Subspecialty Day Edition
An Insider’s Guide to All 7 Meetings

AAO 2019 Inspire!

FEEL THE THRILL

Break free from tradition. Unleash the power of the PanOptix® IOL.
FOR THE RECORD

ANNUAL BUSINESS MEETING
Notice is hereby given that the Annual Business Meeting of the American Academy of Ophthalmology will be held in conjunction with the Opening Session on Sunday, Oct. 13, at 8:30-10:00 a.m., in West 3002 at Moscone Center in San Francisco. Candidates for membership will be approved during this meeting.

For the full list of candidates, visit aao.org/member-services.

To see the full order of business, refer to the Opening Session and Annual Business Meeting page in the printed AAO 2019 Meeting Program or online in the Mobile Meeting Guide (aao.org/mobile).

CALLING ALL VOTING MEMBERS AND FELLOWS
Remember to cast a ballot for the next President-Elect, Senior Secretary for Ophthalmic Practice, Secretary for the Annual Meeting, as well as two Trustees-at-Large, a Council Chair, and a Council Vice Chair. Election materials have been sent to all voting Academy fellows and members. Voting opens on Monday, Oct. 14, and closes Tuesday, Nov. 12, at noon EST. Results of the election will be posted on the Academy’s website at aao.org/about/governance/elections by Nov. 15, 2019.

For candidates’ full statements, visit aao.org/about/governance/elections, or visit the candidate display in the North, Exhibition Level of Moscone Center during AAO 2019.

Want to nominate somebody for the 2021 board? Information on the process will be at aao.org/about/governance/elections later this month.

NOTICE: This publication was printed in advance of Subspecialty Day and AAO 2019. For the most up-to-date information, check the Program Search (aao.org/programsearch) or the Mobile Meeting Guide (aao.org/mobile).

American Academy of Ophthalmic Executives®, EyeNet®, EyeSmart®, IRIS® Registry, Ophthalmic News and Education Network® (ONE® Network), the Focus logo, Protecting Sight, Empowering Lives®, and Preferred Practice Patterns®, among others, are trademarks of the American Academy of Ophthalmology. All other trademarks are the property of their respective owners. © 2019 American Academy of Ophthalmology.

AcrySof® IQ PanOptix® Family of Trifocal IOLs Important Product Information

CAUTION: Federal (USA) law restricts this device to the sale by or on the order of a physician.

INDICATIONS: The AcrySof® IQ PanOptix® Trifocal IOLs include AcrySof® IQ PanOptix® and AcrySof® IQ PanOptix® Toric IOLs and are indicated for primary implantation in the capsular bag in the posterior chamber of the eye for the visual correction of aphakia in adult patients, with less than 1 diopter of pre-existing corneal astigmatism, in whom a cataractous lens has been removed. The lens mitigates the effects of presbyopia by providing improved intermediate and near visual acuity, while maintaining comparable distance visual acuity with a reduced need for eyeglasses, compared to a monofocal IOL. In addition, the AcrySof® IQ PanOptix® Toric Trifocal IOL is indicated for the reduction of residual refractive astigmatism.

WARNINGS/PRECAUTIONS: Careful preoperative evaluation and sound clinical judgment should be used by the surgeon to determine the risk/benefit ratio before implanting a lens in a patient with any of the conditions described in the Directions for Use labeling. Physicians should target emmetropia and ensure that IOL centration is achieved. For the AcrySof® IQ PanOptix® Toric Trifocal IOL, the lens should not be implanted if the posterior capsule is ruptured, if the zonules are damaged or if a primary posterior capsulotomy is planned. Rotation can reduce astigmatic correction. If necessary, lens repositioning should occur as early as possible prior to lens encapsulation. Some visual effects may be expected due to the superposition of focused and unfocused multiple images. These may include some perceptions of halos or starbursts, as well as other visual symptoms. As with other multifocal IOLs, there is a possibility that visual symptoms may be significant enough that the patient will request explant of the multifocal IOL. A reduction in contrast sensitivity as compared to a monofocal IOL may be experienced by some patients and may be more prevalent in low-lighting conditions. Therefore, patients implanted with multifocal IOLs should exercise caution when driving at night or in poor visibility conditions. Patients should be advised that unexpected outcomes could lead to continued spectacle dependence or the need for secondary surgical intervention (e.g., intracocular lens replacement or repositioning). As with other multifocal IOLs, patients may need glasses when reading small print or looking at small objects. Posterior capsule opacification (PCO) may significantly affect the vision of patients with multifocal IOLs sooner in its progression than patients with monofocal IOLs. Prior to surgery, physicians should provide prospective patients with a copy of the Patient Information Brochure, available from Alcon, informing them of possible risks and benefits associated with the AcrySof® IQ PanOptix® Trifocal IOLs.

ATTENTION: Reference the Directions for Use labeling for each IOL for a complete listing of indications, warnings and precautions.

From the Editor
Welcome to Subspecialty Day 2019!

This year’s Subspecialty Day features presentations on the latest developments in diagnosis, treatments, and procedures. The Subspecialty Day lineup includes refractive surgery on Friday and retina on both Friday and Saturday. On Saturday, there will be Subspecialty Day meetings in cornea, glaucoma, neuro-ophthalmology, oculofacial plastic surgery, and pediatric ophthalmology. I urge you to take time to explore disciplines other than your own. Often, pearls from one subspecialty can be applied to a completely different arena in surprising and useful ways. Check out this year’s “Program Directors Share Insights on Subspecialty Day” (page 4) to find topics that might interest you. Look for the second edition of AAO 2019 News on Sunday and check your email each evening for AAO 2019 Daily, a roundup of news from Subspecialty Day and AAO 2019. The content can also be found at aao.org/eyenet/daily.

Ruth D. Williams, MD
Chief Medical Editor, EyeNet Magazine

On the Cover
Corneal Folds

John Leo
Tun Hussein Onn National Eye Hospital
Selangor Darul Ehsan, Malaysia
Program Directors Share Insights on Subspecialty Day

From Cornea to Retina

T
to provide an inside look at Subspecialty Day, EyeNet contacted the program directors from each meeting and asked the following questions: 1) Which presentation will have broad appeal across subspecialties? 2) Which presentation might cause subspecialists to reconsider an area of their clinical practice? 3) Which presentation addresses particularly novel or exciting developments within the field? Here are those answers, accompanied by descriptions directly from the program directors.

Most Subspecialty Day meetings are held on Saturday. However, Refractive Surgery Subspecialty Day takes place on Friday only, allowing refractive surgeons to register for the Saturday Cornea Subspecialty Day program—or any other Saturday program. As always, Retina Subspecialty Day is scheduled for both Friday and Saturday.

Note: All summaries were written in advance of Subspecialty Day. Be sure to check the Subspecialty Day schedule in the Mobile Meeting Guide, accessible at aao.org/mobile, for the most up-to-date information.

Of Interest Across Subspecialties

CORNEA

West 2020
Dry Eye/Ocular Surface Disease, moderated by Sophie X. Deng, MD, PhD (Saturday, 9:12-10:55 a.m.)

Dry eye disease and meibomian gland dysfunction are among the most common ocular surface disorders seen by ophthalmologists. New diagnostic tests and treatments will be presented. Additionally, because neurotrophic keratitis, limbal stem cell deficiency, and ocular cicatricial diseases are often overlooked in their early stages, experts will present signs and symptoms of these disorders, as well as recent advances in their management.

The session will end with discussion of a challenging dry eye case. Afterward, attendees will be able to recognize and treat different ocular surface diseases.

—Sophie X. Deng, MD, PhD
Cornea program director

GLAUCOMA

Esplanade Ballroom
Lombard Street: Winding Your Way Through Glaucoma and Anterior Segment Disease From Birth Until Death, moderated by Ian P. Conner, MD, PhD, and John T. Lind, MD (Saturday, 2:29-3:59 p.m.)

Which came first: the glaucoma or the corneal disease? There is something for everyone in this session on the interplay of glaucoma and anterior segment disease, as these conditions are frequently found together in the same patient. The presentation will start with an examination of these coexisting problems in the pediatric population. The next topic will be adult diseases, covering issues of IOP measurement in abnormal corneas and medical and surgical treatment in these patients, including a discussion of the applicability of newer microincisional glaucoma surgeries. Attendees will learn why glaucoma surgery sometimes causes the cornea fail and why corneal surgery exacerbates glaucoma.

—Johann A. Giaconi, MD, and Eydie G. Miller-Ellis, MD
Glaucoma program director

NEURO-OPHTHALMOLOGY

West 2014
Double Vision—50/50 Chance of Picking the Right One! moderated by Eric L. Berman, MD, and Anne S. Abel, MD (Saturday, 1:17-3:32 p.m.)

All ophthalmologists are faced with patients who have double vision, and the differential diagnosis for this symptom includes both common non–neuro-ophtalmic conditions, such as dry eye or a cataract that causes monocular diplopia, and potentially life-threatening disorders such as aneurysmal cranial nerve palsies. Patients describe their symptoms in a variety of ways, and the concept and perception of “double vision” varies across ages and across the country and world.

The session will engage the audience with several cases in which the initial symptoms alone could lead down several diagnostic and therapeutic pathways. This year features a discussion of new-onset diplopia in patients over the age of 50, a common problem that can lead to consternation and confusion in determining the extent of the workup. Speakers and expert panelists will help the ophthalmologist identify these problems and direct diagnosis and management in the most efficient and effective ways.

—Prem S. Subramaniam, MD, PhD
Neuro-Ophthalmology program director

OCULOFACIAL PLASTIC SURGERY

West 2002
The Do’s and Don’ts of Starting Your Cosmetic Practice, moderated by Wendy W. Lee, MD (Saturday, 8:05-9:25 a.m.)

The practice of cosmetic ocuolofacial plastic surgery has been embraced by both the oculoplastic surgeon and the comprehensive ophthalmologist. Currently, nonincisional procedures, including dermal fillers, botulinum toxin, and skin resurfacing, are performed more often than incisional procedures.

This session will aid physicians in developing a successful cosmetic ocuolofacial plastic surgery practice. John D. McCann, MD, PhD, will share his tips on how to keep patients comfortable before, during, and after surgeries; and Femia Kherani, MD, Jill S. Melicher Larson, MD, and Julie A. Woodward, MD, will share their insights on introducing nonincisional surgeries into the practice.

At the conclusion of the session, Rachna Murthy, MBBS, will review some of the frightening complications of dermal fillers, including tissue necrosis and central retinal artery occlusion, that may present to subspecialists and comprehensive ophthalmologists alike.

—Richard C. Allen, MD, PhD, and Jeremiah P. Tao, MD
Oculofacial Plastic Surgery program directors

PEDIATRIC OPHTHALMOLOGY

West 3020
“I Heard It Through the Grapevine”: Ophthalmic Technology Assessments, moderated by Gena Heidary, MD, and Stacy L. Pineles, MD (Saturday, 9:00-10:45 a.m.)

If you see children in your practice, you will find yourself fielding questions from parents on how to prevent myopia in their children. Faculty of the Pediatric Ophthalmology Subspecialty Day program will share in-depth analyses on the latest techniques in optical and pharmacological correction of myopia.

In addition, several other questions will be covered. For example, the use of beta-blockers for periorcular hemangiomas has become mainstream, but how should these drugs be safely administered, and what is the most effective treatment regimen? Should you consider balloon dacryoplasty for children with nasolacrimal duct obstruction? Presenters will explore the data and help you make recommendations for patients on these and other topics during a special session on technology assessments. All topics will be presented with detailed analysis of the usefulness of each technology.

—Scott A. Larson, MD, and Michael F. Chuang, MD
Pediatric Ophthalmology program directors

REFRACTIVE SURGERY

Esplanade Ballroom
Prevention and Management of Positive and Negative Dysphotopsias, presented by Jack T. Holladay, MD (Friday, 8:33-8:39 a.m.)

Patients may experience a wide variety of symptoms after cataract or refractive surgery, and finding the right descriptor for these manifestations can be challenging. This lecture is designed to present general terms for categorizing postsurgical dysphotopsias, as well as appropriate treatment for each type. Attendees will come away with greater confidence in their ability to identify and address their patients’ symptoms, whether they complain of halos, wobbling images, starbursts, monocular double vision, or any number of other visual disturbances.

—Marcory R. Santiago, MD, and George O. Waring IV, MD
Refractive Surgery program directors
In micro-invasive surgery, seek the micro-invasive option...

- 500,000+ Glaukos trabecular micro-bypass stents implanted and 100+ peer-reviewed publications
- Lowest reported post-op mean IOP of any trabecular bypass stent
- Lowest reported rates of significant endothelial cell loss (ECL)
- Lowest reported rates of peripheral anterior synechiae (PAS)
- Stents are made of titanium, no nitinol (nickel) allergic responses

TransformMIGS.com | 800.GLAUKOS (452.8567)

* In any trabecular bypass MIGS pivotal trial.
† Significant ECL defined as ≥30% ECL.

INDICATION FOR USE. The iStent inject® Trabecular Micro-Bypass System Model G2-M-IS is indicated for use in conjunction with cataract surgery for the reduction of intraocular pressure (IOP) in adult patients with mild to moderate primary open-angle glaucoma. CONTRAINDICATIONS. The iStent inject is contraindicated in eyes with angle-closure glaucoma, traumatic, malignant, uveitic, or neovascular glaucoma, discernible congenital anomalies of the anterior chamber (AC) angle, retinoblastoma, 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 of the angle that could lead to improper placement of the stent and pose a hazard.

MRI INFORMATION. The iStent inject 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. The safety and effectiveness of the iStent inject have not been established as an alternative to the primary treatment of glaucoma with medications, in children, in eyes with significant prior trauma, abnormal anterior segment, chronic inflammation, prior glaucoma surgery (except SLT performed > 90 days preoperative), glaucoma associated with vascular disorders, pseudoxfoliative, pigmentary, or other secondary open-angle glaucomas, pseudophakic eyes, phakic eyes without concurrent cataract surgery or with complicated cataract surgery, eyes with medicated IOP > 24 mmHg or unmedicated IOP < 11 mmHg or > 36 mmHg, or for implantation of more or less than two stents. ADVERSE EVENTS. Common postoperative adverse events reported in the randomized pivotal trial included stent obstruction (6.2%), intraocular inflammation (5.7% for iStent inject vs. 4.2% for cataract surgery only), secondary surgical intervention (6.4% vs. 5.0%) and BCVA loss ≥ 2 lines ≥ 3 months (2.6% vs. 4.2%). 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.


© 2019 Glaukos Corporation. Glaukos and iStent inject are registered trademarks of Glaukos Corporation. PM-US-0176
High-risk nonproliferative diabetic retinopathy (NPDR), when left untreated, often precedes proliferative diabetic retinopathy marked by neovascularization and, possibly, vitreous hemorrhage. Rishi P. Singh, MD, will lead a presentation covering the results from a prospective double-masked randomized study, PANORAMA, to show how an intravitreal anti-VEGF drug (aflibercept) can be used to slow the progression of even high-risk NPDR. Although this exciting discussion is retina focused, it contains interesting pearls for a wide variety of subspecialists as well as comprehensive ophthalmologists.

—Mark S. Humayun, MD, PhD, and Judy E. Kim, MD
Retina program directors

**Clinical Practices to Reconsider**

**CORNEA**
West 2020

Avoiding Keratoplasty: Descemet Stripping Only, presented by Kathryn A. Colby, MD, PhD (Saturday, 2:00-2:08 p.m.)

Fuchs endothelial corneal dystrophy (FECD) has been treated with corneal transplantation for decades, with endothelial keratoplasty being the current accepted surgical procedure. Recently, avoiding keratoplasty by stripping the Descemet membrane alone has generated interest as a novel and simple treatment for FECD, with the potential advantages of avoiding graft rejection and failure and reducing topical corticosteroid administration. But which patients are ideal candidates for the procedure? What should be modified in the surgical technique to achieve ideal outcomes? Do all patients need adjuvant topical therapy with Rho-kinase inhibitors? How quickly does vision recover? Kathryn A. Colby, MD, PhD, will help answer these questions as she discusses the topic of Descemet stripping only to update surgeons on the latest results and recommendations.

—Sanjay V. Patel, MD, FRCOphth
Cornea program director

**GLAUCOMA**
Espalanade Ballroom

Pacific Heights: Reaching 20/20 (or Near That) With Cataract Surgery and Glaucoma, moderated by Vikas Chopra, MD, and Leon W. Herndon Jr, MD (Saturday, 2:00-2:08 p.m.)

Cataract surgery remains the most common surgery performed on patients with glaucoma, yet there is no consensus on the best way to do it. During this case-based video symposium, experts will debate how to manage some of the challenges they have encountered while performing cataract surgery in glaucoma patients. Attendees have the opportunity to weigh in on questions such as: Should a glaucoma procedure be done in conjunction with cataract surgery in medically well-controlled patients—or in patients whose pressure is controlled by previous trabeculectomy or tube shunt? During this session, panelists will also reveal tips for dealing with short eyes and those with narrow angles, as well as how to manage an intraoperative cataract complication in the setting of advanced glaucoma.

—JoAnn A. Giacconi, MD, and Eydie G. Miller-Ellis, MD
Glaucoma program directors

**NEURO-OPHTHALMOLOGY**
West 3014

Tests Will Give Me the Answer! moderated by Raghu Mudumbai, MD, and
MIGS SURGEONS CAN’T IGNORE THE DATA IN THE ROOM

Reporting the most medication-free patients and the largest IOP reduction compared to control of any MIGS pivotal trial at 24 months, the Hydrus® Microstent sets a new standard for high quality patient outcomes.¹ ² ³ ⁴

Delivering a new confidence.

VISIT AAO WEST EXHIBIT HALL, BOOTH #7401
OculoFacial Plastic Surgery
West 2002
Changing Paradigms in the Treatment of Orbital Disease, moderated by Cat Burkat, MD, FACS (Saturday, 11:00 a.m.-12:05 p.m.)

Orbital trauma, tumors, and cellulitis may seem straightforward subjects, but recent studies have challenged previous dogma. M. Reza Vafei, MD, will discuss the evaluation and current indications for the treatment of orbital fractures. Dr. Vafei will also challenge the notion that surgery should be performed for fractures involving more than 50% of the orbital floor, as well as the concept that treatment must be performed within a set period of time. Next, Eva Dafgard Kopp, MD, PhD, from Stockholm, will discuss the technique and indications for fine-needle aspiration biopsy (FNAB) of orbital tumors. Although FNAB is the mainstay for the evaluation of tumors in other countries, it is rarely utilized—and is likely underused—for orbital tumor cases in the United States. Last, Roman Shinder, MD, will conclude the session with a discussion of the indications for using corticosteroids in patients with orbital cellulitis.

—Richard C. Allen, MD, PhD, and Jeremiah T. Tao, MD
Oculofacial Plastic Surgery program directors

Pediatric Ophthalmology
West 3020
“Everyday People”—Controversies in Neuro-Ophthalmology: Point Counterpoint, moderated by Stacy L. Pineles, MD, and Gena Heidary, MD (Saturday, 10:45 a.m.-12:05 p.m.)

Children with neuro-ophthalmic diseases present significant challenges to the ophthalmologist. How should you use neuroimaging in children with neurofibromatosis? Is optical coherence tomography helpful in the diagnosis of children with swollen optic nerves? What is the treatment for children with optic neuritis? Do you really have to image children with esotropia?

This year’s program will explore pediatric neuro-ophthalmic issues faced by all ophthalmologists who see children. Speakers will weigh in on common controversies in a dynamic point-counterpoint format with plenty of opportunities for audience interaction. Attendees will feel more confident in managing these difficult cases and may learn new ways to approach these young patients.

—Scott A. Larson, MD, and Michael F. Chiung, MD
Pediatric Ophthalmology program directors
Break free from the merry-go-round of eye drops. Experience SLT.

The Ellex® SLT Laser
FIRST CHOICE TECHNOLOGY FOR FIRST LINE THERAPY

Global market leadership in SLT technology for a reason.** Ellex® SLT is the doctor’s preferred choice!

Groundbreaking LiGHT Study Conclusions

“Selective laser trabeculoplasty should be offered as first-line treatment for open angle glaucoma and ocular hypertension, supporting a change in clinical practice.”*

VISIT ELLEX® EXHIBIT #439 AT AA0.

(855) 767-5784
WWW.ELLEX.COM/SLT

* LiGHT study | The Lancet. 393.10175
NIHR Biomedical Research Center at Moorfields Hospital, NHS Foundation Trust, London, UK
** Market Scope’s 2018 Global Ophthalmic Laser Market Report

WWW.ELLEX.COM/SLT
Refractive Surgery
Esplanade Ballroom
Synthesizing Data to Optimize Astigmatism Correction in Lens Surgery, presented by Noel A. Alpins, MD, FACS (Friday, 8:15-8:21 a.m.)
The key to optimizing astigmatism outcomes after lens surgery is understanding exactly how accurate your toric intraocular lens (IOL) calculator is in planning the surgery. In this presentation, Noel A. Alpins, MD, FACS, will address central questions that ophthalmologists should ask to assess their calculator, including the following: Does it calculate the spherical as well as the toric power of IOL? Does it use total corneal power? Does it have the ability to analyze and calculate any rotation of the toric IOL to reduce post-refractive cylinder surprise? Understanding exactly what is and is not included in your toric IOL calculator will allow improved astigmatic outcomes. —Marcony R. Santhiago, MD, and George O. Waring IV, MD Refractive Surgery program directors

Retina
West 3002
Systemic Management of Acute Retinal Artery Occlusions, presented by Timothy W. Olsen, MD (Friday, 11:56 a.m.-12:03 p.m.)
Artificial Intelligence for Diabetic Retinopathy Screening, presented by Tien Yin Wong, MBBS (Saturday, 12:53-1:00 p.m.)
Given the complexity of acute retinal artery occlusions, Timothy W. Olsen, MD, will review what could be done from a systemic management standpoint when a patient with the condition is seen in the clinic. This multidimensional approach could provide additional therapeutic options that would allow ophthalmologists to explore beyond what can be done at the eye alone. Among the recent technical innovations in retina, artificial intelligence and deep learning algorithms have become a focus for many researchers. In another presentation, Tien Yin Wong, MBBS, will discuss the great impact that the use of this methodology in screening for diabetic retinopathy has had—and will have—on public health. —Mark S. Humayun, MD, PhD, and Judy E. Kim, MD Retina program directors

Exciting Developments
Cornea
West 2020
Is Tissue Still the Issue? Anterior Segment Imaging for Management of Ocular Surface Tumors, presented by Carol L. Karp, MD (Saturday, 2:36-2:44 p.m.)
Ocular surface tumors can be a challenging diagnostic dilemma for ophthalmologists. An accurate and timely diagnosis of these lesions is crucial for appropriate management. In the past, diagnosis frequently required histopathology: Tissue was the issue, and when in doubt, you cut it out.
The development and advancement of optical coherence tomography (OCT) has revolutionized many areas of ophthalmology, and Carol L. Karp, MD, will discuss the use of high-resolution OCT (HR-OCT) as an adjunctive tool in the diagnosis of ocular surface lesions. In particular, HR-OCT can be useful in differentiating ocular surface squamous neoplasia from more benign entities such as pterygia and pinguecula.
The entire session will provide a review of the most up-to-date recommendations in the diagnosis and management of anterior segment tumors, including ocular surface squamous neoplasia, lymphoproliferative lesions, and pigmented lesions of the anterior segment. —Jennifer Y. Li, MD Pediatric Ophthalmology program director
WE ARE ON A QUEST FOR LONGER DOSING INTERVALS IN WET AMD

At Allergan, we understand how patients actually live, and it’s why we’re searching for a different way to manage this disease.

Visit Booth 1123 to join the conversation
GLAUCOMA
Esplanade Ballroom
Escape From OCT-A-Traz—Knowing the Ins and Outs of Imaging, moderated by Teresa C. Chen, MD, and Sanjay G. Asrani, MD (Saturday, 8:06-9:10 a.m.)

Optic nerve imaging can frustrate the clinician. It is considered an objective method for following glaucoma and glaucoma suspect patients, but it may yield ambiguous or confounding results in difficult cases. What is a clinician to do with false positives (“red disease”), algorithm failures, peripapillary atrophy, and myopic nerves? How much progression in the optic nerve, retinal nerve fiber layer, and macula should prompt escalation of therapy? What does the physician say to the patient when optical coherence tomography (OCT) and visual fields don’t match?

Start off Glaucoma Subspecialty Day with expert advice about how to better interpret and utilize OCT in the practice.

JoAnn A. Giaconi, MD, and Eydie G. Miller-Ellis, MD
Glaucoma program directors

NEURO-OPTHALMOLOGY
West 3014

Bugs and Drugs—Do They Matter?
moderated by Collin M. McClelland, MD, and Mitchell B. Strominger, MD (Saturday, 10:17 a.m.-11:32 a.m.)

Treatment of the neurotrophic cornea has undergone a major change. Steven M. Couch, MD, will discuss the use of corneal neurotization in the rehabilitation of the neurotrophic cornea. This procedure involves the use of an autogenous or cadaver nerve graft that is anastomosed to a functioning branch of the trigeminal nerve. The distal end of the graft is then placed in the subconjunctival space, and fascicles of the nerve are fastened to the perilimbal sclera. This procedure has proved to be a game changer.

Dr. Couch will describe the indications and surgical pearls for this procedure. He will also review neuroophthalmic side effects of common systemic medications.

Peter A. Quiros, MD
Neuro-Opthalmology program director

OCULOFACIAL PLASTIC SURGERY
West 2002

Corneal Neurotization, presented by Steven M. Couch, MD (Saturday, 1:55-2:10 p.m.)

BE SURE TO CLAIM CME
The American Academy of Ophthalmology is accredited by the Accreditation Council for Continuing Medical Education to provide Continuing Medical Education (CME) for physicians.

The Academy designates this live activity for a maximum of 33.5 AMA PRA Category 1 Credits. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Those whose attendance has been verified at AAO 2019 can claim their CME credit onsite at the CME Credit Reporting kiosks in South lobby, West lobby, and in the Academy Resource Center (West, Booth 7337), or online after the meeting.

Registrants will receive an email on Monday, Oct. 14, with the link and instructions on how to claim credit online. Attendees may use this link until Wednesday, Oct. 30.

For more information on CME accreditation and the Academy, visit aao.org/annual-meeting/cme.

GET SELF-ASSESSMENT CREDITS AT AAO 2019
Selected AAO 2019 courses and sessions meet the Self-Assessment CME (SAMCE) requirements defined by the American Board of Ophthalmology (ABO).

U.S. ophthalmologists can complete all eight annually required SACME hours at AAO 2019. Please be advised that the ABO is not an accrediting body for purposes of any CME program. The ABO does not sponsor AAO 2019 or any outside activity, and the ABO does not endorse any particular CME activity.

Credit designated as SACME is AMA PRA Category 1 Credit and is also preapproved by the ABO for the MOC Learning and Self-Assessment Activity requirements.

Find a listing of courses that meet the SACME requirements in the Mobile Meeting Guide at aao.org/mobile. In addition, please note that Subspecialty Day meetings no longer carry SACME.

Patients undergoing intraocular lens (IOL) implantation, whether for cataract extraction or refractive lens exchange, are increasingly opting for multifocal or other presbyopia-correcting IOLs, although the growth in this population of patients is relatively slow. In our experience, patients who have already had vision correction are more likely to consult us for near-vision solutions than those who have not had previous refractive surgery. However, prior corneal surgeries may have resulted in an increase in higher-order aberrations with small optical zones, centered optical zones, or a combination of the two.

This session will discuss the appropriateness of using presbyopic IOLs in various cases. It will also feature pro-con debates on topography-guided laser vision correction (LVC) for aberrated corneas, IOL power calculations using optical biometry, and regular wavefront-optimized LVC, as well as the timing and sequence of the procedures.

Marcy R. Santihago, MD, and George O. Waring IV, MD
Refractive Surgery program directors

RETINA
West 3002

Anti-VEGF Treatment Can Diminish Signs of Diabetic Retinopathy Without Reducing Nonperfusion, presented by Ramin Tadayoni, MD, PhD (Saturday, 1:28-1:35 p.m.)

Although the use of anti-VEGF therapies has dramatically changed the management of diabetic macular edema and has been shown to reduce the severity of diabetic retinopathy, ophthalmologists have long been concerned about the effect of these drugs on retinal perfusion. Thus, this presentation, based on two recent studies, will be of keen interest to retina specialists and generalists alike, as it addresses the topic of retinal perfusion in diabetic eyes receiving intravitreal injections of anti-VEGF agents. Moreover, it demonstrates that these drugs can diminish signs of diabetic retinopathy without reducing nonperfusion. In addition, Dr. Tadayoni will discuss the role of different types of imaging in the assessment of diabetic retinopathy.

Mark S. Humayun, MD, PhD, and Judy E. Kim, MD
Retina program directors
How Ophthalmology Is Leveraging Instagram
A Vivid Window Into Three Physicians’ Lives

With more than 60,000 followers between them, the three physicians profiled below have been using Instagram to document their journey through ophthalmology. They have been leveraging the social media platform to maximum effect—mentoring the next generation of physicians, educating the public, and celebrating their enthusiasm within ophthalmology and beyond.

This week, they are in San Francisco.

Dr. Abugo @MentorMeMD
Usiwoma Abugo, MD, is an oculoplastics specialist based in Greensboro, North Carolina. She is passionate about motivating inspired change through her social media platform.

Dr. Abugo’s Instagram account allows her to mentor, educate, and empower people from across the globe. Through @MentorMeMD she is able to turn her experiences—in both ophthalmology and life at large—into teachable moments, and she has also made many durable connections along the way.

At AAO 2019, Dr. Abugo is using Instagram to share tips and tricks on making the most of your time in San Francisco, including where you should stay. She will also be posting live from Tuesday’s session on creating online content (639), where she’ll be speaking as a panelist (see page 16).

Dr. Melendez @EyeQDoctorRob
Robert F. Melendez, MD, MBA, is a high-volume cataract surgeon in Albuquerque, New Mexico, and is the Academy’s Secretary for Online Education. He is passionate about educating his medical students and has used the handle, or username, EyeQDoctor, across his social media accounts, including Twitter and Instagram.

Dr. Melendez’ Instagram account features educational content about the eye, plus posts on his personal journey in ophthalmology.

At AAO 2019, Dr. Melendez is using Instagram to share interesting cataract surgery pearls. His main goal this year: Take selfies with as many Academy presidents (past, present, and future) as possible.

Dr. Tooley @DrAndreaTooley
Andrea A. Tooley, MD, is an ASOPRS fellow in oculoplastic surgery in New York City.

Dr. Tooley’s Instagram account has showcased her life as a medical student, resident, and now fellow, with the focus on inspiring others to choose a career in medicine and learn about ophthalmology. Dr. Tooley shares her daily routine as a fellow, her study strategies, life hacks, and more. She also uses her platform to support the medical community around her.

At AAO 2019, Dr. Tooley will be posting from Young Ophthalmologist (YO) events, from Monday’s Learning Lounge discussion on social media (LL30) that she’ll be facilitating, from the presentation that she’ll be delivering during Tuesday morning’s YO symposium (Sym52) that focuses on millennial ophthalmologists, and from happenings throughout the meeting.

Instagram Do’s and Don’ts

Drs. Abugo, Melendez, and Tooley shared the following Instagram tips:

- Do be authentic, share photos of yourself, and speak with your true voice.
- Do post often and on a consistent basis.
- Do ask permission from friends before posting their picture. Don’t violate patient trust or privacy. Ever!
- Do post frequently and with consistency. As challenging as this can be, the Instagram algorithm favors accounts that post often and on a consistent basis.
- Do research, and don’t post false information.
- Do do your research, and don’t post false information.
- Do ask permission from friends before posting their picture. Don’t violate patient trust or privacy. Ever!

Social Media at AAO 2019

Make sure you include #aao2019, the official meeting hashtag. You also should familiarize yourself with the Academy’s policy on social media at its annual meetings. The policy includes the following rules on photography and videos:

- Nonflash photography is allowed for personal, social, or noncommercial use.
- Attendees taking photos must do so in a nonobtrusive manner, so as not to disturb the presenter and other attendees.
- Slides with patient faces or other identifiable information cannot be shared on social media due to HIPAA regulations.
- Video recording, live audio, and/or video streaming is strictly prohibited.

Read the policy in full at aao.org/annual-meeting/policies-and-disclaimers#socialmedia.

Saturday
Communicating Research and Education Advances in Ophthalmology (Spe24)

Presidents: Matthew Timothy Feng, MD, Lorraine A. Provencher, MD, Rajesh C. Rao, MD, and Edmund Tsui, MD. This event will focus on how to 1) best share information when attending ophthalmology meetings or posting research sound bites on Twitter, Instagram, LinkedIn, etc. and 2) strengthen the dissemination of late-breaking news in an accurate way in order to make an impact in the field.

When: Saturday 11:30 a.m.-12:30 p.m.

Marketing 101: Kickstarting Your Website, Social Media, and Blog (Spe54)

Presenter: Randall V. Wong, MD. This course offers an overview of marketing strategy based on blogging, publishing, and sharing your ideas on the internet.

When: Saturday 1:00-4:00 p.m. Where:

Protect Your Online Reputation: Five Pearls to Build a Physician Brand and Social Media Presence. Instructor: Ravi D. Goel, MD. Monitoring your online presence and social media to address negative comments is a daunting task that can no longer be ignored. Learn about techniques to support promoters, address critics, engage in social media, and establish a positive internet presence. When: Saturday 3:00-4:00 p.m. Where: Technology Pavilion (West, Booth 7755). Access: Free.

**Sunday**

Employment Law Basics for the Small Ophthalmology Practice (225). Senior instructor: Robert A. Wade, JD. This session will include a brief discussion on use of email, internet, and social media. When: Sunday 2:00-3:00 p.m. Where: South 213. Access: Academy Plus course pass.

Social Media on Steroids: Perils and Pitfalls. Instructors: Rob Melendez, MD, MBA; Andrea Tooley, MD; Elisabeth Sledz, MS; and Gabriella Acosta, MS. With a focus on Instagram and Facebook, the presenters will share some dos and don’ts and highlight some exemplary accounts. When: Sunday 3:00-4:00 p.m. Where: Technology Pavilion (West, Booth 7755). Access: Free.

**Monday**

Growing Patient Volume: Ten Effective Online Strategies to Maximize LASIK, Premium IOL, and Other Elective Procedures (404). Senior instructor: Jim Flynn. This interactive session will discuss

———

Fill knowledge gaps and hone your skills with the Academy’s Ophthalmic News and Education (ONE®) Network. Get on-demand access to the most relevant curated content, including thousands of instructional videos, self-assessment questions, simulators and courses — plus EyeNet® Magazine, Ophthalmology® and 12 other journals — so you can stay sharp and excel.

Renew your membership and activate the most valuable benefits in our profession. aao.org/benefits

SHARING OPHTHALMIC KNOWLEDGE.
As a visual medium, Instagram can be a good fit for ophthalmology, a specialty that is rich in images. In this example Dr. Tooley shares some neurology tips.
Visit us at Booth #6438

AzaSite®
(azithromycin ophthalmic solution) 1%

Widely Available

AzaSite® is a registered trademark of InSite Vision Incorporated and is used under license.
©2019 Akorn, Inc. All rights reserved. P5007 Rev 07/19
the use of measurable online tactics—website optimization, social media, and keyword-focused content—to promote your practice. When: Monday 9:00-10:00 a.m. Where: South 214. Access: Academy Plus course pass.

The Key to Digital Success? Diversification (and the Data Proves It) (407). Senior instructor: David Woodson Evans, PhD. Social media is one of five key touch points that will be discussed in this presentation on marketing your practice. When: Monday 9:00-10:00 a.m. Where: South 212. Access: Academy Plus course pass.


Stay Hip With Instagram and Social Media (part of Sym36). Speaker: Ruth D. Williams, MD. This presentation is part of the Technology Update symposium cosponsored by the Senior Ophthalmologist committee. When: Monday 10:41-10:53 a.m., during Technology Update for Seniors (10:15-11:15 a.m.). Where: West 3020. Access: Free.

Enhancing Your Social Media Presence (L230). Senior instructor: Andrea A. Tooley, MD. Dr. Tooley will be joined by copresenter Ashley R. Brissette, MD, during this informal, small group discussion. When: Monday 1:30-2:30 p.m. Where: Learning Lounge 3 (North, Booth 5315). Access: Free.

Monitoring Your Online Reputation. Instructor: Randall Wong, MD. Learn how to monitor the internet for reviews of your practice, how to respond to negative reviews, and how to proactively enhance your reputation. When: Monday 2:00-2:30 p.m. Where: Technology Pavilion (West, Booth 7755). Access: Free.

Tuesday
Online Content Creation (Blogs, Podcasts, Videos, Social Media) for Ophthalmology Education and Marketing (639). Senior instructor: Jayanth S. Sridhar, MD. Panel of instructors: Usiwoma E. Abugo, MD; Ravi D. Goel, MD; Robert F. Melendez, MD, MBA; and Lorraine A. Provencher, MD. Learn about the different electronic media that are available for educational tool creation and how to blend peer-to-peer education with patient education, while avoiding any ethical and legal pitfalls. When: Tuesday 10:15-11:15 a.m. Where: West 2003. Access: Academy Plus course pass.

Social Media Exploits and How to Protect Yourself. Instructor: Jude Brown. The integration of social media into many aspects of daily life is helping people to stay connected with one another, but it also is being misused. Learn how scammers are using social media to acquire personal information, find out how to identify reliable sources of information, and determine who are real friends. When: Tuesday 11:30-12:00 p.m. Where: Technology Pavilion (West, Booth 7755). Access: Free.
Get the AAO Ophthalmic Education App
A Tutorial for App Newbies

In March, the Academy launched the AAO Ophthalmic Education App, which features a select subset of clinical content from the Academy’s website. It includes access to EyeWiki as well as Diagnose This quizzes, News, and 1-Minute Videos from the ONE Network. The app uses the phone’s notification system to alert you to new content in your areas of subspecialty interest as soon as it becomes available. Within the app you will see a list of content—or “feed”—tailored to your interests.

Install the App
Download. From your phone, go to aao.org/education-app. By clicking “Download on the App Store,” you go directly to the AAO Ophthalmic Education App page within the App Store. (Same process for Google Play.) After you download and open the app, it will ask you to allow (or disallow) notifications. Select “Allow.” Then close out of the Sponsors screen to get to the login screen.

Enter username and password. Current Academy members should use their existing aao.org username (primary email address) and password. Don’t remember this info? Touch “Forgot Email” or “Forgot Password” to get your email or reset your password. If you are not an Academy member, select “Continue as Guest.”

Remember me. Check the “Remember Me” box to avoid retying each time.

Use Touch ID or Face ID. If your smartphone recognizes your thumbprint, you can activate Touch ID to enter the app by placing your thumb on your phone’s Home button. (Don’t press down on the Home button or the app will minimize.) You can always select Touch ID during a future login or from within the app (see “Touch ID,” below). Face ID entry is also available for phones with this capability.

At the Top of the Screen
Settings icon. Tapping the Gear icon (Fig. 1A) brings up the Settings page, where four links let you personalize the app.

Subspecialties. The app automatically sets subspecialty preferences based on your membership profile. Feel free to select different or additional subspecialty areas of interest, and then hit “Done” to save your selections. When new app content in those subspecialty areas becomes available, you will be notified within the app or, if the app is closed, by the phone’s notification system (see “Notifications icon,” below).

The app also places the latest news, videos, and quizzes in your feed on the app Home screen. Note: If you choose different subspecialties within the app, this will not affect your Academy membership profile.

Customize Notifications. This area allows you to further refine notifications by type of content (e.g., News and Journal Reviews, Videos and Podcasts, etc.). Select one or more content types that interest you and hit “Done” to save your selections. Note that this customization does not affect your feed; all app content types related to your preferred subspecialty areas will appear.

Log in to AAO.org. Click “We will log you in automatically” to access aao.org, the full Academy website.

Use Touch ID or Face ID. This provides another way to activate Touch ID or Face ID.

Bookmark icon. Back on the main page, hit the Bookmark icon (Fig. 1B) to display a list of your bookmarked News and Videos (see “Bookmarking,” below).

Notifications icon. When new content is available, a red dot may appear in two places. Within the app. A dot will appear on the Bell icon (Fig. 1C). Click the bell to scroll through content you have not yet viewed.

On your phone’sHome screen. Depending on your phone’s settings, a dot may appear on the AAO Ophthalmic Education App (AAO Oph Edu) icon (Fig. 2) and banner notifications may appear on your Home screen. You can control these in your phone’s general Settings under Notifications/AAO Oph Edu. Turn off notifications. Don’t want notifications? From within the app, toggle all content types off. Or, use the general settings on your phone to disable notifications for AAO Oph Edu. The red dot will not appear within the app, nor will it—or banners—appear on your phone’s home screen.

At the Bottom of the Screen
Use the buttons along the bottom of the app’s screen to navigate to various content.

Home. Content related to your areas of subspecialty interest appears on the Home page (Fig. 1D). Under My Subspecialty News (Fig. 1E), swipe left to see up to five news stories. Just below that, under My Subspecialty Videos (Fig. 1F), swipe through up to five videos.

Below your subspecialty-specific content, the Weekly Case Challenge will be followed by the Latest News and Videos from all subspecialty areas.

Bookmarking. To store an article for later reading, tap the Bookmark icon in the upper right of any news or video summary box (Fig. 1G). Later, when you are ready to view the item, hit the Bookmark icon at the top of the app to see a list of your bookmarked News and Videos. After viewing an item, hit its Bookmark icon again to delete it from your Bookmark list.

News. The News button (Fig. 3A) takes you to a screen that defaults to news items in your areas of subspecialty interest. All items are bookmarkable. For news from across ophthalmology, select “All” at the top of the page (Fig. 3B).

Ad hoc customization. From the All screen, you can narrow down to a subspecialty on the fly. Tap the filter icon, scroll to the desired subspecialty, activate it, and hit “Apply.”

Notifications. When new content is available, a red dot may appear in two places. Within the app, a dot will appear on the Bell icon (Fig. 1C). Click the bell to scroll through content you have not yet viewed. On your phone’sHome screen. Depending on your phone’s settings, a dot may appear on the AAO Ophthalmic Education App (AAO Oph Edu) icon (Fig. 2) and banner notifications may appear on your Home screen. You can control these in your phone’s general Settings under Notifications/AAO Oph Edu. Turn off notifications. Don’t want notifications? From within the app, toggle all content types off. Or, use the general settings on your phone to disable notifications for AAO Oph Edu. The red dot will not appear within the app, nor will it—or banners—appear on your phone’s home screen.

Videos. On this page, find brief interviews and surgical and clinical videos (Fig. 4). The page also defaults to your areas of subspecialty interest. For bookmarking and ad hoc subspecialty customization, follow the steps described above in Home and News, respectively.

Diagnose This (Fig. 5A). This page displays the latest Diagnose This quizzes across all subspecialties. To narrow down to your subspecialty, touch the top Filter icon (Fig. 5B), scroll to your subspecialty and toggle it on; remember to hit “Apply!” You will return to the Diagnose This page, but this time you will see only those quizzes that fall within your area of interest. After you’ve taken a quiz, the item’s flag will change from New to Done (Fig. 5C).

EyeWiki. The EyeWiki button (Fig. 5D) takes you to eyewiki.org, a website written by ophthalmologists and covering the spectrum of eye disease, diagnosis, and treatment. It’s a handy quick reference, especially for point-of-care information.

Check It Out
Download the app at aao.org/education-app, or learn more at the Clinical Education kiosk in the Resource Center (West, Booth 7337).
Eleanor Y. Chew, MD, decided she wanted to become a pediatrician. But by the end of her medical school tenure, she was heading toward ophthalmology. She did not know that she would spend her future career uncovering the secrets of age-related macular degeneration (AMD) and other eye diseases of adulthood.

How did she come to develop an interest in medical retina and ophthalmic research? Dr. Chew gives credit to her mentor in Toronto, retinoblastoma expert Brenda L. Gallie, MD. “I met her at a social function, and she persuaded me to come in and work with her in lab—and I loved it.”

Dr. Gallie was “really keen about research,” Dr. Chew recalled. “Her mantra was that you can help more people by doing research than you can by treating them] one at a time.” And she even took Dr. Chew to her first ARVO meeting. “I thought, ‘Wow, this is kind of fun. She’s really cool. I could be like her.”

Dr. Chew was also mentored by Arnall Patz, MD, who did the original clinical trial that proved the role of oxygen in retinopathy of prematurity (then known as retinal fibroplasia), and by Frederick L. Ferris III, MD, who was a mentor in her first job at the NEI. In more than four decades since meeting Dr. Gallie, Dr. Chew has distinguished herself not only as a dogged epidemiologist and clinical researcher in her own right but also as a driving force behind landmark AMD studies sponsored by the NEI, where she has worked since 1987. She currently directs the NEI’s Division of Epidemiology and Clinical Applications (DECA) and is the chief of DECA’s Clinical Trials Branch.

Importance of Mentoring
In reflecting upon the importance of mentors—and of receiving and providing mentorship throughout one’s career—Dr. Chew added that, as a medical retina fellow at the Wilmer Eye Institute, she was impressed by the newly designed clinical trials in AMD and diabetic retinopathy that were the mainstay of research at the Retinovascular Center. “They generated great energy and enthusiasm from the clinicians and the entire research team,” she said. Moreover, it was there that she learned the power of clinical research that involves experts from multiple disciplines.

All Eyes on AREDS
Notably, Dr. Chew was the principal investigator in the Age-Related Eye Disease Studies (AREDS) and AREDS2 nutritional trials, which, for more than a decade, have followed nearly 9,000 patients with varying degrees of AMD. Key findings from AREDS and AREDS2 include the following:

• Supplementation with a combination of vitamin C, vitamin E, beta-carotene, zinc, and copper—the initial AREDS formula—reduced the risk of advanced AMD by about 25% over five years.1
• The risk was slightly lower with the AREDS2 supplementation. This formula replaced the beta-carotene with the xanthophylls lutein and zeaxanthin (because of clinical trials demonstrating that beta-carotene increased the risk of lung cancer among current and former smokers).2

“These are pretty important findings,” Dr. Chew said, as even a modest reduction in the risk of AMD progression stands to affect a large number of people. By ensuring that patients with AMD take the appropriate AREDS supplement, “We would be saving a number of people at the other end of this disease from needing anti-VEGF therapy at $2,000 a pop,” Dr. Chew said. “If you can prevent that progression, that’s a huge savings for our society, for the patients, and for our health care systems.”

Importance of Nutrition
New analyses of the exhaustively detailed, long-term data gathered in the AREDS trials are reinforcing the importance of nutrition for AMD, Dr. Chew said, and she plans to discuss some of the latest findings during her Jackson Memorial Lecture.

“There was a time when we were looking at nutritional supplements for reducing heart disease and cancer, and none of that came to fruition. But there’s something about nutrition and the eyes that is actually quite compelling. For example, we suspect that perhaps the B vitamins—folate and others—may be quite important in AMD, along with lutein and zeaxanthin,” she said.

However, omega-3 fatty acids from fish oil supplements do not appear to be as helpful as was once thought, she said. “The evidence is quite compelling that the Mediterranean diet itself is protective, but we found that fish oil in a supplement did not make any difference at all,” Dr. Chew said. “What does appear to drive the protective effect is the fish itself [along with] vegetables and other dietary components. So we think it’s something in fish that is important, but we don’t know what that may be. If only we could isolate the ingredients.”

What About Genetics?
Because AMD is a multifactorial disease, it has been difficult to determine how and when AMD-associated genes might interact with other risk factors to lead to disease or disease progression, Dr. Chew said. “Genes so far haven’t added a huge amount to our analysis for prediction of disease, even though 60% of AMD is accounted for by genes.”

Nonetheless, her group is looking to AREDS data for possible answers. “The beauty of these two studies is that their phenotypes are well curated, and patients are seen every year. Altogether, there are almost 9,000 patients, and they have been followed very well.” She added, “We now have published 10-year follow-up in AREDS; in AREDS2, we just finished a 10-year follow-up—and (this is) on a disease that’s very slow growing, with very gradual changes.”

Her research group has contributed all of its AREDS data, as well as retinal images from the subjects, to the database of Genotypes and Phenotypes (dbGaP). This online open-access archive enables other scientists to perform their own genetic studies (https://www.ncbi.nlm.nih.gov/gap/). AREDS2 data and retinal images will soon be placed on the same website for researchers who are interested in pursuing this line of inquiry.

The Future: Deep Learning
There is much excitement in the retina community about the potential that deep learning (computerized machine learning) algorithms have in a field that increasingly relies on high-tech images to inform diagnostic and treatment decisions. The hope is that machine learning eventually will be able to interpret images faster or better than human graders can, Dr. Chew said.

Dr. Chew and her NEI colleagues have been experimenting with using these techniques to analyze the AREDS images to gain new insights. They published a paper on the DeepSeeNet model in April, and two others have been submitted for publication and are under review, she said.

“We and other investigators have proven already that machine learning can actually do better than the physician at finding this particular condition [AMD], and it remains to be seen if early detection/diagnosis would help get the patient into treatment earlier,” Dr. Chew said. She added, “We hope to use the large number of images and longitudinal data that we have and deep learning to be able to predict, on an individual level, the potential risk of progression—and to better understand how to incorporate this technology in the delivery of health care.”


Financial Interests: None.

FURTHER READING

The Jackson Memorial Lecture
AMD: Nutrition, Genes, and Deep Learning

BY LINDA ROACH, CONTRIBUTING WRITER

Innovators Show Special
Featuring choppers and manipulators designed by Christopher S. Connor, MD and Barry S. Seibel, MD

Your choice:
Single or Double-Ended; Stainless Steel or Titanium.

Ask a representative for more info…available while supplies last!

Nurses, technicians, and practice managers are invited to Ask the Expert

Our clinical specialist, Carolyn Neier, RN BSN CNOR, will be available in the Katena booth to answer your instrument care and handling questions and help resolve any issues you may be having with Katena and other instrument brands.

Topics covered:
- Care and handling of instruments
- Best practices and the instrument instructions for use (IFU)
- How to prevent in-tray instrument damage
- Avoiding instrument magnetization
- Identifying damaged instruments

With 35 years of ophthalmic OR experience, Carolyn can answer questions and resolve problems that protect your instrument investment.

Carolyn will be at the Katena booth during exhibition hours.

Enter a drawing to win one of 8 Amazon Echos.
Winning Photography Is on Display

The photos shown here were selected from among the First and Second Place winners at the 2018 Ophthalmic Photographers’ Society (OPS) Scientific Exhibit during AAO 2018 in Chicago.

This year OPS is celebrating its 50th anniversary. Stop by the 2019 OPS Scientific Exhibit (North, Booth 5152) to see this year’s winners and to learn more about special events taking place at the Hotel Nikko during the OPS Annual Program, Oct. 11-14.

2018 OPS Exhibit Winners
From left to right, and top to bottom.

Monochromatic Photography, First Place. Edema and Optic Nerve Hemorrhage Secondary to Sarcoidosis. Michael Bono, CRA, COT. University of Colorado Eye Center, Aurora, Colorado.


Slit-Lamp Biomicroscopy, First Place. Corneal Dystrophy. Amber Kates, COA, CRA, OCT-C. Flaum Eye Institute, University of Rochester, Rochester, New York.
Get Involved With Academy Programs

Opportunities range from short-term microprojects to bigger commitments. There are many to choose from—take your pick!

Did you know that the annual meeting is brought to you by a multitude of volunteers—many of whom serve on annual meeting and Subspecialty Day-related committees? Likewise, many Academy members volunteer their time and talent on other Academy committees. And many more members would like to volunteer, but committee opportunities are limited.

**Noncommittee opportunities.** In March, the Academy launched a concise volunteering web page in the Member Services area of aao.org. It is designed to increase awareness among members of the many volunteer opportunities available outside the scope of committee work. It describes opportunities to speak, write, advocate, and more to further the work of various Academy programs (see “Volunteer,” next page). Each opportunity provides instructions and outlines expectations.

The breadth of opportunities is shown below, along with one example from each category, inclusive of a description of the volunteer activity and a quote from a member who has participated in that activity.

**Get involved!** Visit aao.org/volunteering.

**Write**

Write articles for Academy publications aimed at a variety of audiences, including ophthalmologists, practice administrators, and the public.

- Write an *EyeNet* Ophthalmic Pearls Article
- Write an *EyeNet* Morning Rounds Article
- Write or Edit an *EyeWiki* Article
- Write a *Scope* Article
- Write a *YO Info* Article
- Author *EyeSmart* Articles (for patients)
- Reply to Ask an Ophthalmologist Questions (from the public)

**Example:** Write an *EyeNet* Ophthalmic Pearls Article. Each 1,500-word Pearls article reviews a medical or surgical entity or procedure. Many of the articles offer step-by-step overviews of etiology, diagnosis, treatment, and follow-up.

“Having the opportunity to author an article for Ophthalmic Pearls has been an outstanding experience and a valuable milestone in my early career growth. On a personal level, it was enlightening to study a topic in eye care in great depth and then to creatively discover how to best educate others in the ophthalmology community on this topic. From a professional perspective, this opportunity uniquely empowered me to collaborate with and learn from leaders from institutions around the country, advance my scientific writing ability, and to learn how to create medical diagrams—aspects essential to my journey as an ophthalmology resident and researcher.” — Omar Moinuddin, MD

**Review**

The Academy seeks members who can do volunteer reviews of journal manuscripts, reviews of clinical content for currency, and reviews associated with quality of care documents.

- Review Journal Manuscripts
- Provide Clinical Currency Review
- Review OTAs and PFPs
- Serve as a Methodologist

**Example:** Review Journal Manuscripts. At the invitation of the Ophthalmology, *Ophthalmology Retina*, and *Ophthalmology Glaucoma* editorial boards, reviewers registered in the journals’ database provide thorough and constructive critiques to guide authors on how they can improve their manuscripts. The journals look to volunteer reviewers who offer thoughtful reviews with the goal of helping improve papers, which in turn provide better information to readers, ultimately improving patient care and outcomes.

“I have served as a peer reviewer for more than a decade and find the opportunity as valuable today as it had when I received the first request. Ophthalmology sits at the pinnacle of our peer-reviewed literature and in that position receives the best papers that our field publishes each year. Reviewing allows me to see the next breaking idea at its early stages and helps keep me at the forefront of my specialty. My peer-review experience definitely created the opportunity for me to assume the Editor position for Journal of Refractive Surgery and honed my ability to critically evaluate the literature and determine how to incorporate the latest data into my clinical practice.” — J. Bradley Randleman, MD

Dr. Randleman has served as a peer reviewer for Ophthalmology journal articles since 2003. Dr. Randleman is professor of ophthalmology at the Cleveland Clinic and Editor-in-Chief for the Journal of Refractive Surgery.
Develop Interactive Content
Academy members can volunteer to submit or develop a variety of interactive content that will help their colleagues advance their clinical knowledge.

• Author Interactive Cases
• Write Self-Assessment Questions (for residents)
• Contribute to Online Education (for medical students)
• Submit Your Clinical Images

Example: Author Interactive Cases. All cases are physician-written, drawn from clinical experience, and intended to intrigue and challenge those who visit the Academy’s ONE Network. Cases introduce patients (using fictitious names) and their personal stories, relevant clinical and/or family history, and symptoms.

“Authoring interactive cases through the Academy has been a wonderful and stimulating experience. On a personal level, it was very satisfying to work with the Academy to educate others in ophthalmology. Professionally, doing so gave me the chance to collaborate with leaders and broaden my research and writing skills, and it prepared me for advancement within the Academy and at my institution. Intellectually, the project was engaging and fulfilling. I’d highly recommend getting involved!”

—Ashvini K. Reddy, MD

Dr. Reddy has coauthored numerous Interactive Case Studies, for example “Man With Bilateral Lagophthalmos and Bell’s Palsy” (see screenshot). Dr. Reddy is associate professor of ophthalmology at Dean McGee Eye Institute in Oklahoma City.

Speak
The Academy seeks members to deliver important messages to the media and the public, other Academy members, residents, and medical students.

• Record Your Resident Lectures
• Become a Clinical Spokesperson
• Promote Ophthalmology Under-

Example: Promote Ophthalmology to Under-Represented Minority Students. The Academy and the Association of University Professors of Ophthalmology (AUPO) have partnered to create the Minority Ophthalmology Mentoring program. The program provides tools and resources to help students from under-represented minorities in ophthalmology (African Americans, Hispanics, Native Americans) become competitive ophthalmology residency applicants. Volunteers are needed to help promote the program to interested students at local medical schools and college campuses.

“I am honored to be a part of the Academy/AUPO Minority Ophthalmology Mentoring Program since its start in 2016. Working together nationally to make a difference for each student locally is at the heart of this program. Each student we reach can become an advocate for eye care and a leader in ophthalmology. Collaborating nationally to create innovative solutions that can have a longitudinal impact on patient care has been one of the highlights of my career. This program empowers students to recognize their inherent talents and grow into outstanding ophthalmologists. It is a joy seeing the students go beyond what they believed was achievable, as they simultaneously learn the beauty and depth within our field.”

—Anju Goyal, MD

Dr. Goyal has been involved with the MOM program since 2016. This spring she created a pilot program for premedical students who are under-represented in medicine at Kresge Eye Institute/Wayne State University in Detroit, where she is associate professor of ophthalmology.

Advocate
The Academy plays a significant leadership role advocating at the state and federal levels on issues affecting health policy and patient care. Those efforts depend significantly on the volunteer efforts of Academy members. Here are a few ways you can help.

• Be a Congressional Advocate
  • Share Your State Legislative Contacts
  • Attend Congressional Advocacy Day
  • Host an OphThAC Fundraiser

Example: Attend Congressional Advocacy Day. The Academy’s Congressional Advocacy Day is a unique opportunity to lobby members of the U.S. Congress on the issues that affect ophthalmology practices and patients. Ophthalmology must play a leadership role in educating new and seasoned lawmakers so that they can make informed decisions that promote quality eye care.

“I’ve attended Congressional Advocacy Day meetings on Capitol Hill. During one of these sessions, a legislative assistant made a canny suggestion for accomplishing an Academy goal. This assistant’s dedication, coupled with youth and energy, was really fantastic to observe. However, these assistants must have the facts in order to act correctly. Through the Academy’s advocacy program, ophthalmologists go to the Hill and provide information to and build relationships with congresspeople and their legislative assistants. This work is so important because it can—down the road—protect our patients and their care, and our profession for the next physician generation.”

—Pamela S. Clavis, MD

Pamela S. Clavis, MD, is a retired neuro-opthalmologist in Crozier, Virginia.

Connect
Academy volunteer opportunities offer a chance to connect with minorities considering careers in ophthalmology, international first-time annual meeting attendees, and underserved patient populations.

• Mentor an Under-Represented Minority Student
• Serve as a Meeting Ambassador to an International First-Time Annual Meeting Attendee
• Provide Medical Eye Exams for Underserved Populations (EyeCare America Program)

Example: Medical Eye Exams for Underserved Populations. The Academy’s EyeCare America (ECA) program is the country’s leading public service program providing eye care. It provides access to eye care for seniors who have not had a medical eye exam in three or more years or people at increased risk for glaucoma. Make a difference in the lives of these patients with minimal time commitment and without leaving your office.

“All of us as ophthalmologists have an infinite innate need to reach out and help someone, but sometimes it’s just knowing how to do it. EyeCare America helped me to fulfill that need. You leave work that day, having this deep feeling knowing you have helped somebody other than yourself.”

—Oluwatosin U. Smith, MD

(See main photo on page 22.)

Dr. Smith has been volunteering with ECA since September 2017. She is a glaucoma specialist at Glaucoma Associates of Texas, which has branches in Dallas, Fort Worth, Plano, and Rockwall.

SPEAK. Tiffany Morton (middle), a first-year medical student at the Ohio State University College of Medicine, and Marcia Carney, MD, (right) at the Minority Ophthalmology Mentoring program’s Student Engagement Weekend at AAO 2018 in Chicago on Oct. 27, 2018.
EXHIBITION
MUSEUM OF THE EYE

Pioneers Against Purulence: The Aseptic Revolution

At AAO 2019, explore how rudimentary changes in equipment and practices have influenced the contemporary world of surgery: Visit the Truhlsen-Marmor Museum of the Eye’s exhibit—Aseptic Revolution (West, Booth 7037)—and read the complementary article below.

In the days of so-called “heroic medicine,” general surgeons were cutting off patients’ limbs to save lives. By contrast, ophthalmologists were practicing delicate eye surgery on their patients. The aseptic revolution, born out of germ theory and aseptic practice, improved outcomes for general surgeons and ophthalmologists alike, and eventually changed the way physicians practiced medicine.

Developing an antiseptic protocol. Near the end of the 1880s, Dr. Joseph Lister expanded on Louis Pasteur’s germ theory by pioneering the antiseptic method. Dr. Lister introduced a carbolic acid solution that would kill germs in air, on objects, and in wounds. His research at Glasgow Royal Infirmary resulted in a 100% reduction of infections for his patients over a nine-month period. This discovery ushered in a new standard of care, and he became known as “The Father of Modern Surgery.” His method evolved into the practices of today, where germs are removed from the surgical environment and instruments are sterilized.

Instrumentation redesigned with antisepsis in mind. In 1876 ophthalmologist Dr. John Couper, one of Dr. Lister’s students, introduced aseptic methods and instrument sterilization at the London Hospital Medical College. Dr. Couper is responsible for developing ophthalmic instruments at a time when many surgeons were reluctant to give up their ornate instruments that were made of bone or wood and were stored in velvet-lined boxes that harbored germs and bacteria. The Aseptic Revolution exhibit displays several surgical sets, including instruments in their beautiful presentation boxes alongside sleek, all-metal instruments closer in design to those used today.

The introduction of rubber surgical gloves. Another devoted acolyte of Dr. Lister was the Chief Surgeon at Johns Hopkins Hospital, Dr. William Halsted, who became known as “The American Father of Modern Surgery.” In the 1880s, Dr. Halsted was the first in the United States to perform surgery in a theater built to Dr. Lister’s specifications. Possibly the greatest contribution that Dr. Halsted made to the aseptic revolution was an act inspired by affection rather than infection. His head surgical nurse, Caroline Hampton, developed severe contact dermatitis from the use of mercuric chloride and carbolic acid as disinfectants. To protect her hands, she presented him with a pair of rubber gloves that he had commissioned, and the two eventually married. The Aseptic Revolution exhibit includes a display case devoted to the history of surgical gloves.

Tincture of iodine as an affordable and effective antiseptic. The museum’s exhibit will highlight one more important character in the history of aseptic surgery: Dr. Lionel Stretton. Dr. Stretton is identified as “The Iodine Surgeon” because he developed the use of iodine as a cost-effective antiseptic.

Rethinking surgical furniture. Dr. Stretton also contributed revolutionary designs for the furniture used in doctors’ offices and operating theaters. Previously, surgical chairs and cabinets had been designed to look like parlor furniture. This practice, which predated anesthesia, had the goal of putting patients at ease before the surgeon embarked on a harrowing invasive procedure. Dr. Stretton argued for a more aseptic approach to furniture design. In a 1915 article in the British Medical Journal, he highlighted some of the design principles that he had been championing, such as eliminating “cornices, panels, and ornamentation,” commonplace features that rendered surgical furniture difficult to sterilize.

He also advocated for the use of enameled wood rather than cast metal, arguing that the enamel on metal furniture chips far more easily, and that these chipped places provide spaces which form commodious dwelling places for germs as the caves in the rocks did for our ancestors.

The Museum of the Eye exhibit features several furniture pieces that illustrate how equipment has evolved to support the aseptic approach.

Adoption of Aseptic Practices

While the pioneers of asepsis were setting new standards, it took time for many of their colleagues to adopt the new practices. Surgical gloves, for example, didn’t come into universal use overnight, as demonstrated by these two excerpts from the museum’s oral history collection.

Carl Koller at work. James Ravin, MD, described how his father—Louis C. Ravin, MD—had the privilege of watching Carl Koller in surgery: “Koller had made the important discovery that cocaine applied to the surface of the eye will anesthetize it, and this discovery revolutionized ophthalmology. The discovery took place in Vienna in 1884, and dad met him more than 50 years later. . . . [Dr. Koller was] very old school. He’d walk into the operating room in street clothes. No mask, no cap, no gloves. Just loosen his tie, no real scrub, a bit of hand washing. But his technique was meticulous. He never touched the same instrument twice, certainly never touched the tip of his instruments, and there were no infections.”

A surgical symphony. Edward Raab, MD, described watching a much-admired surgeon operating without gloves during the 1960s: “It was almost a symphony to watch him. He was such a smooth surgeon and so precise in his movements, and, yes, he handled the instruments in a way that didn’t contaminate them. He didn’t let any of us or the rest of his attending staff work without gloves.”

Explore the oral histories at aao.org/oral-histories. The oral history collection preserves the memories and experiences of people whose lives are an inspiration.

Your Moscone Center To-Do List

1) Visit the Aseptic Revolution exhibit (West, Booth 7037) and 2) attend the museum’s annual symposium: Glaucoma: the Twisted History of a Complex Disease (Sym40). Join the symposium chairs—Michael F. Marmor, MD, and Christopher Theodore Leffler, MD—and enjoy this year’s speakers:

• M. Bruce Shields, MD, on “What Is in a Name: ‘Glaucoma’” (1:17 p.m.)
• Daniel M. Albert, MD, FACS, on “The Pressure Rises: Before and After Schiötz” (12:29 p.m.)
• Sayoko E. Moroi, MD, PhD, on “Aquous Circulation and the Vascularity” (12:41 p.m.)
• Christopher Theodore Leffler, MD, on “San Francisco Connection: Gonioscopy and Open-Angle Disease” (12:53 p.m.)
• Frances Meier-Gibbons, MD, on “The Evolution of Glaucoma Surgery” (1:05 p.m.)
• Eve J. Higginbotham, MD, on “Unsung Heroes” (1:17 p.m.)
• Harry A. Quigley, MD, on “Of All the Nerve . . .” (1:29 p.m.)


Coming Soon . . .

The Truhlsen-Marmor Museum of the Eye is slated to open to the public in January 2020. Located in Fisherman’s Wharf, San Francisco, and dedicated to the exploration of sight and the profession of ophthalmology, the new facility is expected to attract 30,000 visitors per year.

For more information, see aao.org/museum-new-home and also read “An Introduction to the Truhlsen-Marmor Museum of the Eye” in the second edition of AAO 2019 News.
WORKING TO EMPOWER A NEW ERA OF PROACTIVE GLAUCOMA SURGERY

PROACTIVE SURGERY

PREDICTABLE POST-OP

SUSTAINABLE TARGET IOP

DEVICE INNOVATION

Go to AdvancingGlaucomaSurgery.com to hear your peers’ perspectives

Visit us at AAO booth 1139

© 2019 Santen Inc. All rights reserved. PP-GLAU-US-0094
New Thinking in Ophthalmology
10 Honorary Lecturers Preview Their Presentations

T

he Opening Session and many Academy symposia are capped by an honorary lecture. These infor-
mative presentations by leaders in their field are easy to fit into your schedule, as they are usually between 15 and 35 minutes long. The speakers preview their own lectures below and in the Sunday AAO 2019 News.

FRIDAY, Oct. 11

RETINA

Charles L. Schepens, MD, Lecture: Retinal Gene Therapy: From Theory to Practice, presented by Jean Bennett, MD, PhD, and Albert M. Maguire, MD.

When: Friday, 9:30-10:30 a.m., during Retina Subspecialty Day 2019.

Where: West 3002.

“"It was not long ago that patients with inherited retinal degeneration (IRD) were told that nothing could be done to treat their disease. With the great progress in identifying the genetic bases of IRDs and the development of gene transfer techniques, it became possible to evaluate gene-based treatments, first in animals with IRDs and then in humans. The durable reversal of the visual deficits revealed in gene therapy clinical trials for RPE65 mutations led to the first FDA-approved gene therapy drug for a genetic disease in the United States and in Europe. This drug—the first approved treatment for an IRD—establishes the path for development of other gene-based treatments for retinal disease.”

Retina Subspecialty Day 2019: F—Inspire Innovation (Friday, 8:00 a.m.—5:28 p.m., and Saturday, 8:00 a.m.—5:30 p.m.) is organized in conjunction with the American Society of Retina Specialists, the Macula Society, the Retina Society, and Club Jules Gimon.

REFRACTIVE SURGERY

Troutman Award: The Impact of Photoablation Keratotomy and Mitomycin C on Corneal Nerves and Their Regeneration, presented by Carla Santos Medeiros, MD.


Where: Esplanade Ballroom.

“Abnormal nerve regeneration often follows corneal injury, predisposing patients to pain, dry eye, and vision loss. However, the mechanism is not yet completely understood. In order to determine how refractive surgery affects corneal nerves and their regeneration, we used photorefractive keratectomy as a model for nerve injury. By means of a three-dimensional analysis, we investigated the changes in corneal nerve tissue, layer by layer, to determine the mechanisms of neural damage and recovery as well as the effects of mitomycin C on this process. Based on these new histological findings, this lecture aims to provide insight into the neural remodeling after corneal refractive surgery.”

Refractive Surgery Subspecialty Day 2019: As Far as the Eye Can See (Friday, 7:30 a.m.—5:29 p.m.) is an annual meeting of the International Society of Refractive Surgery.

SATURDAY, Oct. 12

GLAUCOMA


When: Saturday, 11:48 a.m.—12:18 p.m., during Glaucoma Subspecialty Day 2019.

Where: Esplanade Ballroom.

“Minimally invasive glaucoma surgery (MIGS) is changing the management of glaucoma. With the reduced morbidity and earlier intervention. In clinical glaucoma management, the questions of why, when, whether, what, and where to intervene with MIGS are not yet settled. The trabecular meshwork (TM) is in constant dynamic motion and requires motion to control intraocular pressure. TM motion slows and eventually stops in glaucoma. Novel noninvasive phase-based OCT (PhS-OCT) sheds new light on glaucoma mechanisms and management options by identifying reduced TM movement in glaucoma patients. This lecture will focus on answers to the MIGS questions posed above, based on knowledge of TM motion and the new ability to measure it with OCT.”

2019 ISRS AWARDS

On Friday, the president of the International Society of Refractive Surgery (ISRS), John So-Min Chang, MD, presents some of the profession’s most prestigious awards at Refractive Surgery Subspecialty Day 2019: As Far as the Eye Can See.


Following are the awards and their recipients. Details also are provided about associated lectures if applicable.

2019 José I. Barraquer Lecture and Award: Noel A. Alpins, MD FACS (Australia). The José I. Barraquer Lecture and Award honors a physician who has made significant contributions in the field of refractive surgery during his or her career. This individual exemplifies the character and scientific dedication of José I. Barraquer, MD—one of the founding fathers of refractive surgery. This award has an associated lecture.

When: Monday, 4:52-5:12 p.m., during Sym49, Innovations in Refractive Surgery (3:45-5:15 p.m.).


28th Annual Richard C. Troutman, MD, Dsc (Hon) Prize: Carla Santos Medeiros, MD (Brazil). The Troutman Prize recognizes the scientific merit of a young author publishing in the Journal of Refractive Surgery. This prize honors Dr. Richard C. Troutman. This award has an associated lecture.


Casebeer Award: Rohit Shetty, MBBS (India). The Casebeer Award recognizes an individual for his or her outstanding contributions to refractive surgery through nontraditional research and development activities.

Founders’ Award: John So-Min Chang, MD (Hong Kong). The Founders’ Award recognizes the vision and spirit of the Society’s founders by honoring an ISRS member who has made extraordinary contributions to the growth and advancement of the Society and its mission.

Kritzinger Memorial Award: Marcony R. Santhiago, MD (Brazil). The Kritzinger Memorial Award recognizes an individual who embodies the clinical, educational, and investigative qualities of Dr. Michiel Kritzinger, who advanced the international practice of refractive surgery.

Lans Distinguished Award: Cynthia Roberts, PhD (United States). The Lans Distinguished Award honors Dr. Leedert J. Lans. Given annually, this award recognizes an individual who has made innovative contributions to the field of refractive surgery, especially in the correction of astigmatism.

Lifet ime Achievement Award: Ronald R. Krueger, MD (United States). The Lifetime Achievement Award honors an ISRS member who has made significant and internationally recognized contributions to the advancement of refractive surgery during his or her career.

Presidential Recognition Award: Robert E.T. Ang, MD (Philippines) and J. Bradley Randleman, MD (United States). Dr. Chang has selected Dr. Ang as a Presidential Recognition Award recipient for being a pioneer in presbyLASIK and accommodating IOLs, as well as for serving as an ISRS extern host. Dr. Chang has selected Dr. Randleman as a Presidential Recognition Award recipient for his commitment to the Journal of Refractive Surgery as its editor in chief, as well as for being a leader in cornea biomechanics and ectasia.

Waring Memorial Award for a Young Ophthalmologist: Alain Saad, MD (France). The Waring Memorial Award for a Young Ophthalmologist recognizes an ISRS member early in his or her career who has demonstrated a commitment to ISRS, as well as a commitment to the promotion of knowledge and the practice of refractive surgery. This award honors Dr. George O. Waring III for his commitment to the profession and ISRS.

To join ISRS, visit the Member Services desk at the Academy Resource Center (West, Booth 7337), where you can pick up an application form. You can also visit www.isrs.org.
“Retinopathy of prematurity (ROP) is a leading cause of childhood blindness throughout the world, and the societal burden of infancy-acquired blindness is enormous. Furthermore, clinical ROP diagnosis is often highly subjective and qualitative. Artificial intelligence (AI) is an emerging technology that has potential to improve the quality of ROP care through improved diagnostic accuracy and consistency. This talk will discuss basic principles of AI and how recent research is being applied to ROP care. More broadly, it will cover the implications of AI’s potential to significantly change the practice of ophthalmology.”

“Age-related macular degeneration (AMD), a leading cause of blindness in the United States, still lacks effective therapy, especially for those with geographic atrophy (GA). Lifestyle modifications such as high adherence to a Mediterranean diet (driven mostly by increased fish intake) are associated with decreased risk of AMD, especially for GA. The data are compelling for all stages of AMD. Genetic modifications and interactions are also being evaluated. In this era of big data, we have developed deep learning algorithms that may play an important role in both diagnosing and predicting progression of disease. The future implementation of such technology may indeed change how we manage our patients with AMD.”

“For centuries, vision-impaired musicians have turned to the organ, once acclaimed by Mozart as ‘the king of instruments,’ as their instrument of choice. In the history of classical music, blind organists far outnumber other visually impaired instrumentalists despite facing the unique physical and spatial challenges of multiple keyboards played by both the...
hands and feet, an array of dozens of stop knobs labeled in a variety of languages, and lack of standardization from instrument to instrument. Using examples from the 14th to 19th centuries, this presentation will be illustrated with the music they wrote, the instruments they played, and circumstances that may have led them to choose the most complex instrument of their time.”

**Michael F. Marmor Lecture in Ophthalmology and the Arts (12:45-1:45 p.m.).**

**RETINA**

Arnall Patz Lecture: The Evolving Pathophysiology and Treatment of Retinopathy of Prematurity, presented by Mary Elizabeth Hartnett, MD, FACS.

**When:** Sunday, 12:55-1:30 p.m., during Sym65, Arnall Patz Lecture.

**Where:** West 3020.

“In the 1950s, Arnall Patz, MD, identified high oxygen at birth as a cause of retinopathy of prematurity (ROP). Despite technical advances, ROP remains a major cause of childhood blindness worldwide. Today, it is recognized that high vascular endothelial growth factor (VEGF) leads to several features of ROP; however, inhibition of VEGF can lead to unwanted outcomes in some infants. The Arnall Patz Lecture presents the current understanding of the pathophysiology of ROP, its risk factors, and challenges in treating preterm infants, as well as data from clinical trials and concerns that encourage the development of future treatments.”

Arnall Patz Lecture (12:45-1:45 p.m.) is cosponsored by the Macula Society.

**CORNEA**

Castroviejo Lecture: Acanthamoeba Keratitis: Getting the Treatment Right, presented by John K.G. Dart, MD.

**When:** Sunday, 3:38-3:58 p.m., during Sym25, Picture This: Imaging for the Anterior Segment Specialist.

**Where:** West 2020.

“Acanthamoeba keratitis (AK) is a devastating cause of keratitis that affects predominantly young contact lens users. Twenty-five percent of those with AK suffer severe sight loss during a disease course that lasts more than nine months. Treatment is complicated by delayed diagnosis, lack of a licensed topical antiamoebic drug, since 1985, EyeCare America (ECA) has helped more than 2 million people by providing medical eye exams, often at no out-of-pocket cost. During every annual meeting, ECA honors the dedicated volunteer-ophthalmologists who perform this vital public service. This year, residents who have pledged to become ECA volunteers (once they become practicing ophthalmologists) are invited to join the reception. Come mingle with seasoned volunteers, pick up a gift, enjoy snacks and beverages, and participate in a raffle (the raffle is scheduled to take place at 4:00 p.m.). Ophthalmologists may enroll as new ECA volunteers, and residents can pledge to become volunteers onsite in the Resource Center (West, Booth 7337) or online at aao.org/volunteer or aao.org/pledge.

**When:** Saturday, 3:30-4:30 p.m.

**Where:** Museum of Vision, West, Booth 7037.

**Access:** Free.

**AAO 2019 Meetings on Demand**

**Gather Pearls From Ophthalmic Luminaries — Anytime, Anywhere**

Access up to 1,000 presentations with AAO 2019 Meetings on Demand. Revisit your favorite moments or see what you missed.

Choose from Subspecialty Day or AAO/AAOE Practice Management meetings or a combination package.

**New this year — Get complimentary access:**

- Register for any Subspecialty Day meeting and receive the All-Subspecialty package for free.
- Purchase the Academy Plus course pass and get the AAO Highlights package for free.

Purchase or learn more about free access at the Meetings on Demand booth, North Lobby, or at the Academy Resource Center, West, Booth 7337. Access instructions will be emailed on Oct. 13.

[aaoo.org/ondemand](http://www.aaoo.org/ondemand)
PTS AUTOMATED PERIMETERS
Fast and precise perimetry at your fingertips

- EyeSee™ module* – records eye preview images during stimuli exposures and displays them when reviewing the test result.
- ZETA™ and ZETA™ Fast strategies – fast and reliable examination with precise threshold estimates.
- DPA™ – Defect Progression Analysis – inter-test analysis and judgement on defect progression.
- Head Tracker – monitoring and adjusting patient’s head position throughout the test.
- Gaze Tracker 2.0 – more control over test reliability with repeating exposures when blink occurred or patient lost fixation.
- Dynamic Field Extension – possibility to extend the test field with additional peripheral points during the test.
- Dynamic Retest – select points for which the test should be repeated without waiting for the test to end.
- Structure & Function – export VF data to SOCT software to combine information about functional quality of sight with the information about Ganglion Cells in retina, RNFL and Optic Nerve Head for both eyes on a single report page.

* - not available in US

Structure & Function

All modalities in one FullAuto OCT device:
- Posterior Segment OCT
- Anterior Segment OCT
- Angio OCT
- B-OCT
- T-OCT

REVO The World’s first:
OCT Biometry
OCT Corneal Topography

REVO NX OCT is not cleared by FDA for distribution in the US.
difficulty differentiating between inflammation due to viable organisms or the immune response, scleritis, rapidly maturing cataract, glaucoma, and extracorneal spread. The lecture will focus on the evidence-based management of *Acanthamoeba* keratitis and its complications, and it will show how these management pathways are integrated into a comprehensive protocol developed for a current randomized controlled European trial."

**Sym29, CXL for Corneal Ectasia: Real World Experience.**

**Farhad Hafezi, MD, PhD.**

Ruedemann Lecture: An I for an Eye Removal: Innovations in Enucleation, presented by Jeremiah P. Tao, MD.

**When:** Sunday, 4:59-5:15 p.m., during Sym28, Eyelid Malposition With Ocular Prosthesis in Place.

**Where:** West Ballroom.

"Corneal cross-linking (CXL), originally developed to treat ectasias such as keratoconus, involves applying riboflavin and ultraviolet light to the cornea to cross-link and biomechanically strengthen the stroma. Cross-linking usually flattens corneas and is under investigation as a refractive procedure. Furthermore, the cross-linking biochemical reaction also reduces the microbial load in the cornea and can be used to treat infectious keratitis of bacterial, fungal, and mixed origins (a process that is known as PACK-CXL); and, in many cases, it accelerates time to healing. As antimicrobial resistance increases, the utility of an alternative/adjunctive treatment to antibiotics—especially in developing countries—becomes increasingly important."

**CXL for Corneal Ectasia: Real World Experience (3:45-5:15 p.m.) is cosponsored by the Eye and Contact Lens Association.**

**OCTOPLASTICS/PROSTHETICS**

**OCULOPLASTICS/PROSTHETICS**

**Ruedemann Lecture:** An I for an Eye Removal: Innovations in Enucleation, presented by Jeremiah P. Tao, MD.

**When:** Sunday, 4:59-5:15 p.m., during Sym28, Eyelid Malposition With Ocular Prosthesis in Place.

**Where:** West Ballroom.

"Surgical eye removal poses many reconstructive challenges. Adequate orbital volume and motility are keys to creating a realistic ocular prosthesis. A variety of implants and surgical techniques have been tried to optimize results, yet opportunities for improvement remain. This lecture will cover advancements in enucleation surgery as well as explore new frontiers such as digital microscreen technologies designed to improve eye prosthetic movement."

**Eyelid Malposition With Ocular Prosthesis in Place (3:45-5:15 p.m.) is cosponsored by the American Society of Ocularists.**
## Saturday, October 12, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>Designed to Perform When the Pressure Is On</td>
</tr>
<tr>
<td></td>
<td>Steven Simmons, MD</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Advance Your Intravitreal Approach—The Impact of 1</td>
</tr>
<tr>
<td></td>
<td>John Huang, MD</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Flow and Flux: The Problem of Outflow and IOP Fluctuation in Glaucoma</td>
</tr>
<tr>
<td></td>
<td>Arsham Sheybani, MD</td>
</tr>
<tr>
<td>11:00 AM</td>
<td><strong>NEW</strong> Panel Discussion—Pearls and Pitfalls: Managing Complex Cataract and Cornea Surgeries</td>
</tr>
<tr>
<td></td>
<td>Zaina Al-Mohtaseb, MD; Preeya Gupta, MD; Marjan Farid, MD</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Nasty Cataracts: Prevention and Management of Complications</td>
</tr>
<tr>
<td></td>
<td>Robert Osher, MD</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Toric IOL Pearls: Preventing and Managing Misalignment</td>
</tr>
<tr>
<td></td>
<td>David Chang, MD</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Optimizing Treatment for Pseudophakic DME Patients</td>
</tr>
<tr>
<td></td>
<td>Daniel Kieman, MD</td>
</tr>
<tr>
<td>1:30 PM</td>
<td>A Minimally Invasive Approach to IOP Control</td>
</tr>
<tr>
<td></td>
<td>Manjool Shah, MD</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>Is Treatment Change Happening Too Late in DME?</td>
</tr>
<tr>
<td></td>
<td>David Eichenbaum, MD</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>Flow and Flux: The Problem of Outflow and IOP Fluctuation in Glaucoma</td>
</tr>
<tr>
<td></td>
<td>Joseph Panarelli, MD</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>The Key Elements of Effective Intravitreal Injection Reimbursement</td>
</tr>
<tr>
<td></td>
<td>Kari Rasmussen</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Glaucoma Progression: The Patient Factor</td>
</tr>
<tr>
<td></td>
<td>Jason Bacharach, MD</td>
</tr>
</tbody>
</table>

## Sunday, October 13, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 AM</td>
<td>Advance Your Intravitreal Approach—The Impact of 1</td>
</tr>
<tr>
<td></td>
<td>Nathaniel Roybal, MD</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>A Minimally Invasive Approach to IOP Control</td>
</tr>
<tr>
<td></td>
<td>Arsham Sheybani, MD</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>How Do We Stop the Suffering? Before, During, and After Cataract Surgery</td>
</tr>
<tr>
<td></td>
<td>Karl Stonecipher, MD</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Is Treatment Change Happening Too Late in DME?</td>
</tr>
<tr>
<td></td>
<td>Ashkan Abbaby, MD</td>
</tr>
<tr>
<td>11:30 AM</td>
<td>Flow and Flux: The Problem of Outflow and IOP Fluctuation in Glaucoma</td>
</tr>
<tr>
<td></td>
<td>Manjool Shah, MD</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Designed to Perform When the Pressure Is On</td>
</tr>
<tr>
<td></td>
<td>Nathan Radcliffe, MD</td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Optimizing Treatment for Pseudophakic DME Patients</td>
</tr>
<tr>
<td></td>
<td>Roger Goldberg, MD</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Glaucoma Progression: The Patient Factor</td>
</tr>
<tr>
<td></td>
<td>Jonathan Myers, MD</td>
</tr>
<tr>
<td>1:30 PM</td>
<td>Dry Eye Disease: Understanding the Sign-Symptom Disconnect</td>
</tr>
<tr>
<td></td>
<td>Richard Adler, MD</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>The Key Elements of Effective Intravitreal Injection Reimbursement</td>
</tr>
<tr>
<td></td>
<td>Kari Rasmussen</td>
</tr>
<tr>
<td>2:30 PM</td>
<td>Flow and Flux: The Problem of Outflow and IOP Fluctuation in Glaucoma</td>
</tr>
<tr>
<td></td>
<td>Inder Paul Singh, MD</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Designed to Perform When the Pressure Is On</td>
</tr>
<tr>
<td></td>
<td>Inder Paul Singh, MD</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Is Treatment Change Happening Too Late in DME?</td>
</tr>
<tr>
<td></td>
<td>David Callanan, MD</td>
</tr>
</tbody>
</table>