CENTRE FOR
Eye Research
Australia

Hope in sight®

Annual Review 2024

Share our vision

Our story

Vision is precious and no one should ever lose the gift of sight.

We're deeply committed to conducting eye research with real-life impact and finding ways to prevent people from going blind.

As an international leader in eye research, we use our world-class knowledge and expertise to achieve better treatments and faster diagnosis of eye disease.

Our goal is to prevent vision loss – and ultimately, find cures to restore sight. As true innovators, our scientists are on the brink of new discoveries every day.

With your support we can continue this world-leading research and accomplish scientific breakthroughs previously deemed unattainable.

Our aim is to offer hope to people affected by vision loss and protect the sight of everyone in need.

With CERA, there's hope in sight.

CENTRE FOR
Eye Research
Australia

← **COVER: Louis Shepard, who lives with Usher syndrome, with his mother Emily.**

THE UNIVERSITY OF MELBOURNE

the royal victorian
eye and ear
hospital

Contents

↑ Local device: (from left) Professor Keith Martin, Professor Michael Coote and Dr Jennifer Fan Gaskin examining the locally designed VividFlo glaucoma device.

Chair and Managing Director's message

Partnerships are the lifeblood of successful medical research. They are the key to getting discoveries that have been made in the lab into the clinic.

In 2024, CERA continued to forge dynamic partnerships to drive our research forward.

We unveiled vital new infrastructure – state-of-the-art discovery research laboratories and a new clinical trials centre – which will provide a hub for national and global vision research collaborations.

We also put the finishing touches to our new 2025–2030 strategy, *Impact through innovation*, which puts partnerships at the heart of everything we do.

The new strategy builds on CERA's strong culture of collaboration that underpinned successful projects in 2024.

On World Clinical Trials Day, Victoria's Deputy Premier the Hon Ben Carroll launched CERA's new clinical trials centre, Cerulea Clinical Trials.

Cerulea, supported by a $10 million investment from Breakthrough Victoria, will deliver trials to 2500 Victorians annually over the next decade. It will collaborate with global pharmaceutical and medtech companies – and provide a location for Australian inventors to trial their discoveries.

CERA is also proud to be part of research resulting from a partnership between the University of Melbourne and global genomics company Illumina. The Advanced Genomics Collaboration is using cutting-edge DNA sequencing technology to pinpoint the genetic causes of unexplained inherited retinal diseases.

CERA spin-out company Mirugen also went from strength to strength. Its research to develop a gene therapy to restore damaged photoreceptors received a $1.92 million grant from the CUREator+ scheme in 2024.

Over the past 12 months, our philanthropy program has received a significant boost from our voluntary Philanthropy and Engagement Committee under the leadership of Chair Alexandra Grimwade.

Consumers are also playing an increasing role in our research through our new Consumer Advisory Group. We are grateful to our inaugural members Jane Cherry, Dr Ronelle Hutchinson, Dr Colleen Lewis, Daniel Talko, Chris Edwards and committee chair, CERA Board director Simon Brewin.

Impact through innovation: 2025-2030

Strategic focus

Since 2020, we have transformed our infrastructure, capabilities and capacity to take research from the lab to clinic and intervene early to prevent eye disease.

As we look ahead, our focus will push the boundaries of what is possible in eye research and patient care.

Partnering for impact

CERA will become the partner of choice for eye research and deepen relationships with:

- Consumers and patients
- Industry globally and locally to commercialise novel therapies

In 2024, we also farewelled two leaders.

Long-term CERA Deputy Director Professor Peter van Wijngaarden was appointed to a new role as Executive Director of The Florey. He continues his research at CERA in an honorary capacity and we look forward to future collaborations.

Olivia Hilton also ended her term at CERA after 11 years as a Board Director, including the last six as Chair. Olivia's deep experience as a consultant and executive in social impact organisations has been invaluable.

We thank Olivia and Peter for their outstanding service.

Thank you to our staff, our research partners, The Royal Victorian Eye and Ear Hospital, the University of Melbourne and the people with vision loss who take part in our studies.

None of our research would be possible without the thousands of people who donate to CERA every year. We are incredibly grateful for your support.

Professor Keith Martin
Managing Director

Duncan Peppercorn
Chair

- Funders and philanthropic partners
- Academic and research institutions
- Clinical and hospital partners.

Lead in early eye disease intervention

Early intervention is key to preventing vision loss. To achieve this, we will:

- Utilise epidemiology: Track disease trends and identify risk factors.
- Develop clinical registries: Collect data on eye diseases, enabling better understanding of disease progression.
- Drive early intervention trials: Design and implement clinical trials for early intervention, providing access to new treatments before vision is threatened.

Developing and testing novel eye diagnostics and therapies

Leveraging our world-class new facilities, and access to Cerulea Clinical Trials, CERA will be a beacon for the development and trialling of novel diagnostics, biomarkers and therapies for clinicians and patients.

Focus across four key disease areas

- Glaucoma
- Inherited retinal disease
- Macular degeneration
- Diabetic eye disease.

Nurture emerging spaces

- Ocular oncology
- Corneal diseases
- Uveitis
- Other eye conditions.

2024 snapshot

$5.05M
IN GOVERNMENT GRANTS

$3.75M
IN PHILANTHROPIC GRANTS

212
RESEARCH PUBLICATIONS

Clinical research

4366
PARTICIPANTS

101
ACTIVE CLINICAL RESEARCH STUDIES

67
STUDIES INVOLVING AN INTERVENTION OR INVESTIGATIONAL TREATMENT

$4.18M
IN DONATIONS AND BEQUESTS

Cerulea

CLINICAL TRIALS LAUNCHED

Lions Eye Donation Service

COORDINATED DONATIONS FROM 331 DONORS

FOR...

668

CORNEAL TRANSPLANTS

AND...

308

SCLERA SURGERIES

WITH ...

159

ALLOCATED TO RESEARCH AND TRAINING

CERA's new discovery labs open

THE ADVANCED GENOMICS COLLABORATION

WELCOMING OUR CONSUMER ADVISORY GROUP

$1.92M

CUREATOR+ FUNDING FOR MIRUGEN

Vibrant vision

"If the research team learns something from me that can help someone else see, that's everything I can hope for."

– Lesley Hunter

Artist and great-grandmother Lesley Hunter has a vibrant view of the world that shines through her art.

"I'm big and bold in my work - I've got paint on me, paint on the floor, paint on the dog, paint on everything else," she says.

Lesley has lived with glaucoma for a decade after a surprise diagnosis several years ago.

"I believe my parents may have had it, but that is something that I've never been able to confirm," she says.

Her condition is well managed and she still enjoys both painting and travel, but she is also contributing to the future of glaucoma treatment by participating in research.

Every six months she takes the train to Melbourne from her studio in Beaufort, in central Victoria, to the Centre for Eye Research Australia.

Sandy Rezk is an optometrist and Clinical Research Coordinator at CERA and says Lesley and people like her are an inspiration.

"Lesley has undergone extensive imaging, all at the age of 80 and always with a positive attitude and great big smile," says Sandy.

Lesley hopes that her efforts will contribute to new ways to understand and treat glaucoma.

"If the research team learns something from me that can help someone else see, that's everything I can hope for."

← **Bold vision: Lesley Hunter is participating in research with Sandy Rezk.**

Glaucoma trial goes with the flow

After starting as an idea on a whiteboard in Melbourne, the VividFlo glaucoma implant is now part of a landmark clinical trial.

A Melbourne-designed implant that aims to protect the sight of people with moderate to severe glaucoma is now part of a large, Australian trial underway at Cerulea Clinical Trials and several other sites across the country.

The VividFlo implant, designed by CERA Principal Investigator of Glaucoma Surgical Research Professor Michael Coote, is a step towards improving how vision might be protected in the future.

"It has been incredibly rewarding to take this from an idea to a clinical trial, especially one that is so close to home," says Professor Coote.

The implant being trialled by VividWhite – the company founded by Professor Coote alongside experienced medtech executive Andrew Batty – is built on innovative research on how to reduce pressure in the eye.

Reducing pressure

People whose glaucoma cannot be controlled through eye drops may need surgery to help fluid drain from the eye.

However, current treatments are not effective for everyone.

Professor Coote's work to find a new treatment started in 2010 when he pioneered research to better understand how fluid can leave the eye.

The VividFlo implant is designed to create an additional channel through which fluid can drain, and disperse it gently through a series of over 150 exit channels over the back of the eye.

This innovative design incorporates micro-fluidics and nanofabrication to release fluid in a controlled and consistent fashion to protect the rest of the eye and potentially improve how glaucoma is managed long term.

Following a successful feasibility study in 2022, private investment and $1 million in funding from MTPConnect – the Australian Government's Life Sciences Innovation Accelerator – the device entered a large, multi-centre study in 2024.

CERA Managing Director Professor Keith Martin is one of the surgeons involved with the clinical trial.

"There are not many examples where a small team, without assistance from a major medical device or pharmaceutical company, have taken an idea like this all the way from the drawing board to clinical trial," says Professor Martin.

"It's quite a privilege to be part of this trial, based on such fantastic research and a design that has been entirely locally created."

→ **Local innovation: Professor Michael Coote holding one of the implants.**

National recognition for glaucoma researcher

Associate Professor Zhichao Wu's work to improve the diagnosis and management of glaucoma has received accolades from the National Health and Medical Research Council and a major optometry award.

Many people are only diagnosed with glaucoma after having lost a significant portion of their vision. Even after diagnosis, people with glaucoma can still become blind despite treatment.

CERA Head of Clinical Biomarkers Associate Professor Zhichao Wu has received national recognition for his work to more effectively monitor and identify glaucoma.

In 2024, the National Health and Medical Research Council (NHMRC) selected his research for their prestigious *10 of the Best* publication, which celebrates success stories of health and medical research funded by the Australian Government.

He was also named Optometrist of the Year in 2024 by Optometry Victoria South Australia for almost a decade of contributing to reducing the impact of eye disease.

Significant impact

Associate Professor Wu was working as a graduate optometrist when he first fully appreciated the impact of glaucoma.

"I found myself detecting eye disease that had already caused irreversible vision loss in people who had just come in for their routine eye test," he says.

"It was terrible to me that we could miss it, and that we just didn't have better tools to catch it early."

This motivated him to pursue glaucoma research with the overarching goal of enabling earlier detection of this condition – before significant irreversible vision loss happens.

His research received a boost in 2016 when he was awarded the prestigious NHMRC Early Career Fellowship to support his research to find better ways to detect and measure vision loss.

With support from this fellowship during this crucial point in his career, he has developed novel statistical approaches, trial designs and outcome measures that can reduce the sample sizes of participants required for clinical trials by up to 20-fold.

He is now extending this work by collaborating with CERA's Ophthalmic Neuroscience team to use cutting edge imaging technology to discover new biomarkers – biological processes that help diagnose conditions, understand the way diseases work, predict disease progression and evaluate treatment effectiveness.

They're harnessing the power of an advanced hyperspectral camera – that uses a wide spectrum of different coloured light to reveal many details of the eye – to help identify biomarkers of cells at risk of dying.

Better impact

If these 'high-risk' patients can be identified, clinicians can then monitor them more carefully and treat them more intensively as appropriate.

This research could also make clinical trials more feasible to run – bringing new treatments to patients.

"By combining state-of-the-art OCT imaging with AI techniques, we aim to make glaucoma clinical trials shorter and much less costly to run," Associate Professor Wu says.

Associate Professor Wu and the Clinical Biomarkers team are working hard to ensure these research innovations can be translated into the clinic – and into meaningful improvements for people living with glaucoma.

"Through earlier diagnosis, faster identification of disease progression and paving the way for therapeutic innovation, we hope to make blindness from glaucoma a thing of the past," he says.

↑ **Protecting vision: Associate Professor Zhichao Wu is working to prevent vision loss from glaucoma.**

Extraordinary views of cells

CERA researchers are looking at living cells in unprecedented detail to understand the exact damage that occurs during glaucoma.

Current treatments for glaucoma aim to lower the pressure of fluid within the eye. However, many people who receive these treatments still go on to lose their vision.

While lowering pressure is essential to preventing the death of retinal ganglion cells – the cells in the retina affected by glaucoma – the exact reason they die is still not known.

"We know we are missing something very important about the disease," says CERA Head of Visual Neurovascular Research Dr Luis Alarcon-Martinez.

Both he and CERA Head of Visual Neuroscience Dr Anna Wang are looking into these cells in remarkable detail to discover exactly what factors are causing this cell death.

The retina is a thin layer of light-sensitive nerve tissue at the back of our eyes made up of several different cell types, arranged in layers.

"You could picture it a bit like a layer cake," Dr Wang says.

"The cells on the top layer convert light into electrical signals that reach the retinal ganglion cells at the bottom layer."

Retinal ganglion cells send information to the brain through long axons, which make up the optic nerve.

In glaucoma the death of these retinal ganglion cells disrupts this vital communication and eventually leads to vision loss.

To understand more about how these cells die they are using Dr Alarcon-Martinez's pioneering two-photon microscopy method – an advanced imaging technique allowing researchers to see living tissue at a scale not possible with other microscopes.

Different views

Each researcher is using the technique in different ways.

Dr Wang is aiming to understand the different types of retinal ganglion cells and see if they are affected differently in glaucoma.

"For instance, we might discover that a type of retinal ganglion cell reacts in a specific way to moving objects and is more likely to be damaged in glaucoma," Dr Wang says.

"This information could be used as an important tool for testing patients."

Dr Alarcon-Martinez is researching blood flow in the retina to understand the impact that may have in glaucoma.

"Nerve cells are always getting or using some levels of energy, which is why blood flow is so important to the retina,

the optic nerve and the brain," says Dr Alarcon-Martinez.

Dr Alarcon-Martinez is collaborating with Professor Adriana Di Polo from the University of Montreal, who is a global leader in understanding the mechanisms behind glaucoma.

Together they previously used two-photon microscopy to discover unseen structures that communicate to regulate blood flow between cells in the retina, optic nerve and brain, called nanotubes.

If nanotubes are broken, the blood flow is disrupted.

"We are now seeing the importance of this process to diseases, including glaucoma," says Dr Alarcon-Martinez.

Dr Alarcon-Martinez's ongoing work is supported by Fighting Blindness Canada, Alcon Research Institute, Australian Vision Research, Perpetual, Sir Edward Dunlop Medical Research Foundation and the CERA Foundation.

Dr Anna Wang is supported by the DHB Equity Fellowship for Excellence in Vision Research and a Jack Brockhoff Foundation Early Career Medical Research Grant.

↑ **New view: (from left) Dr Anna Wang, Jesse Gardner-Russell, Dr Luis Alarcon-Martinez and Mahmoud Haddara in the lab.**

Sound and sight

“Research has done a lot for hearing but not as many scientists have focused on vision loss.”

– Louis Shepard

Louis Shepard loves music, playing cricket and watching Formula 1.

The 15-year-old was born with Usher syndrome 1B, a rare genetic condition that causes profound hearing loss, a progressive decline in vision from teen to adult years and balance problems.

Throughout his life, Louis has benefited from advances in medical research.

A cochlear implant at 11 months old has enabled him to enjoy many of the same activities as his peers. He enjoys listening to ‘retro’ music with his mum Emily and is considering music production, along with business or law, as a future career.

But as his vision has declined he now only has 15 degrees of peripheral vision compared to the standard 180 degrees.

Scientists at CERA are developing treatments to save the sight of people living with Usher syndrome.

Louis and Emily are grateful for research efforts to help people with hearing loss, and hope that vision scientists will receive an equal level of funding as the early work to develop the cochlear implant.

“My vision is not the only thing about me. It does not define me,’’ says Louis.

“Research has done a lot for hearing but not as many scientists have focused on vision loss.

"It is amazing that there is now research that could stop people losing their sight from Usher syndrome."

← Looking ahead: (from left) Louis’s mother Emily, Louis and Associate Professor Guei-Sheung (Rick) Liu are passionate about new treatments for Usher syndrome.

New focus for testing functional vision

Researchers are developing an innovative way of measuring the impact of new vision therapies on people's lives.

Scientific advances such as gene therapy have created many new possibilities to improve vision.

But how can experts and individuals with low vision measure the real-world impact of treatments?

A new functional vision test developed by CERA researchers Lisa Lombardi and Lauren Moussallem may have the answer.

They hope that their new test – known as the Assessment Tool for Occupational performance and Mobility-Multisensory approach (ATOMM) – will eventually become an internationally recognised standard assessment tool for real-world functional vision evaluation.

Lombardi, an optometrist and Senior Clinical Research Coordinator, says activities of daily life can be complex for people with low vision – and difficult to 'capture'.

"Traditional vision assessments, such as reading letters on an eye chart, don't necessarily reflect a person's ability to function in everyday life," she says.

"Tasks such as crossing a street or making a cup of tea, require more than just visual acuity – they need a combination of tactile, auditory and cognitive strategies."

A US-developed assessment has been used in Australia, but Lombardi and Moussallem recognised the test was not always suited to Australian life. Particularly, references to following the lines of a crosswalk which don't apply to Australian conditions.

Moussallem, an orthoptist and clinical research coordinator, says the pair decided to develop a tool that would be more practical, efficient and globally applicable.

Objective assessment

ATOMM is designed to capture not only whether someone can complete a task, but also how they do it.

The test consists of 15 tasks divided into three domains: daily living, outdoor navigation and social interactions.

Participants complete the test in their own home and local environment, making the results more applicable to their daily lives.

The assessor gives an objective rating and the participant rates how well they feel they performed.

Lombardi says the test may play a significant role in detecting real-world changes in functional ability before and after medical interventions, such as gene therapy, retinal devices, or orientation and mobility training.

"For instance, if a patient who previously relied entirely on a cane or guide dog for navigation begins using residual or bionic vision after a treatment, this tool may capture that shift," she says.

More applications

Moussallem says that while originally developed for clinical research and bionic vision trials, the ATOMM has broader potential applications, including rehabilitation programs, evaluating new devices and offering insight into the daily challenges faced by vision-impaired individuals.

Lombardi's work has already been recognised with the 2025 LOOK International Scholarship from Optometry Australia. The prestigious award highlights her contribution to vision research and the advancement of clinical tools that improve patient outcomes.

After their pilot study demonstrated the reliability and repeatability of the test, the pair presented their findings at an international orientation and mobility conference in Texas, in November 2024.

The test received overwhelming interest from professionals.

The team is now working to expand the study with additional participants and with the hope of seeking regulatory approval from bodies such as the FDA in the US and TGA in Australia.

Their work has been supported by CERA philanthropic funding and an Australian Vision Research grant.

↑ **Real world tests: (from left) Lisa Lombardi and Lauren Moussallem are measuring real-world impact of treatment.**

Boost to switch on sight

Mirugen, a start-up founded at CERA, has received a $1.92 million grant from the Federal Government's CUREator+ program.

Mirugen is developing a treatment which harnesses the regenerative power of the retina's own stem cells to prevent and reverse damage to the light-sensing photoreceptors in the back of the eye.

The research aims to develop a therapy for currently untreatable conditions like retinitis pigmentosa, Stargardt's disease and age-related macular degeneration.

The Mirugen team's gene therapy treatment involves injecting engineered viruses into the eye to deliver reprogramming genes into retinal cells.

These genes will then stimulate the stem cells in the eye to develop into new photoreceptors that replace the damaged cells.

Mirugen co-founder and Head of Cellular Reprogramming Research at CERA, Associate Professor Raymond Wong, says the team had achieved promising results in earlier preclinical studies.

"The CUREator+ funding has enabled my team to conduct essential preclinical experiments to accelerate the development of our new gene therapy candidate," he says.

"Our ultimate aim is to get our treatment to patients and create a brighter future for people living with incurable blindness."

CUREator+ is funded by the Medical Research Future Fund and delivered by Brandon BioCatalyst and ANDHealth.

↑ **Restoring cells: Associate Professor Raymond Wong is working to regrow cells in the retina.**

Supporting the next breakthrough

Founding members of CERA's Eye Research Alliance are working together to help support the next wave of medical research.

Over the course of their careers Professor Noel Alpins AM and Associate Professor Julian Rait OAM have seen research transform ophthalmology with new treatments allowing them to protect more people's sight.

They are now supporting vision research so today's young ophthalmologists see a similar transformation through their career.

"Research and development are the lifeblood of any industry," says Associate Professor Rait.

"Throughout my career, my patients have received immense benefit from research and scientific progress, and now I'm giving back to support the future of research and healthcare.

"And as Deputy Chair of Vision Australia, I really see the impact of vision loss and what new treatments might achieve for those with blindness or low vision."

Associate Professor Rait and Professor Alpins are inaugural members of CERA's Eye Research Alliance and are beginning to build a community of eye care professionals who can support research.

Professor Alpins has made significant contributions to improving cataract and refractive surgery, developing new methods to plan and analyse laser surgeries for better outcomes for patients.

"I work to make a difference to the vision of every person who walks through my door, but with published research, your work adopted by colleagues internationally can help many, many more gain an improvement in their quality of life," says Professor Alpins.

"Bringing people together with their unique skills, perspectives and interests, we can achieve remarkable outcomes for patients we couldn't do so alone."

↑ **Working together: (from left) Associate Professor Julian Rait OAM and Professor Noel Alpins AM are building a community of eye care practitioners.**

Generous support for women's research

A gift of $300,000 from The Felton Bequest will power Dr Sena Gocuk's research into female carriers of inherited retinal diseases (IRDs) for three years.

Dr Gocuk will be undertaking projects that aim to develop tests to identify a carrier's risk of severe vision loss and the safety and efficacy of gene therapy for these women.

This includes the development of a saliva test to reveal how genes are being expressed.

"Treatments are currently focused on males with X-linked conditions," says Dr Gocuk.

"What we're trying to find out is whether the treatment available for men in current clinical trials will work on women as well."

X-linked IRDs are caused by a gene mutation on the X chromosome, which will typically develop severe vision loss for males, who have one X chromosome.

Female carriers of X-linked IRDs who have two X chromosomes – one mutated and one healthy – can still experience vision loss though the severity and changes are not as well understood as they are in males.

"I'm so honoured that we've received this support from The Felton Bequest," says Dr Gocuk.

"It allows us to explore the questions that remain unanswered for women living with these eye diseases."

↑ **X-linked: Dr Sena Gocuk is working to better understand how IRDs affect women.**

Providing answers for unknown IRDs

New funding is supporting researchers from CERA and the University of Melbourne to find answers for the 40 per cent of people who are diagnosed with inherited retinal diseases (IRDs), but do not have a genetic diagnosis.

Their work has the potential to find targets for breakthrough treatments and help people access future clinical trials.

The Advanced Genomics Collaboration (TAGC) – a partnership between international biotechnology company Illumina and the University of Melbourne – is supporting a team led by Professor Lauren Ayton AM and Dr Ceecee Britten-Jones to access cutting-edge DNA sequencing technology to look for answers.

"It's quite amazing to see how quickly this field has changed from where we were 10 or 15 years ago," says Professor Ayton.

"The fact that we can now look at somebody's whole genetic information and have that explain what they're experiencing is just mindboggling.

"Now we are at the precipice of a whole wave of new treatments, including gene therapy and oral medications, and with TAGC support we've sequenced over 80 people."

Funding for the 2024 TAGC Innovation Projects was possible with the support of Invest Victoria, Illumina and the University of Melbourne.

↑ **IRD answers: Professor Lauren Ayton AM and Dr Ceecee Britten-Jones.**

Genetic testing ends 40-year wait

A Melbourne mother has finally been correctly diagnosed with a disease that affects just one in a million people, thanks to a research collaboration between CERA and the University of Melbourne.

Sharon Burstin, 54, of Elsternwick, was told she had a type of inherited retinal disease called retinitis pigmentosa after experiencing vision loss as a child.

Her search for information as an adult led her to the VENTURE Study into inherited retinal diseases (IRDs) – a joint effort between CERA and the University of Melbourne.

The study aims to understand the progression of IRDs and identify people who may be eligible for future clinical trials.

Through VENTURE, Sharon was able to access genetic testing and was diagnosed with adult Refsum disease, a rare metabolic condition that affects about one in a million people. Its progress can be slowed by dietary and lifestyle changes.

Refsum disease is caused by the build-up of phytanic acid from food in body tissues, including the retina. People with the disease usually develop vision symptoms as a child or teenager. Other symptoms can include loss of smell, sensory and motor issues, deafness, unsteadiness and abnormal joints.

Sharon says that she had the Refsum symptoms of unusual hands and feet at birth, and gradually developed others such as smell and hearing loss, poor balance, and osteoarthritis – but the puzzle was unsolved until she had genetic testing.

"As a child and young woman, it was traumatic to know I had a condition where they could not predict the progress, because retinitis pigmentosa is different for everybody, and of course, losing your vision is very frightening," Sharon says.

"I tried to get genetic testing for more information, but it was extremely hard to access until I joined the VENTURE Study at CERA – which provided the answer. While Refsum is a difficult condition to manage, I'm relieved I now have something concrete and there are ways to slow the progression."

Unique experience

Sharon's unique case was outlined by Professor Lauren Ayton AM and Parker Truong in the journal *Clinical & Experimental Ophthalmology*.

Professor Ayton says that IRDs were considered untreatable less than a decade ago.

"However, advances in genomic research means more people can find out what is causing their vision loss, and rapid advances in gene therapy research and other therapies provide hope for new treatments to stall vision loss and restore sight," Professor Ayton says.

"For Sharon, genetic testing revealed she had a disease that could be slowed down, but testing is equally important for people with other inherited retinal diseases.

"The value of genetic testing for patients with rare diseases cannot be overstated."

Diet and lifestyle can have a positive impact on managing Refsum disease.

Sharon, who is now a passionate advocate for Refsum awareness and genetic testing, says she would have lived her life quite differently had she known earlier about her diagnosis.

"I would never have fasted or dieted to lose weight really quickly, I would not have over-exercised, I would have eaten differently," she says.

"I've made those changes now, but I am already fully blind in one eye, totally night blind and only have five degrees of peripheral vision in the other eye.

"It's important that people have genetic testing through studies, and that ophthalmologists and optometrists are more aware of Refsum disease as there is so much that can be done to slow the progression."

↑ **Correct diagnosis: Professor Lauren Ayton AM with Sharon Burstin.**

Research journey

“To have seen everything that is being done over the last 16 years, I know that progress is being made.”

– Olga Maxwell

About 16 years ago, Olga Maxwell was diagnosed with age-related macular degeneration (AMD) – a disease that affects the central part of the retina at the back of the eye.

There are two late forms of AMD: wet AMD – also known as neovascular AMD - and dry AMD – also known as geographic atrophy.

Olga lives with geographic atrophy.

“It didn’t progress for a very long time, but in the last 12 months it has been progressing quite rapidly," she says.

“I was just recently advised not to drive anymore. I was expecting it, but it was still a bit of a shock.

“I’m a very independent person, and I haven’t lost my independence, but I don’t have the ability to jump in the car and go do something – I have to plan now.”

Wet AMD can be managed with regular eye injections, but up until very recently people with dry AMD did not have any treatments available to slow their vision loss.

In early 2025, Australia’s Therapeutic Goods Administration approved the first ever treatment to slow progression of the condition.

Olga said it has been inspiring after participating in research to finally see the first ever treatment become reality.

“To have seen everything that is being done over the last 16 years, I know that progress is being made.”

← View of progress: Olga Maxwell, who has been participating in research for over a decade, with Clinical Trial Coordinator Emily Caruso.

Editing genes to end regular eye injections

New research targeting the body's genetic messengers could be the key to ending regular eye injections for AMD.

Wet age-related macular degeneration (AMD) can be controlled with regular eye injections, but the cost and discomfort of the procedure is a burden on both patients and the healthcare system.

New research led by Satheesh Kumar and Associate Professor Guei-Sheung (Rick) Liu from CERA and the University of Melbourne has found a gene therapy technique with the potential to end the need for regular injections.

They have for the first time used an RNA editing tool – known as CRISPR Cas13 – to suppress the production of vascular endothelial growth factor (VEGF) in human retinal cells.

VEGF is a protein that causes abnormal leaky blood vessels to grow in the retina at the back of the eye – and is the key driver of vision loss in wet AMD and diabetic retinopathy.

"Our study shows the potential of RNA editing to develop gene therapies that offer an alternative treatment to the invasive, frequent eye injections that are currently used to treat wet macular degeneration and diabetic eye disease," says Associate Professor Liu.

Changing instructions

While DNA provides the instructions for cells to function, RNA carries out these instructions by transmitting their message to cells.

The experiment targeted the mRNA sequence that instructs cells to produce VEGF.

It delivered the RNA editing tool via an adeno-associated virus vector and was tested on a mouse model and human retinal cells derived from stem cells.

It showed that the viral vector was effective in delivering the treatment to retinal cells and produced a significant reduction in VEGF, and a slowing of disease progression in the mouse model.

The research was performed alongside scientists from the University of Sydney, Children's Medical Research Institute, University of Western Australia and Zhongshan City People's Hospital, China, and published in *Proceedings of the National Academy of Sciences* in 2024.

"Although this research is in the early discovery stages and requires further development before transitioning to clinical trials, we envision that RNA editing could become a viable alternative to invasive and costly eye injections that have become a fact of life for many people living with wet macular degeneration or diabetic eye disease."

Associate Professor Liu's research is supported by the Lions Ride for Sight and the CERA Foundation.

↑ Targeting AMD: (from left) Satheesh Kumar, Kristin Ariel and Associate Professor Guei-Sheung (Rick) Liu.

Global study uncovers AMD mysteries

An international study led by CERA, WEHI and the University of Melbourne has found a genetic clue about the people at high risk of losing their vision from macular degeneration.

Age-related macular degeneration (AMD) is a complex disease with many characteristics – which CERA Deputy Director Professor Robyn Guymer AM has dedicated her career to unravelling.

One factor is the development of reticular pseudodrusen – small deposits that build up in the retina of some people diagnosed with the disease.

"We thought these deposits were very rare, but with the latest imaging devices we now find them quite often in people, particularly during the late stages of age-related macular degeneration," says Professor Guymer.

"There is evidence to suggest that reticular pseudodrusen increases the risk of progressing to the late stage of the disease and with that, severe vision loss.

"Additionally, in a study that aimed to slow down disease progression, people with reticular pseudodrusen did worse compared to those without."

Professor Guymer says that up to eight in 10 people with late-stage macular degeneration have reticular pseuduodrusen.

"We really need to concentrate on this group as they appear to have a more sinister disease."

The Synergy High Risk AMD Study was established to understand exactly what these deposits are and why they are so bad for the eye.

The five-year project with colleagues from the University of Melbourne and WEHI is now ending, and resulting in important discoveries.

Genetic difference

To learn as much as possible about people who have reticular pseudodrusen, CERA researchers coordinated the collection of images and samples from 14 different sites across the globe.

"This was an enormous effort led by Dr Carla Abbott to harmonise how images of the eye were captured and graded, and collect genetic results," says Professor Guymer.

"This work has taken us five years which involved at times accessing other group's images so that we could check that we're all in harmony when looking for and defining that these deposits were present or not – which is not easy to do and agree on."

While CERA researchers have been coordinating this massive undertaking, colleagues at the University of Melbourne and WEHI have been developing and studying models of AMD and performing genetic analysis of samples.

Collectively their work will hopefully lead to discoveries that will explain the cause of these deposits, leading to new avenues in treatment.

Changing research

A cornerstone of their collective work is the discovery of one region of DNA that is strongly linked to the development of reticular pseudodrusen.

This is a different region of DNA to that previously associated with AMD, representing a new pathway for the disease.

Beyond genetic analysis, the scope of the project has resulted in many other achievements that can improve how AMD is understood.

Dr Himeesh Kumar who completed his PhD during the project – supervised by Associate Professor Zhichao Wu – developed an AI algorithm that can detect and measure the amount of reticular pseudodrusen in people.

Professor Guymer says that this work is an important step towards understanding AMD.

"We know one gene that is associated with reticular pseudodrusen so now we need to determine what the gene regulates to better understand their cause.

"We are now working to keep the impetus and experience of these research groups going so that together we can work towards more answers."

↑ **AMD answers: CERA Deputy Director Professor Robyn Guymer AM leads research to develop a greater understanding of age-related macular degeneration.**

Growing CERA's supporter community

Chair of CERA's Philanthropy and Engagement Committee Alexandra Grimwade is inspiring others to support research that protects vision.

Grimwade has seen the impact of vision loss on how someone experiences the world.

Her mother has lost peripheral vision due to glaucoma and her paternal grandmother lost her sight through late detection of macular degeneration.

Her career as a teacher only added to her passion for eye health – particularly how early intervention can impact a child's education.

"Sight is a gift, and people should be aware of their eye health just as much as they are the rest of their body," she says.

Knowing her own genetic risk of developing these conditions, she is vigilant about getting her eyes checked.

Her clinician, friend and prolific ophthalmologist Associate Professor Justin O'Day highlighted the research undertaken at CERA and the capacity to help many more people protect their sight.

In 2024 she took on the role as Chair of CERA's Philanthropy and Engagement Committee to inspire more people to make a gift that supports research.

"CERA is a great organisation with brilliant, dedicated people all doing what they do best," she says.

"CERA has a fantastic community of supporters – I want to help grow that community and support it to continue long into the future."

↑ **Bringing people together: Alexandra Grimwade is passionate about vision research.**

Sleep apnoea linked to macular degeneration

Research undertaken at CERA has linked low levels of oxygen in the blood overnight with age-related macular degeneration (AMD).

The findings could suggest sleep apnoea as a modifiable risk factor for AMD.

The study, published in *Clinical & Experimental Ophthalmology*, looked at overnight oxygen levels of people with different stages of AMD and found moderate-to-severe obstructive sleep apnoea was associated with an increased risk of having wet AMD.

"If this association is validated it may well be worth asking people with high-risk early stages of AMD if they have any symptoms suggestive of sleep apnoea, as treating it might reduce the risk of developing wet macular degeneration," says Dr Carla Abbott, co-supervisor of the study.

A lack of oxygen overnight can cause various health issues over time, but the light-sensitive retina in the eye may be particularly sensitive to small drops in oxygen levels.

"The retina is very active at night – it has its highest need for energy while it recovers from the day," says Dr Abbott.

The research was performed by University of Melbourne Master's student Attiqa Chaudhary along with members of CERA's Macular Research Unit, led by Professor Robyn Guymer AM, as part of the wider Synergy High Risk AMD Study.

↑ **Breathing easy: Dr Carla Abbott is investigating the impact of overnight blood levels on AMD.**

Hope for new treatments

Brendan Yagmoor is grateful for the opportunity to participate in research for diabetic macular oedema.

After being warned about his blood sugar in 2010, he successfully controlled his weight for a decade, but in 2021 he was diagnosed with diabetic macular oedema.

Diabetic macular oedema occurs when blood vessels in the macula leak fluid which causes swelling. It makes central vision blurry or wavy making it difficult to read, drive and recognise faces.

After receiving treatment at The Royal Victorian Eye and Ear Hospital, he was offered the chance to participate in a clinical trial at Cerulea Clinical Trials.

Brendan says the experience of participating in research has been very rewarding.

“I’m not sure how long I’ll live – hopefully another 20 years at least – but I want my eyesight to be as good as I possibly can,” he says.

“All this research is happening before significant damage is being done to my eye.

“I’m not sure how significant my results will be, but I’m sure they’ll impact in some small way.”

← **Clearer tomorrow: Brendan finds the experience of participating in a clinical trial rewarding.**

Cerulea Clinical Trials to bring new treatments to Australia

CERA's fully owned, not-for-profit clinical trial centre will improve access to innovative eye treatments.

Victorians now have greater access to new, cutting-edge clinical trials for vision therapies following the launch of Cerulea Clinical Trials.

The centre – supported by a $10 million investment from Breakthrough Victoria – is expected to deliver clinical trials to more than 2500 Victorians a year over the next decade and create 50 new jobs.

Cerulea was launched on 20 May – World Clinical Trials Day – by Victorian Deputy Premier the Hon. Ben Carroll.

A fully owned, not-for-profit subsidiary of CERA, Cerulea Clinical Trials is specialising in advanced therapeutics to prevent and treat blindness, including gene and cell therapies, biologics and medical devices.

It is testing new therapies for eye conditions such as age-related macular degeneration, diabetic eye disease, glaucoma, inherited retinal disease and other rare genetic eye conditions – with a major focus on trialling new therapies for diseases that currently have no treatment or cure.

Cerulea will also boost local research, ensuring that new eye treatments and devices developed in Australia are trialled here where they can benefit local patients first.

Better access

Cerulea Clinical Trials Chair and CERA Managing Director, Professor Keith Martin, says the new centre will harness the growing investment in the global ophthalmic research market to bring more clinical trials to Australia.

"Our aim is to build a specialist clinical trial centre that cements Victoria's reputation as a world leader in preventing blindness and reducing the impact of vision loss," he says.

"It will also support the work of lab-based scientists to develop innovative new treatments to prevent vision loss and restore sight.

"Local eye care professionals will be able to improve the quality of care they provide to their patients by providing them access to emerging treatments in clinical trials."

→ **Celebrating Cerulea: (from left) Minister Carroll launching Cerulea on World Clinical Trials Day with trial participant Kate.**


Cerulea
Clinical Trials
CENTRE FOR EYE RESEARCH AUSTRALIA
Cerulea Clinical Trials
Officially opened by
The Hon Ben Carroll MP
Deputy Premier of Victoria and Minister for Medical Research
20 May 2024

Scanning for diabetes with AI

An AI-powered screening system for diabetes has the potential to improve how the condition is detected and reduce healthcare costs.

Detecting diabetic retinopathy at the earliest possible stage is crucial to protecting a person's vision.

But the complexity of managing diabetes and access to eyecare professionals, particularly in rural settings, means the test is not performed as often as it should be.

Research led by Dr Wenyi Hu and Associate Professor Lisa Zhuoting Zhu at CERA, shows that an accurate AI-powered camera could prevent up to 40,000 cases of blindness from the disease over a 40-year period.

Their study, published in *eClinicalMedicine*, found that by being cheaper to perform than a traditional test and not needing specialised training, an AI scan could be incorporated into many more care settings.

"Our modelling has shown that if we're able to screen over 80 per cent of the diabetic population to find the undetected cases of diabetic retinopathy in the community and protect their vision, we would not only save their sight but save the healthcare system many thousands of dollars in support services," explains Dr Hu.

"There would be some increase in the cost of treating the disease, but since more people get treated earlier, fewer people will progress to blindness – which is our ultimate goal."

The team performed this modelling by comparing an AI-powered system against conventional manual screening at estimated rates of detected and undetected diabetic retinopathy in the community.

The study supports the team's work developing an AI-powered camera that has the capacity to detect a whole host of conditions that are visible through the eye.

"By making this test cheaper and able to be introduced into routine care for everyone, we can find and save the sight of people who might not yet know they have diabetes," says Dr Hu.

"A universal screening program, which is accessible to as many people as possible, could mean more people are able to start treatment before they lose their vision."

→ **Clearer detection: (from left) Researchers Associate Professor Lisa Zhuoting Zhu and Dr Wenyi Hu are using an AI camera to detect diabetic vision loss.**

Group gives consumers a voice

CERA's Consumer Advisory Group, launched in 2024, is embedding consumer voices into research at CERA and Cerulea Clinical Trials.

The research conducted by CERA and Cerulea Clinical Trials happens for one reason – the people experiencing vision loss and their families.

We need to ensure that these people have input into every aspect – from the type of research conducted, to how trials are designed and how findings are ultimately shared with the community.

CERA's inaugural Consumer Advisory Group, appointed in 2024, includes independent consumers – Jane Cherry, Dr Colleen Lewis, Dr Ronelle Hutchinson and Daniel Talko – along with Chris Edwards from Vision Australia, CERA researchers Dr Myra McGuinness, Dr Flora Hui and Dr Luis Alarcon-Martinez and Cerulea Clinical Trials representative Professor Lyndell Lim.

Group Chair CERA Board Director Simon Brewin says the new group oversees the Consumer Program and ensures that consumer insights directly shape research priorities, the development of new treatments for eye disease and the overall direction of CERA and Cerulea.

"The establishment of the group is a turning point," he says.

"Involving consumers directly in our research isn't just the right thing to do – it's going to make our work more impactful.

"These are the voices that matter most, and we're making sure they guide our research."

The program initiative was established by Consumer Involvement and Advocacy Lead Kelly Schulz, who held her role throughout 2024.

"The strength of this group lies in the diversity of perspectives and lived experiences each member brings," she says.

"This advisory group marks the starting point for CERA's broader Consumer Program, laying the foundation for meaningful, long-term involvement of consumers in our research and strategy."

The group provides advice on various aspects of CERA and Cerulea's work, from early research design and clinical trial experience to the rollout of results. This collaboration will help ensure that CERA's research is both practical and responsive to the needs of the community.

The Consumer Program is also supported by more than 30 consumer advisors who have volunteered to provide feedback, advice and guidance on individual research projects.

CERA Managing Director Professor Keith Martin says involving consumers directly in research is a powerful step forward.

"Consumer insights will help ensure our work has real-world impact, benefiting those who need it most," he says.

"The launch of the Consumer Advisory Group marks an important step forward for CERA as it continues to advance eye research.

"By embedding consumer perspectives, CERA is strengthening its commitment to more inclusive, community-driven research – working alongside other organisations that share this goal."

↑ **Consumer conscience: Consumer Advisory Group members (from left) Dr Myra McGuinness, Daniel Talko, Kelly Schulz, Dr Luis Alarcon-Martinez, Dr Flora Hui, Chris Edwards, Dr Ronelle Hutchinson, Jane Cherry, Dr Colleen Lewis, Simon Brewin and Michelle Gallaher.**

Get involved

For more information about the Consumer Advisory Group and to get involved, visit cera.org.au/consumer-program/become-a-partner-in-research-at-cera/

Chair's vision for maximum impact

CERA's new Board Chair Duncan Peppercorn has a vision to maximise the impact and reach of our sight-saving research.

Duncan joined the CERA Board as a Director in February 2024 and was appointed Chair in August, succeeding Olivia Hilton who led CERA though a significant period of growth.

"Chairing CERA provides an extraordinary opportunity to work with great minds, scientists and Board colleagues, and be a part of the future of the organisation," he says.

"It is a privilege to follow on from Olivia's outstanding leadership. I am deeply impressed by the calibre of my Board colleagues – who have skills in entrepreneurship, finance, strategy, medicine and research.

"CERA is a successful organisation. It is in a strong position, with solid financial reserves.

"Despite the challenging environment for medical research institutes and universities in Australia and internationally, we will be looking to make strategic investments to grow the quality of our research in partnership with philanthropy and industry.

"As Chair I hope to open the door to more opportunities and relationships and create connections and partnerships that make more people aware of CERA's research."

Duncan has extensive experience as a senior executive, business consultant and Board Director.

Initially training as an engineer at the University of Cambridge, his career has spanned a diverse array of for-profit and for-purpose organisations, including the Australia Council, Sydney Symphony Orchestra, Social Ventures Australia and, most recently, global consulting firm Partners in Performance.

Global perspective

As our first Sydney-based Chair, Duncan says his appointment is the natural evolution of CERA's focus on global and national partnerships.

"We have a team that is commercialising and translating their research," he says.

"This is crucially important in bringing great ideas to fruition and overcoming the limitation of the traditional research grants system that keeps good ideas in the lab.

"That strong entrepreneurial mindset ensures that our work helps the maximum number of people."

Duncan says the recent CUREator+ investment in gene therapy start-up

Mirugen, which is developing a treatment for the currently untreatable eye disease retinitis pigmentosa, exemplifies this approach.

"By creating Mirugen as a spin-out company to attract further investment, CERA has accelerated the pace of this research and helped it move closer to clinical trial.

"It also leverages the support of philanthropists who backed the blue-sky thinking behind this technology in its early stages – maximising the impact of their support."

Duncan says he is fascinated by the way researchers are applying cutting-edge technologies to prevent vision loss and save sight for people living with diseases which until very recently have been considered untreatable.

"CERA and eye research is also crucially important because the eye is the window to the brain and how it works – opening up new frontiers of research."

He is also inspired by CERA's next generation of emerging research talent.

"We need to maintain an environment that nurtures the talent of our early and mid-career researchers, and encourages innovation," he says.

"CERA has been very successful globally and my aim is to help it grow and continue to thrive."

↑ **Maximising impact: New CERA Board Chair Duncan Peppercorn is aiming to open new possibilities.**

Lead researchers

Dr Luis Alarcon- Martinez
Visual Neurovascular Research
BSc, MSc, PhD

Associate Professor Penny Allen
Bionic Eye Project
MBBS, FRANZCO

Professor Lauren Ayton AM
Retinal Gene Therapy and VENTURE Study
BOptom, PhD, FAAO, FACO, GCOT

Professor Michael Coote
Surgical Glaucoma Research
MBBS, MS, FRANZCO, FRACS

Professor Mark Daniell
Corneal Research
MBBS, MS, FRANZCO, FRACS

Dr Thomas Edwards
Retinal Gene Therapy Research
MBBS, PhD, FRANZCO

Dr Jennifer Fan Gaskin
Ocular Fibrosis Research
MBChb, MD, FRANZCO

Professor Robyn Guymer AM
Macular Research
MBBS, PhD, FRANZCO, FAHMS

Dr Xavier Hadoux (from July 2024)
Ophthalmic Neuroscience
BSc, MSc, Meng, PhD

Professor Alex Hewitt
Clinical Genetics
BMedSci (Hons), MBBS, PhD

Professor Lyndell Lim
Uveitis and Retinal Vascular Disease Research; Chief Medical Officer Cerulea Clinical Trials
MBBS, DMedSci, FRANZCO

Associate Professor Guei-Sheung (Rick) Liu
Genetic Engineering Research
BMedSci, PhD

Dr Isabel Lopez Sanchez
Mitochondrial Biology and Disease
BSc, PhD

Professor Keith Martin
Glaucoma Research
MA, BM, BCh, DM, MRCP, FRCOphth, FRANZCO, FARVO, ALCM

Dr Rod O'Day
Ocular Oncology (Honorary)
MBBS, LLB, BSc, FRANZCO

Associate Professor Ian Trounce
Mitochondria and Neurodegeneration
BSc, PhD

Professor Peter van Wijngaarden
(until July 2024)
Ophthalmic Neuroscience
MBBS, PhD, FRANZCO

Dr Anna Wang
Visual Neuroscience
BSc(Adv)(Hons), PhD

Associate Professor Raymond Wong
Cellular Reprogramming
B. Biomed Sci (Hons), PhD

Associate Professor Zhichao Wu
Clinical Biomarkers
BAppSc(Optom), PhD, FAAO

Associate Professor Lisa Zhuoting Zhu
Ophthalmic Epidemiology
MD, PhD

For more details about our researchers visit cera.org.au

Our Board

We extend the deepest appreciation to our Board members who give their time and expertise to provide strategic direction and governance to CERA.

Duncan Peppercorn
(Joined Board February 2024, elected Chair August 2024)
MA (Hons)

Olivia Hilton
Chair (until August 2024)
BBus (Mkt) (Hons)

Simon Brewin
Royal Victorian Eye and Ear Hospital representative
BBus, Grad Dip HSM, MBL, GAICD

Professor Peter Choong AO
University of Melbourne representative
MBBS, MD FRACS, FAOrthA, FAAHMS, MAICD

Professor Andrew Cuthbertson AO
BMedSci, MBBS, PhD, FAA, FTSE, FAHMS

Suwanee Dharmalingam
B.Comm (Accounting and Finance), LLB (UNSW), Grad Dip Financial Planning

Christine Edwards
(until February 2024)
B App Sc, Post Grade Cert Public Sector Management, M Health Admin, GAICD, Post Grade Cert Editing and Publishing

Professor Darren Kelly
BAppSc (MedLabSc), PhD, FASN

Nuala Kilgallon
BComm (Hons), FCA

Professor Keith Martin
MA, BM, BCh, DM, MRCP, FRCOphth, FRANZCO, FARVO, FAAPPO, ALCM

Wendy Miller
BA, LLB (Hons)

Dr Serge Scrofani
(from February 2024)
BSc (Hons), PhD, MBA, MAICD

Alternate Directors

Professor Robyn Guymer AM
MBBS, PhD, FRANZCO, FAHMS (for Professor Keith Martin from August 2024)

Professor Jenny Wilkinson-Berka
BSc (Hons), PhD (for Professor Peter Choong)

Professor Peter van Wijngaarden
MBBS (Hons), PhD, FRANZCO
(for Professor Keith Martin until July 2024)

CERA Executive team

Professor Lauren Ayton AM

(From August 2024)

Principal Research Fellow, Retinal Gene Therapy Unit and VENTURE Study

Associate Dean Innovation and Enterprise, MDHS, University of Melbourne

BOptom, PhD, FAAO, FACO, GAICD

Leah Borsboom

Co-Chief Operating Officer and Company Secretary

LLB (Hons), GAICD

Tena Cheng

Co-Chief Operating Officer

LLB, BSc

Fiona George

Executive Manager, Finance

BBus (Acc), CPA, GAICD

Professor Robyn Guymer AM

Deputy Director

Head of Macular Research

Professor of Surgery (Ophthalmology)

University of Melbourne

MBBS, PhD, FRANZCO, FAHMS

Professor Lyndell Lim

Head of Clinical Trials Research

Professor of Surgery (Ophthalmology), University of Melbourne

MBBS, DMedSci, FRANZCO

Professor Keith Martin

CERA Managing Director, Head of Glaucoma Research

Ringland Anderson Professor of Ophthalmology, University of Melbourne

MA, BM, BCh, DM, MRCP, FRCOphth, FRANZCO, FARVO, ALCM

Rowan Neilson

Executive Manager, Commercialisation and Legal

BSc/LLB (Hons)

Janine Sim-Jones

Executive Manager, Communication, Fundraising and Advocacy

BA (Journ) GradDipPR, GAICD

Professor Peter van Wijngaarden

(Until July 2024)

Deputy Director

Associate Professor Surgery (Ophthalmology), University of Melbourne

MBBS, PhD, FRANZCO

Abridged financials

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

as at 31 December 2024

	2024 $'000	2023 $'000
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	509	2,123
Trade and other receivables	3,844	1,300
Other assets	458	168
TOTAL CURRENT ASSETS	**4,811**	**3,591**
NON-CURRENT ASSETS		
Financial assets	27,989	32,035
Property, plant and equipment	13,454	7,151
Right-of-use assets	13,302	11,070
Trade and other receivables	0	121
TOTAL NON-CURRENT ASSETS	**54,745**	**50,377**
TOTAL ASSETS	**59,556**	**53,968**
LIABILITIES		
CURRENT LIABILITIES		
Trade and other payables	3,529	4,738
Employee benefits	2,285	2,357
Lease liability	1,119	944
TOTAL CURRENT LIABILITIES	**6,933**	**8,039**
NON-CURRENT LIABILITIES		
Lease liability	13,137	10,539
Borrowings	10,495	5,083
Employee benefits	272	205
TOTAL NON-CURRENT LIABILITIES	**23,904**	**15,827**
TOTAL LIABILITIES	**30,837**	**23,866**
NET ASSETS	**28,719**	**30,102**
EQUITY		
Reserves	21,791	19,352
Retained earnings	6,928	10,750
TOTAL EQUITY	**28,719**	**30,102**

CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

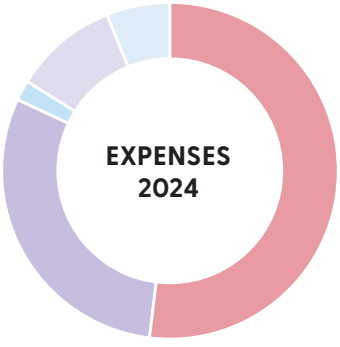
for the year ended 31 December 2024

	2024 $'000	2023 $'000
REVENUE		
Federal and State Government grants	5,050	6,838
Clinical Trials and contract research	8,224	6,356
Donations and bequests	4,181	4,151
Philanthropic and other grants	3,745	2,101
Investment and other income	4,002	3,608
TOTAL REVENUE	**25,202**	**23,054**
EXPENSES		
Research expenses	(13,803)	(14,076)
Research support expenses	(7,923)	(6,165)
Occupancy expenses	(508)	(371)
Depreciation	(2,726)	(1,649)
Finance expenses	(1,625)	(809)
TOTAL EXPENSES	**(26,585)**	**(23,070)**
NET SURPLUS/(DEFICIT)	**(1,383)**	**(16)**

These abridged audited Financial Statements have been extracted from the full audited Financial Statements for CERA and its controlled entities. The full audited Financial Statements can be extracted from the ACNC (Australian Charities and Not-for-profits Commission) website.

CERA operates as a not-for-profit organisation. Accordingly, accumulated surpluses are held as reserves to support future research projects and operations.

32% Clinical Trials and contract research
20% Federal and State Government grants
17% Donations and bequests
16% Investment and other income
15% Philanthropic and other grants



52% Research expenses
30% Research support expenses
10% Finance expenses
6% Occupancy expenses
2% Depreciation

Supporters and acknowledgements

The following generous people and organisations have supported CERA to work towards a world free from vision loss and blindness.

We are grateful for the many generous contributions to our research made by individual donors, along with the support of philanthropic trusts and foundations, industry, government and our member organisations.

Major gifts ($10 000+)

Peter Clemenger AO

Renate Daniell

Marilyn Darling AC

Peto Bros Pty Ltd

Giuseppina Failli from Westside Meat Pty Ltd

Alexandra and Fred Grimwade

Craig Kimberley OAM and Connie Kimberley

Peter Lemon

Jo and Peter Manger

Sherrill Muir

Justin and Sally O'Day

Jane and Julian Rait OAM

We also pay tribute to donors who wish for their contributions to remain anonymous.

Trusts and Foundations ($10 000+)

Australian Vision Research

Betty Brenda Spinks Charitable Trust

Clive and Vera Ramaciotti Foundation

DHB Foundation

Future Vision Foundation

Gras Foundation

Gwenneth Nancy Head Foundation

Harold Mitchell Foundation

Kel and Rosie Day Foundation

Lions 201V3 Ride for Sight

Margaret Miller Foundation

Marjorie M Kingston Charitable Trust

Michelmore Foundation

Norman Beischer Innovation Grant

Retina Australia

Ruth Marie Sampson Foundation

Sir Edward "'Weary" Dunlop Medical Research Foundation

South Coast Foundation

Telematics Trust

The Angior Family Foundation

The Cuthbertson Family Fund

The Danny Wallis Philanthropic Foundation

The Felton Bequest

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The Jack Brockhoff Foundation

The Millar Foundation

The Miller Foundation

The Peggy and Leslie Cranbourne Foundation

The Yulgibar Foundation

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Estate of Harold Raymond Muir

Estate of Lois Elizabeth Oliver

Estate of Mavis Mary Ford

Estate of Nancy Jean Bickart

Corporate supporters

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Royal Victorian Eye and Ear Hospital

We gratefully acknowledge the Royal Victorian Eye and Ear Hospital for facilitating support from the following donors for our research:

H & L Hecht Trust

Endowments

We gratefully acknowledge the support of the University of Melbourne in the ongoing management and direction of the following endowed funds to support our research:

Dorothy Adele Edols Research Fund

Nancy Jean Bickart Bequest (managed by Perpetual Ltd)

Hazel Jean Eastham Bequest

Hector Maclean Fund

Louisa Jean de Bretteville Bequest

Maurice Cantlon Memorial Fund

Winifred Hallam Monds Bequest

Government

Breakthrough Victoria

CUREator+ Medical Research Future Fund

National Health and Medical Research Council

Victorian Medical Research Accelerator Fund

Victorian Government Operational Infrastructure Support Fund

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Diabetes Victoria

Glaucoma Australia

Royal Australian and New Zealand College of Ophthalmologists (RANZCO)

Royal Victorian Eye and Ear Hospital

University of Melbourne

Victorian Lions Foundation

Vision Australia

Partnerships and Associations

Aikenhead Centre for Medical Discovery

Association of Australian Medical Research Institutes (AAMRI)

CCRM Australia

International Agency for the Prevention of Blindness

Medical Research Commercialisation Fund

MedTech Actuator

Melbourne Academic Centre for Health

St Vincent's Hospital, Melbourne

World Health Organization

The Advanced Genomics Collaboration (TAGC)

Honorary Governors

The late Brian L Ansell

Peter Clemenger AO (and the late Joan Clemenger OAM)

Andrew Fairley AM

Professor John Funder AC

The Hon Dr Barry Jones AC

Charles Macek

Tina McMeckan

Andrew G Michelmore AO

Peter Nankivell

Margaret S Ross AM

Professor Hugh Taylor AC

Professor Bob Williamson AO

Vale

CERA expresses its deepest sympathies to the family of the late Brian L Ansell who passed away in 2024. The Ansell family were instrumental in the establishment of CERA through the Ansell Family Trust's support of our early research.

↑ Forward progress: Clinical Trials Coordinator Emily Caruso taking a measurement from Olga Maxwell.

How you can support us

Donate

With your support, we can continue our world leading research and accomplish scientific breakthroughs previously deemed unattainable.

Please visit cera.org.au/donate

Leave a bequest

Make a gift in your will and leave a lasting legacy.

Partnership and funding opportunities

For a confidential discussion about how you can partner with our researchers to help them discover new ways to prevent vision loss contact CERA on philanthropy@cera.org.au

Register for a clinical trial

Be part of clinical research by registering at ceruleaclinicaltrials.org.au/take-part-in-research/register-your-interest

Join our consumer program

Help shape the future of eye research by sharing your lived experience of eye conditions or vision loss.

Please visit cera.org.au/consumer-program

Stay in touch

Visit our website cera.org.au to sign up for our biannual supporter magazine *Visionary* or monthly e-newsletter *Eye-News*.

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Eye Research
Australia

Centre for Eye Research Australia

T +61 3 9959 0000
E cera@cera.org.au
W cera.org.au

ABN: 72 076 481 984