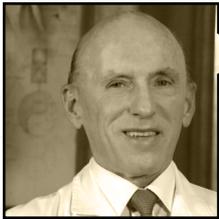


# SAY ANYTHING

## WHAT DO YOU CONSIDER THE MOST IMPORTANT TRENDS OF 2018?



**JORGE L. ALIÓ, MD,  
PHD, FEBOPHTH**

■ Miguel Hernandez  
University, Alicante, Spain

“ There are five areas that I consider the most important trends of 2018:

- ▶ **No. 1:** CapsuLaser technology (Excel-Lens) will offer the ability to perform an inexpensive and accessible laser capsulotomy. I believe this will be a hot topic in 2019.
- ▶ **No. 2:** Studies that demonstrate the cost effectiveness of new surgical ophthalmic procedures will have immense importance on outcomes analysis. Practice managers and physicians will base their decisions on these data.
- ▶ **No. 3:** Presbyopia correction remains an unsolved problem. Corneal procedures such as presbyopic LASIK could help patients with early to intermediate presbyopia. However, for patients over 55 years of age, intraocular surgery is still required. Surgeons must evaluate the relative roles of multifocal and extended depth of focus (EDOF) IOLs.
- ▶ **No. 4:** EDOF IOLs have led to disappointing results for me and my colleagues. I believe that many of these lenses are really multifocal and not EDOF, as some companies may claim. Other EDOF lenses have been removed from the market. I have personally explanted almost 20% of the EDOF lenses I have implanted due to inadequate results.
- ▶ **No. 5:** Corneal inlays will probably continue a downward trend, but it is worthwhile to find out why this is happening and what opportunities may exist in the future for this technology.”



**GERD U. AUFFARTH,  
MD, FEBO**

■ University Clinic Heidelberg,  
Germany

“ On a global scale, outside of ophthalmology, we have witnessed machine learning becoming more integrated into our world. There have been vast improvements with regard to natural language processing in digital assistants such as Alexa, Cortana, Siri, and Google Assistant. The rise and fall of digital currencies and of European data privacy regulations could also have unforeseeable effects on how we work and exchange information in hospitals.

In ophthalmology, there are quite a few specific trends worth exploring:

- ▶ **IOLs.** Every trifocal IOL on the market is fundamentally different from each other—at least according to marketing materials. The current trend is to transition from multifocal IOLs to EDOF lenses. Other optical principles such as small-aperture technology will be interesting to see over the next year. Additionally, refractive lens shaping, a technique in which the surgeon can change the optics and power of an implanted IOL, will be a hot trend in the coming year.
- ▶ **Corneal refractive procedures.** CXL and the rise and fall of corneal inlay technology are the two biggest trends of 2018. Treating low myopia or presbyopia with CXL is becoming more widespread. The withdrawal of two corneal inlays from the European market has inspired a new corneal refractive approach with an allograft inlay (TransForm Allogenic Refractive Lenticule; Allotex).
- ▶ **Capsulorhexis.** It will be worthwhile to expand the market of automated capsulotomy devices to offer a more affordable option for patients.
- ▶ **Preoperative diagnostics for premium IOL patients.** The Visual Behavior Monitor (Vivior) enables ophthalmologists to collect information about their patients' visual needs at various distances. This technology reflects the need to improve preoperative selection of patients for certain IOLs.”



**KENNETH A. BECKMAN, MD**

■ Comprehensive EyeCare of Central Ohio, Westerville, Ohio

“ One of the most important trends that I have observed in 2018 is the growing acceptance of CXL for keratoconus and corneal ectasia. Another component, which is still lagging behind but is starting to gain steam, is the willingness of corneal surgeons to treat advanced cones with CXL rather than jump immediately to performing keratoplasty. We have seen many patients with poor vision, already at graft level, respond well to CXL. Because scleral lens technology has improved dramatically, almost any cone can be fit with a scleral lens to obtain excellent vision. Therefore, many corneal surgeons, myself included, believe that almost any cone—as long as there is not a visually significant central corneal scar—can benefit from CXL and scleral lenses before keratoplasty. This may save patients a lifetime of maintenance for a grafted cornea.”



**Y. RALPH CHU, MD**

■ Chu Vision Institute, Bloomington, Minnesota

“ I think some of the most exciting developments in 2018 were the FDA approvals of the Visian Toric ICL (STAAR Surgical) and small-incision lenticule extraction (SMILE) with the VisuMax femtosecond laser (Carl Zeiss Meditec) for myopia with astigmatism. The approval of the full-range of myopia and myopic astigmatism correction with SMILE, in my opinion, will expand the range of patients that physicians can treat and makes SMILE an excellent complement to LASIK. This has been an important year for refractive surgeons. We are now able to help more patients than ever before with these new treatment options.”



**FARHAD HAFEZI, MD, PhD**

■ The ELZA Institute, Dietikon/ Zurich, Switzerland

“ In terms of CXL, the biggest story of 2018 is with regard to oxygen: We are now beginning to understand the full effect that oxygen's availability in the stroma has on the effectiveness of CXL. Interestingly, oxygen may not be necessary to achieve the pathogen-killing effect of photoactivated chromophore for keratitis (PACK)-CXL, a technique that has become more widely adopted to treat corneal infections.

One question to be addressed in 2019 is: Which chromophore is the most effective for treating infectious keratitis? Is riboflavin (as we know it) still going to be the flavor of the month? When it comes to CXL in thin corneas, we are almost at a point where we can customize illumination profiles to ensure that these thin corneas are crosslinked safely and effectively, without resorting to contact lenses or swelling the corneas with hypotonic riboflavin solution. We must validate the effectiveness of this approach across more clinical sites. This year has seen steady progress in CXL—but there is still more work to be done.”



**AYLIN KILIÇ, MD**

■ Medipol University, Istanbul, Turkey

“ I believe one of the most important advances in 2018 is the CapsuLaser—a novel device used to perform a perfectly round capsulorhexis within seconds. Another area of importance is with regard to the Visual Behavior Monitor. With this device, I can create a customized surgical plan for presbyopia correction. Lastly, I think the Transform Allogenic Refractive Lenticule for presbyopia and hyperopia correction is the future of refractive surgery. Unlike other biosynthetic corneal inlays, the allograft inlay is not a foreign body. Therefore, there is little or no corneal reaction. The lenticule is nearly invisible, and the procedure is easily reversible.”



**GILLES LESIEUR, MD**

■ Ophthalmologic Center  
Iridis, Albi, France

“ In my opinion, the biggest trend of 2018 is the analysis and calculation of total astigmatism with Total Keratometry for IOLMaster 700 and the Z Calc IOL calculator (Carl Zeiss Meditec). These advances, in combination with developments in imaging technologies, help surgeons achieve very good outcomes in astigmatism correction with toric IOLs.”



**MAGDA RAU, MD**

■ Privatklinik Dr. Rau, Cham,  
Germany

“ An exciting new approach to presbyopia correction in patients who have previously undergone excimer laser surgery is IC-8 IOL (AcuFocus) implantation. The IC-8 applies similar small-aperture features as the Kamra corneal inlay (CorneaGen). This lens is my first choice for postrefractive surgery patients with presbyopia who have astigmatism of less than 1.50 D.

An intriguing development from 2018 is the voluntary withdrawal of the CyPass Micro-Stent (Alcon). I began implanting the CyPass in 2009 as a part of the European multicenter study and continued to use this device until the withdrawal earlier this year. Unfortunately, the European study was not able to evaluate endothelial cell loss as well as the COMPASS trial in the United States did. The discovery of endothelial cell loss after CyPass implantation has led to new questions: Do other microstents such as the iStent Trabecular Micro-Bypass Stent (Glaukos) and Xen Gel Stent (Allergan) also cause endothelial cells loss? More research is necessary. Nevertheless, the number of glaucoma patients we see in the coming years will continue to increase. Patients are now diagnosed earlier in life as glaucoma-detecting technology improves and awareness about the disease increases.”



**PAVEL STODULKA,  
MD, PhD**

■ Gemini Eye Clinics,  
Czech Republic

“ There are eight clinics worldwide, including my own, that participated in the SMILE for hyperopia multicenter study organized by Carl Zeiss Meditec to obtain the CE Mark for the treatment of hyperopia. A corneal stromal lenticule, which is thinnest in the center, is cut by the VisuMax femtosecond laser and extracted via a corneal tunnel to increase the corneal curvature. The first results of this study are positive. Visual results are stable up to 1 year postoperative with high satisfaction among patients, including those with high hyperopia and hyperopic astigmatism.”



**JÉRÔME C.  
VRYGHEM, MD**

■ Brussels Eye Doctors,  
Brussels, Belgium

“ I believe that an important trend is the use of a nanosecond laser for cataract surgery. I consider this to be *real* cataract surgery, and not laser-assisted surgery. It offers distinct advantages such as less energy dispersion within the eye, and, compared with femtosecond laser cataract surgery, it is more cost effective.” ■