

Dear friends and supporters

2024 has started in a promising way in many respects.

I was delighted to receive an invitation to give the Paul Henkind Memorial Lecture, awarded for outstanding retinal research, at the February 2024 Macula Society meeting in Palm Springs, California. This is the leading meeting in the world for macular research. The title of my talk was “Deciphering AMD” and I described how, over the last 25 years, we have used a variety of cutting edge tools in genetics, cell culture and machine learning to better understand what causes age related macular degeneration (AMD).



I explained how we studied retinal thickness in over 32,000 so called ‘normal’ individuals. Those who had AMD genetic risk factors showed retinal thinning despite not having been diagnosed with the disease, showing that AMD starts to develop much earlier than previously thought. I also articulated how our analysis of AMD in liver transplant patients showed that complement inhibition had to be given to the eye and not outside the eye e.g. by oral drug therapy, which has now been confirmed through clinical trials. Finally I explained how our work collaborating with computer scientists has resulted in computer programs that can look at an image of the eye and identify what stage of AMD a patient has and whether they will need treatment. This will be a great help in managing patients with the disease. None of this work would have been possible without Gift of Sight’s help. Several of the projects I mentioned included studies undertaken by PhD students supported by Gift of Sight.

I extend my heartfelt thanks to Mr Jeff Smith for his support for our stem cell laboratory. His initial gift enabled Dr Jörn Lakowski to obtain preliminary data, helping to secure an academic grant of £548,535 from the Biotechnology & Biological Sciences Research Council. He has now been awarded a grant of £250,000 from the research charity Retina UK and will recruit a postdoctoral fellow shortly. Jeff has agreed to fund a part time technician for the laboratory to support the growing stem cell team. His generosity emphasises the true value of philanthropy.

The number of people fundraising to help our research has been amazing. Southampton Archery Club will be fundraising for a year, we have a performance of Bach’s St. John Passion in Winchester in March, a musical recital in Highfield in April where I will give a talk, and a gin tasting event in Lymington on the 7th June. I will be running the Cambridge half marathon on the 3rd March with my daughter in aid of Gift of Sight and if you would like to support us please do so through our [JustGiving page here](#). As always thank you for your interest and help for the Gift of Sight Appeal.

With best wishes,



Andrew Lotery MD, FRCOphth
Professor of Ophthalmology
University of Southampton

Isaac Mondon: Masters Student studying genomics and bioinformatics

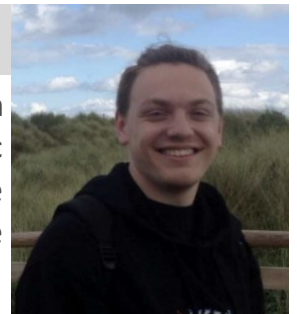


This year I am undertaking my MSc dissertation project with Dr Arjuna Ratnayaka and working closely with Ms Rebecca Miller who is a final year PhD student in the group. I started my MSc at Southampton after completing studies at Cardiff University, where I worked in Huntington's disease, analysing RNA sequencing (RNAseq) data from induced pluripotent stem cell (iPSCs) and mouse models of this disease. There is a seamless continuation using RNA analysis techniques with my current project at Southampton, which has enabled me to further develop my skills in the areas of bioinformatics and genomic medicine.

My project at Southampton is studying how gene expression in retinal pigment epithelial (RPE) cells can change due to the build-up of toxic proteins. RPE cells break down photoreceptor outer segments (POS) from overlying light-sensitive photoreceptors as part of the daily visual cycle. However, this process becomes inefficient with age, where incompletely degraded POS collect inside RPE, which contributes to the death of these cells in conditions such as age-related macular degeneration (AMD). My project utilises my skills in RNAseq, which takes a string of RNA nucleotides (much like a sequence of letters in the alphabet) extracted from cells to produce a series of differentially expressed gene targets that can then be further studied to reveal genetically-linked patterns of damage in RPE cells.

My findings could lead to uncovering new insights at the genetic level in a well-known pathway of RPE damage that is linked with irreversible sight-loss. Thus far, I have made good progress with my project, which I hope to successfully conclude by September 2024. I am grateful to those supporting the Gift of Sight Appeal which enables this type of novel and exciting research to take place in our laboratories at Southampton.

Charlie Ellis: PhD Student



In 2022, I graduated from the University of Sussex with a bachelors' degree in Neuroscience, where I undertook a project focusing on retinal synaptic neuromodulation by nitric oxide. During this period, I developed an interest in the cellular and molecular causes of visual/neurodegenerative diseases including age-related macular degeneration (AMD), Alzheimer's and Parkinson's disease.

Funded by the BBSRC's South Coast Bioscience Doctoral Training Partnership (SoCoBio-DTP) and the University of Southampton's Institute for Life Sciences (IfLS), I began my 4-year PhD programme in October 2022, where I joined Dr Arjuna Ratnayaka's laboratory and the vision science group. My project will investigate an important part of our cells' waste disposal machinery called lysosomes. In healthy cells, lysosomes break down and recycle waste, playing a vital role in cellular maintenance. However, as we age, our lysosomes become less efficient, which leads to waste accumulating inside lysosomes causing damage to these organelles as well as to the cell. Clinically, damage to cells through the accumulation of waste material is seen in eyes of AMD patients and in the brains of patients with neurodegenerative conditions such as Alzheimer's and Parkinson's disease.

My project aims to identify a "fingerprint" of lysosomal dysfunction, so we can better understand their biology at the molecular level. This will provide new information on an important pathway linked with neurodegenerative conditions such as AMD that are associated with advanced age. I am very grateful to the SoCoBio-DTP, the IfLS and the Gift of Sight Appeal for their generous support.

Wessex Regional Ophthalmology Audit Day | Gift of Sight Clinical Award

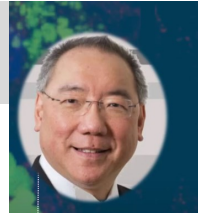
Congratulations to Dr Cara Campbell who is currently working at Salisbury District Hospital. Her presentation “Building back better: Improved patient pathway for new glaucoma patient referrals to hospital eye services” won our Clinical Award. Cara spoke on behalf of the Salisbury glaucoma team, describing the success of a new system to speed up referrals for patients recently diagnosed with glaucoma.



The Wade Lecture (Online) with Professor Sir Peng Tee Khaw

The Eyes are windows to our future : Research shaping the future of health

Thanks to all who attended The Wade lecture on the 13th November 2023. It's always rewarding to hear how our Southampton alumni have made their place in the world and Peng's talk was both interesting and inspiring. The talk was recorded and can be watched on the [University of Southampton's YouTube channel](#).



THANK YOU

MEMORY DONATIONS 2023

We send our warmest thanks to all who commemorated loved ones by sending Memory Gifts to help our research. We remember:

Mr Walter Bayliss | Mrs Anne Binns | Mr Ted Fitzgerald | Mrs Joyce Sare
Mrs May Marriner | Mrs Muriel Reynolds | Mr Peter Kite

Christine's 10 mile walk

Christine's husband was diagnosed with 'wet' Age-related Macular Degeneration (AMD) in October 2011. As a couple Chris and Pete have valued the treatment he has received. Chris enjoys walking and as a personal challenge to herself she decided to walk ten miles without a break, asking her friends and family to sponsor her through her JustGiving page. She has raised an amazing £1,373. A heartfelt thank you from us all Chris.



Province of Hampshire & Isle of Wight Mayflower Lodge No. 8815

Huge thanks to the brethren at Mayflower Lodge No. 8815 for their generous donation of £2,000. Kindness and charitable giving are deeply ingrained within the principles of Freemasonry and we value our relationships with many local Lodges. We know that some of the brethren at Mayflower Lodge benefit from treatment received at Southampton Eye Unit and this further gift from the Lodge is hugely appreciated. Thank you.

Associate Professor Helena Lee: The OLIVIA study

The role of Oral Levodopa in Improving Visual development in Infants and young children with Albinism

This clinical trial was originally planned to start this year. However, the Medicines & Healthcare products Regulatory Agency (MHRA) has requested data that requires a significant amount of additional work, before giving authorisation for the trial to proceed. With no funds available to carry out this work, it is now necessary to apply for new funding to get the trial underway.



Some of the families who have children diagnosed with albinism have offered to fundraise to help my team obtain the data that will be necessary to get the trial going. I am hugely grateful to these generous people. Please read their stories on their fundraising pages and help them by donating through JustGiving. Details can be found on our [Gift of Sight Events page here](#).

FORTHCOMING EVENTS—full details on www.giftofsight.org.uk/events

Bach's St. John Passion - Good Friday 29th March 2024 Winchester College Chapel SO23 9NA

Drinks reception 6pm, performance 7-9pm

Nave seats (facing musicians): **£30pp** | Side seats (no view of musicians): **£20pp**

We are thrilled to be back at Winchester College Chapel to celebrate the 300th anniversary of Bach's St John Passion. *Winchester Bach Voices* will perform a haunting and dramatic musical depiction of the Passion of Christ, as told in the Gospel of John. For full details and to book please see the events page on our [website](#).

Second Wind Clarinet & Saxophone Quartet - Sunday 28th April 2024 at 2.30pm

Portswood Residents Pavilion, 16b Abbotts Way, Southampton SO17 1QT

Enjoy an afternoon of light toe-tapping music with tea and homemade cake! Professor Lotery will be at this fundraising event and will give an update about our vision research studies. There's no need to book just turn up on the day please! Admission is free but there will be a retiring collection.

Portswood Knitwits Charity Fundraising. Portswood Library - Saturday 25th May 10.30am - 1.00pm

Thank you to the members who meet on Monday evenings at Portswood Library to knit and chat. This year's annual fundraising sale will be for Gift of Sight. Please do come along and join us.

Walk for Wiggly Eyes Four - May 2024

Mike Larcombe will be covering a distance of over 2,200km (1,400 miles) in under 90 days, trekking along Croatia's national scenic long distance hiking trail. Walking along picturesque mountain trails, forest paths, coastal walks, and everything in between. Please encourage Mike on yet another massive challenge by donating to his [JustGiving page](#).

820 Spirits Gin Tasting - Friday 7th June 2024 6pm-8pm, £25 per person

Shallowmead Nurseries, Lyminster SO41 8PA

Please join us at this special evening which will include a talk from Professor Andrew Lotery, a bespoke gin masterclass from Tom Simpson and canapes. We're looking forward to this relaxed, informal event. Please visit our [Events page](#) to book your place.

Southampton Archery Club Charity Day - Saturday 20th July 2024, 10am-4pm

Hardmoor Sports Ground, Stoneham Lane, Eastleigh, SO50 9HT

We would love you to join us at the Club's main charity fundraising day, which promises to be lots of fun for all the family. Club members will be undertaking a 24-hour 'shoot' and will be encouraging everyone to test their skills with a bow and arrow. Enjoy 'have a go archery', 'archery tag', BBQ, refreshments and a raffle. All ages and abilities are welcome! Free entry, no need to book in advance.

Contact: Ailsa Walter | T: 023 8059 9073 or Jennie Mugridge | T: 023 8059 5921

Email: info@giftofsight.org.uk Website: www.giftofsight.org.uk

To donate:

Online: visit give.giftofsight.org.uk or use your smartphone to scan the QR code:

By phone: call us on 023 8059 7239

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

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