MARCH / APRIL 2023 # 66

the Ophthalmologist™

the Ophthalmologist POWER List 100

Celebrating 10 Years of Excellence and Impact in Ophthalmology

MARCH / APRIL 2023 # 66

the Ophthalmologist™

Power Personified

Congratulations to Bascom Palmer Eye Institute's ten outstanding members of the 2023 Power List for their notable contributions to the field of ophthalmology.

Top row: Drs. Harry W. Flynn Jr., Janet L. Davis, Ranya Habash, Anat Galor, Carol L. Karp, Hilda Capó,
Bottom row: Drs. Eduardo C. Alfonso, Kendall E. Donaldson, Sonia H. Yoo, Philip J. Rosenfeld

Bascom Palmer Eye Institute®
UNIVERSITY OF MIAMI HEALTH SYSTEM

See other side →

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For the treatment of all stages of neurotrophic keratitis (NK)

NOT JUST ANY SOLUTION

A RESOLUTION

Complete and long-lasting resolution of NK for most patients*[1-4]

- **Up to 72% of patients** achieved complete corneal healing in clinical trials*†[1-3]
- **80% of these patients** remained healed at 1 year (REPARO trial)*[4]

oxervate® (cenegermin-bkbj ophthalmic solution) 0.002% (20 mcg/mL)

* Resolution was evaluated in clinical trials as complete corneal healing, defined as the absence of staining in the lesion area and no persistent staining in the rest of the cornea after 8 weeks of treatment and as <0.5-mm lesion staining at 48-week follow-up.[1-3]

† Key study findings were after 8 weeks of treatment, 6 times daily. REPARO (Study NGF0212): 52 European patients with neurotrophic keratitis (NK) in 1 eye per group; 72% of patients completely healed; vehicle response rate 33.3%. Study NGF0214: 24 US patients with NK in 1 or both eyes per group; 65.2% completely healed; vehicle response rate 16.7%.[2,3]

Important Safety Information

WARNINGS AND PRECAUTIONS

Use with Contact Lens

Contact lenses should be removed before applying OXERVATE because the presence of a contact lens (either therapeutic or corrective) could theoretically limit the distribution of cenegermin-bkbj onto the area of the corneal lesion. Lenses may be reinserted 15 minutes after administration.

Eye Discomfort

OXERVATE may cause mild to moderate eye discomfort such as eye pain during treatment. The patient should be advised to contact their doctor if a more serious eye reaction occurs.

ADVERSE REACTIONS

In clinical trials, the most common adverse reaction was eye pain following instillation which was reported in approximately 16% of patients. Other adverse reactions occurring in 1% to 10% of OXERVATE patients and more frequently than in the vehicle-treated patients included corneal deposits, foreign body sensation, ocular hyperemia, ocular inflammation and tearing.

USE IN SPECIFIC POPULATIONS

Pregnancy

There are no data from the use of OXERVATE in pregnant women to inform any drug associated risks.

Lactation

The developmental and health benefits of breastfeeding should be considered, along with the mother's clinical need for OXERVATE, and any potential adverse effects on the breastfed infant from OXERVATE.

Pediatric Use

The safety and effectiveness of OXERVATE have been established in the pediatric population. Use of OXERVATE in pediatric patients 2 years of age and older is supported by evidence from adequate and well-controlled trials of OXERVATE in adults with additional safety data in children.

INDICATION

OXERVATE® (cenegermin-bkbj) ophthalmic solution 0.002% (20 mcg/mL) is indicated for the treatment of neurotrophic keratitis.

DOSAGE AND ADMINISTRATION

Instill one drop of OXERVATE in the affected eye(s), 6 times a day at 2-hour intervals for eight weeks.

To report ADVERSE REACTIONS, contact Dompé U.S. Inc. at 1-833-366-7387 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

Please see the Brief Summary of full Prescribing Information for OXERVATE on the following page.

References: 1. OXERVATE® (cenegermin-bkbj) ophthalmic solution 0.002% (20 mcg/mL) [US package insert]. Boston, MA; Dompé U.S. Inc.; 2019. **2.** Bonini S, et al. *Ophthalmology*. 2018;125:1332-1343. **3.** Pflugfelder SC, et al. *Ophthalmology*. 2020;127:14-26. **4.** Data on File. Clinical Study Report (NGF0212). Dompé U.S. Inc., 2016.

See more clinical data
OXERVATE.com/hcp

Dompé

oxervate®
(cenegermin-bkbj ophthalmic solution) 0.002% (20 mcg/mL)

Brief Summary of full Prescribing Information

Consult the full Prescribing Information for complete product information, available at www.oxervate.com/prescribing-information.

INDICATIONS AND USAGE

OXERVATE® (cenegermin-bkbj) ophthalmic solution 0.002% is indicated for the treatment of neurotrophic keratitis.

DOSAGE AND ADMINISTRATION

General Dosing Information

Contact lenses should be removed before applying OXERVATE and may be reinserted 15 minutes after administration.

If a dose is missed, treatment should be continued as normal, at the next scheduled administration.

If more than one topical ophthalmic product is being used, administer the eye drops at least 15 minutes apart to avoid diluting products. Administer OXERVATE 15 minutes prior to using any eye ointment, gel or other viscous eye drops.

Recommended Dosage and Dose Administration

Instill one drop of OXERVATE in the affected eye(s), 6 times a day at 2-hour intervals for eight weeks.

WARNINGS AND PRECAUTIONS

Use with Contact Lens

Contact lenses should be removed before applying OXERVATE because the presence of a contact lens (either therapeutic or corrective) could theoretically limit the distribution of cenegermin-bkbj onto the area of the corneal lesion. Lenses may be reinserted 15 minutes after administration.

Eye Discomfort

OXERVATE may cause mild to moderate eye discomfort such as eye pain during treatment. The patient should be advised to contact their doctor if a more serious eye reaction occurs.

ADVERSE REACTIONS

Clinical Studies Experience

Because clinical studies are conducted under widely varying conditions, adverse reaction rates observed in the clinical studies of a drug cannot be directly compared to rates in the clinical studies of another drug and may not reflect the rates observed in practice.

In two clinical trials of patients with neurotrophic keratitis, a total of 101 patients received cenegermin-bkbj eye drops at 20 mcg/mL at a frequency of 6 times daily in the affected eye(s) for a duration of 8 weeks. The mean age of the population was 61 to 65 years of age (18 to 95). The majority of the treated patients were female (61%). The most common adverse reaction was eye pain following instillation which was reported in approximately 16% of patients. Other adverse reactions occurring in 1-10% of OXERVATE patients and more frequently than in the vehicle-treated patients included corneal deposits, foreign body sensation, ocular hyperemia, ocular inflammation and tearing.

USE IN SPECIFIC POPULATIONS

Pregnancy

Risk Summary

There are no data from the use of OXERVATE in pregnant women to inform any drug associated risks.

Administration of cenegermin-bkbj to pregnant rats or rabbits during the period of organogenesis did not produce adverse fetal effects at clinically relevant doses. In a pre- and postnatal development study, administration of cenegermin-bkbj to pregnant rats throughout gestation and lactation did not produce adverse effects in offspring at clinically relevant doses.

Lactation

Risk Summary

There are no data on the presence of OXERVATE in human milk, the effects on breastfed infant, or the effects on milk production. The developmental and health benefits of breastfeeding should be considered, along with the mother's clinical need for OXERVATE, and any potential adverse effects on the breastfed infant from OXERVATE.

Pediatric Use

The safety and effectiveness of OXERVATE have been established in the pediatric population. Use of OXERVATE in this population is supported by evidence from adequate and well-controlled trials of OXERVATE in adults with additional safety data in pediatric patients from 2 years of age and older.

Geriatric Use

Of the total number of subjects in clinical studies of OXERVATE, 43.5 % were 65 years old and over. No overall differences in safety or effectiveness were observed between elderly and younger adult patients.

NONCLINICAL TOXICOLOGY

Carcinogenesis, Mutagenesis, Impairment of Fertility

Carcinogenesis and Mutagenesis

Animal studies have not been conducted to determine the carcinogenic and mutagenic potential of cenegermin-bkbj.

Impairment of fertility

Daily subcutaneous administration of cenegermin-bkbj to male and female rats for at least 14 days prior to mating, and at least 18 days post-coitum had no effect on fertility parameters in male or female rats at doses up to 267 mcg/kg/day (1709 times the MRHOD).

In general toxicology studies, subcutaneous and ocular administration of cenegermin-bkbj in females was associated with ovarian findings including persistent estrus, ovarian follicular cysts, atrophy/reduction of corpora lutea, and changes in ovarian weight at doses greater than or equal to 19 mcg/kg/day (119 times the MRHOD).

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Peer 2 Peer

THE PODCAST

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“We got caught up very much in spectacle independence as a criteria of patient satisfaction and I think that was pretty much a blind pathway.”

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Rayner

The Power of One

Hundreds of nominations from all over the world, but let's not forget the impact just one doctor – or one patient – can have.

Perhaps my favorite question for ophthalmologists is something like, "When did you know ophthalmology was right for you?" And, though there is huge diversity in the field, the answers have generally followed a similar pattern. So many doctors have mentioned a single moment, in which they encountered a single patient who had their life transformed through the medicine and science of ophthalmology. It might be the first time they saw the immediate success of a cataract surgery or the smile on a patient's face after refractive correction. Every ophthalmologist I've met so far has countless stories of patients who were able to keep playing with their grandchildren or enjoy their hobbies – in other words, improved quality of life – all thanks to their eye doctor.

I've been thinking about this commonality in the run-up to the Power List. This year, we decided on a big and bold theme: "Ten Years of Excellence and Impact in Ophthalmology." But measuring and quantifying "impact" represents a serious challenge. Despite the best attempts of the scientific community to assess impact in terms of citation numbers, papers published, or even the profitability of new innovations, it's clear that there is more to the true scale of ophthalmology's impact.

After all, how do you objectively measure the impact of giving someone an extra five years of seeing their grandchildren grow up? How do we put a numerical value on the freedom and quality of life that comes from being able to get back behind the wheel?

Well, I truly believe the Power List reflects the excellence and the measurable and immeasurable impact that defines the entire field. But, as ever, we note that no such list can ever be definitive. We can only show an impressive cross section of the many, many people who have shaped the field.

The very best of ophthalmology is, in my opinion, found in those stories of one patient or a single transformative moment. So, while celebrating the 100 figures on this year's list, let's take a moment to remember that the most comprehensive record of ophthalmology's impact and excellence is found not in accolades, papers, or successfully commercialized products, but in the transformed lives of patients – each and every one of them.

Jon Greenaway
Editor

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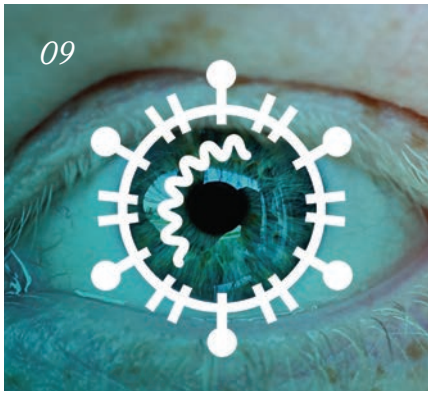

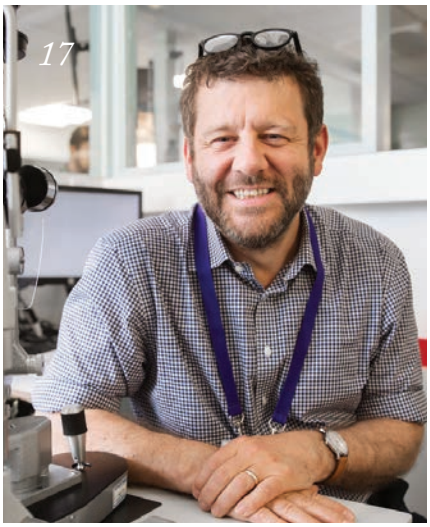

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REFERENCE

1. Glaukos Data on File.

iStent infinite® IMPORTANT SAFETY INFORMATION

INDICATION FOR USE. The iStent infinite® Trabecular Micro-Bypass System Model iS3 is an implantable device intended to reduce the intraocular pressure (IOP) of the eye. It is indicated for use in adult patients with primary open-angle glaucoma in whom previous medical and surgical treatment has failed. **CONTRAINDICATIONS.** The iStent infinite is contraindicated in eyes with angle-closure glaucoma where the angle has not been surgically opened, acute traumatic, malignant, active uveitic, or active neovascular glaucoma, discernible congenital anomalies of the anterior chamber (AC) angle, retrobulbar tumor, thyroid eye disease, or Sturge-Weber Syndrome or any other type of condition that may cause elevated episcleral venous pressure. **WARNINGS.** Gonioscopy should be performed prior to surgery to exclude congenital anomalies of the angle, PAS, rubeosis, or conditions that would prohibit adequate visualization that could lead to improper placement of the stent and pose a hazard. **MRI INFORMATION.** The iStent infinite is MR-Conditional, i.e., the device is safe for use in a specified MR environment under specified conditions; please see Directions for Use (DFU) label for details. **PRECAUTIONS.** The surgeon should monitor the patient postoperatively for proper maintenance of IOP. Three out of 61 participants (4.9%) in the pivotal clinical trial were phakic. Therefore, there is insufficient evidence to determine whether the clinical performance of the device may be different in those who are phakic versus in those who are pseudophakic. **ADVERSE EVENTS.** The most common postoperative adverse events reported in the iStent infinite pivotal trial included IOP increase ≥ 10 mmHg vs. baseline IOP (8.2%), loss of BSCVA ≥ 2 lines (11.5%), ocular surface disease (11.5%), perioperative inflammation (6.6%) and visual field loss ≥ 2.5 dB (6.6%). **CAUTION:** Federal law restricts this device to sale by, or on the order of, a physician. Please see DFU for a complete list of contraindications, warnings, precautions, and adverse events.

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GLAUKOS®

Upfront

Research
Innovation
Trends

Closing the Research Gap

Underrepresentation in ophthalmic research calls for serious change

Although more than US$5.4 billion is spent on tackling visual impairment in the US annually, racial and ethnic inequities mean that not all are given access to the healthcare they need. With chronic diseases such as diabetes becoming more common within the growing population, the risk of eye disease is at an all-time high. If not addressed soon, the imminent demand in ophthalmic care could exacerbate current inequities.

To combat this matter, researchers conducted a scoping review to investigate the current gaps within health inequity research pertaining to ophthalmology (1). Out of the 75 studies included in the final sample, 93 percent pertained to race and ethnicity. Among the findings, six studies showed that White patients were more likely to follow up with an ophthalmologist than patients from other races. Several studies indicated that Hispanic individuals were more likely to develop conditions such as cataracts and myopia than White individuals; however, they were also less likely to adhere to annual eye examinations. Similarly, although several studies found that Black individuals were more likely to develop glaucoma than White patients, they were also found less likely to access ophthalmic care.

As well as race and ethnicity, 53 percent of the studies pertained to sex and/or gender. These findings were mixed; although several studies indicated that men were more likely than women to develop certain eye conditions, such as primary open-angle glaucoma. Other studies found that the male sex was associated with decreased risk of vision impairment. Similarly, where some studies found that women were more likely to be compliant and/or follow up with care, others found that women had higher eye screening failure rates and were less likely to undergo certain ophthalmic surgical procedures.

Although there seems to be a positive trend in health inequity ophthalmic research there are also clear gaps. The researchers concluded by recommending that future studies examine the barriers to clinical study, medical trainee recruitment, and the implementation of telemedicine in underresourced areas.

See references online.

Mind the (Retinal Age) Gap

Researchers explore the association between the retinal age gap and the risk of kidney failure

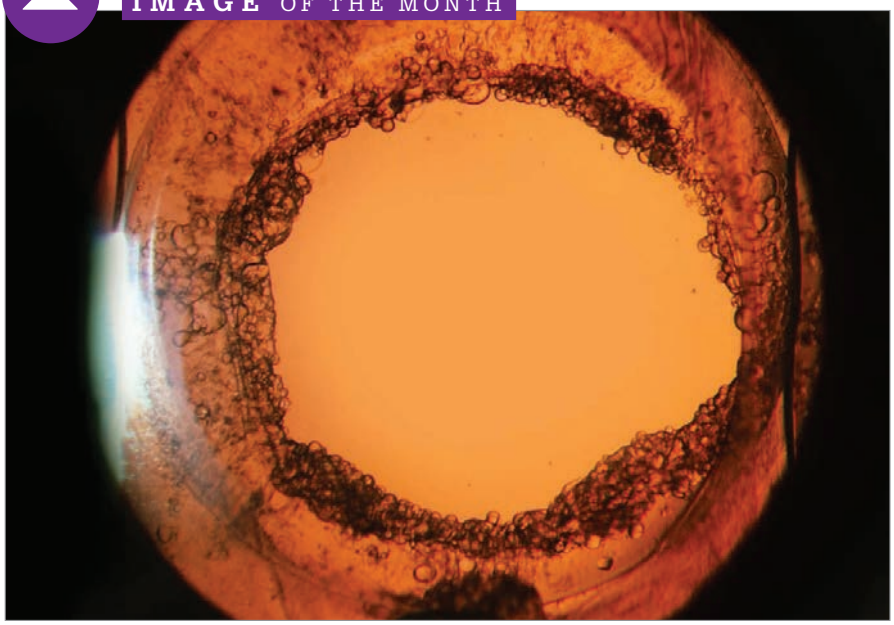
Chronic kidney disease (CKD) affects an estimated 15 percent of the US population (1). Although there is evidence to indicate a relationship between aging biomarkers and CKD or end-stage kidney disease (ESKD), current investigations are limited by small scale sample sizes and cross-sectional designs.

To identify new, more powerful biomarkers, a research team set out to explore the associations between the retinal age gap (RAG, defined as the gap between retina-predicted age and chronological age) and the risk of incident kidney failure.

The results showed that for every year increase in retinal age gap, there was a corresponding 10 percent increase in the risk of incident kidney failure. Moreover, the risk of developing incident kidney failure in participants with a RAG in the fourth quartile was 2.77-fold higher than those in the lowest quartile. The authors conservatively note that their findings suggest that RAG could be a "promising noninvasive predictive biomarker for incident kidney failure."

See references online.

IMAGE OF THE MONTH



Crystal Clear Capsulotomy

This image from the Ophthalmic Photographers' Society Scientific Exhibit Photo Contest was displayed at the American Academy of Ophthalmology (AAO) meeting in 2022. This stunning slit lamp picture of a Post Yag Laser Capsulotomy was taken by Kasi Sandhanam from the Singapore National Eye Centre in Singapore

Credit: Post Yag Laser Capsulotomy courtesy of the Ophthalmic Photographers' Society

Would you like your photo featured in Image of the Month? Send it to edit@theophthalmologist.com

QUOTE OF THE MONTH

"I can gladly write that on the first day of Black history month, I woke up to the news that I was no longer the only Black ophthalmology resident in LA. There are now two."

David Peprah, ophthalmology resident at UCLA Jules Stein Eye Institute, California, USA.

Credit: Images used sourced from Unsplash.com

Credit: Eye image sourced from Unsplash.com

A Shared Interest

Researchers identify novel associations between COVID-19 and AMD

Because of AMD's association with a higher likelihood of COVID-19 complications than type II diabetes or obesity, researchers from The Boston University Chobanian & Avedisian School of Medicine hypothesized that AMD and COVID-19 may share some common genetic risk factors (1).

To identify these genetic determinants, the researchers evaluated genetic correlations between AMD and COVID-19 using cross-phenotype meta-analysis (pleiotropy analysis). The results identified a novel association between both conditions and PDGFB gene variation: a gene that plays a significant role in the abnormal blood vessel changes that occur in AMD.

Researchers also used Mendelian randomization to investigate the relationships between PDGFB variants, Pdgfb concentrations in blood, AMD, and COVID-19 outcomes. These studies identified a causal relationship between complement pathway dysfunction in AMD and subsequent infection by COVID-19.

These findings suggest that lowering PDGFB expression and serum PDGF-BB concentrations may reduce the severity of COVID-19, particularly in patients aged 40 years and up.

See references online..

In My View

Experts from across the world share a single strongly held opinion or key idea.

One in Ten Million

What's to blame for the lack of Black ophthalmology residents in the US?

By David Peprah, an ophthalmology intern at UCLA Jules Stein Eye Institute. He is a product of the Rabb Vennable Excellence in Ophthalmology Program of the National Medical Association.

Little ophthalmology is taught in medical school, and so, when my three months of dedicated ophthalmology clinic came around, I threw myself into it. One morning, I was practicing applanation tonometry and my patient happened to be a Black male. Given his race, he was three times more likely to have glaucoma, and I – being a Black male in ophthalmology – was statistically much less likely to receive him. Appreciating the rare moment, my patient confided that I was "the first Black ophthalmology resident [he] had seen in 20 years." It was the second time I had heard that phrase that morning.

Up until residency, I had only thought about residency in the context of a hospital – not a city. Slowly, however, it dawned on me that I was the only Black ophthalmology resident for the whole 10 million residents of LA county. In this city of millions, how could I be the only Black anything? I texted my family to process this reality and then fired off a quick tweet, not knowing what would come next (1).

My tweet went viral and sparked a conversation across multiple social media platforms around race and medicine. Some congratulated me and others, who understood my predicament, encouraged me to remain strong. Rather than meaning to boast about my own exceptionality, my tweet was meant to highlight the sense of loneliness I felt in what was supposedly the most innovative field – and purportedly in the most progressive state. It is important to note that I am not trying to be a stand bearer or trailblazer. Although I am proud of my work so far, I am aware of my privilege. There have been many Black residents that have trained in LA before me that simply are not given the recognition they deserve.

LA was formally the home of the KING-DREW-UCLA Ophthalmology Residency Program; the same program that appointed famed Black inventor and ophthalmologist, Patricia Bath, as chair in 1983. In this position, Bath became the first female ophthalmology residency program director in the US, and in the Martin Luther King Jr. Community Hospital (MLK) in Compton, no less. At a time when so many Black residents were systematically excluded, LA and Howard University in Washington DC provided a hopeful future for young, aspiring Black ophthalmologists.

As the first female member of the Jules Stein Eye Institute, the challenges of intersectional identity no doubt impacted Bath's career, resulting in her decision to take leave in Europe so that she could continue her work in a more progressive environment. Despite her pioneering efforts, Bath's legacy no longer lives on in the residency she helped establish. Around the turn of the century, the King/Drew-UCLA ophthalmology program lost accreditation and, as a result, no longer offers residency programs. A legacy effaced – but why?

"...it dawned on me that I was the only Black ophthalmology resident for the whole 10 million residents of LA county."

Systemic racism and a lack of viable support are to blame. With only 6.3 percent of resident ophthalmologists identifying as underrepresented in medicine (URiM), ophthalmology is now the least diverse specialty amongst all residency specialties (2). Disappointingly, this rate is below the 7.2 percent of practicing ophthalmologists who identify as URiM.

Implicitly, one wonders if Black people are able to grasp the complexity that underlies the scientific and technological innovations that have defined our field. Many assume that the composition of a residency class is meritocratic and so, rather than being an issue of discrimination, many believe that the lack of Black residents merely reflects an inability to perform and innovate. Alongside being completely false, this assumption enables the continuation of discrimination in the field. Irrespective of how the meritocracy has cultivated advancement and progress, it is now imperative that we challenge it, ensuring that Black residents are afforded the same opportunities as their White counterparts.

It has become all too familiar for Black trainees and faculty members to experience suspicious eyes and silent pauses on introductions. We adapt the way we speak, focus on communicating as clearly as possible, and constantly calculate the risk–reward ratio of asking for help, knowing that the perception of our competency will be penalized. It comes as no surprise that an investigation by STAT found that "Black residents either leave or are terminated from training programs at far higher rates than white residents (3)."

We need to move beyond seeing diversity, equity, and inclusion as merely the cost of doing business. We are more than just insurance against public outrage or charity cases – there is real importance in the work we produce. Alongside improved clinical outcomes and increased diversity in clinical trials that can more accurately reflect the diversity of the American population, patients feel more seen with patient–physician racial concordance, further highlighting the importance of increased diversity in ophthalmology (4).

Although Black people have been presidents of the AAO and chairs of well established ophthalmology departments, representation is more than just who sits at the top and who is left at the bottom. Representation covers all levels and ultimately shapes the priorities of our profession reflected in patient care, research, and community engagement. Although programs like the Minority Ophthalmology Mentoring program have done their part, it is now time for residency selection committees to chip in, lifting their gates higher to embrace a holistic review (5).

In the spring of 2023, there will be major considerations regarding diversity with a ruling pending against Harvard University and race-based admissions (6). Such a decision threatens affirmative action at colleges and universities around the nation, decreasing the representation of Black and Latino students, while bolstering the number of White and Asian ones. Justice Samuel A. Alito Jr. implied that preferentially considering one applicant, no matter how disadvantaged, will come at the cost of another. This age-old idea harkens back to the difference between equity and equality. Although equality seeks to treat everyone the same, it ignores where one starts. Equity, on the other hand, accounts for one's starting point and has the end goal of equality.

It is now more important than ever that institutions zoom out and see their role in shaping society. As shown during the tumultuous spring of 2020, an inequitable society is fundamentally unstable. Diversity shouldn't have to rely on reactionary efforts to mitigate the fallout from visceral displays of racism in the media. Let's instead invest in the longevity of our communities and begin to see diversity, equity, and inclusion as key areas in which ophthalmology can innovate.

I can gladly write that on the first day of Black history month, I woke up to the news that I was no longer the only Black ophthalmology resident in LA. There are now two.

Reference

1. *Twitter (2023). Available at: https://bit.ly/3kwIpTK.*
2. *A Atkuru et al., "Trends in Racial Diversity among United States Ophthalmology Residents," Ophthalmology, 129, 957 (2022). PMID: 35351473.*
3. *STAT (2022). Available at: http://bit.ly/3EJTszJ.*
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6. *The New York Times, "Supreme Court Seems Ready to Throw Out Race-Based College Admissions" (2022). Available at: https://bit.ly/3m8xAHQ.*


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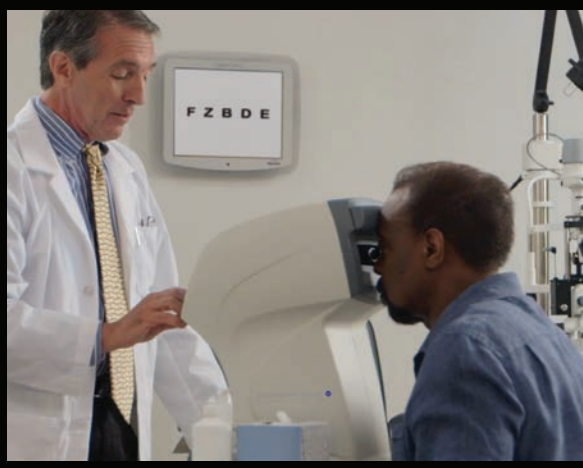

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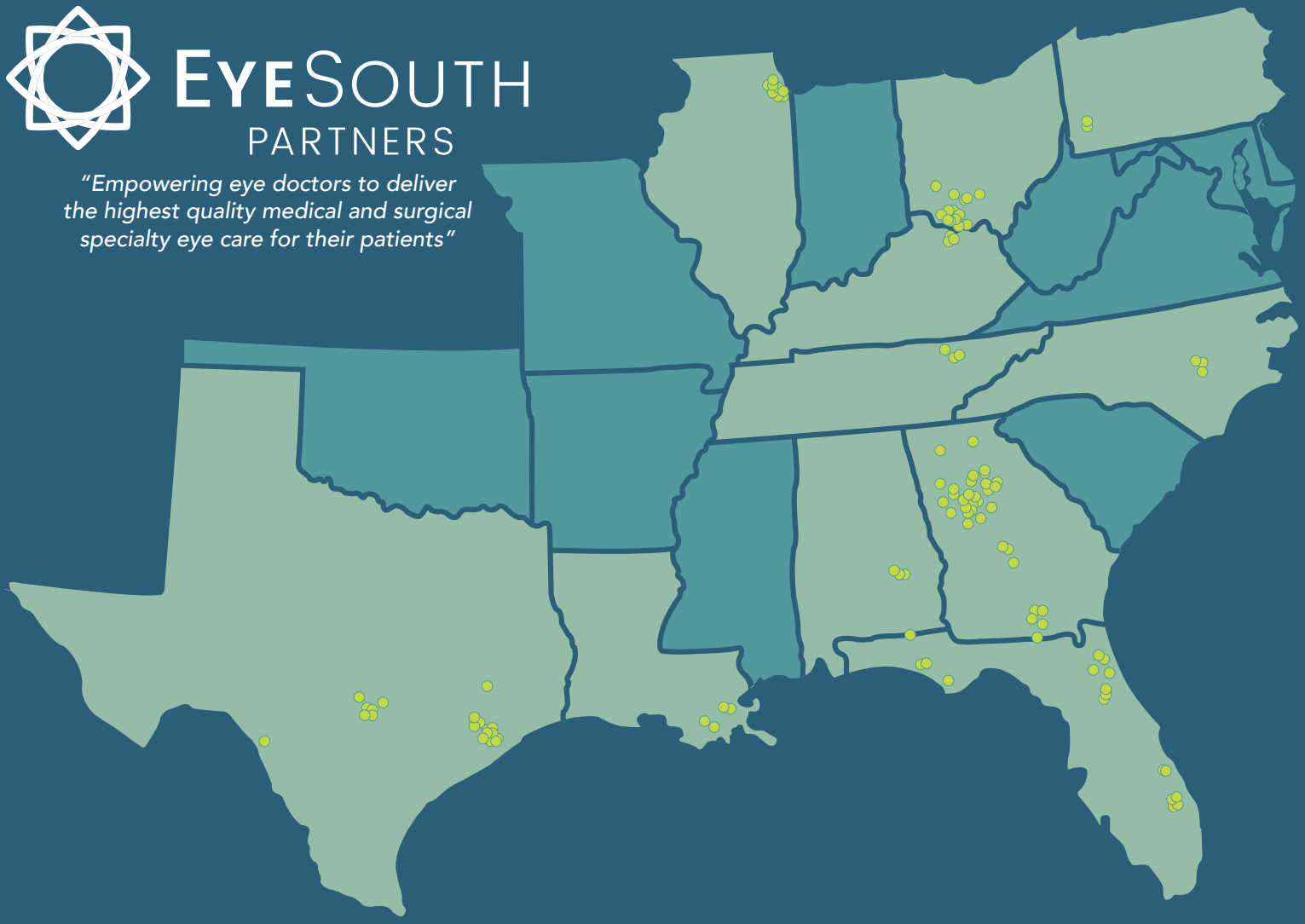

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the Ophthalmologist POWER List 100

The Power List is back! As usual, we celebrate the most influential figures in ophthalmology from all around the world, but for our 10th iteration of the Power List, we settled on a special theme: "Ten Years of Excellence and Impact in Ophthalmology"

Despite the 10-year emphasis and a more rigorous nomination process, we still received many hundreds of nominations. Those nominations were passed to a panel of 15 internationally renowned judges, who were given the extreme challenge of deciding upon just 100 individuals whose excellence and impact cannot be ignored.

And so, in our latest issue, we are delighted to celebrate 100 titans and trailblazers whose dedication to eye care helps drive the whole field forward. As always, we do not claim the Power List to be definitive, but we can say that it is a glorious snapshot of the excellence that can be found in all corners of our community and a wonderful reflection of the great impact you all have on patients everywhere. To those familiar faces from Power Lists past and to those ophthalmologists who find themselves here for the first time – hearty congratulations! And to everyone reading this: Welcome to The Ophthalmologist Power List 2023.

1

Carol L. Shields

Chief, Ocular Oncology Service, Wills Eye Hospital, Thomas Jefferson University Philadelphia, USA

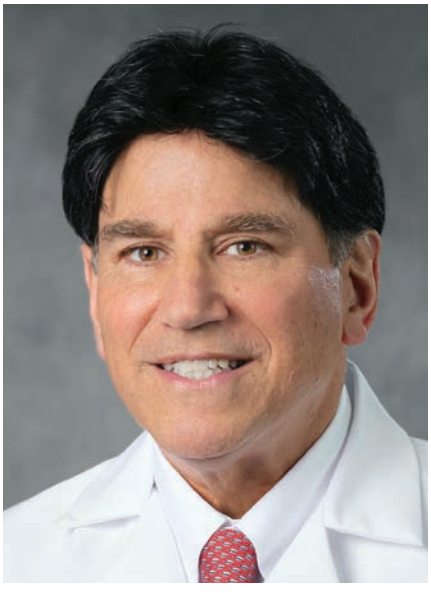
Why did you decide to pursue ophthalmology/your subspecialty? I was attracted to the precision of ophthalmology and the ability to bring back sight with a single surgery.

What is your proudest contribution to ophthalmology / your subspecialty? My proudest contribution to our field is in the subspecialty of ocular oncology where I have spent my career examining various tumors and their imaging features, treatments, and outcomes.

If you could restart your career would you do anything differently? I have been very satisfied with my career – it wasn't always easy but it was satisfying. I was lucky to be able to work with my husband Jerry A. Shields and together we had a wonderful academic and family life.

When you are no longer practicing, what do you want your legacy to be? She cared for each individual patient with the highest standards, gave it her heart, and we will never forget what she has taught us.

Do you have any advice for young, aspiring ophthalmologists? Do what you love and love what you do.



2

Robert N. Weinreb

Distinguished Professor and Chair, Ophthalmology, Director, Shiley Eye Institute, San Diego, USA

Why did you decide to pursue ophthalmology/your subspecialty? With a background in mathematics, computer science and electrical engineering, I was interested in visual perception and thought it might be possible to interface computers with the brain to restore and enhance vision. I realized that I would need a medical degree to engage in clinical vision research. I discovered glaucoma as a resident, a specialty that was replete with unmet needs and ripe with opportunities to translate laboratory discoveries to enhance patient care.

What are your predictions for what will change in ophthalmology / your subspecialty over the next 10 years ? There will be a convergence of big data, data science, medical bioinformatics and wearable technologies for glaucoma.

What do you credit most for your success over the course of your career? One should never stop learning as there always are many more questions about glaucoma than answers. A plaque in my office reads "I am still learning" (Michelangelo). Every day, I am reminded how fortunate I am to be able to do this.

3

Gus Gazzard

Director of Surgery and Consultant Ophthalmic Surgeon, Moorfields Eye Hospital & UCL Professor of Ophthalmology, UK

Why did you decide to pursue ophthalmology/your subspecialty? A love of the science of perception - and the surgery is pretty cool too!

Who is your role model (ophthalmic or otherwise) and why? David Taylor - a legendary pediatric ophthalmologist at Great Ormond Street. He taught me and so many others that the patient always comes first.

What is your proudest contribution to ophthalmology/your subspecialty? Changing the treatment of newly diagnosed glaucoma patients and showing that we can prevent visual field loss without medication.

What do you credit most for your success over the course of your career? Dogged determination to keep going!

4

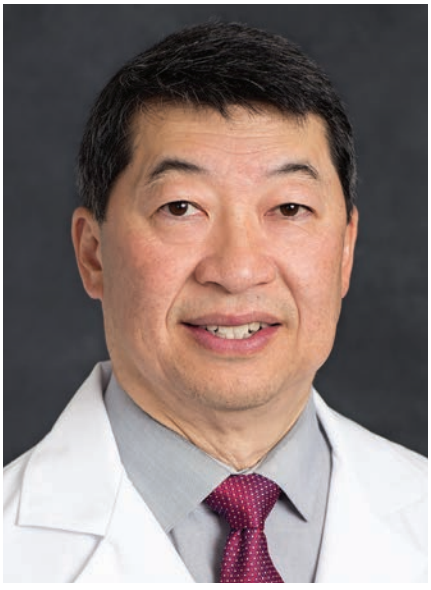
Iqbal "Ike" K. Ahmed

Professor, Department of Ophthalmology and Visual Sciences, University of Utah, USA

Why did you decide to pursue ophthalmology/your subspecialty? The technical micron level surgical expertise required to preserve the most precious sense of our body, protecting the essence of what it is to live – to see the world!

What is your proudest contribution to ophthalmology/your subspecialty? The creation of a new approach in glaucoma (Interventional Glaucoma) and new surgical genre (MIGS or Micro-Invasive Glaucoma Surgery). Changing the treatment of glaucoma from a passive to an active one, addressing adherence, risks, and limitations of traditional treatments to improve the quality of life of those suffering with glaucoma. To turn a specialty on its end has been a challenge but together we are finding a better way to help our patients.

Do you have any advice for young, aspiring ophthalmologists? Be genuine and do the right thing.



5

David Chang

Private practice, Altos Eye Physicians, Los Altos, California; Clinical professor, University of California, San Francisco, USA

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? Due to the high global volume of cataract surgery, economic and environmental sustainability is a major challenge. Amazingly, the American healthcare system accounts for nine percent of carbon emissions in the United States and about a quarter of greenhouse gas emissions from the entire global healthcare sector. Our high and increasing surgical volume obligates us to collaborate with industry to reduce ophthalmology's carbon footprint.

What is your proudest contribution to ophthalmology / your subspecialty? I've tried to use my voice to highlight the need to reduce needless surgical waste in ophthalmology. With the ASCRS executive board's support, I've led a team that created EyeSustain.org, which is a coalition of global eye societies and their members who are collaborating to advance sustainability in ophthalmology.

6
Emily Y. Chew
Director of Div. of Epidemiology and Clinical Applications, National Eye Institute/ National Institutes of Health , USA

Why did you decide to pursue ophthalmology/your subspecialty? I had wonderful mentors and role models in ophthalmology. I love the fact that we continue to see patients for long-term followup, so we're able to develop meaningful relationships with our patients.

Who is your role model (ophthalmic or otherwise) and why? Brenda Gallie, a world renowned retinoblastoma expert, was my hero because of her love for research. She impressed upon me the importance of research which multiplied the impact of a clinician in helping patients and society.

What is your proudest contribution to ophthalmology/your subspecialty? Mentoring the wonderful next generation of clinician scientists.

If you weren't an ophthalmologist, what would you be doing? Although I'm not sure I have the talent for it, maybe I would be a chef. Cooking and baking bread with my friends and family makes me very happy.

Do you have any advice for young, aspiring ophthalmologists? Always be collaborative because one can accomplish so much more together than individually. But above all, have fun doing it!

7
George L. Spaeth
Director Emeritus, Glaucoma Service, Wills Eye Hospital, Sidney Kimmel Medical College and Thomas Jefferson University, USA

What is your proudest contribution to ophthalmology / your subspecialty? Oh, there's so many I couldn't really choose. I think specifically, there were moments when I was willing to move out of the box and think, why is this happening? A young woman with a swollen face, feeling very sick, came into the emergency ward at Wills Eye Hospital when I was a resident. We admitted her because she was very sick and "I thought, oh my gosh, she has trichinosis. There's no treatment for this, so I thought, what can we do?" I found out that Merck had just developed an agent to treat parasitic diseases, so I wrote to them and asked whether you can use thiabendazole in humans, and he said it had never been used. I asked if I could try it, and he said sure. So, I treated the first person with trichinosis with thiabendazole.

Do you have any advice for young, aspiring ophthalmologists? There is no general advice. It's all to whom am I speaking and who is speaking to me in a specific moment and setting. There's a phrase that I've really come to like, which is the 'thing itself'. That is always specific, it is never a label, or general. We speak to people in different ways, depending on many different factors.

8
H. Burkhard Dick
Professor and Chairman, University of Bochum, Germany

Why did you decide to pursue ophthalmology/your subspecialty? Sight is one of the greatest blessings of nature and to preserve it is a most rewarding task and wonderful profession.

What is your proudest contribution to ophthalmology / your subspecialty? This is a question that others might be more able to answer honestly. I have tried to make a great medical success story, cataract surgery, even more effective, safer, more predictable and give patients an even higher chance of the utmost postoperative satisfaction.

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? Make ophthalmic care more affordable and accessible to everyone.

9
Sir Peng T. Khaw
Director: Research and Development,
Moorfields Eye Hospital, London, UK

Who is your role model (ophthalmic or otherwise) and why? My many teachers and my patients have been my inspiration and role models, together with some of the many people in research I have been privileged to work with, including individuals like George Spaeth who are brilliant clinicians, researchers and also humanitarians.

What do you credit most for your success over the course of your career? The basic drive to "make things better" for people with sight problems through research. None of this would have been possible without the immense support and inspiration from my parents and my family – particularly my wife, Lady Peggy Khaw.

If you weren't an ophthalmologist, what would you be doing? Something creative yet practical like an Architect, Musician or Inventor

If you could restart your career would you do anything differently? I would try to learn how to get things done more quickly and also harness the power of technology.

10
Arthur Cummings
Consultant Ophthalmologist,
Wellington Eye Clinic, Dublin, Ireland

What was the reason that you decided to pursue ophthalmology/ your subspecialty in the first place? I had a very varied experience working in almost all disciplines before latching on to ophthalmology. When I started working in ophthalmology and specifically refractive surgery, I got the feeling that I could do this for the rest of my life.

What is your proudest contribution to ophthalmology / your subspecialty? Being appointed to the Alcon board of directors was my proudest moment in ophthalmology and being a co-founder and trustee of the World College of Refractive Surgery my proudest moment in refractive surgery.

If you could re-start your career would you do anything differently? Not that I can think of except possibly skipping the urology piece. I'm just kidding. Our current situation is influenced by all our previous experiences and I cannot think of anything that I would have wanted to be different.

11
Carol L. Karp

Professor of Ophthalmology, Dr. Richard K. Forster Chair in Ophthalmology, Dr. Ronald and Alicia Lepke Professorship in Corneal Diseases, Bascom Palmer Eye Institute, USA

What is your proudest contribution to ophthalmology / your subspecialty? My passion is ocular surface oncology. I hope that my work with topical immuno/chemotherapies has helped to provide our patients with effective treatment for their surface tumors. Furthermore, I have so enjoyed discovering the power of the high resolution OCT to help with the diagnosis and management of these tumors.

What was the reason that you decided to pursue ophthalmology/your subspecialty in the first place? Sight is a magical sense. Even as an ophthalmologist, I am amazed by how the eye and brain allow us to see. I think most of us would give up an arm or a leg instead of our vision. Being able to help people regain and maintain vision is truly satisfying and rewarding.

When you are no longer practicing what do you want your legacy to be? I hope that I am remembered for my dedication to my patients, colleagues, and the field of ophthalmology, specifically ocular surface oncology. I have so enjoyed mentoring young students, residents, and fellows. I hope that a small part of me will remain a part of their lives.

12
Jorge L. Alio

Professor and Chairman of Ophthalmology Miguel Hernandez University Founder, Vissum Miranza Alicante, Spain

What was the reason that you decided to pursue ophthalmology/your subspecialty in the first place? The capability of this specialty to start from the beginning and to finish the case, using investigational, clinical, surgical tools and knowing and studying the outcomes.

Who is your role model (ophthalmic or otherwise) and why? George Waring III: he was an innovator, extremely systematic clinical researcher and had a wonderful personality.

What is your proudest contribution to ophthalmology / your subspecialty? The promotion of refractive surgery, corneal and intraocular in Spain and in Europe in general. The description and creation of platelet rich plasma use in corneal disease.

The promotion of small and minimal incision cataract surgery and being the pioneer in corneal stromal regeneration as an alternative to corneal graft.

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? The move from corneal graft to corneal regeneration procedures. The accomplishment of accommodative lenses.

#13
Michael F. Chiang
Director, National Eye Institute, National Institutes of Health, Bethesda, Maryland, USA

In the words of his nominator: "Michael F. Chiang has made a number of landmark research accomplishments including his leadership of the development of the first NEI Strategic Plan, studies developing artificial intelligence systems for ROP screening, and many of the initial studies in developing and evaluating electronic health records for ophthalmic care."

#14
Paul J. Foster
Professor of Ophthalmic Epidemiology and Glaucoma Studies, Theme Leader – Population and Data Sciences, UCL Institute of Ophthalmology and Moorfields Eye Hospital, UK

Why did you decide to pursue ophthalmology/your subspecialty? I love the precision and cleanliness of ophthalmology, and that we have some very good treatments (cataract surgery is arguably the "best" operation ever devised).

Who is your role model (ophthalmic or otherwise) and why? I am hugely inspired by great scientists who struggled with rudimentary equipment throughout history to make sophisticated scientific advances.

What is your proudest contribution to ophthalmology/your subspecialty? I feel privileged to have been able to contribute to improving the outcomes for patients with angle-closure glaucoma.

What do you credit most for your success over the course of your career? Peng Tee Khaw has been a constant supporting figure, guiding my career, and deserves huge credit for the things I have accomplished.

If you could restart your career would you do anything differently? Worry less, and enjoy the "wins" more when they happen.

#15
Philip J. Rosenfeld
Professor of Ophthalmology, Bascom Palmer Eye Institute, University of Miami Miller School of Medicine, Miami, Florida, USA

Why did you decide to pursue ophthalmology/your subspecialty? The beauty of the eye, my love of genetics, and the importance of vision.

Who is your role model (ophthalmic or otherwise) and why? Thomas Kelly for his love of science and the design of experiments that yield meaningful results.

What is your proudest contribution to ophthalmology / your subspecialty? Avastin therapy for exudative and neovascular eye diseases.

What do you credit most for your success over the course of your career? My parents.

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? The elimination of AMD as the major cause of irreversible vision loss among the elderly.

#16
David (Ted) Garway-Heath

Glaucoma UK Professor of Ophthalmology, UCL, and Hon. Consultant Ophthalmologist, Moorfields Eye Hospital, London, UK

Why did you decide to pursue ophthalmology/your subspecialty? I trained as a Medical Student at St Thomas's Hospital in London which has one of the most respected academic ophthalmology departments in the UK - the dedication to, and enthusiasm of, the research and teaching was contagious; I was fortunate enough to work for the great mentor David Spalton in my first ophthalmology job - from then, there was never any question of doing anything else

Who is your role model (ophthalmic or otherwise) and why? Roger Hitchings. At Moorfields, he was responsible for building one of the strongest and most influential academic glaucoma units in the world. He did that by identifying and bringing in individuals who not only had potential as academic leaders but also were collegial and team players. The team spirit is still strong today.

#17
Jost B. Jonas

Professor and Chairman, Department of Ophthalmology, Medical Faculty Mannheim, Heidelberg University, Germany

Why did you decide to pursue ophthalmology/your subspecialty? Personal experience.

Who is your role model (ophthalmic or otherwise) and why? Sohan S. Hayreh for his straightforwardness.

What would you like to see change in ophthalmology/your subspecialty over the next 10 years and why is this the case? Development of a better glaucoma cure and therapy for age-related macular degeneration.

If you could restart your career would you do anything differently? Be resident in another university department.

Do you have any advice for young, aspiring ophthalmologists? Always be forward thinking independent of the professors´ opinion.

Note from the nominators: Jost B. Jonas's work has been a landmark for so many areas of ophthalmology. His research on the intravitreal application of medication as treatment for proliferative and neovascular diseases has been groundbreaking and will be the foundation for ever more effective treatment. It isn't hard to see why his work is some of the most highly cited in the world!

#18

Helen Danesh-Meyer

CNZM, Sir William and Lady Stevenson Professor of Ophthalmology, University of Auckland, New Zealand

Who is your role model (ophthalmic or otherwise) and why? My mother who was one of the early female physicians in Iran - she faced extraordinary challenges to pursue a career as a woman in medicine.

What is your proudest contribution to ophthalmology / your subspecialty? The cohort of bright people I have trained and of course, the patients I have helped.

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? More innovative career pathways to retain and promote talented women.

#19
Andrzej Grzybowski
Professor of Ophthalmology, Foundation for Ophthalmology Development, Poznan, Poland

Why did you decide to pursue ophthalmology/your subspecialty? I wanted to reconcile clinical and scientific work, and thought that ophthalmology might be a good choice.

What is your proudest contribution to ophthalmology/your subspecialty? 1. I have worked in recent years to limit the overuse and misuse of antibiotics in ophthalmology and helped to introduce international and national guidelines on antibiotic stewardship and more common use of antiseptics in ophthalmology instead of antibiotics.

2. Saving some important facts and people from the history of ophthalmology from oblivion.

What do you credit most for your success over the course of your career? Hard work and openness to the views of others.

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? More personalized and predictive tools that enable early treatment.

If you could restart your career would you do anything differently? I would spend more time abroad on scientific trips.

#20
Julia A. Haller
Ophthalmologist-in-Chief and William Tasman Endowed Chair, Wills Eye Hospital Professor and Chair of Ophthalmology, Thomas Jefferson University, USA

Why did you decide to pursue ophthalmology/your subspecialty? I was attracted to ophthalmology and especially to retina because of the dynamism of the field: the cutting edge technology and research, the inspiring role models, the elegant surgery, the ability to care for both adults and children and the huge impact of our field on patient lives.

Who is your role model (ophthalmic or otherwise) and why? My dad. He was one of the pioneers in the field of pediatric surgery and a key role model in my life. He was brilliant and innovative, a supremely skilled cardiac surgeon and a wonderful educator, mentor and parent.

Do you have any advice for young, aspiring ophthalmologists? Yes. Work hard, be resilient and keep your sense of humor!

Excellence and Innovation

The 2023 Power List is a celebration of a decade of excellence and impact in ophthalmology, championing leaders who have been nominated by the wider community. Here, our industry sponsors showcase their commitment to excellence and how they are developing new solutions to benefit both doctors and patients all around the world.

AnnMarie Hipsley
Founder and CEO,
Ace Vision Group (AVG), Inc.

What in the ophthalmic field is your team most excited about right now?

AVG is excited about the future growth potential for the presbyopia category. Therapeutic solutions are on the horizon, and Laser Scleral Microporation (LSM) is a viable vision and aesthetic treatment performed with the first-in-class VisioLite® Ophthalmic Laser.

In what area of ophthalmology do you think your team can make an extraordinary impact?

AVG provides a therapeutic solution to help patients see clearly and naturally during their presbyopic lifespan. LSM is an in-office, non-invasive procedure that offers a therapeutic solution to treat functional loss of vision, resolving age-related vision disability and potentially preventing the age-related progression of presbyopia.

What are the biggest challenges when making an impact with new technology or innovations?

Educating the clinical community about the biomechanics of the eye and how aging affects the dynamic movement inside the eye or the Dynamic Range of Focus (DRoF) function is challenging and not typically taught in the ophthalmology curriculum. Furthering presbyopia education will require a paradigm shift from approaching it as a 'refractive error' with a vision correction solution to an aging disease, which involves a therapeutic intervention to treat the disease's progression over time. LSM is a rejuvenating procedure that treats age-related ocular rigidity by "uncrosslinking" collagen bonds making the tissue flexible again. LSM is extraocular, touching no optics, yet creating an impact on restoring the ability for the muscles to change the shape of the natural crystalline lens, giving patients back youthful vision naturally.

What does pursuing excellence look like for your team?

Pursuing excellence means making a significant positive impact on eye care for millions of patients worldwide. We are trailblazing an untrodden path and creating a new category of vision therapy with our VisioLite® device and LSM Treatment. Our technology and procedures are evidence-based and backed by deep scientific rigor. We expect to benefit patients and the industry with our new exciting innovations.

Who are the role models in the community that model excellence in their work?

AVG has been fortunate to have the most elite mentors in ophthalmology. It is inspiring to witness those who have boldly forged ahead with new science and built organizations in the face of adversity. Professor John Marshall, inventor of excimer laser technology for refractive surgery, has been instrumental in helping us forge this new ophthalmic technology. Marsha Link, CEO coach, has inspired and mentored many CEOs through the entrepreneurial adventure, providing invaluable advice and leadership. Finally, Dr. Dan Neal, a visionary in optics, has contributed so much knowledge and technology in the dynamic measurement of vision in presbyopia.

AceVision
See Life Naturally™

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Kendra Hileman
PhD. VP, Head of Instrumentation, R&D
Alcon

What in the ophthalmic field is your team most excited about right now?

For over 75 years, Alcon has brought new innovations to many surgical fields, including cataract and vitreoretinal surgery. It's an exciting time in ophthalmology where we can offer surgeons a comprehensive equipment ecosystem. We've had many advancements just in the past few years, including our entry into preoperative diagnostics with ARGOS® Biometer with Image Guidance, which can help match patients with the right type of IOL and send surgical data from the clinic to the OR. For our R&D team, we are energized about the possibilities of AI to simplify the surgical process and support surgeons in delivering optimal patient outcomes.

In what area of ophthalmology do you think your team can make a unique impact?

We can make a unique impact in the field of ophthalmology because we consider the entire ophthalmic ecosystem in how we approach R&D. It's not just about a few pieces of equipment. It's about leveraging the power of a full ecosystem. We want to ensure that our portfolio of products enhances the user experience. Our proprietary customer support tools allow us to create touchpoints with customers to further improve device performance. Our R&D team focuses on ensuring consistency and connectivity with our equipment, while leveraging data throughout the patient journey.

What are the biggest challenges when it comes to making an impact with new technology or innovations?

We must remember: ophthalmologists, in addition to being incredible surgeons, have businesses to run. They need solutions that address ever-changing patient needs and lessen the logistical burden on their practices. What's more: not every ophthalmic office or OR has the same needs or equipment. The solution lies in creating flexible technology and solutions capable of meeting various workflows and adapting to changing situations.

What does pursuing excellence look like for your team?

I've been in the field of ophthalmic research and development for my entire career, which gives me a perspective on how technology effectively comes to life in the clinic. Excellence for my team means delivering the right products at the right time for physicians and patients. We want to provide the best individual solutions to preoperative, operative, and postoperative customer needs across all the ophthalmic specialities: cataract, refractive, vitreoretinal, dry eye, glaucoma and more. That's why we've designed our suite of devices to ultimately work together so that the whole is much greater than the sum of the parts.

What are your 5–10-year predictions for innovation in the ophthalmic field?

Most leaders in the field see the use of robotics in ophthalmic surgery expanding. If you think about it, we already use robotics systems like refractive surgery lasers and FLACS systems. We will likely see the use of robotics expand to increase efficiency and improve reproducibility of procedures.

Alcon

www.alcon.com

Susan Daniels Ph.D.
Chief Scientific Officer
Avellino

What in the ophthalmic field is your team most excited about right now?

The use of genetics in identifying the risk a patient has to develop ophthalmic disorders and how those may also effect other systems within the body. Early risk detection will provide the clinician the ability to observe and treat the patient with a broader range of choices than they would otherwise have with current diagnostic approaches.

In what area of ophthalmology do you think your team can make a unique impact?

Avellino has been at the forefront of genetic testing in eye care. We have been providing genetic testing to patients since 2008 in the area of Corneal Dystrophies and Keratoconus, with over one million tests being completed. We are excited about our upcoming Glaucoma test as well as collaborating with clinicians on how we can make an impact where predictive genetic testing can improve patient care by tailoring therapeutic treatments and vision correction choices.

What are the biggest challenges when it comes to making an impact with new technology or innovations?

The technology or innovation itself is actually not the largest hurdle in many cases. The largest hurdles for adoption in the genetic space is education and overcoming fear – fear from patients over what they may learn and how their personal data is being handled, and then educating the physician on how to utilize the tests and leveraging it in their decision making process. We spend a significant amount of time ensuring that we protect our patients' data, and then work directly with the physician so that they can explain the results to their patients, including genetic counselling when needed.

What are your 5–10-year predictions for innovation in the ophthalmic field?

At Avellino, everything we do starts with genetic data and applying AI and machine learning to make discoveries and develop new tests and therapy targets. We have been pioneering research with our scientist and technology teams utilising large genetic, clinical and imaging datasets to continue to refine our understanding of the relationships between what we are seeing in the genetic data, patient environmental factors and what can be visualized using advanced scanning and imaging systems. These advances will create the bridge from treating symptoms to true preventative care and precision medicine.

AVELLINO

Georgea Pasedis PharmD. RPh.
Senior Vice President, Global Head of Medical and Clinical Affairs
Dompé

What in the ophthalmic field is your team most excited about right now?

Our teams are most excited about the future innovation for patients with hard-to-treat conditions. Our team this year is highly focused on starting and executing 8 clinical trials, both Phase 4 and Phase 2-3 programs. This is the first step to developing clinical programs to solve key scientific gaps. Like we have done in the past, we took a rare disease that not many companies had thought about, but we knew there was a great patient need. The FDA granted rhNGF "Breakthrough Therapy Designation" and, during the registration process, conferred it a "Fast Track" and "Priority Review" status. We hope to continue this again in other areas of high unmet medical need.

In what area of ophthalmology do you think your team can make a unique impact?

At Dompé our research team has spent decades unveiling the potential applications of neurotrophins. There are four characterized neurotrophins – nerve growth factor (NGF), brain derived neurotrophic factor (BDNF), neurotrophin 3 and 4 (NT-3/4). With the understanding that NGF and BDNF receptors are expressed throughout the body, including the anterior and posterior segments, NGF is critical for differentiation, growth, and maintenance of neurons. Recent literature shows that neurosensory abnormalities can underlie many conditions affecting the anterior segment. We believe our teams can make a unique impact utilizing this knowledge, developing trials that maypotentially lead to commercialization of novel therapies to to treat ophthalmic conditions with high unmet need.

What does pursuing excellence look like for your team?

Dompé is a privately held international company founded over 130 years ago, it's family owned and has been for several generations. This allows Dompé to focus on science and reinvesting in R&D without barriers. Excellence for Dompé has and will always be deeply embedded in putting patients first and embracing the challenge of science.

Our focus will continue to be reinvesting a significant amount of profit back into finding solutions for patients with high unmet medical needs within ophthalmics.

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3. *L Mastropasqua et al., "Understanding the Pathogenesis of Neurotrophic Keratitis: The Role of Corneal Nerves," J Cell Physiol, 232, 717, (2017) PMID 27683068.*
4. *Please also see the Prescribing Information for complete information on the approved label indication and Important Safety Information (bit.ly/OXERVATE_Prescribing_Information)*

The intent of this material is to provide non-promotional corporate awareness for Dompé R&D platforms

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Jeff Francis
General Manager, Glaucoma
Sight Sciences

What in the ophthalmic field is Sight Sciences the most excited about now?

At Sight Sciences, we are most excited about partnering with eyecare professionals to improve the lives of patients suffering from debilitating eye diseases. With our innovative glaucoma and dry eye technologies, we have the responsibility to help address the underlying causes of these diseases with safety and efficacy.

The introduction of minimally invasive glaucoma surgery (MIGS) has provided advancements in technology and surgical technique with unprecedented benefits to surgeons and patients. Our OMNI® Surgical system, with the broadest FDA-cleared ab interno indication for use in adults with primary open-angle glaucoma, enables surgeons to address all three points of resistance in the conventional outflow system. OMNI can be used alone or in combination with cataract surgery. With its proven safety and efficacy, OMNI significantly expands the treatment armamentarium for millions of glaucoma patients. Our new SION™ Surgical Instrument features an innovative bladeless goniotomy technology designed to minimize tissue trauma.

In dry eye, our TearCare® System targets obstructed meibomian glands, the underlying cause of evaporative dry eye. TearCare delivers the clinically proven time and temperature required to effectively liquefy meibum in a non-invasive, open-eye experience which is followed by a targeted manual expression.

In what area of ophthalmology do you think Sight Sciences is making a unique impact?

Our innovative technologies, designed to comprehensively treat the underlying causes of eye disease, drive our differentiation. This year, we will present compelling new clinical evidence to demonstrate further OMNI's and TearCare's excellent efficacy and patient outcomes. We have commissioned a study of more than 100,000 eyes using the American Academy of Ophthalmology's IRIS Registry of real-world data to analyze post-surgical outcomes for the leading MIGS technologies in the United States. We believe the data will demonstrate better results in key outcomes with our OMNI technology. We also expect interim results from the SAHARA RCT, which intends to demonstrate superiority of the TearCare System versus Restasis®.

What does pursuing excellence look like for Sight Sciences?

Our pursuit of excellence focuses on patient needs and protecting humanity's most precious sense – sight. When I joined Sight Sciences in 2017, we were a company of 10 employees. Since then, we have built one of the fastest-growing companies in eyecare. Our team of highly talented and committed individuals share a common goal to transform care for dry eye and glaucoma. Our company is built upon a foundation of technological advancement, innovating best-in-class products, and our cultural pillars of passion, community, courage, and perseverance. Through our trusted partnership with eyecare professionals and patients, we Deliver the Power of Sight.

SIGHT SCIENCES

www.sightsciences.com

Fumio Ohue
Head of THINC Business / Former Global Head of Eye Care Business
THINC = Topcon Healthcare Innovation Center

What in the ophthalmic field is your team most excited about right now?
The harmonization of eye care is essential to meet the growing demand for eye care and help minimize preventable vision loss globally. We are excited to see eye care stakeholders adopting our Harmony software platform to facilitate communications around patient needs and amass data that is informing clinical decision support dashboards tailored to specific diseases and practice settings. This growing ecosystem of eye care facilities, clinicians and data will activate more effective decision-making tools, support earlier detection, enable core decisions focused on the needs of individual patients, and encourage effective collaboration between eye care providers.

In what area of ophthalmology do you think your team can make a unique impact?
Topcon has a comprehensive suite of robotic, multiple function, and cost-effective devices to make examinations quicker and more accessible, increasing access to care, patient throughput and practice revenues. Our Harmony cloud-based software platform has been integrated in primary care, primary eye care and advanced eye care practices. The data-driven vendor-neutral dashboards on Harmony will drive digital health to facilitate earlier detection of disease, inform treatment decisions, and allow transparent collaboration between eye care providers. Additionally, Topcon Screen helps increase access to care by enabling primary care physicians to identify and refer patients into eye care, helping to facilitate better outcomes for patients.

What are the biggest challenges when it comes to making an impact with new technology or innovations?
One of the biggest challenges is when new innovations are not integrated effectively within eye care workflows, or when data is not effectively connected with other technologies. To address this, Harmony enables secure, transparent and seamless integration of images and data, while also allowing for these data to be transmitted between care facilities and eye care providers. This means even doctors with non-Topcon devices can utilize our data-driven clinical decision dashboards. Harmony's cloud-based infrastructure also allows doctors without Harmony to provide second opinions and view the relevant clinical data that was aggregated and transmitted by the referring site. We believe wide-scale access to eye health data will drive technological innovations for advancing eye care. We are leading the way in standardization of, and access to, real-world diagnostic data to enhance clinical research and create a healthy competitive environment for technology manufacturers to advance their eye care solutions.

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Achim Langenbucher

Director Institute of Experimental Ophthalmology, Professor and Head, Institute for Experimental Ophthalmology, Saarland University, Saarbrücken, Germany

As his nominator remarked: "Achim Langenbucher is the inventor and founder of IOL Con, an up-to-date internet-based, internationally available database which is the world leading platform for optimized IOL constants and characteristics of intraocular lenses, and an indispensable tool for all who deal with IOL power calculation."

Alice T. Epitropoulo

Ophthalmic Surgeons & Consultants of Ohio, The Eye Center of Columbus, Clinical Assistant Professor, The Ohio State University, Ohio, USA

Who is someone in ophthalmology / your subspecialty that you feel has been particularly influential over the past 10 years? Peter Utrata who recently passed away, was a mentor and great friend. He taught me phacoemulsification as a resident. He was often referred to as the "gentleman" of ophthalmology owing to his kind treatment of his patients, staff and people in general. He became world-renowned as an eye surgeon because of his innovative invention, the capsulorhexis or Utrata forceps. He will be missed tremendously.

Adnan Tufail

Consultant Ophthalmologist, Moorfields Eye Hospital, Institute of Ophthalmology, UCL, London, UK

A nominator explained: "Adnan Tufail is a world-leader in research, particularly in AMD and choroidal neovasculaisation, and has pioneered a number of landmark papers, receiving the largest EU grant to support the development of intermediate AMD treatments. He is also a leader in AI and deep learning investigation, collaborating with Google DeepMind, and clinically led the first paper showing that AI could detect all OCT features of early AMD and late manifestations."

Allen C. Ho

Wills Eye Hospital Attending Surgeon, Director of Retina Research and Co-Director of the Retina Service, Professor of Ophthalmology, Thomas Jefferson University, Mid Atlantic Retina, Philadelphia, Pennsylvania, USA

What is an interesting or little-well known fact about you? you? I have six amazing children and four granddaughters, very lucky. I enjoy sports, outdoors and physical activities and I still compete in triathlon racing; I am a very mediocre swimmer on a lifelong journey to improve that leg of the race!

Adrienne Graves

Chairman, Iveric Bio, Former President and CEO, Santen Inc., San Francisco, California, USA

What would you like to see change in ophthalmology in the next 10 years? I'd like to see advances in the development of neuroprotection and vision restoration therapies for glaucoma and inherited retinal diseases. I'd also like to see continued progress in gender and ethnic diversity in ophthalmology, both in medicine and executive roles in industry.

Anat Galor

Staff physician, Miami Veterans Hospital, Professor of Ophthalmology, Bascom Palmer Eye Institute, University of Miami, Miller School of Medicine, Miami, USA

Why did you decide to pursue ophthalmology/your subspecialty? I wanted to be a primary care physician and surgeon all at the same time. And, ophthalmology has allowed me to manage complex patients over the long term while performing surgery.

Anthony Khawaja

Associate Professor & Honorary Consultant Ophthalmic Surgeon, UCL Institute of Ophthalmology & Moorfields Eye Hospital, London, UK

Do you have any strong opinions with which the rest of the field tends to disagree? I remember when I posted on an ARVO forum that their banning of photographs of presentations/posters was outdated, there was quite a backlash! I strongly feel that we should share and communicate as much as possible, and taking photos/videos can help with that dissemination and should be encouraged.

Audrey Rostov

Director of Cornea, Complex Cataract and Refractive Surgery, Northwest eye Surgeons, Affiliate Surgeon, HCP/ Cureblindness, Seattle, Washington, USA

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? I would like to see an emphasis on decreasing OR waste, and medical waste in general. Global warming is accelerating, WHO has declared climate change the biggest public health threat, and we need to decrease waste, repurpose and reuse instruments and supplies when possible. We need to eliminate the "single use" concept of our throwaway culture. The OR waste generated in a single cataract case in the US is 2.3-3.9 kg, compared with the waste generated from a single cataract surgery in India at Aravind, which is 0.25 kg, 2/3 of which is recycled, and Aravind center in India does not have an increased incidence of infection.

Ben LaHood

Cataract and Refractive Surgeon at Adelaide Eye and Laser Centre, Consultant Ophthalmologist at The Queen Elizabeth Hospital, Lecturer at University of Adelaide, Adelaide, Australia

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? I would like to see refractive surgery become a more popular and acceptable subspecialty where it is ok for a trainee to say they want to be a refractive surgeon.

Chelvin Sng

Medical Director, Chelvin Sng Eye Centre, Adjunct Associate Professor, National University of Singapore, Adjunct Clinician Investigator, Singapore Eye Research Institute, Singapore

Why did you decide to pursue ophthalmology/your subspecialty? It was fortuitous that I pursued a fifth grade school project on "The Eye", and this spurred a life-long interest in ophthalmology.

Christopher Rapuano

Chief, Cornea Service, Wills Eye Hospital, Philadelphia, Pennsylvania, USA

What is an interesting or little-well known fact about you? I am a French citizen and visit France fairly often. My mother was born and raised in France and we still have many relatives there.

What's been the biggest breakthrough in ophthalmology / your specific field over the last 10 years, and what are the reasons behind your choice? The advent of corneal crosslinking for the treatment of keratoconus has dramatically changed how we manage patients with keratoconus. It prevents progression and has decreased the number of transplants we need to perform for this condition.

Clara Chan

Associate Professor, University of Toronto, Department of Ophthalmology and Vision Sciences, Ontario, Canada

What's been the biggest breakthrough in ophthalmology / your specific field over the last 10 years, and what are the reasons behind your choice? We have seen the effectiveness of corneal collagen crosslinking to prevent the progression of keratoconus. Together with topography custom ablation treatments, we can now further regularize an ectatic cornea. Prior to crosslinking being readily available, we would watch our patients slowly lose vision until a cornea transplant was needed - a procedure which has intraoperative risks and carries lifelong risk for rejection, trauma, etc.

Daniel S.W. Ting

Associate, Professor, Duke-NUS Medical School, Chief Data and Digital Officer, Singapore National Eye Center, Head, AI and Digital Innovation, Singapore Eye Research Institute, Innovation Mentor, Byers Eye Institute, Stanford University, Singapore

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? More AI and digitally literate next generation - this could unlock a lot more opportunities to build more state-of-art technologies to help improve eye care access worldwide to prevent blindness.

Clement C. Y. Tham

Chairman and S.H. Ho Professor of Ophthalmology & Visual Sciences, The Chinese University of Hong Kong (CUHK), Hong Kong

What is your prediction for where ophthalmology/your subspecialty will be 10 years from now? I believe artificial intelligence and big data will revolutionize many medical fields in the coming 10 years, with ophthalmology and my glaucoma subspecialty included. There should also be substantial room for telemedicine and robotics surgery to play larger roles in ophthalmology, especially because ophthalmology is a highly visual specialty. Advancing imaging technologies have also allowed increasingly excellent structural evaluations for eye diseases.

What was the reason that you decided to pursue ophthalmology / your subspecialty? Great mix of both medical and surgical cases, beautiful imaging, inspiring role models, surgeries are high paced, minimally invasive with great finesse.

Damien Gatinel

Head of the Anterior Segment and Refractive Surgery Department, Rothschild Foundation Hospital, Paris, France.

Do you have any strong opinions with which the rest of the field tends to disagree? I am convinced of the mechanical root origin of keratoconus, which I have summarized in a simple maxim "no rub, no cone." This seems evident when one combines logic with clinical experience and published facts about this condition. This opens the prospect of preventing the onset of this condition by educating the population about the deleterious role of excessive eye rubbing.

David A. Mackey

Professor of Ophthalmology, University of Western Australia and Lions Eye Institute, Western Australia, Australia

What is an interesting or little-well known fact about you? Six years ago I used genetic testing and then did a massive literature review to recognize that a rare cancer I developed would respond to a COX2 inhibitor and thus avoided major surgery with a relatively safe and inexpensive medical treatment. So I have lived personalized genomic medicine.

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*Trabecular meshwork (trabeculotomy), Schlemm's canal (canaloplasty), and collector channels (canaloplasty).

[1] Klabe K, et al. 2021 Jul 20. *Clin Ophthalmol.* 15:3121-3129.

INDICATIONS FOR USE: The OMNI® Surgical System is indicated for canaloplasty (microcatheterization and transluminal viscodilation of Schlemm's canal) followed by trabeculotomy (cutting of trabecular meshwork) to reduce intraocular pressure in adult patients with primary open-angle glaucoma.

CONTRAINDICATIONS: Do not use the OMNI Surgical System in any situations where the iridocorneal angle is compromised or has been damaged (e.g., from trauma or surgery), since it may not be possible to visualize the angle or to properly pass the microcatheter. Do not use the OMNI Surgical System in patients with angle recession; neovascular glaucoma; chronic angle closure; narrow-angle glaucoma; traumatic or malignant glaucoma; or narrow inlet canals with plateau iris. Do not use the OMNI Surgical System in quadrants with previous MIGS implants. Please refer to the full Instructions For Use, available at omnisurgical.com/IFU, for warnings, precautions, and adverse event information.

SIGHT SCIENCES

David Crabb
Professor of Statistics and Vision Research, Department of Optometry and Visual Sciences, City, University of London, UK

What is an interesting or little-well known fact about you? I am a weird statistician/vision scientist who has ended up on a list of truly elite ophthalmologists.

Who would you invite to your dream dinner party? Harry Kane, Ledley King, Glen Hoddle and Pat Jennings – If you know, you know. COYS!

Dennis S. C. Lam
Chairman & CEO, Hong Kong C-MER International Eye Care Group Ltd, Director, the CMER International Eye Research Center of the Chinese University of Hong Kong (Shenzhen), PRC, Editor-in-Chief, Asia-Pacific Journal of Ophthalmology (APJO).

Is there a particular tool, technological advance, or instrument you would not have been able to live without over the past 10 years? Scanning laser ophthalmoscopy: this is a strong supplement to BIO and assists my VR practice, including screening for myopia patients before refractive surgeries.

Do you have any personal missions for the next 10 years? To become one of the pioneers in developing ophthalmic innovation and technology.

Douglas J. Rhee
Professor & Chair, Department of Ophthalmology & Visual Sciences, University Hospitals, Cleveland Medical Center, Case Western Reserve University School of Medicine, Ohio, USA

What's been the biggest breakthrough in ophthalmology / your specific field over the last 10 years, and what are the reasons behind your choice? MIGS would seem the obvious choice as it has given so many patients more safe options often delaying more invasive and risky traditional procedures. However, I would include that the results of the LiGHT trial provided the pivotal data that will mark an inflection point in the treatment of glaucoma - I believe that glaucoma will be treated primarily as a surgical/interventional condition rather than intervention only after medications have failed. I believe that this trend will be realized not just from the LiGHT trial data, but cost-effectiveness in the increasingly challenging economic environment of healthcare.

Eduardo C. Alfonso
Chair and Director, Bascom Palmer Eye Institute, Miami, USA

What is an interesting or little-well known fact about you? I am honored and humbled to say that the Bascom Palmer Eye Institute has been my only employer. Since joining the faculty as an assistant professor in 1986, Bascom Palmer has given me the opportunity to learn from giants in the field, a lifetime of valuable friendships, and the opportunity to make a difference in the lives of patients that I treat.

What is your prediction for where ophthalmology / your subspecialty will be 10 years from now? I predict that ophthalmology will continue to be a very desirable and rewarding career. The patient-satisfaction rates are high, the field is continually growing, and most ophthalmologists enjoy a good lifestyle.

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Eric Donnenfeld
Founding Partner Ophthalmic Consultants of Long Island
Clinical Professor of Ophthalmology,USA

What's been the biggest breakthrough in ophthalmology/your subspecialty field over the last 10 years, and what are the reasons behind your choice? Corneal crosslinking has allowed us to prevent keratoconus from progressing, saving the need for rigid contact lenses and corneal transplantation for thousands of patients.

What is an interesting or little-well known fact about you? I was born in the Philippines at Sangley Naval Base.

Farhad Hafezi
Chief Medical Officer, ELZA Institute, Dietikon, Zurich. Professor of Ophthalmology, University of Geneva. Associate Clinical Professor, USC Roski Eye Institute.

What's been the biggest breakthrough in ophthalmology/your subspecialty specific field over the last 10 years, and what are the reasons behind your choice? In my field, understanding the crucial role of oxygen in CXL has been a game-changer. This knowledge allowed us to accurately model the UV-riboflavin-tissue interaction, optimize CXL, and finally develop a highly sought-after epi-on CXL, which is as effective as epi-off CXL. Epi-on CXL without risk for infection will lead to a paradigm change and open up office-based applications.

Francesca Cordeiro
UCL, Imperial College London, Western Eye Hospital, and Novai LTD, UK

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? I would like to see primary care ophthalmology being delivered by non-ophthalmologists; additionally, I am passionate that the eye is recognized more as a window on to the brain.

What is an interesting or little-well known fact about you? I love tennis – playing and spectating!

Gerd Auffarth
Professor and Chairman, Heidelberg University Eye Clinic, Director, The David J. Apple International Laboratory for Ocular Pathology, Heidelberg, Germany.

Do you have any strong opinions with which the rest of the field tends to disagree? I wouldn't say the rest of ophthalmologists disagree, but as illustrated in my Binkhorst Lecture at the ESCRS two years ago there is "No Free Lunch in Optics," a lot. A lot of industry marketing still claims that the perfect intraocular lens with perfect optics is not a problem. Every optics engineer knows that any artificial lens solution is always a compromise in terms of image quality, depth of field and side effects.

Francesco Carones
Medical Director and Physician CEO, Advalia Vision, Milan, Italy

Who is someone in ophthalmology / your subspecialty that you feel has been particularly influential over the past 10 years? Guy Kezirian. Unfortunately, a disease interrupted his career as a surgeon, but he did not give up. Thanks to his great attributes like passion, entrepreneurship, commitment, and charity to cite just a few, he contributed to elevate refractive surgery to higher standards and educate refractive surgeons not only on their clinical/surgical skills, but also on their hidden values through really mind-opening programs.

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Gerrit Melles

Cornea Specialist/Director of NIIOS, Rotterdam, The Netherlands Director of NIIOS USA, San Diego, USA

Who is someone in ophthalmology / your subspecialty that you feel has been particularly influential over the past 10 years? Jack Parker at Parker Cornea in Birmingham, Alabama, USA.

What's been the biggest breakthrough in ophthalmology / your specific field over the last 10 years, and what are the reasons behind your choices? Bowman layer onlay transplantation in the management of keratoconus.

Harry W. Flynn Jr.

The J. Donald M. Gass, Distinguished Chair in Ophthalmology, Miami, Florida, USA

Why did you decide to pursue ophthalmology/your subspecialty? As a first year medical student, we were required to go through a physical exam which included screening by an ophthalmologist. At that time, I was wearing glasses for myopic correction. The attendant asked, "Have you ever tried contact lenses?" My answer was "no but, I want to give it a try." Within about one week I was wearing contact lenses full-time and was delighted with my wide field of vision and improved sharpness for distance and near vision. As a result of this positive encounter, I began to hang around the ophthalmology clinic, observing patient care and surgery. Ophthalmology is a unique specialty in which medical therapy and surgery combine to achieve visual improvementand improve the quality of life for our patients.

Hilda Capo

Professor of Clinical Ophthalmology, John T. Flynn Chair, Ophthalmology Bascom Palmer Eye Institute, The University of Miami, Miller School of Medicine, Miami, Florida, USA

In the words of her nominators: "A specialist in pediatric ophthalmology and adult strabismus, Hilda Capo, is world-renowned for her expertise in strabismus and adjustable sutures and embodies the consummate strabismus surgeon. Additionally, her training of more than 175 residents and fellows, reaffirms her abilities as an academician, educator, and surgeon and exceptionally qualifies her for this prestigious nomination."

James Bainbridge

Professor of Retinal Studies, UCL; Consultant Ophthalmologist, Moorfields Eye Hospital London, UK

Why did you decide to pursue ophthalmology/your subspecialty? I was inspired to explore the eye as an extraordinary microcosm of the body, a hidden world revealed by microscopy

What's been the biggest breakthrough in ophthalmology / your specific field over the last 10 years, and what are the reasons behind your choice? Genetic surgery offers amazing new opportunities to help improve lives.

Janet L. Davis

Leach Distinguished Professor of Ophthalmology Bascom Palmer Eye Institute University of Miami Miller School of Medicine, USA

What's been the biggest breakthrough in ophthalmology/ your field over the last ten years, and why? The biggest breakthrough in ophthalmology in my field in the last 10 years has been research targeting genetic eye disease. It is a breakthrough not only because it is a new application of science to medicine but because there is tremendous potential to discover new ways to treat retinal disease.

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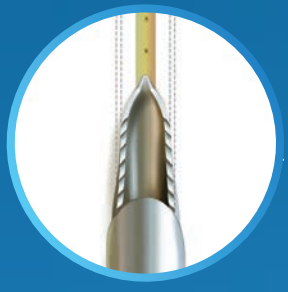

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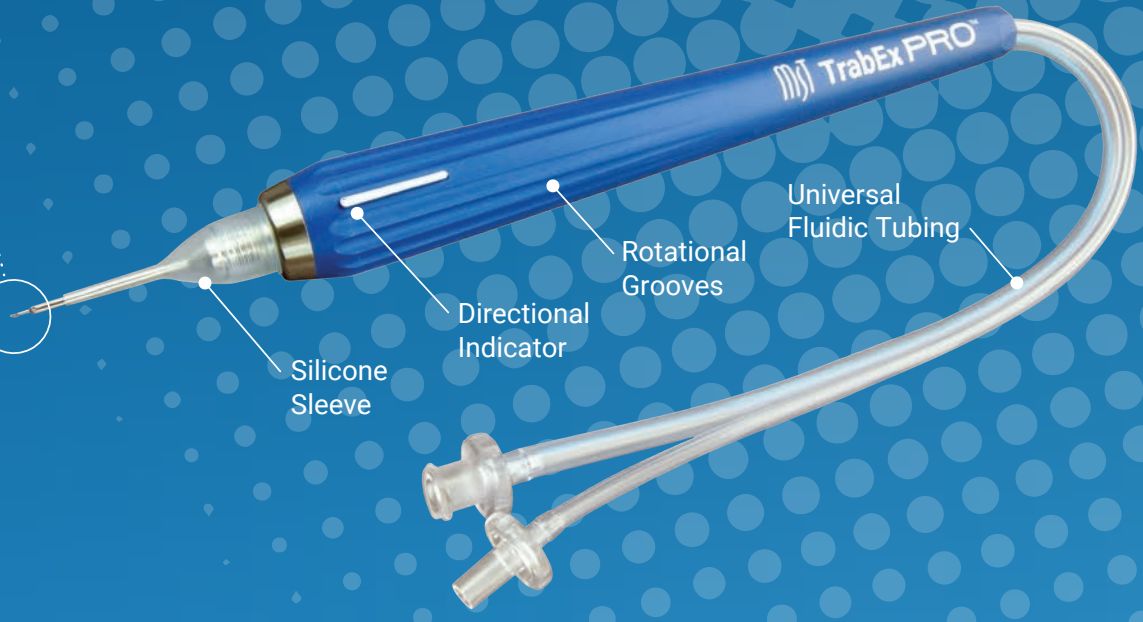

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Janey Wiggs

Paul Austin Chandler Professor of Ophthalmology, Harvard Medical School, Mass Eye, USA

Why did you decide to pursue ophthalmology/your subspecialty? I liked the combination of medicine and surgery. Also, many eye diseases are inherited and have a strong genetic basis.

John A. Hovanesian

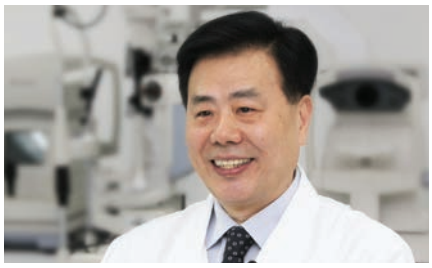
Principal at Harvard Eye Associates, Clinical faculty member at UCLA Stein Eye Institute, USA

What is an interesting or little-well known fact about you? I'm a pilot, soon to earn my instrument rating. Learning to fly, which I have taken on just since the pandemic, has been a great education that has actually benefited my practice of medicine. Doctors should use more checklists, like pilots do, and organize their preparation for the unexpected.

Jean Bennett

FM Kirby Professor of Ophthalmology, Perelman School of Medicine, Director, Center for Advanced Retinal and Ocular Therapeutics (CAROT), University of Pennsylvania, USA

Here is what her nominator said about her: "She is leading the science behind the first ocular gene therapy, voretigene neparvovec, and she is involved in the development of new gene therapies for inherited retinal diseases.



Ke Yao

Professor and Chief, Zhejiang University Eye Hospital, China, Eye Center of Second Affiliated Hospital of Zhejiang University, School of Medicine, China

Do you have any personal missions for the next 10 years? I see myself as an ophthalmologist, a teacher, and an advocate for ophthalmic public welfare. My personal mission for the next 10 years is to promote the advancement of ophthalmology, cultivate ophthalmic talents, and foster the development of ophthalmic public welfare.

John Marshall

Frost Professor and Deputy Director for Enterprise, UCL Institute of Ophthalmology London, UK

As his nominator explains: "John has made multiple contributions but is best known for his pioneering work on Excimer laser surgery. He has mentored 60 PhD students and has made fundamental contributions to retinal age related disease, excimer laser refractive surgery and, more recently gene therapy for corneal dystrophies."

Keith Barton

Consultant Ophthalmologist, Moorfields Eye Hospital, Professor of Ophthalmology, Institute of Ophthalmology, University College London, UK

Is there a particular tool, technological advance, or instrument you would not have been able to live without over the past 10 years? The Baerveldt Glaucoma Implant.

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Kendall E. Donaldson

Professor of Clinical Ophthalmology, Cornea/External Disease/Cataract/ Refractive Surgery, Bascom Palmer Eye Institute in Plantation, USA

What is an interesting or little-well known fact about you? When I was 9 years old, I won first place in the state piano competition at the Peabody Institute in Baltimore. This happened due to a misunderstanding with my piano teacher. She told me to practice for two hours, but I misunderstood and thought she meant two hours per day when she meant per week. This misunderstanding lasted for several years, until my parents eventually had to speak to her because I was having a hard time finishing my homework due to lengthy daily practice demands. Once I started practicing with a more reasonable routine, my future in music disappeared.

Kuldev Singh

Professor of Ophthalmology, Stanford University School of Medicine, USA

Who would you invite to your dream dinner party? One dream dinner party would include Arsène Wenger and Alex Ferguson to discuss the Arsenal-Manchester United rivalry of the 2000's and the impact it had on how football was played in England and throughout the world. Assuming there are enough seats at the table, it would be great to have the key players from the respective teams join as well.

Kyoko Ohno-Matsui

Professor and Chair, Department of Ophthalmology and Visual Science, Tokyo Medical and Dental University, Japan

What is an interesting or little-well known fact about you? I grew up near the ocean and I am a very good swimmer.

Why did you decide to pursue ophthalmology/your subspecialty? I was a dermatologist for one year, but according to my husband who was already an ophthalmologist, I switched over to ophthalmology.

Who is someone in ophthalmology / your subspecialty that you feel has been particularly influential over the past 10 years? Dennis Lam, Lauwrence Yannuzzi, and Richard F. Spaide.

Is there a particular tool, technological advance, or instrument you would not have been able to live without over the past 10 years? OCT, in particular, swept-source OCT and wide-field OCT.

Leon W. Herndon Jr

MD, Professor of Ophthalmology, Chief of Glaucoma Division, Duke Eye Center, USA

Why did you decide to pursue ophthalmology/your subspecialty? I am a high myope and got my first pair of glasses in the 9th grade. I then decided to work in a career to help patients maximize their vision.

Do you have any personal missions for the next 10 years? My vision is to develop a program to effectively screen family members of glaucoma patients

What is an interesting or little-well known fact about you? I work at Duke, but pull for the UNC Tarheels!

Liliana Werner

Professor of Ophthalmology and Visual Sciences, Co-Director, Intermountain, Ocular Research Center , John A. Moran Eye Center, University of Utah, USA

What's been the biggest breakthrough in ophthalmology/ your subspecialty over the last ten years, and why? I believe that the desire for power adjustability after intraocular lens implantation in a non-invasive manner is driving great breakthroughs in this area. The light adjustable lens is already available in different markets, and technologies such as refractive index shaping, allowing postoperative power adjustment of commercially available intraocular lenses by a femtosecond laser, are undergoing clinical trials.

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Lisa M. Nijm

Founder & Medical Director, Warrenville EyeCare and LASIK
Assistant Clinical Professor of Ophthalmology, University of Illinois Eye and Ear Infirmary, USA

What's been the biggest breakthrough in ophthalmology/your subspecialty over the last ten years, and why? In cornea, the evolution of the corneal transplant surgery from full thickness to increasingly thinner partial thickness grafts has been nothing short of amazing. Gone are the days where Fuchs patients had to wait an entire year to be fully recovered. Nanothin DSAEK has become one of my favorite surgeries to perform as the improvement in vision that my patients experience is truly remarkable.

Louisa Wickham

National Clinical Director for Eye Care, NHS England, Medical Director, Moorfields Eye Hospital Foundation Trust, London, UK

What would you like to see change in ophthalmology/your subspecialty subspecialty over the next 10 years and why is this the case? The rising demand for ophthalmic care has put increasing pressure on health systems to identify and manage eye disease. This was the case before the COVID-19 pandemic but is now a real focus for us in the UK as we try to address significant backlogs. This has given us the impetus to radically transform how we deliver ophthalmology services and we are now working towards digitally enabled pathways to deliver end to end patient care.

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RxSIGHT

Malik Y. Kahook

The Slater Family Endowed Chair in Ophthalmology at the University of Colorado School of Medicine, USA

Who is someone in ophthalmology/your subspecialty that you feel has been particularly influential over the past 10 years? It is hard to compete with the achievements of Joel Schuman over the past couple of decades and he is showing no signs of slowing down. The introduction of optical coherence tomography, of which he is an inventor, has revolutionized the way we diagnose and treat ophthalmic diseases.

Marcus Ang

Senior Consultant, Head of Cornea and External Eye Diseases, Singapore National Eye Center; Associate Professor, DUKE-NUS Ophthalmology and Visual Sciences, Singapore

In the words of his nominator: "Marcus is an active teacher as a Clinical Lecturer with the Yong Loo Lin School, NUS and a clinical instructor and trainer for Residents in SNEC. More recently, he has innovated new AI algorithms in Myopia, with the development of an AI-enabled digital platform high myopia prediction in a pilot implementation as part of the National Myopia Prevention Program in Singapore."

Marguerite McDonald

Clinical Professor of Ophthalmology, NYU Langone Medical Center, New York, USA

Who would you invite to your dream dinner party? Amelia Earhart, Martin Luther King, Queen Elizabeth, Ronald Regan, Abraham Lincoln, Luciano Pavarotti and Freddie Mercury (who would sing their duet of Nessun Dorma to us during cocktails), Edith Piaf (who would sing Le Vie en Rose during dessert), Elon Musk, and Thomas Edison.

Marie-José Tassignon
Emeritus head of the department of ophthalmology of the University hospital and University of Antwerp, Belgium

Do you have any strong opinions with which the rest of the field tends to disagree? Yes, I am convinced that the bag-in-the-lens device and implantation technique is the only IOL that allows surgeon control centration, eradicates PCO in a high percentage compared to the traditional lens implantation, optimal alignment along the patient's visual axis (although the optimal alignment method still needs to be improved), optimal survival of the capsular bag by keeping the patient's LEC sequestered in the periphery of the capsular bag.

Michael Mrochen
Entrepreneur, Zurich, Switzerland

Do you have any strong opinions with which the rest of the field tends to disagree? Presbyopia eye drops definitely have a limited market, but the clinical effectiveness and patient satisfaction is behind the initial expectations.

Mariya Moosajee
Professor of Molecular Ophthalmology and Consultant Ophthalmologist at Moorfields Eye Hospital, UCL Institute of Ophthalmology and The Francis Crick Institute, London, UK

What is an interesting or little-well known fact about you? I like to think I am a hyper-realist oil painter. When I was a medical student and junior doctor, I was commissioned to paint several large pieces of art for public display!

Mingguang He
Chair Professor of Experimental Ophthalmology, The Hong Kong Polytechnic University, Hong Kong SAR of China

What is an interesting or little-well known fact about you? I really enjoy running long-term studies, such as the Guangzhou Twin Eye Study. We have been running it for more than 15 years! With the Zhongshan Angle Closure Prophylactic trial, we just finished a 14-year visit!

Michael Belkin
Professor Emeritus of Ophthalmology,Goldschleger Eye Research Institute, Tel Aviv University, Israel

What's been the biggest breakthrough in ophthalmology/your subspecialty over the last ten years, and why? In terms of a colossal breakthrough it must be anti-VEGF for retinal diseases.

Do you have any strong opinions with which the rest of the field tends to disagree? Yes – the importance of neuroprotection for retina and CNS diseases.

Nadia K. Waheed
Professor in Ophthalmology, Tufts University Medical School, USA

Who is someone in ophthalmology / your subspecialty that you feel has been particularly influential over the past 10 years? I would say Jim Fujimoto (his work on OCT has transformed how we look at patients) and Phil Rosenfeld whose translation of those imaging modalities to understanding disease has evolved our understanding of eye disease.

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Neil M. Bressler

Editor in Chief, JAMA Ophthalmology, Johns Hopkins University School of Medicine, USA

Is there a particular tool, technological advance, or instrument you would not have been able to live without over the past 10 years ? Optical coherence tomography is essential to retinal disease management in the 21st century, and advances in this field, such as swept source and other imaging, coupled with artificial intelligence analyses may help reduce the magnitude of vision loss from many of the common and rare ophthalmic diseases.

Do you have any personal missions for the next 10 years? Spend as much time as possible with my children and four grandchildren, at our homes, and around the world.

Nick Mamalis

Professor of Ophthalmology, Moran Eye Center, Univ. of Utah, USA

Why did you decide to pursue ophthalmology/your subspecialty? My mother had Devic's disease that affected her optic nerves when I was a medical student and I was fascinated by her condition and evaluations she received by ophthalmologists.

What is an interesting or little-well known fact about you? I was born and raised in the small town of Rock Springs, on the windswept plains of Southern Wyoming, and worked my way through college by working in a plant/mine complex.

Ningli Wang

Director of Beijing Tongren Eye Center, China.

What's been the biggest breakthrough in ophthalmology/your subspecialty over the last ten years, and why? The abnormal trans-laminar cribrosa pressure difference (TLCPD) has been proved by our and other professors' study that it is one of the pathogenesis factors of normal-tension glaucoma and has been called TLCPD theory. The discovery and development of TLCPD theory have aided in the diagnosis and treatment of open-angle glaucoma and other ocular and cerebral diseases.

Paulo E. Stanga

The Retina Clinic London - Director & Vitreoretinal Surgeon, Institute of Ophthalmology, University College London, UK

What was the reason that you decided to pursue ophthalmology / your subspecialty in the first place? I originally considered being a plastic surgeon. However, after going through ophthalmology at university I remained forever fascinated by the beauty of the intraocular anatomy of the eye, specially the vitreous and the retina, and I loved the challenge of vitreoretinal surgery.

What is an interesting or little-well known fact about you? I am passionate about horse riding, polo, country sports, garden sculptures and gardening.

Pearse A. Keane

Consultant Ophthalmologist, Moorfields Eye Hospital NHS Foundation Trust
Professor of Artificial Medical Intelligence, University College London (UCL) Institute of Ophthalmology, UK

Why did you decide to pursue ophthalmology/your subspecialty? I remember reading The Hunt for Red October by Tom Clancy when I was about 12 years old. The wife of the main character, Cathy Ryan, was an ophthalmic surgeon at Johns Hopkins in the US and I remember thinking it sounded really cool!

When my patients don't have time for downtime, I recommend

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"MicroPulse TLT is very patient and lifestyle friendly. With a good safety profile and minimal downtime, the procedure doesn't impact quality of life. It's a non-incisional option that I use for all types and stages of glaucoma and for those who don't have time for post-op limitations.

My active working patient

My 78-year-old patient presented with uncontrolled secondary glaucoma on maximum medical therapy following multiple retinal detachment surgeries. He owns a body shop and did not want to be away from his business. Following MicroPulse TLT, his pressure fell from 18 OS on three drops to 13 OS on two drops, and his vision was stable. He is happy and continues to work.

Ye Elaine Wang, MD
Harvard Eye Associates
& Clinical Instructor
UCLA Stein Eye Institute
Laguna Hills, California

Scan QR to learn how Dr. Ye Elaine Wang uses MicroPulse® Technology in her practice.

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Randall J. Olson

University Distinguished Professor, Chair of Ophthalmology and Visual Science. CEO The John Moran Eye Center, University of Utah School of Medicine, USA

What is an interesting or little known fact about you? I love the solitude of our high mountains and have spent many weeks wandering in the most isolated areas of the American and Canadian Rockies.

Do you have any personal missions for the next 10 years? To leave the John Moran Eye Center with such a foundational strength that it will continue to be a powerful force for good in the vision field far into the future.

Ranya Habash

Cataract Surgeon, Voluntary Assistant Professor, Bascom Palmer Eye Institute, Visionary Innovation Mentor, Stanford University, USA

Who is someone in ophthalmology/your subspecialty that you feel has been particularly influential over the past 10 years? Elon Musk. Ok, so he's not exactly in our field but he's transformed some of the most consequential industries on Earth: banking, cars, energy, rockets, and brain-computer interface technology. I hope to transform the eye care industry for the benefit of our patients, colleagues, and industry partners the same way.

R.V. Paul Chan

Chair, Department of Ophthalmology and Visual Sciences, The John H. Panton, MD Professor of Ophthalmology, Illinois Eye and Ear Infirmary University of Illinois at Chicago, USA

Is there a particular tool, technological advance, or instrument you would not have been able to live without over the past 10 years? I started my training when OCT was just coming to market and it has been an indispensable tool ever since.

Rohit Shetty

Vice Chairman, Clinician Translational scientist, Narayana Nethralaya, Bengaluru, India

What's been the biggest breakthrough in ophthalmology / your specific field over the last 10 years, and what are the reasons behind your choice? The biggest breakthrough is newer lenticule procedures in refractive surgery that can create a new dimension in refractive surgery.

Sanduk Ruit

Executive Director, Tilganga Institute of Ophthalmology, Kathmandu, Nepal

Do you have any personal missions for the next 10 years? I would like to make sure that we are in the process of removing the cataract backlog especially from low and middle income countries with a mission to provide sufficient, successful, and sustainable modern cataract surgery.

Sean Ianchulev

Professor of Ophthalmology, New York Eye and Ear Infirmary, Icahn School of Medicine, Mount Sinai, NYC, USA

Who is someone in ophthalmology/your subspecialty that you feel has been particularly influential over the past 10 years? I am fortunate to have been in the midst of incredibly bright colleagues and role models while on this innovation trail - people who have inspired and encouraged me every day - Don Minkler, Tom Zimmerman, Ken Hoffer, Bob Sinskey, David Chang, Bob Weinreb, Ike Ahmed, Jim Tsai, Lou Pasquale.

Seang-Mei Saw

Seang-Mei Saw, Distinguished Wallace Foulds Professor, Duke-NUS Medical School, Singapore, Singapore Eye Research Institute (SERI), Singapore

What would you like to see change in ophthalmology / your subspecialty over the next 10 years, and why? I would like to see a larger number of women in leadership and senior positions. Senior female leaders set good examples and mentor junior female faculty."

What is an interesting or little-well known fact about you? I used to canoe competitively.

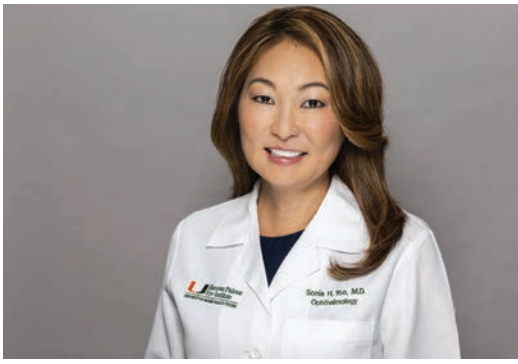
Sobha Sivaprasad

Director of NIHR Moorfields Clinical Research Facility, Moorfields Eye Hospital, London, UK

What is an interesting or little-well known fact about you? I love to read biographies of the younger Royal Family.

Who is someone in ophthalmology/ your subspecialty that you feel has been particularly influential over the past 10 years? Professor Alan Bird.

Do you have any strong opinions with which the rest of the field tends to disagree? Topical drops are required to replace intravitreal anti-VEGF injections.



Sonia Yoo

Professor, Greentree Hickman Chair in Ophthalmology, Associate Medical Director, Bascom Palmer Eye Institute, University of Miami, Miller School of Medicine, Miami, Florida, USA

Why did you decide to pursue ophthalmology/your subspecialty? I was interested in microsurgery and was introduced to ophthalmology by two enthusiastic ophthalmology residents (Drs David Cano and Richard Kalski) and their mentors, Dr. William Bruner and Dr. Lawrence Singerman. I worked with Drs. Bruner and Singerman as a medical student and they helped me pursue a career in ophthalmology.

Shigeru Kinoshita

Professor and Chair, Department of Frontier Medical Science and Technology for Ophthalmology, Kyoto Prefectural University of Medicine, Japan

As one of his nominators remarked: "Dr. Kinoshita shows 98 of his H-index, and has published 670 articles. Over the past 40 years, his primary interest has been focused on the translational research of new therapeutic modalities for severe corneal diseases. He also developed CHCEC injection therapy for corneal endothelial dysfunction. His group also proved the clinical efficacy of ROCK-inhibitor topical application for partial corneal endothelial dysfunction, with its clinical trials now being underway in the US and EU."

Stephanie Watson

Professor, Head, Corneal Research Group, The University of Sydney, Head, Corneal Unit, Sydney Eye Hospital, Sydney, Australia

Is there a particular tool, technological advance, or instrument you would not have been able to live without over the past 10 years? Access to high quality data is a key tool that has been invaluable over the past 10 years. For example, the Save Sight Keratoconus and Dry Eye Registries which I lead have been able to collect data from everyday clinical practice which has enabled clinicians to benchmark their practice and understand disease natural history and treatment outcomes. In my laboratory studies, the ability to analyze outputs in real-time and in detail such as with in vivo cellular imaging has generated high quality data that has enabled the discovery of new knowledge.

Stephen D. McLeod

Chief Executive Officer, American Academy of Ophthalmology, USA

Why did you decide to pursue ophthalmology/your subspecialty? It quickly became clear in medical school that ophthalmology was uniquely gratifying amongst medical specialties: for so many of the major causes of visual disability, we actually had a truly effective treatment—from the humble but debilitating refractive error to cataract and beyond. And the intractable problems faced present deeply interesting scientific problems.

Tetsuro Oshika

Professor and Chairman, Department of Ophthalmology, Faculty of Medicine, University of Tsukuba, Ibaraki, Japan

Do you have any strong opinions with which the rest of the field tends to disagree? I am very conservative when it comes to refractive surgery. As a moderately myopic and presbyopic individual myself, I am highly satisfied with spectacles and contact lenses. If refractive surgery and contact lenses had already existed in this world and someone had invented spectacles for refractive errors and presbyopia, that invention would deserve a Nobel Prize. They are so safe, non-invasive, reversible, changeable, convenient, and suitable for everyone, including children and seniors.

Tamara R. Fountain

Professor of Ophthalmology and Section Chair Emeritus Oculofacial Plastic Surgery, Rush University Medical Center.

One Interesting or little-known fact about me: I would have been an Air Force fighter pilot like my dad if I hadn't become myopic in early childhood (which back then banished a person from military aviation).

Theo Seiler

Chairman IROC, Zurich, Switzerland and Professor, University of Zurich, Switzerland

As his nominator stated: Theo Seiler is the father of refractive surgery for the D-A-CH region, and has mentored multiple fellows along his career." Over his career he has reached a number of milestones including the world's first PTK on human eyes, the first clinical studies on PRK and the invention of corneal crosslinking, and its first clinical applications.

Tara Moore

Chief of Research and Innovation Avellino USA, Professor of Personalized Medicine, Ulster University, Northern Ireland

What was the reason that you decided to pursue ophthalmology/your subspecialty in the first place? I met Tony Adamis at ARVO in Fort Lauderdale when I was 22 years old, he invited me to work in his laboratory in Boston in MEEI and I have never looked back and remained in ophthalmology research since then.

Tien-Yin Wong

Chair Professor & Founding Head, Tsinghua Medicine, Tsinghua University, Beijing, China, Professor & Senior Advisor, Singapore National Eye Centre, Singapore

Who is someone in ophthalmology/your subspecialty that you feel has been particularly influential over the past 10 years? Neil Bressler, Johns Hopkins University.

What was the reason that you decided to pursue ophthalmology / your subspecialty in the first place? Perfect balance between "medicine" and "surgery".

Tina Wong

Head, Glaucoma Service, Singapore National Eye Centre, Singapore Eye Research Institute, Duke-NUS Medical School, Singapore

Why did you decide to pursue ophthalmology/your subspecialty? Retinal cell-based therapy to recover vision in retinal degenerative diseases. The incredible bionic eye - revolutionary technology allowing the restoration of functional vision in subjects with partial to total blindness.

Uday Devgan

Private clinic, Devgan Eye Surgery, Los Angeles, Host of CataractCoach.com, Clinical Professor of Ophthalmology, UCLA, USA

Do you have any strong opinions with which the rest of the field tends to disagree? Perhaps we need to periodically redefine the way we measure success in ophthalmology. I love ophthalmology and I love cataract surgery, but I love my relationships and my health more. This is surprisingly uncommon among my peers.

Ula V. Jurkunas

Associate Director, Cornea and Refractive Surgery Service, Massachusetts Eye and Ear Infirmary, Associate Professor, Department of Ophthalmology, Harvard Medical School, USA

What is your prediction for where ophthalmology / your subspecialty will be 10 years from now? Cell therapy and small molecules will treat most ocular conditions.

What was the reason that you decided to pursue ophthalmology / your subspecialty in the first place? Surgical precision, fast surgical recovery with gratifying outcomes.

Ursula Schmidt-Erfurt

Professor and Chair of the Department of Ophthalmology at the University Eye Hospital, Vienna, Austria. Founder of the Vienna Reading Center, Austria

In the words of the nominators: "Ursula Schmidt-Erfurt is one of the leading figures of European ophthalmology. Her work on AI, imaging and retinal fluid monitoring has been transformative and showcases just how important AI tools are and how badly they are needed in the clinic!"

Vance Thompson

Refractive Surgeon Founder, Vance Thompson Vision, Professor of Ophthalmology, University of South Dakota, Sanford School of Medicine, USA

Who would you invite to your dream dinner party? Jesus, my family, my best friends, and Winnie the Pooh…that would be a dream come true dinner for me, someone who deeply loves and appreciates the joy of time spent enjoying food, wine, and conversation around the dinner table.

Xiulan Zhang

Professor of Ophthalmology, Zhongshan Ophthalmic Center, Sun Yat-sen University, Guangzhou, China

What is an interesting or little-well known fact about you? When I was five years old, I made up my mind to become a doctor. That year, my father was diagnosed with "silicosis" and his life was in danger. My brother took me and we walked for two or three hours over mountains and valleys to visit our seriously ill father in the hospital. Just as we walked through the hospital gate, a young doctor in a white coat walked towards us. At that moment, being a doctor became my lifelong pursuit! For decades, I have never regretted it because saving lives and healing the sick is the greatest and most rewarding experience in the world.

iSTENT INFINITE: A NEW WAY TO TREAT GLAUCOMA

How the new standalone implantable device from Glaukos differs from the current crop of glaucoma treatment options

To combat the large unmet need for standalone MIGS implant surgery in the US, Glaukos has developed the iStent infinite: a first-of-its-kind implantable device designed to reduce the intraocular pressure (IOP) of the eye. Indicated for use in adult patients with primary open-angle glaucoma in whom previous medical and surgical treatments have failed, the FDA-cleared device can be used on both phakic and pseudophakic patients and offers a safe and immediate alternative to more invasive procedures.

With three anatomically designed stents preloaded into an elegant injector system, iStent infinite meets the needs of the "interventional glaucoma" revolution – doctors who recognize the need to surgically intervene earlier in disease progression can do so with the iStent infinite thanks to its favorable benefit-risk ratio.

Better than the rest!

Aside from its application in standalone procedures, the new iStent infinite boasts many other benefits that set it apart from currently available options. First, it delivers foundational, 24/7, long-term IOP control in patients who have failed prior medical and surgical intervention and isn't restricted by glaucoma severity (mild, moderate or severe). Second, it offers a truly micro-invasive alternative to medications and more invasive procedures, helping to address the rampant rates of patient non-compliance and disease progression.

Going with the flow

The iStent infinite restores physiologic outflow by creating arcs of flow spanning up to eight clock hours (240°) while minimizing tissue disruption. Designed to maximize outflow

GLAUKOS

while minimizing disruption to the eye's natural anatomy, the iStent infinite occupies only three percent of Schlemm's canal, leaving 97 percent completely untouched. Studies have shown that iStent technologies have demonstrated immediate and more expansive flow post-implantation (1).

Compared with other MIGS procedures that are limited by mild-to-moderate disease stages, the fact this procedure can be performed at any stage of disease progression (provided that patients have failed prior medical and surgical intervention) providess surgeons with the versatility to treat a variety of patients.

Put to the test

In a prospective, multicenter, 12-month pivotal trial, patients with open-angle glaucoma who had failed prior medical and surgical intervention (patients were on an average of three medications and had failed an average of 2+ prior surgeries) underwent standalone iStent infinite implantation. The device delivered exceptional results that effectively demonstrated sustained efficacy throughout the course of the study, as well as exceptional intraoperative and postoperative safety, securing it as a promising and viable device for the future of IOP management (2).

It is important to address the words of Ike Ahmed – recognized as one of the most experienced glaucoma MIGS surgeons in the world – who said: "Our current treatment model is in need of a refresh. As much as we like the meds we have, so many patients progress due to side effects, poor adherence and lack of efficacy. We have an opportunity to intervene and doing so earlier is our best chance."

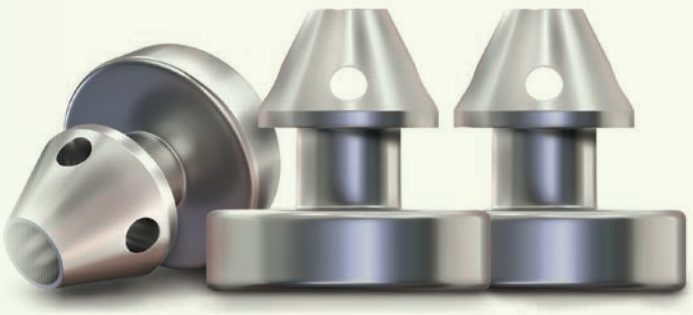
The iStent infinite is designed for this clear need, making it an essential addition to the interventional glaucoma armamentarium.

PM-US-1403

References:

1. *K Gillmann, "A Prospective Analysis of iStent Inject Microstent Implantation: Surgical Outcomes, Endothelial Cell Density, and Device Position at 12 Months," J Glaucoma, 29, 639 (2020). PMID: 32433094.*
2. *Glaukos, "Clinical Data for iStent infinite®." Available at: https://bit.ly/3LvAO2X.*

INDICATION FOR USE. The iStent infinite® Trabecular Micro-Bypass System Model iS3 is an implantable device intended to reduce the intraocular pressure (IOP) of the eye. It is indicated for use in adult patients with primary open-angle glaucoma in whom previous medical and surgical treatment has failed. **CONTRAINDICATIONS.** The iStent infinite is contraindicated in eyes with angle-closure glaucoma where the angle has not been surgically opened, acute traumatic, malignant, active uveitic, or active neovascular glaucoma, discernible congenital anomalies of the anterior chamber (AC) angle, retrobulbar tumor, thyroid eye disease, or Sturge-Weber Syndrome or any other type of condition that may cause elevated episcleral venous pressure. **WARNINGS.** Gonioscopy should be performed prior to surgery to exclude congenital anomalies of the angle, PAS, rubeosis, or conditions that would prohibit adequate visualization that could lead to improper placement of the stent and pose a hazard. **MRI INFORMATION.** The iStent infinite is MR-Conditional, i.e., the device is safe for use in a specified MR environment under specified conditions; please see Directions for Use (DFU) label for details. **PRECAUTIONS**. The surgeon should monitor the patient postoperatively for proper maintenance of IOP. Three out of 61 participants (4.9%) in the pivotal clinical trial were phakic. Therefore, there is insufficient evidence to determine whether the clinical performance of the device may be different in those who are phakic versus in those who are pseudophakic. **ADVERSE EVENTS.** The most common postoperative adverse events reported in the iStent infinite pivotal trial included IOP increase ≥ 10 mmHg vs. baseline IOP (8.2%), loss of BSCVA ≥ 2 lines (11.5%), ocular surface disease (11.5%), perioperative inflammation (6.6%) and visual field loss ≥ 2.5 dB (6.6%). **CAUTION:** Federal law restricts this device to sale by, or on the order of, a physician. Please see DFU for a complete list of contraindications, warnings, precautions, and adverse events.



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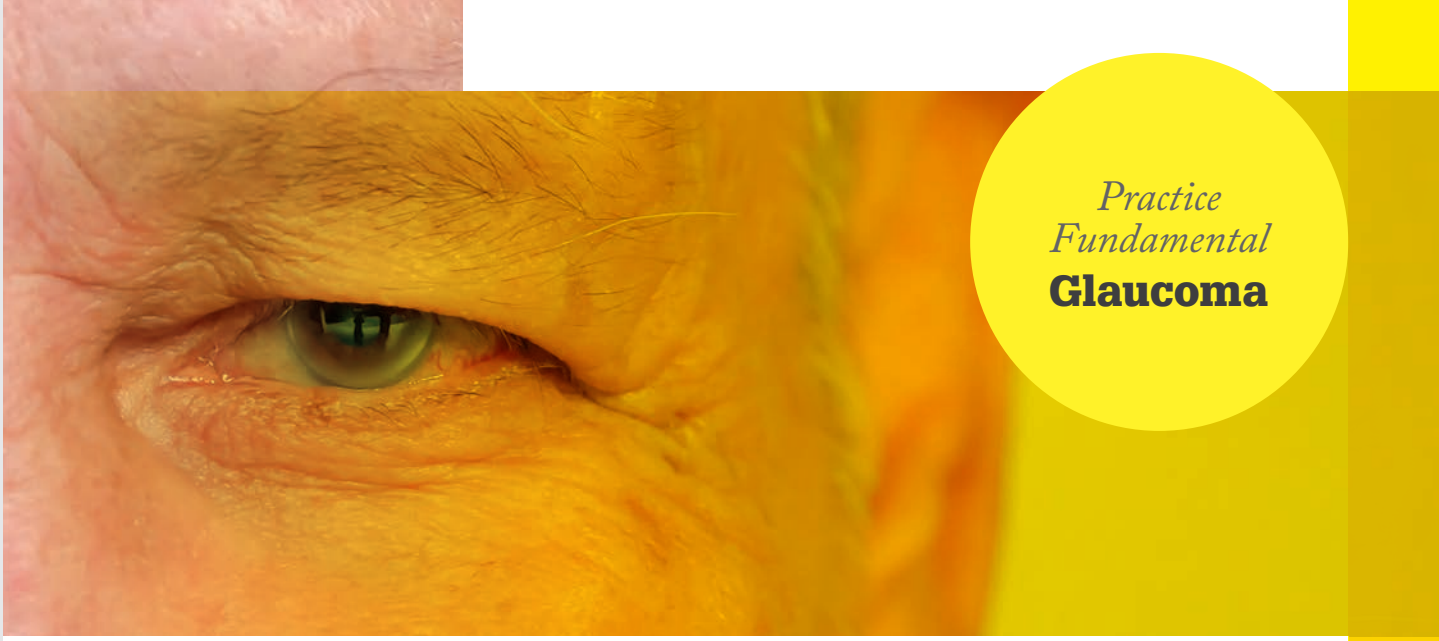

Perimetric Progressions. Using data collected in December 2021, researchers investigated the associations between the rates of ganglion cell/inner plexiform layer (GCIPL) and circumpapillary nerve fiber layer (cpRNFL) thinning, as well as the development of perimetric glaucoma in eyes with suspected glaucoma (1). Using a joint longitudinal multivariable survival model, the researchers found that the mean rates of GCIPL thinning were faster in eyes that developed perimetric glaucoma. Among other factors, African American race, male sex, and higher baseline visual field pattern standard deviation were associated with higher risks of developing perimetric glaucoma.

At home monitoring. To assess the validity of home contrast sensitivity (CS) monitoring as a measure of glaucomatous damage, researchers asked 26 participants to remotely use the Berkeley Contrast Squares application – a free downloadable tool that records users' contrast sensitivity for varying degrees of visual acuity (2). Participants were asked to send logarithmic CS results within a minimum eight week test–retest period. Validating results against office-based contrast sensitivity testing collected within the previous six months, the study identified high Berkeley Contrast Squares test–retest reliability with an intraclass correlation coefficient score of 0.91 and significant correlation between repeat test results and baseline test scores.

Apple of my AI. Glaucoma management demands a combination of multiple testing and imaging modalities, making it a key target for clinical decision support (CDS) (3). To evaluate clinical perceptions of a prototyped CDS tool that integrates visual field (VF) metric predictions from AI models, 10 clinicians from the University of California, San Diego, participated in six cases uploaded to a CDS tool. For each case, clinicians answered questions about management recommendations, paying particular attention to the utility and validity of the AI-predicted VF metrics. The results of the study found that a CDS tool can present AI model outputs in useful and reliable ways that clinicians are willing to integrate into clinical decision making.

Honing in on hyphema. Researchers set out to identify the risk factors of hyphema development after Kahook Dual Blade (KDB) excisional goniotomy combined with phacoemulsification for glaucoma management (4). A total of 202 eyes in 145 patients received the combined procedure and were evaluated for preoperative factors predictive of postoperative hyphema. Hyphema occurred in 8.4 percent of patients on day one, with several significantly correlated risk factors, including male sex, angle closure glaucoma, and postoperative day one IOP.

See references online.

IN OTHER NEWS

Significant associations. *A new study – analyzing 112 eyes from patients with primary open-angle glaucoma (POAG) – has identified correlations between microvasculature dropout and the central retinal vessel trunk in POAG eyes (5).*

Cutting costs. *Research into cost differences between a second glaucoma drainage device (SGDD) and transscleral cyclophotocoagulation (CPC), has found that the total direct cost in the SGDD group was more than double that in the CPC group (6).*

Implant evaluation. *An evaluation of the XEN45 stent in eyes with open angle glaucoma and high myopia found that, although the XEN implant lowered IOP in highly myopic eyes with glaucoma, rates of hypotony were high (7).*

Same but different. *Assessing 31 case control studies, researchers found that the corneas of normal tension glaucoma patients are more deformable than normal controls, in contrast to the stiff corneas of high-tension glaucoma and ocular hypertension patients (8).*

Safe Simple Success

A dependable implantation approach and appropriate patient selection yields beneficial outcomes with Xen Gel Stent

By Zachary Vest

Ten years ago, when I was finishing up my glaucoma fellowship, our choices for glaucoma surgery included trabeculectomies and a variety of tube shunts. The Ex-Press shunt was one of the original attempts at making invasive trabeculectomy surgery safer. Although the device did not offer much of a safety improvement, in terms of preventing postoperative hypotony, it did make the surgery a bit easier, which was a benefit to the surgeon. However, the immediate postoperative and long-term risks of filtering surgery remained. The first commercial alternative to trabeculectomy surgery, within the subconjunctival space, was the Xen Gel Stent (internal lumen diameter of 45 μm). The original iteration used an ab interno delivery device – which remains the case, according to its FDA-approved labeling. This microinvasive glaucoma surgery stent was designed to be introduced into the subconjunctival space via the anterior chamber.

As it eliminates the need for a large conjunctival incision, Xen greatly reduces risk of bleb and conjunctival leaks as well as poor wound healing (1, 2). Compared with the Ex-Press shunt, the implant's lumen size is designed to throttle IOP to prevent hypotony. In this way, the Xen establishes an IOP floor, adding greatly to the safety profile. The InnFocus MicroShunt, which is in FDA investigations, is another device that looks to minimize hypotony risk but still provides the pressure-lowering benefits of the subconjunctival space.

Zachary Vest

Since its FDA approval, the procedure to implant the Xen Gel Stent has gone through a variety of iterations.

Indications for use

The Xen gel stent was approved by the FDA in 2016 for use in primary open angle glaucoma and pseudoexfoliative glaucoma with open angles that are unresponsive to maximum tolerated medical therapy, as well as refractory open angle glaucoma that has failed previous surgical treatment. In clinical studies, patients generally achieve IOPs in the 12–18 mm Hg range. Candidates for

Xen should have a healthy conjunctiva; the tissue should not be excessively scarred or have had previous surgical manipulations. Although not a requirement, it is better if patients can be supplemented with additional medication to achieve their IOP goal. I would not opt for Xen in a patient who is still progressing at a pressure of 11 mm Hg, for example. That is someone who likely needs a trabeculectomy to get them into the single digits.

I like to use the Xen in patients for whom I would have traditionally used a tube shunt because the pressure lowering effect is similar – in the mid-teens. My Xen candidates include those for whom a trabeculectomy is a little too aggressive or those with other risk factors, such as advanced age, systemic blood thinner use, thin conjunctiva, and an inability to keep the required close follow up post trabeculectomy. Another reason for choosing Xen in these patients is its superonasal positioning, which leaves a quadrant of tissue in case a future tube shunt is needed; this sequence of surgeries is typically relatively simple. In other words, using the Xen does not "burn any bridges." The exception is in a patient who may ultimately need a trabeculectomy, which can be more difficult after Xen because the conjunctiva has already been manipulated and exposed to mitomycin-C.

Faster recovery

Compared with our traditional surgeries, which typically involve stitches that cause ocular discomfort while healing, the postoperative course is much easier with Xen. With traditional surgery, patients are on strict activity restrictions for several weeks – sometimes a month or more, if they're slow to heal, or if they have an atypical or rocky postoperative course. In Colorado, where I practice, telling patients they cannot participate in their outdoor activities for a month is often a tough pill for them to swallow. Xen patients are usually on restrictions for only about a week as a result of the greatly reduced risk of hypotony.

"Compared with our traditional surgeries, which typically involve stitches... the postoperative course is much easier with Xen."

Revisions over time

In the original FDA Xen trials, the surgery was a hybrid model involving an ab interno placement, but with a conjunctival peritomy to take the conjunctiva down so as to accommodate the mitomycin-soaked sponges that were used. In clinical practice however, many surgeons inject mitomycin-C instead of using sponges. Additionally, it was determined early on that the implant can get tangled in Tenon's capsule, causing fibrosis at the distal tip, which requires needling. Subsequent implantation iterations aimed to solve this issue. Some surgeons have converted to a transconjunctival ab externo approach, keeping the needle as superficial as possible when placing the implant to avoid Tenon's capsule. Some surgeons, like myself, choose to take the conjunctiva down for an ab externo approach. Those who like the original ab interno delivery of the Xen may perform a primary needling at the time of implantation or use special devices to try to sweep away Tenon's as described by Lauren Dahr and colleagues (3). The goal is to create space to ensure that there is no tissue around the distal end of the implant.

Certainly, implanting the Xen is significantly less invasive and easier than using a tube shunt or having to create a watertight closure for a trabeculectomy. Still, we must properly position the Xen to obtain optimal outcomes. No matter the technique used by the surgeon, ensuring a clean distal tip at the completion of the case is important, as it should deliver results that are comparable to what has been seen in the published data.

The future of subconjunctival procedures

The biggest advantage of Xen is its safety profile. The focus now is how we can best optimize the subconjunctival space. It may be through a combination of a different or larger bore devices – alongside a better understanding of wound healing and wound modulation. One big question hanging over outcomes is how the eye responds to aqueous filtering into the subconjunctival space. There will always be interest in iterations that can make this type of surgery better – whether that's a change to the implant, further finessing of the technique, or a modification that has an impact on wound modulation to make it an even more favorable choice.

Zachary Vest is in practice with Mile High Eye Institute, Sheridan, Colorado. He specializes in the medical and surgical management of glaucoma as well as advanced cataract surgery techniques and may be reached at drvest@mhei.com.

See references online.

The Joy of Exploration

Sitting Down With… Himal Kandel, Kornhauser Research Fellow at Save Sight Institute and Honorary Research Associate at Sydney Eye Hospital.

Himal Kandel is an ophthalmic outcomes researcher currently working as the Kornhauser Research Associate at the Save Sight Institute in Australia. His special research interests include evaluating the quality of life outcomes of patients with eye conditions. Here he talks about his global career, moving across optometry and ophthalmology and the importance of global health systems.

What initially inspired you to become involved in both ophthalmology and optometry?

I was born in a remote village in Nepal that was deprived of good health care services – we had to walk for two days to go to the nearest hospital. After high-school, I discovered that many relatives in my village had a visual impairment that could be corrected with a simple pair of glasses. I was amazed by how much a person's quality of life could be improved with the right care, and I wanted to be a part of helping others see the world more clearly. Additionally, I have always been drawn to the scientific and technical aspects of medicine; ophthalmology and optometry offered a unique combination of those interests. That, alongside my mother's practice of traditional medicine, was what inspired me to pursue a career in this field.

Can you tell me more about your time as a clinician and lecturer in Nepal, the Maldives, Eritrea, and Kenya? And why did you relocate so frequently?

While in Nepal, I was involved in organizing and providing clinical care in numerous eye and health camps in rural communities. I have always been interested in global health and the opportunity to make a positive impact on other communities in need. And that's why I chose to work as a clinician and lecturer in various countries in Asia and Africa. In Nepal, rural communities were deprived of eye care services that were largely limited to cities. The Maldives relied on international ophthalmologists and optometrists as it did not have its own eye health workforce training center. I worked as a pioneer lecturer in the first optometry schools in Kenya and Eritrea. In Eritrea, the shortage of human resources for eye health was so critical that they were training nurses to perform cataract surgery – I worked as visiting faculty to help them.

I was fortunate enough to have the opportunity to work in these diverse settings that, in turn, allowed me to gain a wider perspective on different cultures and healthcare systems. Each time I moved, I was inspired by the resilience and determination of the people I worked with and the impact I was able to have on their lives. I learned so much from my time in each of these countries, and I am grateful for the experience.

Why did you decide to move from Nepal to South Australia to study for a PhD in Optometry and Vision Science?

During my MSc studies at the International Centre for Eye Health at the London School of Hygiene and Tropical Medicine, I became acutely aware of the significance of quality-of-life research in ophthalmology. I felt a strong drive to contribute to this important area of study and to make a positive impact on the lives of people with eye disease and visual impairment.

While researching the top institutions in this field, I came across the world-class research being conducted by Konrad Pesudovs and his team at Flinders University in South Australia. I was eager to be a part of such a cutting-edge program and reached out to Professor Pesudovs to inquire about the possibility of a PhD opportunity.

Fortunately, I was able to secure funding through several scholarships, including the International Post-graduate Research Scholarship, Australia Postgraduate Awards, and the Australian Government Research Training Programme Scholarship. Working on my PhD in Optometry and Vision Science at Flinders University in South Australia allowed me to make meaningful contributions to the field and work towards my goal of improving the quality of life for those with visual impairments.

"I have always been interested in global health and the opportunity to make a positive impact on other communities in need."

Of all the places you've lived and worked, where have you been happiest?

My time spent in Adelaide was truly one of the best times of my life. Firstly, Adelaide is a vibrant city that offers a rich history, beautiful parks and beaches, diverse cultural offerings, and friendly people. All of these elements combined to create a wonderful experience for me during my time there.

Additionally, my time in Adelaide was marked by several accomplishments in both my academic and personal life. During my time there, I was awarded the Vice Chancellor's prize for doctoral thesis excellence for my PhD thesis, and I was even named the South Australian international student of the year in 2018.

Finally, one of the most memorable

experiences of my time in Adelaide was starting a family. I got married during that time and our daughter was born there in 2018. The city's great quality of life and friendly community made it the perfect place to start our family and create lasting memories.

Adelaide has a special place in my heart for giving me experiences I will always treasure.

What things are you currently working on?

I am currently working on a number of projects that explore the various avenues for advancing the field of keratoconus. Some of my current projects include understanding the longer-term impacts of corneal cross-linking protocols for keratoconus; understanding the potential role of artificial intelligence in keratoconus management; improving the mental health impact of keratoconus; and determining the association and roles of allergy and eye rubbing in keratoconus. As a quality-of-life research expert, I also collaborate in international projects to explore and improve the quality-of-life impact of other eye diseases.

Ultimately, I hope to see a future where keratoconus is better understood, better treated, and where patients have access to the care and resources they need to manage their condition and improve their quality of life. I am committed to making a positive impact in the lives of those with keratoconus and advancing the field for the benefit of future generations.

What do you look forward to in the future?

Ultimately, I hope to see a future where keratoconus is better understood, better treated, and where patients have access to the care and resources they need to manage their condition and improve their quality of life. I am committed to making a positive impact in the lives of those with keratoconus and advancing the field for the benefit of future generations.

As a researcher with a special interest in quality-of-life research, I look forward to modern psychometric theories, such as Rasch analysis and Item Response Theory, being employed more widely to analyze quality-of-life studies. We must work towards ensuring that the quality-of-life impact of diseases and the benefits of interventions are understood more accurately from patients' perspectives. That is why it's so important to work closely with patients, involving them in our studies. I certainly encourage patients with keratoconus to get involved and share their experiences and insights, which can help drive progress in this field.

Reference

1. *H Kandel et al., "Quality of life impact of eye diseases: a Save Sight Registries study," Clinical & Experimental Ophthalmology, 50, 386 (2022). PMID: 35080803*

SYFOVRE ™ (pegcetacoplan injection), for intravitreal use
BRIEF SUMMARY OF PRESCRIBING INFORMATION
Please see SYFOVRE full Prescribing Information for details.

INDICATIONS AND USAGE

SYFOVRE is indicated for the treatment of geographic atrophy (GA) secondary to age-related macular degeneration (AMD).

CONTRAINDICATIONS

Ocular or Periocular Infections
SYFOVRE is contraindicated in patients with ocular or periocular infections.
Active Intraocular Inflammation
SYFOVRE is contraindicated in patients with active intraocular inflammation.

WARNINGS AND PRECAUTIONS

Endophthalmitis and Retinal Detachments
Intravitreal injections, including those with SYFOVRE, may be associated with endophthalmitis and retinal detachments. Proper aseptic injection technique must always be used when administering SYFOVRE in order to minimize the risk of endophthalmitis. Patients should be instructed to report any symptoms suggestive of endophthalmitis or retinal detachment without delay and should be managed appropriately.
Neovascular AMD
In clinical trials, use of SYFOVRE was associated with increased rates of neovascular (wet) AMD or choroidal neovascularization (12% when administered monthly, 7% when administered every other month and 3% in the control group) by Month 24. Patients receiving SYFOVRE should be monitored for signs of neovascular AMD. In case anti-Vascular Endothelial Growth Factor (anti-VEGF) is required, it should be given separately from SYFOVRE administration.
Intraocular Inflammation
In clinical trials, use of SYFOVRE was associated with episodes of intraocular inflammation including: vitritis, vitreal cells, iridocyclitis, uveitis, anterior chamber cells, iritis, and anterior chamber flare. After inflammation resolves patients may resume treatment with SYFOVRE.
Increased Intraocular Pressure
Acute increase in IOP may occur within minutes of any intravitreal injection, including with SYFOVRE. Perfusion of the optic nerve head should be monitored following the injection and managed as needed.

ADVERSE REACTIONS

Clinical Trials Experience
Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.
A total of 839 patients with GA in two Phase 3 studies (OAKS and DERBY) were treated with intravitreal SYFOVRE, 15 mg (0.1 mL of 150 mg/mL solution). Four hundred nineteen (419) of these patients were treated in the affected eye monthly and 420 were treated in the affected eye every other month. Four hundred seventeen (417) patients were assigned to sham.
The most common adverse reactions (≥5%) reported in patients receiving SYFOVRE were ocular discomfort, neovascular age-related macular degeneration, vitreous floaters, and conjunctival hemorrhage.

Table 1: Adverse Reactions in Study Eye Reported in ≥2% of Patients Treated with SYFOVRE Through Month 24 in Studies OAKS and DERBY

Adverse Reactions	PM (N = 419) %	PEOM (N = 420) %	Sham Pooled (N = 417) %
Ocular discomfort*	13	10	11
Neovascular age-related macular degeneration*	12	7	3
Vitreous floaters	10	7	1
Conjunctival hemorrhage	8	8	4
Vitreous detachment	4	6	3
Retinal hemorrhage	4	5	3
Punctate keratitis*	5	3	<1
Posterior capsule opacification	4	4	3
Intraocular inflammation*	4	2	<1
Intraocular pressure increased	2	3	<1

PM: SYFOVRE monthly; PEOM: SYFOVRE every other month
*The following reported terms were combined:
Ocular discomfort included: eye pain, eye irritation, foreign body sensation in eyes, ocular discomfort, abnormal sensation in eye
Neovascular age-related macular degeneration included: exudative age-related macular degeneration, choroidal neovascularization
Punctate keratitis included: punctate keratitis, keratitis
Intraocular inflammation included: vitritis, vitreal cells, iridocyclitis, uveitis, anterior chamber cells, iritis, anterior chamber flare

Endophthalmitis, retinal detachment, hyphema and retinal tears were reported in less than 1% of patients. Optic ischemic neuropathy was reported in 1.7% of patients treated monthly, 0.2% of patients treated every other month and 0.0% of patients assigned to sham. Deaths were reported in 6.7% of patients treated monthly, 3.6% of patients treated every other month and 3.8% of patients assigned to sham. The rates and causes of death were consistent with the elderly study population.

USE IN SPECIFIC POPULATIONS

Pregnancy
Risk Summary
There are no adequate and well-controlled studies of SYFOVRE administration in pregnant women to inform a drug-associated risk. The use of SYFOVRE may be considered following an assessment of the risks and benefits.
Systemic exposure of SYFOVRE following ocular administration is low. Subcutaneous administration of pegcetacoplan to pregnant monkeys from the mid gestation period through birth resulted in increased incidences of abortions and stillbirths at systemic exposures 1040-fold higher than that observed in humans at the maximum recommended human ophthalmic dose (MRHOD) of SYFOVRE (based on the area under the curve (AUC) systemically measured levels). No adverse maternal or fetal effects were observed in monkeys at systemic exposures approximately 470-fold higher than that observed in humans at the MRHOD.
In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2-4% and 15-20%, respectively.
Lactation
Risk Summary
It is not known whether intravitreal administered pegcetacoplan is secreted in human milk or whether there is potential for absorption and harm to the infant. Animal data suggest that the risk of clinically relevant exposure to the infant following maternal intravitreal treatment is minimal. Because many drugs are excreted in human milk, and because the potential for absorption and harm to infant growth and development exists, caution should be exercised when SYFOVRE is administered to a nursing woman.
Females and Males of Reproductive Potential
Contraception
Females: It is recommended that women of childbearing potential use effective contraception methods to prevent pregnancy during treatment with intravitreal pegcetacoplan. Advise female patients of reproductive potential to use effective contraception during treatment with SYFOVRE and for 40 days after the last dose. For women planning to become pregnant, the use of SYFOVRE may be considered following an assessment of the risks and benefits.
Pediatric Use
The safety and effectiveness of SYFOVRE in pediatric patients have not been established.
Geriatric Use
In clinical studies, approximately 97% (813/839) of patients randomized to treatment with SYFOVRE were ≥ 65 years of age and approximately 72% (607/839) were ≥ 75 years of age. No significant differences in efficacy or safety were seen with increasing age in these studies. No dosage regimen adjustment is recommended based on age.

PATIENT COUNSELING INFORMATION

Advise patients that following SYFOVRE administration, patients are at risk of developing neovascular AMD, endophthalmitis, and retinal detachments. If the eye becomes red, sensitive to light, painful, or if a patient develops any change in vision such as flashing lights, blurred vision or metamorphopsia, instruct the patient to seek immediate care from an ophthalmologist.
Patients may experience temporary visual disturbances associated either with the intravitreal injection with SYFOVRE or the eye examination. Advise patients not to drive or use machinery until visual function has recovered sufficiently.

Manufactured for:
Apellis Pharmaceuticals, Inc.
100 Fifth Avenue
Waltham, MA 02451

SYF-PI-17Feb2023-1.0

2/23 US-PEGGA-2200163 v2.0

NOW APPROVED: the first and only FDA-approved treatment for GA secondary to AMD[1]

GA unravels so much
SAVE RETINAL TISSUE BY SLOWING PROGRESSION[1-3]

SYFOVRE achieved continuous reductions in mean lesion growth rate* vs sham pooled from baseline to Month 24[1]

Monthly	Every Other Month (EOM)
OAKS trial (mm^2): (3.11 vs 3.98) **22%**	OAKS trial (mm^2): (3.26 vs 3.98) **18%**
DERBY trial (mm^2): (3.28 vs 4.00) **18%**	DERBY trial (mm^2): (3.31 vs 4.00) **17%**

SE in trials (monthly, EOM, sham pooled): OAKS: 0.15, 0.13, 0.14; DERBY: 0.13, 0.13, 0.17.

*Slope for baseline to Month 24 is an average of slope of baseline to Month 6, Month 6 to Month 12, Month 12 to Month 18, and Month 18 to Month 24.[1] Based on a mixed effects model for repeated measures assuming a piecewise linear trend in time with knots at Month 6, Month 12, and Month 18.[1]

AMD=age-related macular degeneration; GA=geographic atrophy; SE=standard error.

Learn more about the SYFOVRE clinical data at SyfovreECP.com/efficacy

INDICATION

SYFOVRE™ (pegcetacoplan injection) is indicated for the treatment of geographic atrophy (GA) secondary to age-related macular degeneration (AMD).

IMPORTANT SAFETY INFORMATION

CONTRAINDICATIONS

- SYFOVRE is contraindicated in patients with ocular or periocular infections, and in patients with active intraocular inflammation

WARNINGS AND PRECAUTIONS

- **Endophthalmitis and Retinal Detachments**
  - Intravitreal injections, including those with SYFOVRE, may be associated with endophthalmitis and retinal detachments. Proper aseptic injection technique must always be used when administering SYFOVRE to minimize the risk of endophthalmitis. Patients should be instructed to report any symptoms suggestive of endophthalmitis or retinal detachment without delay and should be managed appropriately.
- **Neovascular AMD**
  - In clinical trials, use of SYFOVRE was associated with increased rates of neovascular (wet) AMD or choroidal neovascularization (12% when administered monthly, 7% when administered every other month and 3% in the control group) by Month 24. Patients receiving SYFOVRE should be monitored for signs of neovascular AMD. In case anti-Vascular Endothelial Growth Factor (anti-VEGF) is required, it should be given separately from SYFOVRE administration.
- **Intraocular Inflammation**
  - In clinical trials, use of SYFOVRE was associated with episodes of intraocular inflammation including: vitritis, vitreal cells, iridocyclitis, uveitis, anterior chamber cells, iritis, and anterior chamber flare. After inflammation resolves, patients may resume treatment with SYFOVRE.
- **Increased Intraocular Pressure**
  - Acute increase in IOP may occur within minutes of any intravitreal injection, including with SYFOVRE. Perfusion of the optic nerve head should be monitored following the injection and managed as needed.

ADVERSE REACTIONS

- Most common adverse reactions (incidence ≥5%) are ocular discomfort, neovascular age-related macular degeneration, vitreous floaters, conjunctival hemorrhage.

Please see Brief Summary of Prescribing Information for SYFOVRE on the adjacent page.

Trial Design: SYFOVRE safety and efficacy were assessed in OAKS (N=637) and DERBY (N=621), multi-center, 24-month, Phase 3, randomized, double-masked trials. Patients with GA (atrophic nonexudative age-related macular degeneration), with or without subfoveal involvement, secondary to AMD were randomly assigned (2:2:1:1) to receive 15 mg/0.1 mL intravitreal SYFOVRE monthly, SYFOVRE EOM, sham monthly, or sham EOM for 24 months. Change from baseline in the total area of GA lesions in the study eye (mm^2) was measured by fundus autofluorescence (FAF).[1,4]

References: 1. SYFOVRE (pegcetacoplan injection) [package insert]. Waltham, MA: Apellis Pharmaceuticals, Inc.; 2023. **2.** Pfau M, von der Emde L, de Sisternes L, et al. Progression of photoreceptor degeneration in geographic atrophy secondary to age-related macular degeneration. *JAMA Ophthalmol.* 2020;138(10):1026–1034. **3.** Bird AC, Phillips RL, Hageman GS. Geographic atrophy: a histopathological assessment. *JAMA Ophthalmol.* 2014;132(3):338–345. **4.** Data on file. Apellis Pharmaceuticals, Inc.

Apellis

SYFOVRE™
(pegcetacoplan injection)
15 mg / 0.1 mL