



# The View

News from the Ocular Repair Group at the Save Sight Institute

Welcome to the first edition of *The View*, a newsletter for patients who wish to stay up-to-date on the latest research developments in ocular repair and regeneration.

We have assembled an expert multidisciplinary team of researchers, clinicians and scientists to investigate new and better ways to save sight, and I'm pleased to share some of our projects with you in this edition, with more detail about individual projects, results and clinical trials to follow in forthcoming editions.

I'm especially pleased to introduce you to some of our team members, all passionate and motivated experts in the field of eye research.

The work that we do would not be possible without the generosity of donors and supporters. I thank these visionary individuals and organisations for the immense trust that they put in our team.

Unfortunately, funding for medical research in Australia has never been more uncertain, so the contributions of donors and supporters is more critical than ever.

As doctors and clinicians, we are reminded every day of why we do what we do. It is a privilege to care for patients. Ultimately, we hope that the new treatments and insights will make a real difference to people suffering from a variety of eye diseases and conditions.

Thank you for your interest in our work. I look forward to sharing results and outcomes with you in future editions. I wish you and your family and friends an enjoyable festive season and a healthy and happy 2015.



*Clinical Professor Stephanie Watson,  
head of the Ocular Repair Group.*

Clinical Professor  
Stephanie Watson  
Ocular Repair Group  
Save Sight Institute

**Community Information Morning**  
Presented by the Ocular Repair Group  
Friday 20th February 2015, 10am - 12pm  
Save Sight Institute (Sydney Eye Hospital)  
To register call (02) 9382 7316 or visit  
<http://ssi-org2015.eventbrite.com.au>

## Some of the projects currently underway:

### New Treatments for Dry Eye

Dry Eye and Blepharitis (eyelid inflammation) are common eye disorders, affecting up to 40% of people. Many of these people suffer ongoing discomfort despite available therapies, significantly impacting their quality of life.

We have developed a novel new eye drop which provides relief whilst uniquely addressing all of the underlying aspects.

Clinical trials have found decreased signs and symptoms of blepharitis and dry eye after use, treating both the cause and the symptoms of the conditions, with less side-effects.

We are currently in the process of seeking funding for Phase 2 trials.

### Stem Cell Repair

Our novel and world-first stem cell transplantation technique, growing corneal stem cells on a contact lens (the carrier) and then transferring them to the ocular surface of the patient has already successfully restored sight to a number of patients.

Stem cells play an important role in restoring clear vision and comfort to the surface of the eye.

Our research in this area continues, with a particular focus on the factors required to promote stem cell repair of the ocular surface.

### Sutureless Surgery

Sutures are used to seal ocular wounds and in corneal surgery, including corneal transplantation.

Sutures, however, have a number of disadvantages which includes infection.

Our research team has developed an innovative laser-activated chitosan bioadhesive that can be rapidly applied to the eye with high-burst pressure.

It is also capable of delivering anti-infective and anti-inflammatory agents to wounds.

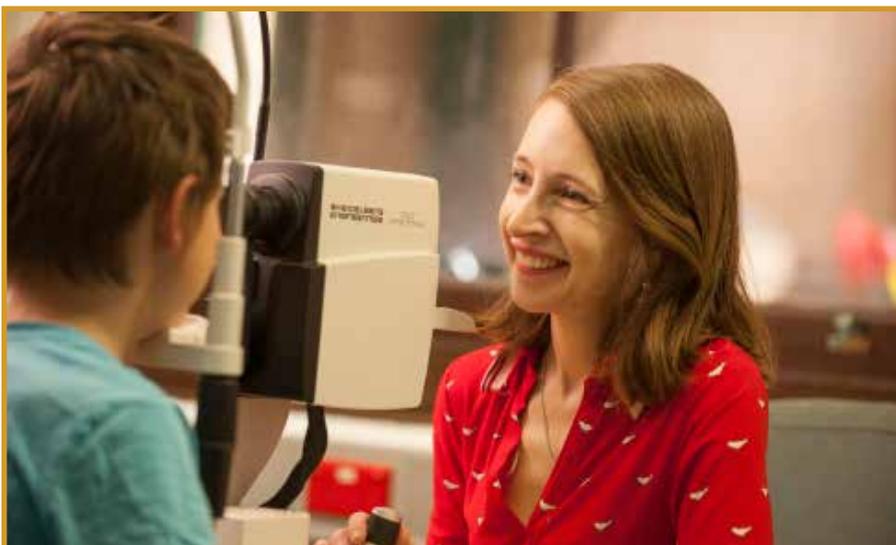
### Serious Ocular Infections Project

Eye infection can irreversibly damage the eye, resulting in vision loss and even blindness.

Prompt and appropriate use of antimicrobials is critical when it comes to saving sight, but antimicrobial resistance is emerging as a significant problem.

Our research aims to determine the pattern of pathogenic microbes and prevalence of antimicrobial resistance in the most common, serious and sight-threatening infections encountered in the field of ophthalmology, namely endophthalmitis (infection of the globe) and microbial keratitis (infection of the cornea).

This project is supported by the Sydney Eye Hospital Foundation.



***“Our novel and world-first stem cell transplantation technique, growing corneal stem cells on a contact lens, has already successfully restored sight to a number of patients”***

## Some of our team members:

### Fight Corneal Blindness Project

This project utilises a sophisticated registry technology platform, developed at the Save Sight Institute, to efficiently collect high quality national data within clinical environments.

The first stage of the project involves post-market surveillance of keratoconus patients who receive corneal cross-linking treatment.

Evidence-based management guidelines, evaluation of new interventions and a true indication of patient related outcomes will be the result, informing the profession's approach to treating keratoconus in the future.

This project is supported by Keratoconus Australia and the Ophthalmic Research Institute of Australia.

### Link Between Breast Cancer Treatment and Dry Eye

We have conducted the first prospective survey study of breast cancer patients on aromatase inhibitors, and have found an increase in the occurrence of dry eye. We continue to investigate this link.

This project is supported by the Ophthalmic Research Institute of Australia.

Dr Dana Robaei  
Project: Ocular Infections

"Ophthalmology offers real and discernable improvements in quality of life. I want to ensure that treatments I offer really work and are backed by strong evidence, hence my interest in clinical research. I hope that my research into corneal infections results in meaningful policies that can be implemented nationally."



Dr Kenneth Ooi  
Project: Dry Eye Treatments

"As both an ophthalmologist and researcher, I am motivated to find new and better ways of treating debilitating and frustrating conditions such as dry eye and blepharitis. I see every day the impact that these conditions have on my patients."



Gayani Gunsekara  
Project: Fight Corneal Blindness

"After working in a school for the blind and visually impaired, I am pleased to be part of research which aims to make a difference to these and many other people. I have a background in orthoptics, health science, and health management and I am putting these skills to good use on the FCB project!"



Eamon Brown  
Project: Serious Ocular Infections

"My father has macular degeneration and had surgery at this very hospital. I'm so pleased to be working alongside the people who saved his vision, and ultimately his livelihood. I'm determined to produce real change for people who suffer from vision problems."



Dr Maria Cabrera-Aguas  
Project: Herpes Simplex Virus Keratitis

"As a little girl I was diagnosed with amblyopia (lazy eye) and underwent rigorous treatment to recover the vision in my right eye. This experience encouraged me to study medicine and public health, and ultimately to work on this important project where I am able to contribute to better delivery of eye health care"



*Continued over*

## New treatments for Viral Blindness

Herpes simplex keratitis is a leading cause of infection blindness in developed nations, and is commonly seen by ophthalmologists throughout Australia.

Our research group is currently developing Australian guidelines for anti-viral therapy for this infection, ultimately aiming to preserve vision for those people affected.

This project is supported by the Sydney Eye Hospital Foundation.

## National Surveillance Studies

In partnership with the Australian and New Zealand Ophthalmic Surveillance Unit, we are investigating the national incidence of scarring disease of the eye surface (ocular cicatricial pemphigoid, Steven Johnson Syndrome) and end-stage limbal stem cell failure.

## Our Team

Dr. Daniel Barthelmes

Dr. Martina Bosch

Eamon Brown

Dr Maria Cabrera-Aguas

Dr. Yi Chiao-Li

A/Prof. Nick DiGirolamo

A/Prof. John Foster

Gayani Gunasekara

A/Prof. Alex Hunyor

Dr. Holly Inglis

Dr. Yves Kerdraon

Dr. Hugo Lee

Dr. John Males

Dr. Ken Ooi

Dr. Dana Robaei

Dr. Jack Tan

Prof. Stephanie Watson

### Our Collaborators:

A/Prof. Frances Boyle

A/Prof Mark Daniell

Prof. Michael Friedlander

Prof. Mark Gillies

Prof. Denis Wakefield

### We thank and acknowledge our loyal supporters:

Sydney Eye Hospital Foundation

Keratoconus Australia

Ophthalmic Research Institute of Australia

NHMRC Career Development Fellowship

NHMRC Project Grant

UNSW Goldstar Award

## Support our research

Donations to the Ocular Repair Group can be made via the enclosed donation form, or online at [www.savesightinstitute.org.au](http://www.savesightinstitute.org.au) by selecting 'Ocular Repair Group' from the USYD online gift form.

You can also call (02) 9382 7316 with a credit card or send a cheque made out to 'The University of Sydney' stating that your gift should be applied to the Ocular Repair Group at Save Sight Institute (K6602/DF027). Cheques can be mailed to : Advancement Services, Level 6, Jane Foss Russell Building, University of Sydney NSW 2006.

**Donations over \$2.00 are tax deductible.**

Save Sight Institute is a centre of The University of Sydney.



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