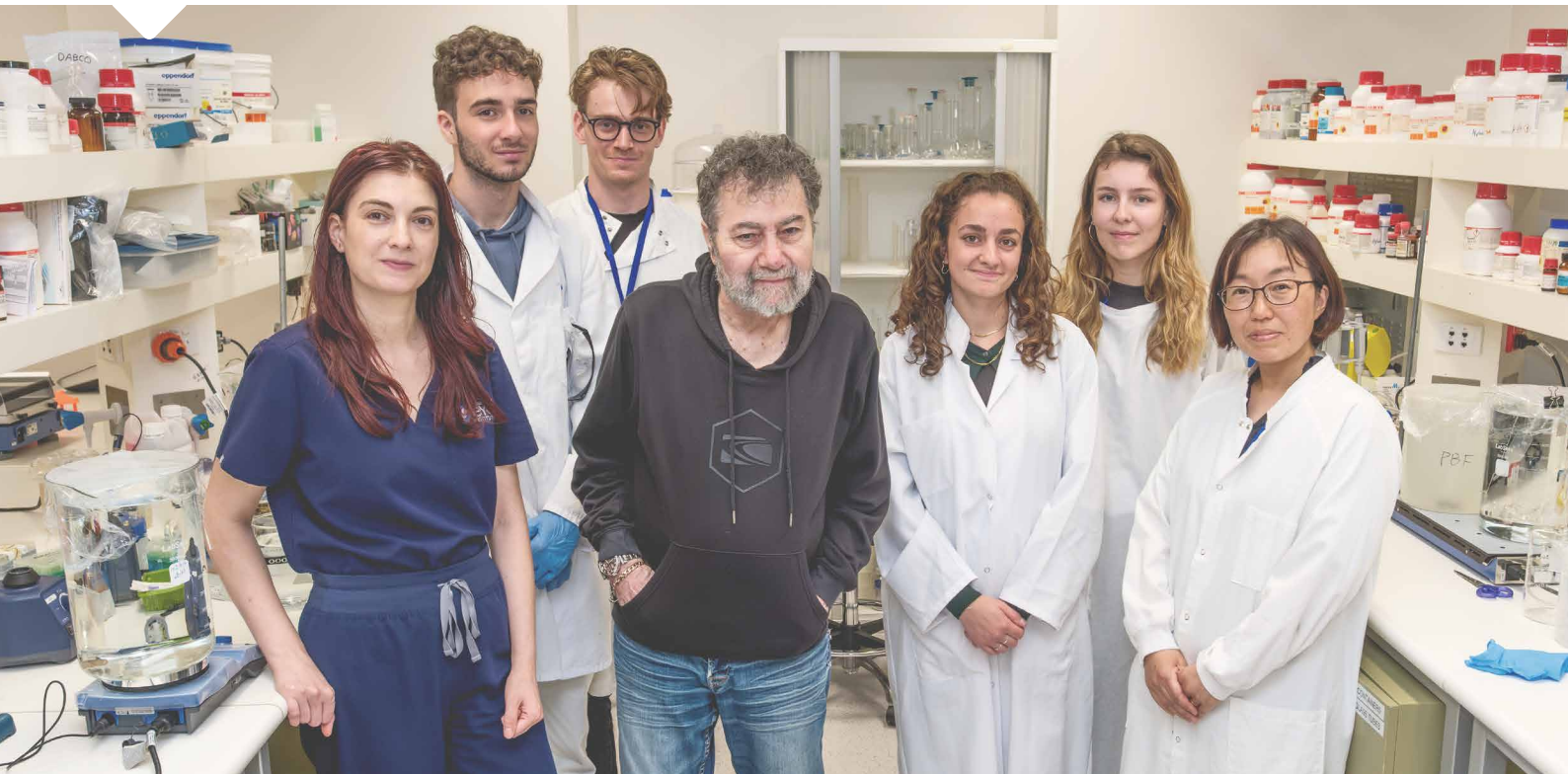
The agreement commits Aix Marseille Université and QEI to a continuing exchange of students, academic, research and administrative staff, conducting collaborative research and education projects, and exchanging research and materials.

In 2025 four students travelled to Brisbane to study under and assist the QEI research team on a range of projects, including accelerated gelation of silk sericin isolated from the cocoons produced by a mutant silkworm (more about this research on page 4).

Professor Mark Radford, QEI's CEO and Executive Director, says the student internship program benefits all involved.

"The students gain invaluable experience in a real-life laboratory, guided by a world-renowned polymer scientist," he says, "and QEI draws closer to achieving its research goals with every experiment the students conduct.

> "It's a win for all involved"



CELEBRATING 60 YEARS OF SAVING SIGHT.

This year the Queensland Eye Institute (QEI) Foundation celebrates 60 years of fundraising to support eye health research and education in Australia.

Established in April 1965 as the Prevent Blindness Foundation (Queensland Division), the QEI Foundation has built a reputation as one of Queensland's most trusted charities, raising money to pay QEI scientists and buy research equipment and supplies.

From humble beginnings in a room at the Princess Alexandra Hospital, the Queensland Eye Institute now operates from a custom-built clinical and research campus in Woolloongabba. Highly skilled ophthalmologists work with research scientists and a clinical trials team towards future cures, while offering advanced treatment options to all Australians.

HOW THE HUMBLE SILKWORM COULD HELP SAVE SIGHT.

Retinal diseases such as age-related macular degeneration, retinitis pigmentosa and diabetic retinopathy can be caused by oxidative stress. This damage occurs at a cellular level, leading to poor vision in dim light, or loss of colour vision or visual sharpness. If enough photoreceptors are damaged, people can experience progressive vision loss and even blindness.

QEI scientists are investigating the anti-oxidative effect of silk sericin and its potential to treat retinal diseases. Sericin is a protein found in the silk produced by certain silkworms. It acts as a "glue", holding together the fibroin fibres that make up a silk cocoon. Silk sericin can be crosslinked, copolymerized and blended with other materials, especially artificial polymers, to produce materials with improved properties.

SCAN ME!

Read more about QEI's research on silk sericin here

Raw silk cocoons imported from Japan.

Noé Bourgoin in the QEI lab looking at cells grown on a silk sericin gel. Researchers use different methods to assess cell growth, which is done most accurately and efficiently with a microplate reader.

MICROPLATE READER APPEAL.

The microplate reader system in QEI's laboratory has failed beyond repair, and replacing it is now a priority. Throughout September, October and November, every donation made to the QEI Foundation will go directly towards purchasing a new system.

A microplate reader detects and quantifies chemical, biological, or physical reactions or properties within the wells of a microplate. It's essential for efficient screening in research, diagnostics, and drug discovery.

Our scientists currently face significant delays, relying on a rented machine when one can be sourced, or travelling to other labs to complete their work. With your generosity, we can restore efficiency to the lab and ensure our researchers have the tools they need to advance treatments that protect and restore sight.

The QEI Foundation hopes to raise $40,000 – about half the cost of a replacement system. To donate, see the back page of Eyecure, or talk to QEI clinic reception staff.

ADVANCES IN EYE CARE.

Monoclonal antibody treatments (mAbs) have revolutionised the treatment of autoimmune diseases affecting sight. Sometimes the body's immune system goes rogue, attacking healthy cells by mistake, leading to autoimmune disease. If this accidental self-attack targets a person's eyes, optic nerves, or brain, the person can lose vision or even go blind. mAbs target specific immune cells to calm down the immune system and call off the attack. This relatively new treatment ensures some patients can now be restored to full sight when, ten years ago, they would likely have been blind for the rest of their lives.

Dr Anthony Pane

Dr Anthony Pane is an eye surgeon and medical ophthalmologist who has worked at the Queensland Eye Institute Clinic since it opened in 2005. He has a special interest in neuro-ophthalmology: diseases of the brain and nerves which can cause blurred vision, double vision, or abnormal eye movements.

The advent of anti-vascular endothelial growth factor (anti-VEGF) injections nearly 20 years ago has transformed treatment for wet age-related macular degeneration (nAMD). Age-related macular degeneration is deterioration of layers of the retina and choroid as people get older. Before the introduction of these agents, nAMD often led to irreversible vision loss and blindness.

Associate Professor Anthony Kwan

Associate Professor Anthony Kwan is a Vitreoretinal surgeon and the Director of Vitreoretinal Service at the Queensland Eye Institute. He specialises in retinal and macular diseases including age related macular degeneration, epiretinal membrane (macular pucker, cellophane maculopathy), macular hole, diabetic retinopathy (eye disease in diabetes mellitus), and retinal detachment.

Keratoconus is a progressive eye condition where the cornea, the clear front surface of the eye, thins and bulges into a cone-like shape, causing blurred vision, light sensitivity, and irregular astigmatism. Traditional management involved rigid contact lenses, which could be uncomfortable and painful, or corneal transplant surgery. Treatment was revolutionised in the early 2000s with Corneal Collagen Cross-Linking (CXL). The procedure strengthens the cornea's collagen fibres, slowing or halting the disease. More recently, Corneal Allogenic Intrastromal Ring Segments (CAIRS) has emerged as a safe method of reshaping the cornea to improve vision for keratoconus sufferers.

Dr Brendan Cronin

Dr Brendan Cronin is a corneal and refractive surgeon. He performs corneal transplant surgery, pterygium surgery, cataract surgery and refractive surgery. Dr Cronin has a special interest in keratoconus, especially LASER "Athen's Protocol" corneal regularisation combined with collagen cross-linking and Corneal Allogenic Intrastromal Ring Segments or "CAIRS".

Improvements to surgical instruments and imaging over the past 50 years have revolutionised surgeries treating the back of the eye, including the macula and retina. The transition from traditional 20-gauge systems to micro-incisional vitrectomy surgery using 23-, 25-, and 27-gauge instruments allows for suture-less surgeries, reducing patient discomfort and recovery time. High-speed vitrectomy cutters and adaptive fluidics systems have also reduced surgery times and improved patient safety.

Associate Professor Abhishek Sharma

Associate Professor Abhishek Sharma is a specialist in medical and surgical retinal eye conditions. His sub-specialties include retinal surgery for macular holes, epiretinal membranes and retinal detachments, as well as in treatment for macular degeneration and severe diabetes.

ADVANCES IN EYE CARE. (Continued)

Half a century ago, surgically fixing refractive error was a roll of the dice. Today, laser and lens-based vision correction are routine day surgeries. Modern refractive surgery including LASIK, CLEAR and implantable Collamer lenses have had significant social impact, including better career choices, safer driving, and the small thrill of buying sunglasses off the rack because every pair is suddenly prescription-ready.

Dr David Gunn

Dr David Gunn is a Brisbane based ophthalmologist specialising in medical and surgical diseases of the cornea, complex cataract surgery and laser and refractive eye surgery. He is active in eye disease research and publishes in local and international medical journals. He is involved in the training of surgical registrars, medical students and nurses and is an honorary faculty member of The University of Queensland.

The advent of multifocal intraocular lens (IOL) technology has greatly improved outcomes for patients undergoing cataract surgery. Unlike traditional monofocal lenses, which only correct vision at one distance, multifocal IOLs are designed with multiple zones to improve vision at near, intermediate, and far ranges. They have greatly enhanced patient outcomes by reducing dependence on glasses or contact lenses after surgery, allowing for greater visual independence and overall quality of life. Many patients now experience clearer, more functional vision in a variety of everyday settings, from reading to driving.

Dr Geoffrey Ryan

Dr Geoffrey Ryan has completed advanced sub-specialty training in both cornea and glaucoma, gaining expertise in the management of complex eye conditions. He is skilled in performing cataract surgery and refractive laser eye surgery, providing comprehensive solutions to enhance vision and eye health.

Fibrin glue became widely available in the early 2000s to treat pterygium, a raised, fleshy growth sometimes occurring on the eye's conjunctiva. Previously pterygia were removed surgically, followed by sutured conjunctival autografting. Patients experienced significant discomfort until the sutures dissolved from the surface of the eye after weeks or sometimes months. The introduction of fibrin glue means patients no longer require sutures. They benefit from shorter surgical procedures, significantly reduced postoperative pain, faster recovery and lower recurrence rates.

Dr Angela Richards

Dr Angela Richards is a highly skilled ophthalmic surgeon with expertise in cataract surgery, eyelid surgery, tear drainage surgery, macular degeneration and diabetic retinopathy.

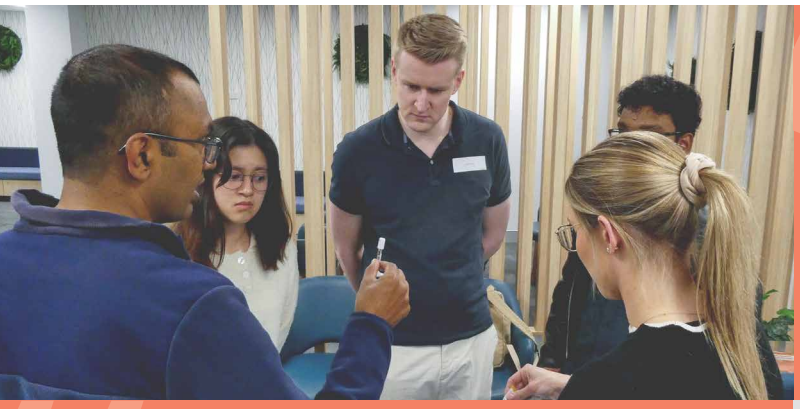
A gentler, non-invasive laser treatment for Glaucoma was introduced in the early 2000s, allowing patients to avoid or delay daily eye drops to manage vision loss. Selective Laser Trabeculoplasty (SLT) uses a low-energy laser to target pigmented cells in the eye's natural drainage system. SLT has a low risk of complications and is especially useful in elderly or medically complex patients who may not tolerate medications or surgery well.

Dr Jonathan Lai

Dr Jonathan Lai is a comprehensive general ophthalmologist, consultant neuro-ophthalmologist and glaucoma subspecialist. He is actively involved in the training of both medical students and ophthalmology registrars and is also a visiting consultant at the Mater Hospital Brisbane.

LEARNING AT QEI.

QEI ophthalmologists hosted an interactive workshop for more than 50 final-year optometry students in August, featuring hands-on practice in corneal foreign body removal, intravitreal injections, basic suturing techniques, glaucoma and nasolacrimal drainage assessment.



> Loved the interactive elements of actually doing things rather than just watching a lecture.

> I loved having the chance to speak with doctors in small groups - when we go on placement it is sometimes hard to fit in all our questions, so this was a very valuable opportunity!

> There were a lot of techniques that ophthalmologists do, that I would've never thought I'd get a chance to try. It was very interesting and enjoyable!

Clinical Operations Coordinator Tina Huynh (centre) with members of QEI's clinical team (L-R) Rhianan Lo, Cassandra Versteeg, Angela Messer and Kate Ridgway.

WELCOME TINA.

Tina Hyunh joined QEI as Clinical Operations Coordinator earlier this year. Tina leads QEI's team of 27 clinical assistants, including optometrists and orthoptists, who care for patients before they see their doctor. This care could include vision testing, measuring eye pressure, taking images and scans, and preparing patients for minor surgical procedures.

As well as managing the clinical operations team and ensuring clinical equipment is maintained, Tina is integral to QEI's education program. She oversees optometry students doing practical placements at the Woolloongabba and Clayfield clinics and is the architect behind QEI's optometry education events.

Tina enjoys the diversity her role offers and the opportunity to play a role in patients' ongoing care. "I really feel as though I am part of a patient's journey to better eye health," Tina says. "And it's a lovely work environment here, with friendly staff who all help each other out."

PLEASE DONATE TODAY.

MICROPLATE READER APPEAL.

This spring, all donations to the Queensland Eye Institute Foundation will directly fund a new microplate reader for the QEI laboratory. **All donations $2.00 and above are tax-deductible and are issued a receipt.**

CALL US
07 3239 5050

DONATE ONLINE
www.qei.org.au

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