Cornea Society
Advancing the treatment of corneal disease
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News
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Summer 2013

Experts offer tips and pearls at Cornea Day 2013

Addressing the ocular surface—especially in cases of pterygium or Salzmann's nodules—before having patients undergo cataract surgery is highly recommended, according to one surgeon who spoke at Cornea Day 2013. "Patients who undergo cataract surgery first and then have these entities removed will have their vision impacted after the removal," **Richard S. Davidson, MD**, N.Y., said. Ptergyia, in particular, induces with-the-rule astigmatism, especially if the lesion is under 1 mm, he said.

Salzmann's nodules tend to occur bilaterally, and affect patients older than 50 years.

Dr. Davidson also recommended surgeons perform manual keratectomy "to inspect mires," and said the irregularity "does not often completely disappear."

He recommends performing a superficial keratectomy to the peripheral axis using a 69 or 57 blade, and the excision should steepen the underlying cornea. He also recommends waiting three months before proceeding with cataract surgery.

Fuchs' and cataracts

Two surgeons presented on whether or not protecting or replacing the endothelium in patients with Fuchs' dystrophy results in better visual outcomes. **Francis S. Mah, MD**, La Jolla, Calif., said among the reasons to perform cataract surgery separately from endothelial keratoplasty is that "it's faster, there's a faster recovery of best corrected visual acuity, it's less expensive, there are fewer postoperative follow-up visits, and no need for topical immunosuppression medication." He noted that in recent years, there's been a shift away from concentrating on a patient's numbers to concentrating on the density of the cataract, the ocular comorbidities, and the patient's signs and symptoms. Surgeons who perform cataract surgery alone need to protect the endothelium, but "there is no difference between a scleral or tunnel incision," and likewise, no difference in what kind of viscoelastic used.

"The soft-shell technique does have some benefits," he said. If there is the possibility of a Descemet's stripping automated endothelial keratoplasty down the road, "aim for myopia with your IOL implant—somewhere around –0.75 D to –1.0 D," he said.

Bryan D. Ayres, MD, Philadelphia, countered that among the advantages of the triple procedure is that surgeons are preventing a prolonged recovery period with little compromise in visual outcomes.

Dr. Ayres performs a three-plane incision (about 4 mm) but said his effective incision is only 2.2-2.8 mm.

"Make sure your paracentesis is steep and peripheral," he advised. "Make your capsulorhexis smaller than the optic," and keep the IOL in the bag to help prevent anterior chamber shallowing during graft surgery.

"A continuous capsulorhexis will greatly simplify this step," he said, and advocated the used of a capsular stain for better visibility.

When to consider torics

Should toric IOLs be considered if a patient has abnormal topography? Yes, said **Chaz Reilly, MD**, San Antonio. However, surgeons have a better chance of success if they create realistic patient expectations.

"Further, make sure the magnitude and axis of cylinder are in agreement between the corneal topography and refraction. Make sure there's reasonable visual potential, too—beware of meridional amblyopia, consider anisometropia, and be aware of how the posterior cornea contributes to cylinder," Dr. Reilly said. Mild cases of keratoconus (those that can be corrected with spectacles) can also be considered for toric lenses, he said.

Most premium brands and services are customizable, but that's not the case with toric lenses, and that creates a potential issue, said **Michael W. Belin, MD**, Tucson, Ariz. Toric IOLs compensate for the corneal astigmatism on the lens plane, while rigid gas permeable (RGP) lenses correct the astigmatism on the corneal plane.

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Cornea Society
Advancing the treatment of corneal disease

Summer 2013

Dear Colleagues and Members,

In this issue's message, I would like to highlight several educational platforms within our Society that promote exchange of information, which enable us to fulfil our mission to advance the treatment of corneal disease.

One key educational platform is our journal. *Cornea: The Journal of Cornea and External Diseases* is supported and sponsored by the Society for all member corneal specialists, general ophthalmologists, and doctors-in-training. With a current impact factor of 1.733, the journal brings together the latest clinical and basic research on the cornea and anterior segment of the eye, along with in-depth reviews on the latest corneal and anterior segment microsurgical procedures and the advantages and potential drawbacks of promising new surgical techniques. With **Alan Sugar, MD**, helming *Cornea* as its editor-in-chief, the page allotment in *Cornea* recently saw an increase from 120 to 164 pages per issue. An iPad version will be made available in September. On behalf of the Board, I would like to acknowledge Dr. Sugar and his team for their great efforts in elevating *Cornea* to what it is today; to **Anthony Aldave, MD**, **Kathryn Colby, MD, PhD**, and **Marianne Price, PhD**, for contributing to the editorial board; and to the associate and assistant editors, **Henry Perry, MD**, **Joel Sugar, MD**, **Ivan Schwab, MD**, **Vincent de Luise, MD**, **Kaz Soong, MD**, and **Jayne Weiss, MD**, whose contributions have been most instrumental and invaluable. Members can access articles in *Cornea* as well as archived issues of *Cornea Society News* via the Society's face-lifted website.

Next, the World Cornea Congress (WCC). The WCC is the Cornea Society's major scientific meeting held every five years, providing the international corneal community with highlights and updates on the clinical and scientific progress in the field. Planning is already under way for the next World Cornea Congress, which will be held in San Diego from April 15-17, 2015. We will certainly endeavor to make this WCC the highlight of 2015.

Annually, the Society co-sponsors Cornea Day with the American Society of Cataract & Refractive Surgery (ASCRS), scheduled on Friday immediately preceding the ASCRS meeting. This meeting continues to grow. Also yearly, and organized in collaboration with the Eye Bank Association of America (EBAA), the Cornea Society/EBAA Fall Educational Symposium is held on Friday prior to the American Academy of Ophthalmology (AAO) meeting. This is the Society's annual scientific and business meeting, comprising a full day of free papers and presentations, with Cornea Subspecialty Day co-sponsored with AAO immediately following. The scientific programs of these meetings are planned with **Barry Lee, MD**, scientific program chair, taking the lead and the subcommittees spending great efforts in ensuring stimulating scientific content with varied focal topics and themes impacting the current regional and international advances in the field of cornea and external eye diseases. In addition, the Society co-organizes corneal symposia held during the main ASCRS and AAO meetings.

In fulfilling its burgeoning international role, the Society remains committed to co-sponsor and co-organize various symposia in conjunction with many international and national societies, including EuCornea, the European Society of Ophthalmology (SOE), the Asia Cornea Society (ACS), the Royal Australian and New Zealand College of Ophthalmologists (RANZCO), the Asia-Pacific Academy of Ophthalmology (APAO), and the Asia-Pacific Association of Cataract and Refractive Surgeons (APACRS), to name a few, and the International Congress of Ophthalmology (ICO) at the World Ophthalmology Congress (WOC).

I appeal to all of you to actively attend and participate in these scientific congresses, meetings, and symposia, so that we can all help to advance our field. You can readily access information on these events on the expanded meeting and educational programming section of the Society's website at www.CorneaSociety.org

Sincerely,
Donald TH Tan, FRCS
President

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"In my opinion, a toric IOL is contraindicated in patients with irregular, asymmetric, or unstable corneas, or in patients who have a visual axis that's off-center," he said. The "single most important and underutilized diagnostic test we have is an RGP diagnostic fit." Toric IOLs can be a good fit if the best corrected acuity equals what can be achieved with an RGP.

"Spherical, monofocal lenses may be a better option in patients with iris or pupil abnormalities," he said. "The 'premium' IOLs are not always 'better,' and in some complex cases may result in worse vision."

Presbyopia correction

Accommodative IOLs, corneal inlays, laser-based presybopic correction (PresbyLASIK) and trifocal lenses are all attempting to correct presbyopia, and most of the work on the treatments is being done outside the U.S.

No consensus exists on the methods of measurement that will substantiate the degree of accommodation, said **John A. Vukich, MD**, Madison, Wis. "Most accommodative lenses are working on forward shift; 1 mm of movement results in about 0.8 D in a long eye and 2.3 D in a short eye," he said.

Three corneal inlays are under development; each implanted at slightly different depths, said **Damien Gatinel, MD**, Paris. The Flexivue Microlens (Presbia, Amsterdam) is the only one available in different powers.

"In all cases, achieving the proper centration is the most important step to achieving optimal visual performance," he said.

PresbyLASIK creates a multifocal cornea, and most importantly, a change in spherical aberrations, said **Gustavo Tamayo, MD**, Bogota, Colombia. The procedure is safe and effective, with almost 93% spectacle-freedom.

"PresbyLASIK is particularly well suited for younger presbyopes," he said. "Complications from the surgery are manageable with other techniques." Complications with the procedure are similar to those with multifocal IOLs.

Beyond the bifocal IOLs (refractive, diffractive, or hybrid), under investigation outside the U.S. are two trifocal lenses, the AT LISA tri 839MP (Carl Zeiss Meditec, Jena, Germany) and the Finevision Trifocal (PhysIOL, Liege, Belgium). Both are diffractive lenses; for a 3 mm pupil, the lens provides 43% distance, 29% intermediate, and 15% near with a 1.75 D intermediate add, 3.50 near add. The AT Lisa provides a +3.33 D near add, and a +1.66 D intermediate add at the IOL plane. Pupil independent up to 4.5 mm, the lens provides 50% distance, 30% near, and 20% intermediate, according to **Quentin Allen, MD**, Dunlap, Ill. **CN**

Examining corneal transplant rejection

Corneal surgeons discussed how to prevent and manage corneal transplant failure at the symposium "Objection to Rejection: Prevention and Management of Corneal Transplant Failure," sponsored by the Cornea Society, at the 2013 ASCRS• ASOA Symposium & Congress. **W. Barry Lee, MD**, Atlanta, and **Christopher Rapuano, MD**, Philadelphia, moderated the symposium.

Dr. Lee discussed what studies have reported regarding the incidence of corneal transplant rejections. He said that 25% of all penetrating keratoplasties (PKs) are thought to undergo endothelial rejection. The incidence of endothelial rejection after Descemet's membrane endothelial keratoplasty (DSEK) appears lower, with only a 0-2% rejection rate, although there is not much long-term data available yet from this type of surgery, Dr. Lee said.

Endothelial rejection does not occur with Descemet's automated lamellar keratoplasty (DALK), although epithelial and subepithelial and stromal rejection may occur with this procedure. Rejection after DALK is more often reversed than after PK, Dr. Lee said.

Examining another aspect of how to manage corneal transplant rejection, **Stephen C. Kaufman, MD**, Minneapolis,

Cornea journal iPad app coming soon

Starting in September, *Cornea: The Journal of Cornea and External Disease* will have an iPad app. The app enhances *Cornea*'s superb content with the advanced functionality of the iPad. Downloading the app will be free, and accessing the full-text content is a benefit of the Cornea Society membership. This is an exciting development for *Cornea*.

Introducing Cornea for the iPad

Cornea for the iPad will be available in the iTunes App Store. The same research that's so critical to your profession is now brought to you on the iPad. The *Cornea* app optimizes the best in digital technology to enhance a print-like reading experience with article-sharing options, convenient navigation features, and more. The app includes these features:

- Easy to read full-text articles that you can share via email or social media
- Ability to store or delete downloaded issues
- Resize text and images with "pinch and zoom"
- Quick scrolling through abstracts
- Notification when a new issue is available
- Engaging multimedia
- Link to www.corneajrnl.com to view supplemental content, browse the archives, and more

After an introductory free-access period, full-text access via the app will be limited to members and non-member individual subscribers who have registered for online access to the journal.

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focused on the use of calcineurin inhibitors to prevent rejection. He explained that cyclosporine ophthalmic emulsion 0.05%—Restasis (Allergan, Irvine, Calif.)—is a calcineurin inhibitor. However, corneal transplants do not typically use Restasis after corneal transplantation. Some transplant physicians will use more potent systemic forms of calcineurin inhibitors more frequently for transplants in other parts of the body.

Dr. Kaufman commonly uses the calcineurin inhibitor tacrolimus (Protopic, Astellas, Northbrook, Ill.) 0.03%, noting that a 0.1% formulation is also available. Tacrolimus is a thick topical ointment that is hard to get into the eye. Some patients have trouble tolerating tacrolimus because they experience discomfort. The medication also has a black box warning from the U.S. FDA as a few patients developed lymphomas after using the drug. Still, Dr. Kaufman believes that tacrolimus can be useful for the treatment of high-risk PKs and that there is more potential for the use of the medication in ophthalmology.

With an eye on preventing corneal neovascularization, **Natalie Afshari, MD**, San Diego, noted that the modulation of angiogenesis within the body could have a major impact on 21st-century ophthalmic medicine. Research into angiogenesis assists with the treatment of corneal neovascularization, helping to prevent further growth, she explained.

Graft failure in patients who have glaucoma drainage devices occurs in anywhere from 9-30% of cases, said **Richard Davidson, MD**, Denver. "Glaucoma drainage devices are good at controlling IOP but graft clarity is often compromised," he said.

Some pearls to help avoid graft failure in patients with glaucoma drainage devices is to consider temporary tube obstruction, inject with a 30-gauge needle rather than a cannula, and leave 100% air filter inside the eyes, he said.

Donald TH Tan, FRCS, Singapore, reported on the increasing prevalence of cytomegalovirus (CMV) keratitis, which often masquerades for Descemet's stripping endothelial keratoplasty rejection. He noted that this problem is currently more common in Asia, although there are some cases reported in the United States. "We misdiagnose, and sometimes the clinical picture may mimic other conditions," he said. One condition that it mimics is corneal decompensation following cataract and glaucoma surgery.

Common signs of CMV keratitis include mild iritis, stromal and epithelial edema, keratic precipitates, mild anterior chamber activity, and nodular endothelial lesions.

CN

A United States corneal graft registry

Creation of a corneal graft registry has been a goal of the Cornea Society for some time. Registries in Australia, the U.K., and Sweden have demonstrated the value of tracking surgical outcomes over the long term in a large cohort of transplant recipients.[1-5] The higher number of transplants and surgeons in the United States offers greater prospects for data collection as well as greater challenges. Attempts to start a registry in the U.S. have foundered for lack of funding and for the data input burden required of clinicians.

A new opportunity for starting a graft registry has arisen. The American Academy of Ophthalmology has undertaken the creation of a clinical ophthalmic registry designed to capture essential data elements with little impact on office workflow. As Cornea Society liaison to the AAO Registry Task Force, I have been working to include collection of corneal transplantation data as part of this registry. Drawing on elements of existing registries, Chris Rapuano, MD, Alan Sugar, MD, David Musch, MD, and David Glasser MD have developed a list of corneal transplantation data elements for inclusion in the AAO project.

The registry is based on the following principles:

- Ophthalmologists will own their individual data
- The AAO and Cornea Society will have access only to de-identified aggregated data and results
- Data security and protection will be integral
- Ophthalmologist permission will be required for reporting of individual data
- Protections in place for discovery of physician-specific data
- Burden of data entry should be minimized

The Academy is building on the experience of other specialty societies with registries. Adoption rates of electronic health records (EHRs) by ophthalmologists approaching 35-40% offer the promise of automated data collection. The AAO has approved funding and chosen an IT vendor to develop the registry infrastructure. The vendor will work with the measurement development group to ensure automated data capture by mapping data elements from EHRs to the registry. This will include not just identification of discreet data such as diagnosis and procedure codes, but also extraction of relevant items from free text entries.

In addition to supplying a backbone for clinical research projects like transplant outcomes, the registry will facilitate quality improvement projects and be an avenue for ophthalmologists to qualify for payment incentives and avoid penalties, and meet requirements for maintenance of certification and licensure. A beta site is anticipated this year, with enrollment of physicians expected by next year. **CN**

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Cornea journal highlights from the editor

Cornea, the journal of the Cornea Society, has been reducing its backlog of accepted papers awaiting print progressively over the past year. With an increase in the number of pages and the introduction of online-only publication of selected papers, we anticipate that the time from receipt of final proofs to print publication will be about three to four months by the end of this summer.

Several recent papers are of great merit. A report on the successful medical treatment of Fuchs' corneal endothelial dystrophy with ROCK inhibitor drops by Koizumi et al is particularly exciting. It appeared online in May and will be in the August print issue. Collagen crosslinking for the treatment of keratoconus is the subject of five papers in the July issue. In the June issue, a report on standardization of ocular transplant tissue terminology, from an international committee led by Armitage, is of great importance to eye banks and corneal surgeons.

We encourage clinicians and scientists working in our field to continue to
contribute their best work to *Cornea*.

Alan Sugar, MD
Editor-in-chief

My experience as an advocacy ambassador

This year, the Cornea Society sponsored me as an advocacy ambassador at the American Academy of Ophthalmology Mid-Year Forum and Congressional Advocacy Day. The experience was truly enlightening and inspirational. As young ambassadors-in-training, this forum not only updates us on the most pressing political issues in the field of ophthalmology, something that is rarely taught or discussed in our residency or fellowship programs, but it also gives us an opportunity to immediately join the action by discussing and presenting our personal stories to members of Congress on Capitol Hill.

The day before I flew to Washington, D.C. to attend the forum, I was a mixture of excitement and nerves. I was eager for the change of pace from the normal clinical duties of a corneal fellow and to become involved in a different aspect of healthcare, but at the same time felt woefully uninformed about the active issues in our field of medicine. Fortunately, on the first evening of the meeting, a dinner briefing updated us on current major legislative concerns of the Academy as well as provided excellent strategies in presenting our case to Congress.

Thus, the next day, I felt much better prepared as we headed out to Capitol Hill to our scheduled meetings with local and state legislators. As the day progressed, I noticed the transformation among myself and fellow trainees; with each successive meeting, we went from observing on the sidelines to chiming in with our personal stories, giving a young ophthalmologist's perspective on each discussion topic. As was pointed out by multiple staff members we met, as representatives of the future of our field, our voices are particularly important, and Congress does want to hear from us as they create new policies that will impact our future.

H. Peggy Chang, MD (second from left), and colleagues at the AAO Mid-Year Forum and Congressional Advocacy Day, April 2013

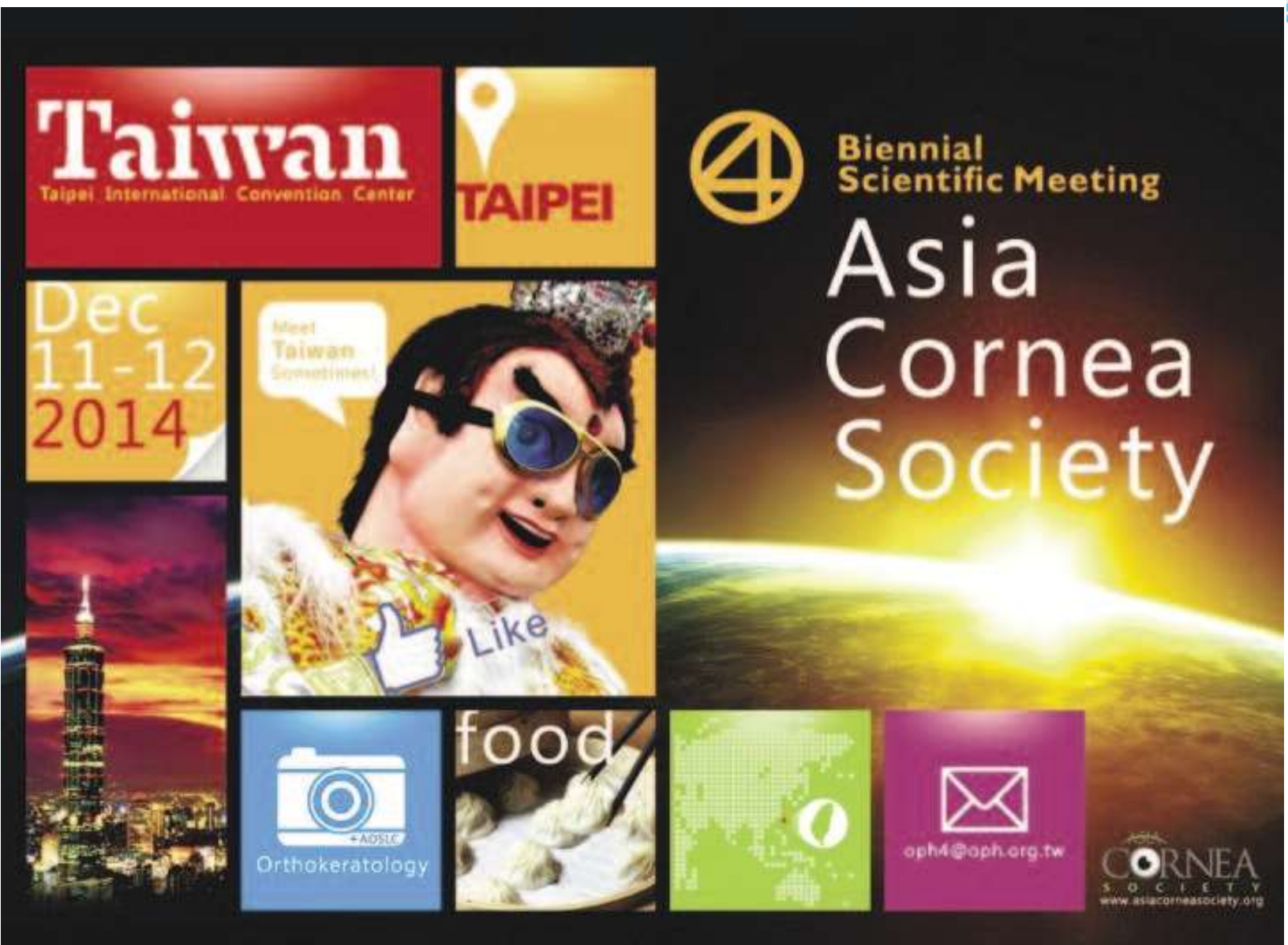
The rest of the meeting was very educational, discussing current issues facing the practicing ophthalmologist and providing helpful strategies in addressing them. Throughout the meeting, I met many inspirational mentors who have returned year after year in an effort to protect our ability to continue providing excellent care for our patients. I encourage every young ophthalmologist to become involved in the process (it is our future for which we are advocating!), and again thank the Cornea Society for giving me this opportunity. **CN**

H. Peggy Chang, MD
Massachusetts Eye & Ear Infirmary

Announcement of Zoster Eye Disease Study (ZEDS)

As you may have heard, a group of opthalmologists, including Stephen D. McLeod, Deborah Pavan Langston, Christopher J. Rapuano, Kathryn A. Colby, Todd Margolis, Roy Beck, and myself are preparing a grant application to the NEI/NIH for support of a large multicenter trial regarding prolonged suppressive antiviral treatment, comparing oral valacyclovir 1,000 mg daily to placebo for one year, in patients with acute or chronic herpes zoster ophthalmicus (HZO). Our purpose is to determine if suppressive antiviral treatment reduces complications of HZO, including ocular disease and postherpetic neuralgia (PHN). This treatment is in addition to currently recommended acute high dose oral antiviral treatment of HZO. Patients in our study will be followed every three months for 18 months, including six months after completion of antiviral or placebo treatment. The grant will be submitted to the NEI this September. If funded, the earliest we will begin enrolling patients will be in the fall of 2014. The study will be coordinated by the Clinical and Translational Science Institute at New York University School of Medicine.

We would like as many cornea practices as possible in the U.S. that treated 20 or more patients with HZO in 2012 to participate. We are pleased that many cornea specialists have already responded that they would like to participate. If you are interested in being part of this important study, please contact me at Elisabeth.cohen@nyumc.org or Eliana Castano, a project manager, at Eliana.castano@nyumc.org, and we will send you a survey to complete. If you have any questions, please contact one of us. We would like to identify all participating centers by August 1. **CN**



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Friday, November 15, 2013

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Submissions Deadline–September 3, 2013

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Advancing the treatment of corneal disease

EYE BANK ASSOCIATION of AMERICA

Critical issues discussed at AAO Mid-Year Forum

The American Academy of Ophthalmology 2013 Mid-Year Forum took place on April 10-13 in Washington, DC.

Congressional Advocacy Day was a tremendous success with more than 400 eye MDs and DOs visiting members of Congress and their staff. The Cornea Society representation in the advocacy ambassador program included Peggy Chang, MD, currently in fellowship training at Massachusetts Eye and Ear Infirmary. This year's messages on the Hill included:

- Fair and stable Medicare reimbursement
- Truth in marketing: empowering patients
- Electronic health record improvement
- Funding support for the NIH/NEI and the Department of Defense vision trauma research program
- Creation of new loan repayment assistance program

This was followed by the Mid-Year Forum to discuss critical issues facing ophthalmology and to provide input to the Academy's Board. The general session included discussions on what ophthalmologists need to know to navigate integrated healthcare, role of mid-level practice extenders, and patient-centered care.

In addition, there were two hearings on electronic health records to improve quality, cost-effectiveness, and the confounding situations with compounded drugs. This year's Council meeting included discussions on a Council Advisory Recommendation for balance billing for Medicare patients, eye drop instillation by technicians, and CodeQuest seminars, among others. Next year's meeting is scheduled for April 9-12, and all members are encouraged to participate. **CN**

Subspecialty Day

2013
New Orleans
November 15 – 16

Cornea Society

Cornea 2013:
Through the Looking Glass – Where We Are, Where We're Headed

In conjunction with The Cornea Society
Saturday, November 16, from 8:00 AM to 5:30 PM
New Orleans, LA

Program Directors:

Kathryn A Colby MD PhD
William Barry Lee MD
Elmer Y Tu MD

Join us in New Orleans for Subspecialty Day

Your registration for Cornea Subspecialty Day includes:

- Flexibility to float between all Subspecialty Day meetings on Saturday: Glaucoma, Oculofacial Plastic Surgery, Neuro-Ophthalmology, Pediatric Ophthalmology, Refractive Surgery and Retina.
- Access to the Annual Meeting Exhibit Hall on Saturday.

Registration Opens:

Academy Members: **June 26**
Nonmembers: **July 10**

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