Gift of **SIGHT**

JULY 2025 NEWSLETTER



Dear friends and supporters,

My thanks to those of you who joined us at our Gift of Sight Lecture on 14th May, either in person or online. It was good to be able to meet and chat with patients and friends again, some of whom we have known for many years. If you missed the lecture, the talks are available to watch on YouTube here.

A group of our vision scientists and students joined me at the annual Association for Vision Research and Ophthalmology (ARVO) Conference, held this year in Salt Lake City, Utah. As the largest eye and vision research organisation in the world, this meeting provides a wonderful opportunity to showcase our work, to see what is being investigated academically worldwide, and to forge new contacts and collaborations. I was an author on eight pieces of research presented at this meeting, ranging from how diet affects your risk of macular degeneration (led by my colleague Dr Arjuna Ratnayaka) to novel ways to detect the earliest progression of macular degeneration as part of our Wellcome funded PINNACLE project.

Some years ago, I was part of a team that conducted a study to assess the role of *Bevacizumab* (Avastin) in treating age-related macular degeneration (AMD) and other eye conditions. Although the drug had been used 'off the shelf' for certain patients, the NHS faced challenges in approving it due to licensing issues. Pharmaceutical companies contested this in court but, based in part on my evidence, a judge ruled that limiting access to the drug would harm public healthcare by keeping costs unnecessarily high. I'm pleased to share that a licensed version of the drug, *Lytenava*, is now available on the NHS for treating wet AMD.

My warmest congratulations to Dr Helena Lee who has received an award of £542,321 from the Medical Research Council. This means she is now able to recommence the OLIVIA study, developing a treatment for Oculocutaneous Albinism type 1 (OCA1). This is amazing news and we're all hugely grateful to the supporters who fundraised to help this project.

Publications in academic journals are vital to prove that research is worthwhile. So far this year we have published 14 academic papers, covering a range of topics from the genetics of AMD to the impact on caregivers supporting patients with retinitis pigmentosa. We typically publish one to two papers per month, and we have continued at that pace this year.

On a more personal note, I am taking part in the Clarendon Marathon in October, running a relay with friends who have generously agreed that any sponsorship received will support Gift of Sight. Details are given on the back page in our Events section.

My thanks, as always, for your ongoing interest and support for our vital eye research.

Best wishes,

Andrew Lotery

Andrew Lotery MD, FRCOphth
Professor of Ophthalmology
University of Southampton

The Gift of Sight Appeal is managed by the University of Southampton which is an 'Exempt Charity' (HMRC reference number X19140) under the terms of the Charities Act 2011.

Professor Parwez Hossain, Consultant Ophthalmologist



Although corneal transplantation is among the most successful procedures for restoring eyesight, it still faces a shortage of donated tissue. Eye donation (ED) restores sight for patients with corneal blindness; however, the waiting list exceeds 6,000 patients, and demand continues to grow. We propose creating an electronic 'Donor Assessment and Identification Tool' (DONAIT) that incorporates artificial intelligence to enhance the ED pathway. This responds to a key recommendation from the 2023 NHS Blood and Transplant (NHSBT) Eye Summit and addresses a significant priority on the risk register.

Ophthalmic lasers could provide a means to increase the availability of suitable corneal tissue for transplantation. I have continued my collaboration with engineers at the world-leading Optoelectronic Research Centre at the University of Southampton to develop a laser that may help produce more suitable corneal tissue through precise layered or sectioned corneal dissection. This will enable multiple uses of a single donor cornea, potentially allowing one cornea to restore sight to two or more recipients.



Our corneal fellow, **Dr Harinderjeet Sandhu,** is pursuing a PhD and we have developed a prototype for tissue dissection. With recent pump-priming funding, we are advancing in our study of next-generation high-precision surgical ablation laser technology. This aims to create a novel therapeutic laser that will significantly reduce collateral tissue damage. Pilot studies suggest that the new laser can limit damage to collateral tissues to less than one cell width - surpassing current technologies.

I also continue working on developing an infection detection chip with colleagues from the University's Network for Antimicrobial Resistance & Infection Prevention, as well as colleagues from Electronic Engineering, Molecular Microbiology, Ophthalmology (Eye Unit) and Southampton University NHS Hospital Trust. By using a technology called electrical impedance, we can identify different types of bacteria without sample preparation and achieve 'instant' detection from just a drop of the specimen.

A dedicated prototype device has been created for clinical samples from patients. Through this cross-faculty clinical project, the team will refine the technology to optimise it for clinical use. This will enable rapid treatment with the appropriate medication for patients with corneal infections, which often require urgent intervention to preserve sight. We have progressed to examining other corneal infections such as Acanthamoeba and fungal pathogens, with pilot studies conducted by academic clinical fellow Dr Mohammed Bashir.

It is satisfying to see these projects come together through many clinical and academic collaborations and focus on patient benefits. Thank you for your interest.



Dr Mohammed Bashir, Academic Clinical Fellow in Ophthalmology

I have been researching fungal corneal infections in inpatients presenting to University Hospital Southampton over the past 10 years. These infections are rare in the UK and are challenging to diagnose, but they can be destructive and often cause long-term damage to the cornea. I have been analysing imaging data from Anterior Segment Optical Coherence Tomography (OCT) in these patients to determine whether the scans can help identify these infections earlier and monitor treatment response. My preliminary work has been accepted for presentation at the upcoming European Association for Vision and Eye Research (EVER) conference in Florence, Italy, this autumn.

The *DONAIT* Project: Digital Solutions in Eye Donation





Investigation Team led by Professor Parwez Hossain

Dr Anna Fairclough, NHS Digital AI Fellow,
University of Southampton / University Hospitals Southampton

Dr Borna Assarian, Academic Foundation Fellow,
University of Southampton / University Hospitals Southampton

Corneal transplantation has the power to restore sight and transform lives. Yet need far outstrips supply: over 6,000 people are currently waiting for a corneal transplant. Sadly, 59% have been waiting more than 18 months, with an annual shortfall of around 1,500 corneas.

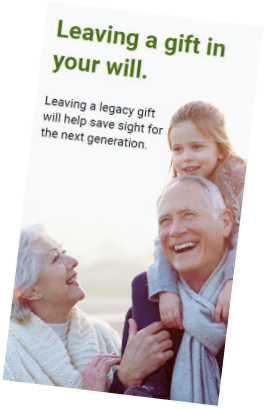
Our audit indicates that fewer than 10% of eligible patients are referred for eye donation within the NHS, with many potential donors overlooked. Data from our single-centre audit shows that only 10% of registered eye donors proceed to donation. We have identified inefficiencies in the process of identifying suitable eye donors and aim to utilise advanced information technology systems to streamline this process, ensuring that suitable donors are not missed and that their wishes are respected.

The DONAIT project, based in Southampton, investigates and implements specific IT tools to monitor Electronic Health Records screening 24/7, evaluating every deceased patient for eye donation eligibility. Using specialised algorithms and AI, with the latest language learning models, it will generate a live, prioritised worklist of suitable donors, providing NHS Blood and Transplant's National Referral Centre with the strongest candidates for eye donation. DONAIT will significantly enhance current eye donation pathways by enabling timely and accurate assessments, reducing eye bank discard rates, and improving corneal transplant viability.

We anticipate that DONAIT could reduce the UK's cornea shortage by one-third within the NHS and plan to extend this technology to other NHS organisations. This will help improve, augment, and boost eye donation and address current shortages.

LASTING LEGACIES

We are indebted to all the generous people who have left a legacy to Gift of Sight, helping support our team's ongoing vision research studies. Every member of the team has been helped in some way by these generous gifts. From the purchase of consumables used in laboratory studies to the funding of PhD studentships, all legacies, whether small or large, make a lasting impact on how we are able to keep eye research projects moving forward. Every study undertaken highlights ideas for further investigations, working towards either a wider understanding of the pathways of disease or developing new treatments.



We have taken this opportunity to attach a link to our new Legacy Leaflet, in case you feel you may like to support us in this way. We'd love you to let us know if you have put Gift of Sight in your will, so that we can make sure we keep you abreast of areas of interest to you.

Two PhD students were funded by a bequest from a lady who suffered with age-related macular degeneration, and was keen to help beat blinding eye conditions. Sarah Macdonald and Catherine Robertson reflected in our June 2022 newsletter, how this amazing generosity meant so much to them. They are both coming to the end of their projects and we look forward to sharing an update from them in our next newsletter.

OUR THANKS

To **Stephanie Constantine-Smith** and her **Silver Swans** dance students who meet weekly in St Thomas's Church Hall, Lymington and have generously raised £247.70 to support our work. Thanks also to **Neil Constantine-Smith, David Macro and their team at Specsavers**, who are long-term supporters of our research team. Their last donation amounted to £395 and we wish them success as they celebrate their 17th anniversary in August, raising funds and awareness for Gift of Sight. Such amazing, ongoing help from our friends in the Lymington Branch of Specsavers.

We spent a lovely afternoon with **Maureen Peters, President of Probus Ladies Club of Bournemouth**, and grandmother to Mike Larcombe, our 'Wiggly-Eyed Warrior'. We gave a talk to the members at their annual charity day and the sum of £350 was raised to support our Nystagmus research.

Jennie and Ailsa were thrilled to attend **Live Aid Liverpool, organised by Tony Cook (TRAM productions)** on the 13th July 2025 at the iconic Adelphi Hotel, Liverpool, celebrating 40 years to the day since the original Live Aid. It was an amazing event, raising vital funds for three charities including Gift of Sight. It was lovely to meet up again with Joe Marsden, who ran 7 marathons in 7 days last year, fundraising for Dr Helena Lee's albinism research. We had great fun and send our heartfelt thanks to Tony, his team and sponsors for their tremendous help.

UPCOMING EVENTS IN 2025

SNOWDON. Sending our best wishes to **Ben and Alex from the Alma Inn, Upham, Southampton** on their climb of Mount Snowdon on 25th August. The original hike was delayed but customers have been generously supporting the two of them as they continue their training. See their JustGiving page here.

ROMSEY TEST WAY. Karen and Paul Larcombe, parents of Mike, our 'Wiggly-Eyed Warrior', their daughter **Nicole,** and her husband **Andy** will be walking 12 miles of the Test Way on 28th September. Their JustGiving page is here if you'd like to support them. We'd love you to sign up to walk one of the distances for us too. Please let us know if you register and we'll send you a polo shirt to wear and will be there to welcome you at the end. Booking details are given on the Rotary Website.

SALISBURY to WINCHESTER. Clarendon Marathon, 5th October. Please support **Professor Andrew Lotery** who is joined by three friends to run this beautiful route as a relay team. Their JustGiving page is here or donations can be made directly through our website, adding a Tribute Type *'on behalf of Clarendon Marathon'*. Thank you.

WINCHESTER QUIZ NIGHT. 24th October at Shawford Parish Hall, Pearson Lane, SO21 2AA, organised by **Vickie Lush**. Arrival 7pm for a 7.30pm start after a short talk by Professor Andrew Lotery. Tickets £15pp include a hot dog (meat or veggie - please confirm when booking) and a cupcake. Please bring your own drinks/nibbles and glasses. Teams of 6 - please mention if you would like to enter a team or buy individual tickets. To book, email vickiealush@gmail.com or phone 07860 779955.

SOUTHAMPTON. Cake sale for Gift of Sight on the morning of 5th November in the front entrance foyer at University Hospital Southampton, Tremona Road, Southampton SO16 6YD.

Contact: Ailsa Walter | T: 023 8059 9073 or Jennie Mugridge | T: 023 8059 5921
Email: info@giftofsight.org.uk Website: www.giftofsight.org.uk

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By cheque: please post to **Gift of Sight, Office of Development & Alumni Relations Building 37, Highfield, Southampton, SO17 1BJ**

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