



Cornea Day returns ahead of ASCRS

Cornea Day will cover a number of hot topics in the field of cornea

This year's Cornea Day is back again ahead of the ASCRS•ASOA Symposium & Congress and promises an exciting program. It will take place on Friday, May 5, from 8:00 a.m. to 5:00 p.m., at the Los Angeles Convention Center. Cornea Day is sponsored by the Cornea Society and ASCRS Cornea Clinical Committee. The program chairs are **Terry Kim, MD**, and **Marian Macsai, MD**, and the Planning Committee includes **Anthony Aldave, MD**, **Clara Chan, MD**, **Sophie Deng, MD**, **Anat Galor, MD**, **Preeya Gupta, MD**, **Barry Lee, MD**, **Francis Mah, MD**, and **Chris Starr, MD**.

"As usual, Cornea Day will continue to deliver a very dynamic and educational format," said Dr. Kim, program co-chair, ASCRS Cornea Clinical Committee, professor of ophthalmology, and division chief of Cornea, Duke University Eye Center, Durham, North Carolina. We always make an effort to invite a variety of faculty on the program, including international faculty as well as young, up-and-coming faculty, he added.

The program will deliver corneal content for the comprehensive ophthalmologist as well as the corneal specialist. Dr. Kim said the organizers always make an effort to ensure there is a variety of content, including video case presentations, panel discussions, and point/counterpoint presentations to ensure that there is a lively dialogue occurring on stage.

The program is divided into four sections. The first, Dr. Kim said, is a joint session with the Asia Cornea Society looking at global hot topics, such as



different trends in infectious keratitis that are seen globally, ocular surface reconstruction internationally, and international initiatives to address corneal blindness through various transplant procedures.

Another section will focus on corneal complications and controversies in both cataract and refractive surgery. Other topics will include corneal endothelial safety in femtosecond versus manual phacoemulsification; Fuchs' dystrophy in cataracts; IOL selection in patients with ocular surface issues; and complications that occur in various cataract and refractive procedures like herpes infections, ocular surface disease, and epithelial ingrowth. New techniques like small incision lenticule extraction (SMILE, Carl Zeiss Meditec, Jena, Germany) also will be addressed, and there will also be a special section on case-based presentations on complications in this area, like toxic anterior segment syndrome, persistent corneal edema, and other complications.

Dilemmas in corneal ectatic disease and ocular surface disorders also will be addressed in a section. Dr. Kim noted that one particular hot topic in this area is collagen crosslinking. With the recent U.S. Food and Drug Administration approval, many are starting to use the procedure in practice and want pearls for how best to handle these cases, he said. There are also issues to discuss surrounding epi-on and epi-off

procedures, as well as combining cross-linking with other technologies and modalities. Dr. Kim said advances in ocular surface will also be discussed, including which limbal stem cell transplant procedure should be considered for various conditions.

The corneal surgery section is always one of the highlights, he said. This will primarily be in a video-based format, Dr. Kim said, and will feature practical information and pearls on a variety of cutting-edge corneal surgery topics, including Descemet's membrane endothelial keratoplasty, deep anterior lamellar keratoplasty, and Bowman's layer transplantation.

"Cornea Day is a great way to start the ASCRS annual meeting, and it continues to be a very popular and well-attended program because of its exceptional content and outstanding faculty. On behalf of our Cornea Society chair, Marian Macsai, MD, and our Planning Committee, we invite you to attend this event to gain the latest information on cornea topics that are highly relevant to the comprehensive ophthalmologist's as well as the corneal specialist's practice," said Dr. Kim. **CN**

Editors' note: Dr. Kim has no relevant financial interests related to his comments.

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Cornea Society

Advancing the treatment of corneal disease

President's Message

Dear Cornea Society Members,

We have had a busy winter here at the Cornea Society focusing on our upcoming programming.

Terry Kim, MD, and I have been working with the organizing committee to put together a terrific program for Cornea Day at ASCRS this May in Los Angeles. We hope to see you there. It will include a section on global hot topics including information on Zika virus, bioengineered corneas, and xenotransplantation. "Corneal Controversies and Complications in Cataract & Refractive Surgery" will cover TASS and wound burns as well as premium IOLs and refractive surgery patients with dry eye disease. After lunch, "Cornea Ectatic and Ocular Surface Dilemmas" will provide in depth knowledge of collagen crosslinking, from patient selection to management of the epithelium. "Cutting Edge Corneal Surgery" will discuss primary descemetorhexis and give a step by step guide to transitioning to DMEK and DALK. This will be a Cornea Day you will not want to miss! I'd like to thank our program committee for their dedication in putting this year's Cornea Day together. We couldn't have done it without the leadership of the committee members: **Anthony Aldave, MD, Clara Chan, MD, Sophie Deng, MD, Anat Galor, MD, Preeya Gupta, MD, Barry Lee, MD, Francis Mah, MD, and Chris Starr, MD**. I hope to see you there! Register early or on-site—just be sure to attend.

In addition, **Barry Lee, MD**, Vice President of Industry Relations, **Gail Albert**, and I were at the Hawaiian Eye Meeting where we had 15 meetings to try to raise money for the Society and our Fellows Programs. As you know, every year we bring fellows from around the country to Tampa, Florida, for a two-day didactic and wet lab course on what is new in cornea. This year we are expanding to 55 fellows for the Fellows Summit. We are working hard to cover our costs for this important initiative. We are also working with our young physicians to develop yearlong programming to meet their needs. **Jessica Ciralsky, MD**, has taken on a leadership role in Cornea Society University. **Barry Lee, MD**, and **Bennie Jeng, MD**, have taken on leadership roles in the young physician task force. We are busy planning dinners, webinars, and numerous new ways to engage and educate our membership.

Our goal is to provide cutting-edge education in the field of cornea and external disease. Please let me know if you have ideas or needs that the Cornea Society can fulfill. This is your society!

Sincerely,
Marian Macsai, MD
President, Cornea Society



Marian Macsai, MD

Cornea Society presents 2017 Fellows Educational Summit

The Cornea Society is pleased to present the 2017 Fellowship Educational Summit for current cornea fellows in Tampa, Florida. The program directors, **Jessica Cialsky, MD, Deepinder Dhaliwal, MD, and Shahzad Mian, MD**, have assembled a distinguished faculty of dynamic speakers to address

advanced concepts in anterior segment surgery and medical management of cornea and external diseases. Our confirmed faculty to date are **Michael Belin, MD, Marjan Farid, MD, W Barry Lee, MD, Jennifer Li, MD, Marian Macsai, MD, and Greg Ogawa, MD**.

Fellows will be introduced to the use and interpretation of anterior segment

imaging tools ranging from corneal topography to anterior segment OCT and UBM. Practical applications of these skills will be put to the test and will cover basic and advanced concepts in surface ablation and LASIK. Common and uncommon diseases of the ocular surface including advanced dry eye will be discussed, as well as a review of corneal considerations in cataract surgery

Recipients of Castroviejo Medal and Dohlman Award

This year's Castroviejo Medal recipient is **Jonathan Lass, MD**, Cleveland. The Castroviejo Medal is the Cornea Society's highest honor and is named in honor of Ramon Castroviejo, MD, who is known as the father of modern corneal transplant surgery and was also the inspiration for founding the Cornea Society. This medal is awarded annually to an individual who has made significant contributions to the field of cornea and anterior segment surgery.

Dr. Lass is the Charles I Thomas Professor of Ophthalmology at Case Western Reserve University (CWRU), a member of the Center for Anterior Segment Disease and Surgery in the

University Hospitals (UH) Eye Institute, medical director of Eversight Ohio, and medical director of the Cornea Image Analysis Reading Center at CWRU and UH. He is one of the leading corneal and external disease experts in the U.S. His research interests include corneal genetics, image analysis, and clinical trials advancing our understanding of the factors impacting success in corneal preservation and transplantation. Dr. Lass has been recognized for his efforts in the field with numerous other awards.

This year's recipient of the Dohlman Award for teaching excellence is **Mark Mannis, MD**, Sacramento, California. The Dohlman Award is given to recognize a lifetime of teaching excel-

lence in the field of cornea and external disease and for contributions to the profession.

Dr. Mannis is a professor and chair of the UC Davis Eye Center. He has many research interests, including antimicrobial agents and growth factors that affect the corneal wound healing, skin diseases that affect the eye, visual rehabilitation after corneal transplantation, and the artificial cornea. He has authored many books and publications and has received numerous awards, including the Castroviejo Medal in 2014. Dr. Mannis has held various leadership positions in ophthalmic organizations and has trained both domestic and international corneal fellows. **CN**

Cornea: Journal news

Wolters Kluwer is pleased to announce the *Cornea* journal website now offers responsive design. This enables the website to resize and adapt to whatever screen size the reader is using. The improved browser experience will be available on all devices, whether Apple or Android.

Wolters Kluwer has rolled out responsive design in order to meet an industry-wide trend over the last few years that has seen mobile device usage increasing, while usage of journal-specific apps has declined. Users are increasingly using the browser on their mobile devices and moving away from opening an app for each specific journal they read. **CN**

and the management of corneal trauma. All aspects of complex cataract surgery, IOL management, and premium IOLs will be addressed as well.

We are pleased to announce the number of program participants has increased to 55 to accommodate a growing waitlist. Registration for the two-day program will open in late June. Please visit www.fellows.cornea-society.org for further details. **CN**

Desktop/Laptop:

The desktop view shows a full-width layout with a navigation bar at the top containing 'Articles & Issues', 'Collections', 'For Authors', and 'Journal Info'. A search bar is on the right. The main content area features the journal cover, issue information (ISSN, frequency, ranking), and a highlighted article titled 'Factors Associated With Graft Detachment After Primary Descemet Stripping Automated Endothelial Keratoplasty'.

Tablet:

The tablet view maintains the same content as the desktop but adjusts the column widths and font sizes for better readability on a larger mobile screen. The navigation and search elements are also adapted to the screen size.

Smartphone:

The smartphone view uses a single-column layout, with the journal cover and issue details stacked vertically. The navigation and search options are simplified for ease of use on a small screen.

Asia Cornea Society Meeting wrap up

The Asia Cornea Society (ACS) 5th Biennial Scientific Meeting was held in December in Seoul, South Korea, with presentations covering a variety of cornea-related topics throughout the meeting.

Diagnosis and treatment in cornea

The Asia Cornea Foundation Lecture was given by **Choun-Ki Joo, MD, PhD**, Seoul, South Korea, on the topic of “Development of Diagnosis and Treatment in the Corneal Field.”

In his lecture, Dr. Joo highlighted the change in corneal research over the years, stressing the tremendous developments in diagnosis and treatment. In terms of diagnosis, he discussed biological character, optical anatomy, biomechanics, and tear film.

Dr. Joo spoke about the timeline of different treatment options in refractive surgery and keratoplasty. The first theoretical work on the potential of refractive surgery was done in 1896, he said, with the first attempt at performing surgery occurring in 1930. Refractive surgery can be broken down into flap procedures, surface procedures, corneal incision procedures, and presbyopia surgery.

With keratoplasty, different categories include full thickness, anterior lamellar, posterior lamellar, other keratoplasty, and computerized.

Dr. Joo also discussed the future in cornea, stressing that he thinks diagnosis and treatment should be integrated.

Options in corneal imaging

Carol Karp, MD, Miami, spoke about how high-resolution OCT has changed her ocular surface oncology practice. In diagnosis of ocular surface lesions, the gold standard is histopathology, she said. But it would be nice to have a way to find out what’s going on before doing a biopsy, Dr. Karp said, and high-resolution OCT is a great way to do this. It helps to show the tear film, epithelium, Bowman’s layer, stroma, features of the endothelium, and Descemet’s membrane.

Dr. Karp first started to realize the benefit of this technology in her work in 2009. She demonstrated the features

of ocular surface squamous neoplasia (OSSN) on an OCT. In reading an OCT, you first find the normal epithelium, then find the inferior edge of the epithelium, assess the main lesion, and determine if there is epithelial or subepithelial. For OSSN, you will see normal epithelium, then an abrupt transition from normal to abnormal, and then a thickened hyper-reflective epithelium, she said. In summary, Dr. Karp said that high-resolution OCT is an exciting new technology for ocular surface imaging. It has a high degree of correlation with histopathology, and is an “optical biopsy,” providing an excellent adjunct to clinical acumen. Dr. Karp said that it has revolutionized her practice.

Plenary “puts the pieces together”

In “Putting the Pieces Together: Approaches in the Investigation and Management of Atypical Corneal Infections,” **Elmer Tu, MD**, Chicago, took the opportunity of giving the first Plenary Lecture of the Asia Cornea Society 5th Biennial Scientific Meeting to take a breather from big data and highlight the value of what he called “small” and “very small data.”

“We’ll go the opposite way from big data,” Dr. Tu said. Rather than following the trend toward big data forward, he began by looking into the past.

England in the 1800s, Dr. Tu said, was “somewhat of a miserable experience.” For centuries, he said, there had been no real improvement in terms of life expectancy, with most people dying in their 30s and 40s, “much like a mayfly after mating.”

This was in no small part due to various European pandemics, such as the bubonic plague and cholera. Compounding the abyss of the period’s primitive level of technology, hygiene, and abbreviated life spans, there was no real way of stopping these pandemics other than by isolating subjects to prevent infecting others.

At the time, the prevailing theory for transmission of disease was the miasmatic theory—diseases such as cholera, it was believed, were transmitted through exposure to “bad air,” typically emanating from foul or rotting organic

matter. Diseases were thus believed to be transmitted through breathing rather than direct contact or ingestion.

This theory, Dr. Tu said, had been held throughout history, and as an intervention in the case of cholera epidemics in London, the city began directing human waste away from homes and into the river Thames to keep “bad air” out of the city.

Enter John Snow—who, as it turns out, knew something. A skeptic of the miasmatic theory, Snow had previously written on his theory of the origin of cholera outbreaks in 1849. He identified a particular water company supplying South London that he associated with more than 50% of deaths in all of London.

Following the Soho cholera outbreak in August 1854, the Reverend Henry Whitehead, miasmatic theorist and self-styled “mythbuster” of his age, met John Snow through a local commission to investigate cholera. He immediately set out to disprove Snow’s theory.

However, after interviewing local residents, Reverend Whitehead mapped the subjects around a single water source—and ultimately came to believe Snow. He used small data to get to the bottom of why cholera outbreaks were occurring. This led to the eventual demise of the miasmatic theory and the eventual acceptance of germ theory.

The case of the Broad Street tap, Dr. Tu said, is an example of how to approach other human diseases—really, he said, this was “the birth of epidemiology.” More than just statistics, epidemiology brings together experts from multiple disciplines to collaborate in a small, well-designed study asking appropriate questions based on a best understanding of a disease.

Fast forward to the present: Turns out, Dr. Tu said, atypical corneal infections are “quite amenable” to this approach.

His particular experience, he said, has been with *Acanthamoeba* keratitis—a traditionally rare disease with a reported incidence of two cases per million contact lens wearers per year; easily traceable using special diagnostic modalities requiring specialized, compound medications; and primarily a disease of the eye.

It was from outbreaks, he said, that we have learned quite a bit about *Acanthamoeba* keratitis. Through outbreaks, we have been able to identify contact lens wear as the primary risk factor, amplified by deviations in water quality; study of these outbreaks suggests that environmental risk factors may not be modifiable; and the surge in *Acanthamoeba* keratitis over the last decade or so may reflect changes in risk factors that may have an effect not only on other ocular infections but also on the general public health.

Big data, Dr. Tu said, remains most ideal, but small data and even really small data have their value. Ultimately, he concluded, what is important is that whether big, small, or very small, the data be “good and clean” and that their study be directed by knowledge.

Cornea surgery begins in the eye bank

“It used to be that corneal surgery was quite straightforward,” said **Marian Macsai, MD**, Glenview, Illinois. “We had a problem—keratoconus—we got a cornea, we punched a button, we sewed it into place, and the eye was rehabilitated.

“Things have gotten much more complicated in the past decade,” she said. Corneal transplantation is no longer restricted to full-thickness penetrating grafts, with surgeons now performing lamellar surgery with partial grafts, sometimes even using scleral tissue for grafts; moreover, rather than being used on the spot, corneal tissue is being stored long term and shipped all around the world.

In her plenary lecture, Dr. Macsai made the argument that, following more than 25 years of dramatic surgical innovation and advancements in instrumentation, today “Corneal Surgery Begins in the Eye Bank.”

“The processing of tissue is very high level and quite complicated,” Dr. Macsai said. It was because of this that the Eye Bank Association of America (EBAA) established universal medical standards for eye banking.

The standards cover the six eye banking functions: recovery, processing, storage, evaluation of tissue for transplantation, determination of donor

eligibility, and distribution.

In addition, eye banks provide infrastructure for gathering postoperative outcome information up to and including adverse reactions.

Given the scope of eye banking and the complexity of modern corneal transplant surgery, all around the world cornea doctors no longer retrieve or process corneas before surgery, the exception being South Korea, where the law requires that physicians continue to do so.

Elsewhere, Dr. Macsai said, the advantages of eye banking are clear.

Since surgeons no longer have to worry about harvesting and processing tissue, they can perform surgery in a matter of minutes. In DSAEK and DMAEK, for instance, Dr. Macsai said that the surgeon simply grips the Descemet’s membrane and inserts the tissue into the AC, injects air or gas, and it is done.

Moreover, she said, it is likely that an eye bank technician precutting and processing tissue over and over will be doing it much more efficiently than any surgeon doing it just once or twice a week.

Any lingering concerns over the quality of precut tissue should also be laid to rest; Dr. Macsai said that there is

no significant difference in the quality of tissue or patient outcomes between surgeon prepared and precut tissue.

Overall, precutting also saves time and money, as well as reduces stress in the operating room and the amount of tissue wasted per procedure.

There are concerns about shipping tissue overseas. However, while one study has shown endothelial cell density (ECD) losses of around 1.75% with precutting and 3.79% with overseas transportation—for a total ECD loss of 5.68%—and another study on 40 donor corneas during international shipment underwent 2.3% ECD loss, Dr. Macsai said that the dislocation and rejection rates were comparable with corneas that stayed local before transplantation.

It is true, however, that Dr. Tu has published a study showing that fungal contaminants can be amplified in storage media by more than 100 times by routine warming cycles as compared to a single warming cycle, and Dr. Macsai wondered whether antifungal should be added to the storage media. **CN**

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Cornea journal report

Cornea, the Cornea Society’s journal, has added several members to the Editorial Board: **Claus Cursiefen MD, PhD**, is ophthalmology chair in Cologne, Germany, and an expert in corneal neovascularization and transplant surgery; **Esen Akpek MD**, from the Wilmer Eye Institute, Johns Hopkins University, specializes in ocular surface disease; **Sophie Deng, MD, PhD**, studies ocular surface transplantation at the Stein Eye institute of UCLA; and **Bennie Jeng, MD**, is chair of ophthalmology at the University of Maryland and an expert on eye banking. We welcome their added expertise.

Vincent DeLuise, MD, has retired as assistant editor after many years of service improving the science and the linguistics of our manuscripts. **Kazuo Tsubota, MD**, is taking a leave of absence from the board to pursue an executive MBA degree. Both have provided outstanding contributions to the journal and to the Cornea Society. **Kenneth Kenyon, MD**, and **Chris Rapuano, MD**, have moved to positions as assistant editors of the journal.

I am certain that continuing change will help us keep up with the continuing progress of our field and the growing activity of the journal. I greatly appreciate the contributions of all of our board members, authors, and reviewers.


—Alan Sugar, MD, editor-in-chief

Cornea Society University update

Cornea Society University (CSU), the Cornea Society's newest initiative, was first launched at the 2015 Cornea Fellows Educational Summit. CSU was developed to help fill in the gaps in our current educational model to provide education, career guidance, and mentorship for cornea fellows and young cornea specialists. Due to the overwhelmingly positive feedback, we decided to make CSU a permanent part of the Cornea Fellows Educational Summit as well as a year-long educational platform for cornea fellows and young cornea specialists. Through monthly e-newsletters that feature articles addressing both clinical education and career development, CSU will provide an ongoing education throughout the academic year. The first CSU e-newsletter was launched this past October.

In the first issue of the e-newsletter, the clinical education focused on DSAEK techniques, complications, and outcomes with a CSU VideoEd by **Anthony Aldave, MD**. The career development column concentrated on practice building. Many of us learned about practice building the hard way, through trial by fire. This column offered great practice building pearls from slightly older ophthalmologists (those in practice 5–10 years) related to referring doctors, social media, and patient care. Every practice will be different depending on practice location, practice setting, referral patterns, and patient population but these pearls can be applied across a wide range of settings.

In the second issue, building upon the first issue's VideoEd focused on DSAEK, we featured a CSU VideoEd by **W. Barry Lee, MD**, describing the transition from DSAEK to DMEK. The career development content focused on surviving your first solo surgery after fellowship. Most of us will struggle through our first solo surgery as a new attending no matter how much we prepare and plan ahead of time. In this column, we offered advice focused on preparation, time management, case selection, and post-analysis, to help smooth the transition.



CSU Update

Cornea Society University February 20, 2017

Latest cornea news from the Cornea Society


Introduction
Welcome to the fifth issue of CSU (CORNEA SOCIETY UNIVERSITY). This month's CSU VideoEd will be focused on Refractive Surgery. We will also feature an article discussing how to achieve a work-life balance.

WORK-LIFE BALANCE
One of the things I liked most about becoming a doctor was the well-defined medical pathway that we all had to follow. (read more)

REFRACTIVE SURGERY
Refractive surgery has evolved greatly since Dr. Jose Ignacio Barraquer first described keratomileusis in 1964. (read more)

DMEK Wet Lab Offering
The Cornea Society in conjunction with SightLife Surgical is launching a new program to take the skills transfer for DMEK surgical techniques to the next level. (read more)

Full stories below




A cornea fellow participates in the DMEK wet lab at the 2016 Fellows Summit.

WORK-LIFE BALANCE

One of the things I liked most about becoming a doctor was the well-defined medical pathway that we all had to follow. My friends who entered other fields constantly struggled during those first few years after college with finding a profession that was meaningful and rewarding. They evaluated their enthusiasm for the job, their work environment, and their work-life balance constantly until they found the right fit. Although my medical training was a long and arduous process, I knew it was a means to an end. I was passionate about medicine and my desire to help people would ensure my career was meaningful and rewarding. Interestingly, it wasn't until a few years into my first job that I first started to question my work-life balance. I had been so focused on successfully completing each step of the process that I never stopped to evaluate my happiness and satisfaction.

A national survey conducted a few years ago evaluated burnout and work-life balance among



In the third issue, we shifted away from posterior lamellar surgery to focus on DALK, an anterior lamellar keratoplasty, with a CSU VideoEd by Dr. Aldave. The career development column featured an article on global medicine. According to the World Health Organization (WHO), 285 million people worldwide are visually impaired, with many affected by cataracts and corneal pathology.¹ One of the great benefits of being a cornea, refractive, and anterior segment surgeon is the ability to use our clinical and surgical skills abroad. **Roberto Pineda, MD, Grace Sun, MD**, and Dr. Aldave offered new graduates advice on getting involved in global medicine. There are many great opportunities to make a difference abroad, even as a trainee or new graduate.

In the fourth issue, the clinical education focused on artificial corneal transplantation with a CSU VideoEd featuring **Kathryn Colby, MD**, discussing the Boston Keratoprosthesis. The career development content featured an article on how to survive your first three years in practice. The first few years on your own can be quite overwhelming. Even though you have spent countless years preparing to practice independently, you may feel like you are being thrown into the deep end before you have learned how to swim on your own. **Bradley**

Gustave, MD, and Zaina Al-Mohtaseb, MD, two of my colleagues who are currently surviving their first three years of practice, offered advice for new graduates. Developing good habits early on is crucial. You are laying the groundwork for a hopefully long and fulfilling career.

In the fifth issue, the clinical education shifted away from corneal transplantation to focus on refractive surgery with a CSU VideoEd given by **Deepinder Dhaliwal, MD**. The career development content focused on work-life balance. Achieving work-life balance can seem like an impossible task with all of our competing priorities. It is a constantly evolving process that needs to be reassessed and readjusted often. A national survey conducted a few years ago evaluated burnout and work-life balance among physicians. Although ophthalmologists fared slightly better than all physicians, there was still a high percentage of ophthalmologists who reported burnout symptoms (43.4%) and dissatisfaction with work-life balance (43.2%).² I asked **Preeya Gupta, MD**, and Dr. Colby, two great physicians who seem to juggle it all, for advice and insight for new graduates.

CSU will continue to provide a yearlong education addressing both clinical education and career development for cornea fellows and young cornea specialists. We will eventually shift from monthly e-newsletters to a more interactive platform where cornea fellows and young cornea specialists can engage in dialogue and interactive educational activities on a daily basis. I hope that CSU will help fill in the gaps in our current educational model to provide ongoing education, guidance, and mentorship throughout the year. **CN**

1. www.who.int/mediacentre/factsheets/fs282/en/

2. Shanafelt, TD, et al. Burnout and satisfaction with work-life balance among US physicians relative to the general population. *Arch Intern Med* 2012;172(18):1377–1385.

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Expert Insights You Can Apply to Your Practice

Cornea 2017

Keeping the Old, or
Breaking the Mold?

New Orleans | Nov. 11

Program Directors:
Bennie H. Jeng, MD
Carol L. Karp, MD
Jennifer Y. Li, MD

Your registration for Cornea Subspecialty Day includes:

- Flexibility to float among all Subspecialty Day meetings on Saturday.
- Access to the AAO 2017 exhibit hall on Saturday.

Member Registration Opens: June 28

Nonmember Registration Opens: July 12



Cornea Society

Advancing the treatment of corneal disease

In conjunction with the Cornea Society

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Subspecialty Day AAO 2017

Managing severe ocular surface disease

This year's Asia Cornea Foundation Medalist Lecture at the Asia Cornea Society 5th Biennial Scientific Meeting in Seoul, South Korea, was given by **Edward Holland, MD**, Cincinnati, on the topic of "Management of Severe Ocular Surface Disease: Lessons Learned."

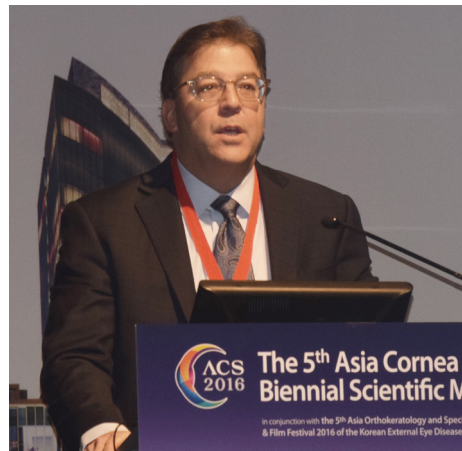
He first discussed a study looking at patients referred to the Cincinnati Eye Institute. There were 738 eyes of 432 patients diagnosed with limbal stem cell deficiency (LSCD) between 2002 and 2015. Many of these patients received standard keratoplasty, and in all of these patients, the keratoplasty failed.

Lesson 1, Dr. Holland said, is do not perform standard keratoplasty without a successful ocular surface stem cell transplantation (OSST) for severe conjunctiva deficiency and/or total LSCD. The consequence of doing standard keratoplasty for conjunctival or LSCD is that all keratoplasties eventually fail due to recurrent LSCD or subsequent immunologic rejection. Patients will then be immunologically sensitized to corneal antigens and have a worse prognosis for OSST, Dr. Holland said.

Lesson 2 is the importance of an ocular surface team. A corneal surgeon cannot take care of these patients alone, he said. At the Cincinnati Eye Institute, they have patterned the team after an organ transplantation program at the University of Cincinnati.

Within ophthalmology, the cornea surgeon is the team leader, and also on the team are oculoplastic, retina, and glaucoma specialists. There also needs to be a representative from internal medicine, and Dr. Holland stressed the importance of an expert in organ transplant immunosuppression. The drugs used are quite specific and not the same as those used in other medical specialties such as oncology or rheumatology. A nephrologist managing kidney transplants is preferable. Another key part of the team is a transplant coordinator, who oversees patient education and long-term follow-up as these patients take an enormous amount of time, Dr. Holland said.

Lesson 3 is to adopt donor and recipient screening and immunosuppres-



Edward Holland, MD

sion (IS) protocols from organ transplantation. This could include patient monitoring schedules, new protocols, new agents, and induction therapy.

The next lesson Dr. Holland highlighted was that immunosuppression in OSST is safe. He discussed results from an adverse effects study, which was a retrospective study over the last 10 years with all patients undergoing OSST and receiving concomitant IS from 2000–2007. This study supported 136 patients (225 eyes) with a mean follow-up after OSST of 4.5 years. Of these patients, 76 patients (56%) had no systemic comorbidities at initial presentation. The mean duration of IS was 3.5 years. Additionally, the study found that 105 patients (77.2%) had a stable ocular surface at their last visit, and 37 patients (35.2%) with a stable ocular surface were able to be tapered successfully off IS. The majority of patients remaining on IS were on monotherapy with Cellcept (Genentech, San Francisco). In terms of adverse events, there were no deaths and no secondary tumors in this group of patients, although there were three severe events in two patients and 21 minor events in 19 patients.

Lesson 5 is that "staged management" results in better outcomes, and Lesson 6 is to develop a treatment paradigm. "We can achieve good long-term outcomes with OSST for bilateral severe ocular surface disease," Dr. Holland noted in Lesson 7.

OSST requires close monitoring and may have significant complications, he said for Lesson 8. Multiple surgeries

are often needed. We certainly do see failures, Dr. Holland said. There is also a risk for glaucoma and complications of severe dry eye. A healthy ocular surface is needed for good vision, and immunosuppression is required.

Lesson 9 is to incorporate keratoprosthesis surgery into the treatment paradigm, and Dr. Holland highlighted some of the advantages and complications associated with the Boston type I KPro. Advantages include that it requires only a single operation, it's technically similar to penetrating keratoplasty (PK) surgery, there is no immunosuppression, no risk of rejection, and a poor ocular surface does not interfere with vision. However, there are complications, Dr. Holland noted in Lesson 10. We can't measure their pressure, he said. They need lifelong, close follow-up and lifelong topical antibiotics. Complications can lead to loss of the eye. "We are cautious about high-risk patients receiving Boston KPros," he said.

Ocular surface stem cell transplant has numerous advantages over a KPro in some patients, Dr. Holland said. OSST can be used for severe conjunctival disease, offers easy IOP monitoring, improves and stabilizes the ocular surface for subsequent keratoplasty, complications result in loss of the surface only and not loss of the eye, and follow-up can be reduced once the surface is stabilized.

Dr. Holland's final lesson, Lesson 11, was that it's not which technique is better, but which technique is best indicated for the patient. Both ocular surface transplantation and KPro are successful methods for visual rehabilitation in patients with severe ocular surface disease, and there are specific indications and complications related to both procedures. Surgeons should become familiar with both procedures and their complication management in order to offer severe ocular surface disease patients the best opportunity for visual recovery, he said. **CN**

Contact information

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CORNEA and EYE BANKING FORUM 2017

NEW ORLEANS
FRIDAY, NOVEMBER 10



Cornea Society
Advancing the treatment of corneal disease



Join us for this exciting one-day educational program designed to provide the latest scientific developments in corneal surgery, eye banking, and more.

For more information and to register, visit restoresight.org/forum or corneasociety.org.

Introducing the Cornea and Eye Banking Forum, coming in November

The event formerly known as the *Fall Educational Symposium* is getting a re-boot. The new *Cornea and Eye Banking Forum*, which will still be jointly sponsored by the Cornea Society and the Eye Bank Association of America, will feature a number of program enhancements, such as:

- An additional hour of content to provide time for new programming while keeping the same number of scientific free papers.
- Two 30-minute symposia for topic-specific invited talks.
 - » Keratoconus: The *Forum* will be held on November 10, which is World Keratoconus Day. We're partnering with the National Keratoconus Foundation to invite speakers who will discuss topics related to this disease.

CORNEA and EYE BANKING FORUM 2017

NEW ORLEANS
FRIDAY, NOVEMBER 10

- » Corneal Preservation Time Study (CPTS): Speakers will provide an overview of the CPTS, including updates and recent findings. This session will highlight this multi-center prospective study's findings regarding the impact of preservation time as well as operative factors on

graft success and cell loss following DSEK.

We're also changing some of the meeting logistics to better serve our presenters and attendees:

- The submission site opened in March to better align with the AAO abstract submission process and timeline.
- Submitted scientific free papers will be reviewed, and presenters will be selected by mid-August to allow for greater flexibility in travel planning.
- Invited speakers will be identified and invited this spring in order to publicize elements of the program in advance.

Please mark your calendars and plan to join us for the inaugural Cornea and Eye Banking Forum, Friday, November 10 in New Orleans. **CN**

Cornea Society Symposium to explore corneal transplantation

During the ASCRS•ASOA Symposium & Congress, the Cornea Society will once again sponsor a symposium, which will focus on cornea-related topics. This year's session will take place on Sunday, May 7, from 8:00–9:30 a.m. and will explore "Decision Making in Corneal Transplantation: Case Based Presentations." The symposium will be held in the Los Angeles Convention Center in Room 152-153 and will be moderated by **Anthony Aldave, MD**, Los Angeles, and **Marian Macsai, MD**, Glenview, Illinois.

The session will be broken down into three sections: the management of corneal edema, the management of corneal ectasia, and the management of corneal opacification and graft failure. The symposium will also feature a variety of speakers from the United States and around the world, giving attendees perspective on how some of these topics are addressed both domestically and internationally. Following each of the three sections, discussion time is

scheduled.

Though corneal procedures, like keratectomy and keratoplasties are discussed quite frequently, this symposium specifically aims to give attendees information on important factors to consider in selecting the most appropriate technique for patients with different indications and anatomic factors. The presentations will be case-based, and following the presentations, a panel will also offer thoughts on other factors to consider and recommendations for the different cases.

In the corneal edema management section, **Francis Price Jr., MD**, Indianapolis, and **Audrey Talley Rostov, MD**, Seattle, will both highlight cases of Fuchs' corneal dystrophy. Meanwhile, **Carolina Aravena, MD**, Santiago, Chile, and **Anjali Tannan, MD**, Chicago, will present cases of pseudophakic corneal edema in different patient types.

In the discussion of the management of corneal ectasia, **Rajesh Fogla, MD**, Hyderabad, India, will highlight

a case of corneal ectasia in an atopic young patient with prior hydrops, while **Donald Tan, MD**, Singapore, shares information on progressive corneal ectasia following penetrating keratoplasty for keratoconus. Rounding out that section, **Pravin Vaddavalli, MD**, Hyderabad, India, will present on peripheral corneal thinning, and **Roger Steinert, MD**, Irvine, California, will present an instance of an older phakic patient with post-RK ectasia.

The final section of the session, on management of corneal opacification and graft failure, will feature presentations from **Vincenzo Sarnicola, MD**, Grosseto, Italy, on corneal scarring; **Christopher Rapuano, MD**, Philadelphia, on visually significant recurrent corneal stromal dystrophy; **George Rosenwasser, MD**, Hershey, Pennsylvania, on DSEK failure; and **Valeria Sanchez-Huerta, MD**, Mexico City, Mexico, on PK failure. **CN**

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8:00 a.m.–5:00 p.m.

Join world-renowned faculty for the premier one-day program on cornea and cataract surgery. Through panel discussions, case studies, debates, and surgical video reviews, this program will provide a comprehensive overview of cutting-edge cornea surgery, management of complications, cornea ectatic and ocular surface dilemmas, and global hot topics that impact patient outcomes worldwide.

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Marian Macsai, MD (Cornea Society)

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PROGRAM AT A GLANCE

Global Hot Topics Joint Session with the Asia Cornea Society

- Infectious Disease
- Ocular Surface Reconstruction
- Addressing Corneal Blindness—Expanding the Supply of Donor Corneas

Corneal Controversies and Complications in Cataract & Refractive Surgery

- Point-Counterpoint!
- Complications, Prevention Strategies, and Management Techniques
- Case-Based Complications Corner

Cornea Ectatic and Ocular Surface Dilemmas

- Keratoconus Diagnosis
- Crosslinking 101
- The Great Debate #1: Crosslinking Treatment Protocols
- Advances in DES
- Ocular Surface Dilemmas
- Great Debate in the Treatment of LSCD

Cutting-Edge Corneal Surgery

- DMEK: Everything You Need to Know
- Alternatives to DMEK
- DALK: How to Get on Board

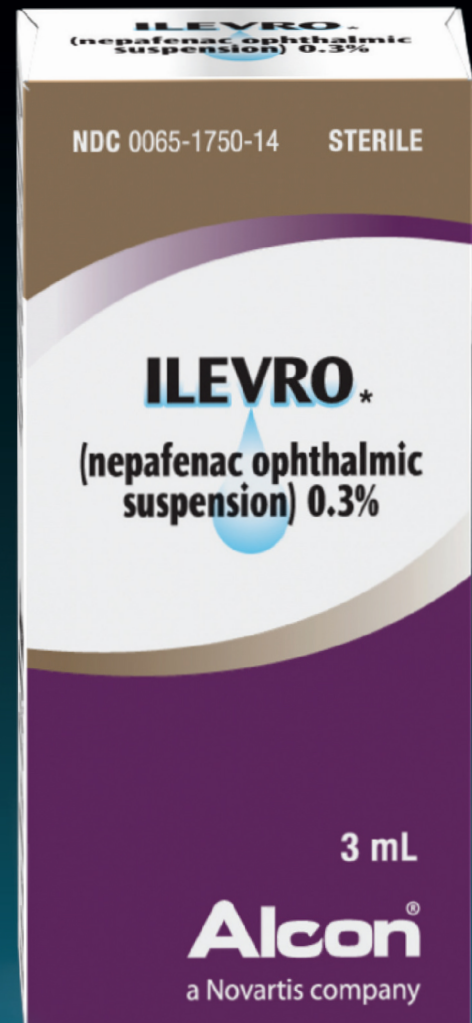
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