

## UCSF Ophthalmology and Proctor Foundation at the “AAO 2018 Annual Meeting”

### **Richard L Abbott MD**

#### **Global Forum: Scaling and Sustaining Eye Care Through Partnerships**

8:30 **Welcome and Introduction: The Academy and International Partnerships**

##### Abstract

*Cosponsored by the Global Education and Outreach Committee.* International partnerships and alliances are instrumental in developing and strengthening effective responses to eye care needs around the world. The challenge is to strengthen global and regional partnerships, ensure they contribute to building strong and sustainable health systems, and make partnerships ever more effective. Case examples, lessons learned, and opportunities for development and further growth of effective partnerships will be presented and discussed in this symposium. The objective is to advise the audience on effective ways to establish partnerships among academic institutions and domestic and international eye care providers, both for direct eye care delivery and for long-term capacity-building projects. Effective international partnerships and alliances are required for further progress in implementation of Universal Eye Health: A Global Action Plan, 2014–2019, which was endorsed by all Member States of the World Health Organization.

Monday, 8:30AM - 11:00AM

Session: SYM32 Location: S406B

### **Nisha Acharya MD**

#### **Section VII: Uveitis Panel**

2:05 **Uveitis Case Panel Discussion**

*Nisha Acharya MD*

Friday, 1:37PM - 2:25PM

Session: RET09 Location: ARIE CROWN

#### **Section II: Up-Front Blues—Anterior Uveitis, Episcleritis, and Scleritis**

Saturday, 9:10AM - 10:35AM

Session: UVE03 Location: E450 TICKETRECORD

#### **Section VIII: Avant-Garde Blues**

4:39 **Late Breaking Developments: FAST Trial Results**

Saturday, 4:30PM - 5:32PM

Session: UVE09 Location: E450

#### **Clinical Profile and Treatment Outcome of Intralenticular Abscess at a Tertiary Eye Hospital in South India**

##### Abstract

**Purpose** To evaluate intralenticular abscess (ILA) with its treatment results. **Methods** Eighteen eyes of 18 patients with ILA were evaluated with B-scan and anterior segment OCT. Lens extraction was done with culture of the lens matter. Secondary IOL was done after three months. **Results** Etiologically, penetrating trauma in 16 (88%) and systemic metastasis in one (6%) were noted. Follow-up ranged from five to 18 months. Cataract removal resulted in controlled inflammation in 16 eyes (94%) and endophthalmitis in one eye (6%). The IOL was placed in a staged procedure in 16 (78%) after three months. Culture revealed bacterial growth in 3 cases (16%)—*Moraxella* in one and *Staphylococcus* in two—and fungal (*Aspergillus*) in one case (6%). The culture was negative in 13 patients (72%). Final vision ranged from 20/40 to 20/80. **Conclusion** In lens abscess, primary IOL placement is contraindicated. Early lens extraction and systemic and local antibiotics are the key elements in the eradication of microbial load for successful treatment.

Sunday, 12:45PM - 1:45PM

Session: PO017 Location: HALL A

#### **Efficacy and Safety of Adalimumab by Disease Duration in Patients With Noninfectious Uveitis in the VISUAL III Trial**

##### Abstract

**Purpose** To assess the long-term safety and efficacy of adalimumab (ADA) by disease duration (DD) in patients with noninfectious (nonanterior) uveitis. **Methods** Adult patients in the VISUAL III open-label extension received ADA 40 mg every other week. Analyses included quiescence and steroid dose. **Results** DD groups were < 1 yr (n = 50 [13.5%]); 1 to <

3 yrs (n = 125 [33.7%]); and ≥ 3 yrs (n = 196 [52.8%]). Quiescence (and steroid-free quiescence) increased in all DD groups; Week 0/78: < 1 yr: 14.0%/66.0%; 1 to < 3 yrs: 40.0%/66.4%; ≥ 3 yrs: 35.7%/63.8% (nonresponder imputation). Mean daily steroid dose decreased in all DD groups; Week 0/78: < 1 yr: 12.1/2.6 mg; 1 to < 3 yrs: 8.2/1.8 mg; ≥ 3 yrs: 9.4/2.1 mg (as observed). Safety (events/100 pt-yrs) was comparable with previous VISUAL trials, with no discernible DD effect. Conclusion ADA increased the percentage of patients achieving quiescence and steroid-free quiescence in VISUAL III, irrespective of DD at VISUAL I/II baseline. No new safety signals were detected.

Monday, 8:54AM - 9:01AM

Session: PA036 Location: S405

## Armin Afshar MD, MBA

### Effect of Primary Rhegmatogenous Retinal Detachment Repair Method on Need for Reoperation among Commercially Insured Patients, 2003-2016

Abstract

**Purpose** To examine associations with reoperation after primary rhegmatogenous retinal detachment (RRD) repair. **Methods** Using 2003-2016 claims from a nationwide managed care network, we evaluated patients with incident RRD repair and at least three years of continuous plan enrollment. We determined annual volume of patients requiring reoperation within 90 days of primary repair. Multivariable logistic regression models were used to assess the effect of patient characteristics on reoperation. **Results** Of 16,388 patients with primary RRD repair, 3715 (22.7%) required reoperation within 90 days. Odds of reoperation were highest among patients with initial pneumatic retinopexy (PR) (OR 3.57;  $P < .001$ ), pseudophakia (OR 1.19;  $P < .001$ ), vitreous hemorrhage (OR 1.17;  $P < .01$ ), and Charlson Comorbidity Index (CCI) > 4 (OR 1.34;  $P < .01$ ). Pars plana vitrectomy was the most common secondary repair procedure ( $n = 2311$ ). **Conclusion** Ocular and systemic comorbidities influence odds of RRD reoperation. Primary PR was most strongly associated with reoperation.

Monday, 12:45PM - 1:45PM

Session: PO411 Location: HALL A

## Robert B Bhisitkul MD

### Management of the Vitreous for the Anterior Segment Surgeon

Abstract

**Synopsis** This Skills Transfer course will present management of the vitreous during complicated anterior segment surgery. A variety of vitrectomy techniques will be discussed. Topics will include anterior vitrectomy, pars plana access to the anterior vitreous, and effective use of small-gauge instrumentation. **Objective** This course is designed to enhance participants' technical skills in handling vitreous during complicated anterior segment surgery.

Tuesday, 10:30AM - 12:00PM

Session: LAB132B Location: N228

## Michele M Bloomer MD

### Advanced Refractive Cataract Surgery and Anterior Segment Reconstruction

Abstract

**Synopsis** This course is designed for surgeons who (1) want to expand their armamentarium for dealing with difficult cataracts, dislocated IOLs, traumatic cataracts, and dysphotopsias and (2) want to achieve better emmetropic results and greater spectacle independence through the use of toric IOLs, limbal relaxing incisions, and multifocal IOLs. **Objectives** This course will cover iris and scleral suture and sutureless fixation techniques for IOLs, chopping techniques, capsular tension rings and stabilization devices, pupil expanders, iris pupillary cerclage and primary closure for iris defects, and strategies for dealing with challenging cases. Seipser slip knots and Hoffman pockets will be emphasized.

**Fee:** \$

Sunday, 1:30PM - 3:30PM

Session: LAB124A Location: N228

## Matilda F Chan MD, PhD

### The Use of Prostaglandin Analogues in Uveitic Glaucoma

Abstract

**Purpose** To determine if the use of prostaglandin analogs (PGAs) in uveitic glaucoma (UG) is associated with an increased risk for cystoid macular edema (CME). **Methods** Medical records from patients with UG registered from 2000 to

2016 were reviewed, and information was collected regarding the diagnosis and management of uveitis and the different glaucoma treatments and interventions. Logistic regression analyses were done, focusing on the development of CME as the main outcome. **Results** 223 eyes with UG from 162 patients were enrolled. Univariate analysis did not show any significant association between the use of PGAs and the development of CME ( $P = .42$ ). Similarly, when controlling for age, gender, and baseline steroid use, there was no association ( $P = .59$ ,  $P = .41$ ,  $P = .52$ , respectively). Conclusion We failed to find evidence of increased risk for CME in those patients with UG who received topical PGAs.

Sunday, 12:45PM - 1:45PM

Session: PO103 Location: HALL A

## Thuy A Doan, MD, PHD

### Section II: Up-Front Blues—Anterior Uveitis, Episcleritis, and Scleritis

#### 9:20 Case Presentation

*Thuy A Doan, MD, PHD*

Saturday, 9:10AM - 10:35AM

Session: UVE03 Location: E450

### Section V: Mystery Blues—Infectious, Noninfectious, and Masquerades in Panuveitis

#### 1:35 Panel Discussion and Audience Interaction

*Thuy A Doan, MD, PHD*

Saturday, 1:35PM - 3:00PM

Session: UVE06 Location: E450

### Common and Emerging Causes of Infectious Uveitis

Abstract

**Synopsis** Infectious uveitis includes a large spectrum of potential pathogens and presentations. Some of these diseases are more familiar and well known, while others are newly emerging entities. Air travel, immigration, and world globalization have modified traditional patterns of geographic distribution of infectious uveitis. Diagnosing and managing infectious uveitis have become increasingly challenging for the ophthalmologist. This course will review ocular manifestations of both common and emerging infectious diseases relevant to the ophthalmologist, including Zika, dengue, Ebola, chikungunya, West Nile, rickettsia, tuberculosis, syphilis and cytomegalovirus. The instructors will present a variety of challenging cases from around the world, with interactive discussion sessions. **Objective** At the end of this course, the audience will be able to develop a stepwise approach to diagnosing and managing new emerging infectious uveitis entities.

Sunday, 10:15AM - 12:30PM

Session: 214 Location: N138

### Fungal Keratitis: Innovations in Diagnosis and Treatment

Abstract

**Synopsis** The incidence of postkeratoplasty fungal keratitis is increasing. Fungal keratitis is more severe than bacterial keratitis, with worse visual acuity outcomes and higher rates of corneal perforation. Next-generation sequencing identifies all pathogens and has the potential to alter the standard-of-care diagnostic paradigm. The Mycotic Ulcer Treatment Trial I & II, two large NEI-funded randomized controlled trials, demonstrated that topical natamycin is still the most effective treatment for fungal keratitis. We will also discuss results of a clinical trial looking at intrastromal injection of voriconazole and other potential therapies, including adjunctive collagen crosslinking. **Objective** To update general and subspecialty ophthalmologists on the diagnosis and treatment of fungal keratitis. At the conclusion of this course, the attendee will be familiar with diagnostic methods, including next-generation sequencing and confocal microscopy, as well as evidence-based treatment of fungal keratitis.

Sunday, 4:30PM - 5:30PM

Session: 283 Location: N137

## Jacque L Duncan MD

### Retinal Frontiers: Updates in Gene Therapy and Stem Cell Therapy

Abstract

**Synopsis** In this course, we will discuss new treatments for inherited retinal dystrophies, focusing on updates in the fields of retinal gene therapy and stem cell therapy. A panel of international experts in these fields will provide a didactic introductory lecture, followed by an open panel discussion. **Objectives** At the conclusion of this course, the attendee will

be able to (1) better counsel patients with retinal dystrophies regarding updates in clinical characterization and possible therapies, (2) describe the logistics of ordering and interpreting genetic testing, (3) counsel patients regarding the nuts and bolts of viral vector-mediated retinal gene therapy and stem cell therapy, (4) deepen their understanding of the surgical implications of these treatment modalities, and (5) describe updates in current-day clinical trials in the fields of retinal gene therapy and stem cell therapy. Course received an overall course grade within the top 10% of its subject area based on 2017 attendee evaluation data.

Sunday, 2:00PM - 4:15PM

Session: 247 Location: N137

### **Advances in Vision Restoration Techniques and Devices**

Abstract

**Synopsis** This course will review retinal physiology, inherited retinal degenerations, and current approaches to vision restoration, including gene therapy, photoreceptive molecule therapy, stem cell therapy, various electronic prostheses, and robotic devices. Commercially available products and devices, ongoing research, and clinical trials will be described. Blind rehabilitation techniques and quality of life research in the field of artificial vision will be discussed. **Objective** At the conclusion of this course, the attendees will be able to describe the various types of vision restoration approaches and artificial vision strategies and devices that are commercially available and under development. They will develop a better understanding of prosthetic vision quality and demonstrated impact on patients' activities of daily living and quality of life.

Tuesday, 12:45PM - 3:00PM

Session: 693 Location: S504ABC

### **David G Hwang MD FACS**

#### **Top 10 Hot Corneal Surgical Tips for 2019: Cornea, External Disease**

Abstract

**Synopsis** An expert panel of experienced corneal surgeons presents their annual survey of the hottest corneal surgical tips for 2019. Each surgical tip has been carefully selected for novelty and maximum potential impact on clinical practice. Annually updated topics include time-saving office techniques (eg, rebubbling, amniotic membrane grafting), refinements of common operations (eg, Descemet-stripping automated endothelial keratoplasty, Descemet membrane endothelial keratoplasty), and details of novel, cutting-edge surgical procedures (eg, descemetorrhexis without endothelial keratoplasty [DWEK], sutureless keratoplasty, simple limbal epithelial transplantation, and PDT treatment of infectious keratitis). A rapid-fire format with expert panel commentary and audience Q&A will promote lively discussion, and annual refreshing of topics and rotating faculty ensure that material is of interest to repeat attendees. **Objective** Through step-by-step instructions, surgical video, and detailed handouts, the practitioner will gain practical, specific, and immediately applicable knowledge of improved techniques and approaches for common and challenging corneal surgical problems.

Tuesday, 10:15AM - 12:30PM

Session: 647 Location: S502AB

### **Jeremy D Keenan MD MPH**

#### **Smartphone Conjunctival Photography for Validating Trachoma Elimination: Global Ophthalmology**

Abstract

**Purpose** The World Health Organization has targeted trachoma for elimination by 2020. In this study we tested the feasibility of smartphone photography to validate elimination of trachoma. **Methods** This cross-sectional, population-based study took place in 20 villages in the Nouna Health and Demographic Surveillance Site in Burkina Faso. A random selection of 15 children per village, aged six-59 months, were selected. In-field examination and conjunctival photography were performed. **Results** Conjunctival examination was performed in 301 children from 20 communities. 205 participants from 15 villages had conjunctival photographs. Photograph quality was high: 130 photographs (63%) were deemed of high quality and 75 (37%) of moderate quality; one was ungradable. Neither trachomatous inflammation, follicular (TF), nor trachomatous inflammation, intense (TI), was not identified in any of the 205 photographs. **Conclusion** This study demonstrated that high-quality conjunctival images can be obtained from smartphone cameras, which may be helpful for validating elimination.

Sunday, 12:45PM - 1:45PM

Session: PO132 Location: HALL A

#### **Diagnosis and Management of *Acanthamoeba* Keratitis: Cornea, External Disease**

Abstract

**Synopsis** This course reviews the epidemiology, diagnosis, and management of acanthamoeba keratitis, including the

newer diagnostic tools such as confocal microscopy and PCR, and newer treatments such as miltefosine. **Objective:** At the conclusion of this course, the attendee will be able to: (1) recognize the early and late clinical signs of acanthamoeba keratitis, (2) understand the strengths and limitations of confocal microscopy as a tool to diagnose and follow patients with acanthamoeba keratitis, (3) understand the various microbiological tests for diagnosing acanthamoeba keratitis, including culture, smear, and PCR, (4) choose the proper medication regimen for acanthamoeba keratitis based on susceptibility data, and (5) understand the potential beneficial and detrimental role of topical corticosteroids for acanthamoeba keratitis.

Monday, 11:30AM - 12:30PM

Session: 460 Location: N140

## Robert C Kersten MD

### Section I: Orbitology

8:50 **Orbital Tumors**

*Robert C Kersten MD*

9:05 **Complex Cases With Panel Discussion**

*Robert C Kersten MD*

Saturday, 8:05AM - 9:25AM

Session: OCU02 Location: S406A

### Updating the Paradigm for Managing Orbital Fractures

Abstract

Visit the Learning Lounge to participate in informal, small group facilitated discussions led by experts in the field. New topics begin every 15 minutes. Float among the discussions and interact with colleagues.

Monday, 11:15AM - 12:15PM

Session: LL26 Location: LEARNING LOUNGE 2

### Oculoplastic Procedures for the General Ophthalmologist

Abstract

**Synopsis** This course will describe basic and effective procedures for the treatment of involutional ectropion and entropion, tarsorrhaphy, marginal eyelid lesions, dermatochalasis, and aponeurogenic involutional ptosis. **Objective:** At the conclusion of this course, the attendee will be able to select and perform the appropriate surgical technique for the treatment of common eyelid problems encountered in a general ophthalmology practice. Course received an overall course grade within the top 10% of its subject area based on 2017 attendee evaluation data.

Monday, 2:00PM - 3:00PM

Session: 482 Location: S502AB

### Blepharoplasty

Abstract

**Synopsis** This course will cover the latest techniques in upper and lower eyelid blepharoplasty. Basic and advanced surgical techniques, eyelid anatomy, patient selection, preoperative evaluation, and avoidance of complications will be discussed. A course handbook with illustrations outlining the surgical techniques will be provided. **Objective** This course will provide participants with the techniques required to perform successful upper and lower eyelid blepharoplasties. **Note:** *This is the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.*

**Fee:** \$

Monday, 3:15PM - 5:30PM

Session: LEC151 Location: S505AB

### Blepharoplasty

Abstract

**Synopsis** This course is designed to provide hands-on laboratory experience with the techniques used in upper and lower eyelid blepharoplasty. Videos of techniques will be presented, along with personal assistance with cadaver dissection. **Objective** Participants will be shown the clinically relevant anatomy as it relates to performing upper and lower eyelid blepharoplasties. **Note:** *Participants should bring surgical loupes. Participants are required to sign an infectious disease transmission waiver / release form.*

**Fee:** \$

Tuesday, 8:00AM - 10:00AM

Session: LAB151A Location: N229

## Thomas M Lietman MD

### Descemet Endothelial Thickness Comparison Trial: A Randomized Trial Comparing Ultrathin DSEK to DMEK: Cornea, External Disease

Abstract

**Purpose** To compare outcomes of ultrathin Descemet-stripping automated endothelial keratoplasty (UT-DSAEK) and Descemet membrane endothelial keratoplasty (DMEK). **Methods** In this multicenter, double-masked, randomized, controlled clinical trial, patients with isolated endothelial disease were randomized by the eye bank to UT-DSAEK or DMEK. **Results** A total of 50 eyes of 38 patients were enrolled. Overall, we found DMEK to have better visual acuity outcomes compared with UT-DSAEK after correcting for baseline visual acuity: 1.8 logMAR lines at 6 months (95% CI, 2.8 to 1.0 lines better;  $P < .001$ ) and 1.4 logMAR lines at 12 months (95% CI, 2.2 to 0.1 lines better;  $P < .001$ ). Average endothelial counts were 1857 cells/mm<sup>2</sup> for DMEK and 2070 cells/mm<sup>2</sup> for UT-DSAEK ( $P = .06$ ) at 12 months.

Complication rates were similar between groups. **Conclusion** DMEK had superior visual acuity results compared with UT-DSAEK at 6 and 12 months, with similar endothelial cell loss and complications rates. **Trial Registration: NCT02373137**

Monday, 3:54PM - 4:01PM

Session: PA079 Location: E450

## Stephen McLeod MD

### Descemet Endothelial Thickness Comparison Trial: A Randomized Trial Comparing Ultrathin DSEK to DMEK

Abstract

**Purpose** To compare outcomes of ultrathin Descemet-stripping automated endothelial keratoplasty (UT-DSAEK) and Descemet membrane endothelial keratoplasty (DMEK). **Methods** In this multicenter, double-masked, randomized, controlled clinical trial, patients with isolated endothelial disease were randomized by the eye bank to UT-DSAEK or DMEK. **Results** A total of 50 eyes of 38 patients were enrolled. Overall, we found DMEK to have better visual acuity outcomes compared with UT-DSAEK after correcting for baseline visual acuity: 1.8 logMAR lines at 6 months (95% CI, 2.8 to 1.0 lines better;  $P < .001$ ) and 1.4 logMAR lines at 12 months (95% CI, 2.2 to 0.1 lines better;  $P < .001$ ). Average endothelial counts were 1857 cells/mm<sup>2</sup> for DMEK and 2070 cells/mm<sup>2</sup> for UT-DSAEK ( $P = .06$ ) at 12 months.

Complication rates were similar between groups. **Conclusion** DMEK had superior visual acuity results compared with UT-DSAEK at 6 and 12 months, with similar endothelial cell loss and complications rates. **Trial Registration: NCT02373137**

Monday, 3:54PM - 4:01PM

Session: PA079 Location: E450

### What You Need to Know from the Past Year's Literature

8:35 Cornea Update

*Stephen D McLeod MD*

Abstract

*Cosponsored by the American Ophthalmological Society (AOS) and the American Board of Ophthalmology (ABO).*

Advances in ophthalmic research and practice occur rapidly, making it difficult for busy ophthalmologists to keep abreast of important advances outside of their subspecialty. This symposium will highlight a compendium of key journal articles and discoveries published or presented during the previous year in a cross-section of subspecialties, with analysis and commentary by leading experts. The information should support attendees in improving their practices.

Tuesday, 8:30AM - 10:00AM (McLeod 8:35 AM)

Session: SYM51 Location: E450

## Ayman Naseri MD

### Advanced Refractive Cataract Surgery and Anterior Segment Reconstruction

Abstract

**Synopsis** This course is designed for surgeons who (1) want to expand their armamentarium for dealing with difficult cataracts, dislocated IOLs, traumatic cataracts, and dysphotopsias and (2) want to achieve better emmetropic results and greater spectacle independence through the use of toric IOLs, limbal relaxing incisions, and multifocal IOLs. **Objectives** This course will cover iris and scleral suture and sutureless fixation techniques for IOLs, chopping techniques, capsular tension rings and stabilization devices, pupil expanders, iris pupillary cerclage and primary closure

for iris defects, and strategies for dealing with challenging cases. Seipser slip knots and Hoffman pockets will be emphasized.

**Fee:** \$

Sunday, 1:30PM - 3:30PM

Session: LAB124A Location: N228

## Catherine Oldenburg, ScD, MPH

### Smartphone Conjunctival Photography for Validating Trachoma Elimination

Abstract

**Purpose** The World Health Organization has targeted trachoma for elimination by 2020. In this study we tested the feasibility of smartphone photography to validate elimination of trachoma. **Methods** This cross-sectional, population-based study took place in 20 villages in the Nouna Health and Demographic Surveillance Site in Burkina Faso. A random selection of 15 children per village, aged six-59 months, were selected. In-field examination and conjunctival photography were performed. **Results** Conjunctival examination was performed in 301 children from 20 communities. 205 participants from 15 villages had conjunctival photographs. Photograph quality was high: 130 photographs (63%) were deemed of high quality and 75 (37%) of moderate quality; one was ungradable. Neither trachomatous inflammation, follicular (TF), nor trachomatous inflammation, intense (TI), was not identified in any of the 205 photographs. **Conclusion** This study demonstrated that high-quality conjunctival images can be obtained from smartphone cameras, which may be helpful for validating elimination.

Sunday, 12:45PM - 1:45PM

Session: PO132 Location: HALL A

## Yvonne Ou MD

### Section I: New Drug Session

8:26 **Trabecular Meshwork-Targeted Drugs**

*Yvonne Ou MD*

8:54 **Discussion**

*Yvonne Ou MD*

Saturday, 8:09AM - 9:09AM (Ou 8:26 AM)

Session: GLA02 Location: E35

### Glaucoma Original Papers

3:40 **Panel**

*Yvonne Ou MD*

Monday, 2:00PM - 5:15PM (Ou 3:40 PM)

Session: OP07 Location: S404

## Sriranjani P Padmanabhan, MD

### Manual ECCE Surgery: Indications and Techniques

Abstract

**Synopsis** Although phacoemulsification surgery is the standard of care for mild to moderate cataracts, manual extraction of cataracts, sutureless extracapsular cataract surgery (SECS), aka manual small-incision cataract surgery (SICS), is the procedure of choice. The low cost, high efficiency, and quality outcomes make this surgery a must for working in the developing world. Additionally, the superior outcomes compared to traditional extracapsular cataract extraction (ECCE) are invaluable to any surgeon faced with cases better suited to a manual extraction or conversion. **Objectives** By the conclusion of this course, the attendee will (1) have learned and be able to practice SICS surgery, (2) have learned and be able to practice how to convert from a clear corneal phacoemulsification to a SICS approach, and (3) be better able to deal with complications of all forms of extracapsular cataract surgery.

**Fee:** \$

Monday, 4:00PM - 5:30PM

Session: LAB110B Location: N228

## Travis Porco PhD, MPH

### The Use of Prostaglandin Analogues in Uveitic Glaucoma

#### Abstract

**Purpose** To determine if the use of prostaglandin analogs (PGAs) in uveitic glaucoma (UG) is associated with an increased risk for cystoid macular edema (CME). **Methods** Medical records from patients with UG registered from 2000 to 2016 were reviewed, and information was collected regarding the diagnosis and management of uveitis and the different glaucoma treatments and interventions. Logistic regression analyses were done, focusing on the development of CME as the main outcome. **Results** 223 eyes with UG from 162 patients were enrolled. Univariate analysis did not show any significant association between the use of PGAs and the development of CME ( $P = .42$ ). Similarly, when controlling for age, gender, and baseline steroid use, there was no association ( $P = .59$ ,  $P = .41$ ,  $P = .52$ , respectively). **Conclusion** We failed to find evidence of increased risk for CME in those patients with UG who received topical PGAs.

Sunday, 12:45PM - 1:45PM

Session: PO103 Location: HALL A

### Descemet Endothelial Thickness Comparison Trial: A Randomized Trial Comparing Ultrathin DSEK to DMEK

#### Abstract

**Purpose** To compare outcomes of ultrathin Descemet-stripping automated endothelial keratoplasty (UT-DSEK) and Descemet membrane endothelial keratoplasty (DMEK). **Methods** In this multicenter, double-masked, randomized, controlled clinical trial, patients with isolated endothelial disease were randomized by the eye bank to UT-DSEK or DMEK. **Results** A total of 50 eyes of 38 patients were enrolled. Overall, we found DMEK to have better visual acuity outcomes compared with UT-DSEK after correcting for baseline visual acuity: 1.8 logMAR lines at 6 months (95% CI, 2.8 to 1.0 lines better;  $P < .001$ ) and 1.4 logMAR lines at 12 months (95% CI, 2.2 to 0.1 lines better;  $P < .001$ ). Average endothelial counts were 1857 cells/mm<sup>2</sup> for DMEK and 2070 cells/mm<sup>2</sup> for UT-DSEK ( $P = .06$ ) at 12 months.

Complication rates were similar between groups. **Conclusion** DMEK had superior visual acuity results compared with UT-DSEK at 6 and 12 months, with similar endothelial cell loss and complications rates. **Trial Registration:** NCT02373137

Monday, 3:54PM - 4:01PM

Session: PA079 Location: E450

## Jennifer R Rose-Nussbaumer MD

### Cataract Surgery and Uveitis: Controlling Inflammation, Difficult Pupils, and Distorted Anatomy

#### Abstract

**Synopsis** This course will teach the management of difficult and potentially complicated cataract surgery in uveitis using surgical videos that highlight unique uveitic anatomy. The focus will be on preoperative immunosuppression and patient selection, intraoperative management of distorted uveitic anatomy, and postoperative considerations. Both surgical and medical guidelines for the ophthalmologist will be given, with an emphasis on immunosuppression. **Objectives** At the conclusion of this course, attendees will be able to discuss preoperative planning and immunosuppression for cataract surgery in uveitis patients. They will learn intraoperative management of uveitic anatomy via surgical videos and the management of postoperative inflammation.

Sunday, 11:30AM - 12:30PM

Session: 217 Location: N135

### Poster Theater: Cornea, External Disease

#### Abstract

Attend moderated poster discussions by your mentors and colleagues.

Sunday, 11:30AM - 12:30PM

Session: PT03 Location: HALL A

### Fungal Keratitis: Innovations in Diagnosis and Treatment

#### Abstract

**Synopsis** The incidence of postkeratoplasty fungal keratitis is increasing. Fungal keratitis is more severe than bacterial keratitis, with worse visual acuity outcomes and higher rates of corneal perforation. Next-generation sequencing identifies all pathogens and has the potential to alter the standard-of-care diagnostic paradigm. The Mycotic Ulcer Treatment Trial I & II, two large NEI-funded randomized controlled trials, demonstrated that topical natamycin is still the most effective treatment for fungal keratitis. We will also discuss results of a clinical trial looking at intrastromal injection of voriconazole

and other potential therapies, including adjunctive collagen crosslinking. **Objective** To update general and subspecialty ophthalmologists on the diagnosis and treatment of fungal keratitis. At the conclusion of this course, the attendee will be familiar with diagnostic methods, including next-generation sequencing and confocal microscopy, as well as evidence-based treatment of fungal keratitis.

Sunday, 4:30PM - 5:30PM

Session: 283 Location: N137

### Cornea, External Disease Original Papers

#### 3:54 PA079 Descemet Endothelial Thickness Comparison Trial: A Randomized Trial Comparing Ultrathin DSEK to DMEK

*Jennifer R Rose-Nussbaumer MD*

Monday, 3:30PM - 5:15PM (3:54 Jennifer R Rose-Nussbaumer MD)

Session: OP09 Location: E450

### Factors Associated With Graft Success in the Cornea Preservation Time Study

Abstract

**Purpose** To evaluate the effect of donor, recipient, and operative factors on graft success three years after Descemet-stripping automated endothelial keratoplasty (DSAEK) in the Cornea Preservation Time Study (CPTS). **Methods** 1330 eyes undergoing DSAEK were randomized to a donor cornea with preservation time (PT) of 0-7 days ( $n = 675$ ) or 8-14 days ( $n = 655$ ). Proportional hazard and logistic regression models were used to estimate risk ratios (RR) and 99% confidence intervals (CI). **Results** 1251/1330 grafts (94%) were clear at three years. Along with the effect of PT 12-14 days as previously published, diabetic donors (RR: 2.35 [CI, 1.03-5.33]) and operative complications (RR: 4.21 [CI, 1.42-12.47]) increased risk of early failure. Recipient diagnosis of pseudophakic / aphakic corneal edema (PACE) (RR: 3.59 [CI, 1.05-12.24]) increased risk of late failure compared with Fuchs dystrophy. **Conclusion** PT 12 to 14 days, diabetic donor status, recipient diagnosis of PACE, and operative complications increased the risk for graft failure following DSAEK, while other preop and operative factors did not.

Monday, 3:42PM - 3:49PM

Session: PA078 Location: E450

### Descemet Endothelial Thickness Comparison Trial: A Randomized Trial Comparing Ultrathin DSEK to DMEK

Abstract

**Purpose** To compare outcomes of ultrathin Descemet-stripping automated endothelial keratoplasty (UT-DSAEK) and Descemet membrane endothelial keratoplasty (DMEK). **Methods** In this multicenter, double-masked, randomized, controlled clinical trial, patients with isolated endothelial disease were randomized by the eye bank to UT-DSAEK or DMEK. **Results** A total of 50 eyes of 38 patients were enrolled. Overall, we found DMEK to have better visual acuity outcomes compared with UT-DSAEK after correcting for baseline visual acuity: 1.8 logMAR lines at 6 months (95% CI, 2.8 to 1.0 lines better;  $P < .001$ ) and 1.4 logMAR lines at 12 months (95% CI, 2.2 to 0.1 lines better;  $P < .001$ ). Average endothelial counts were 1857 cells/mm<sup>2</sup> for DMEK and 2070 cells/mm<sup>2</sup> for UT-DSAEK ( $P = .06$ ) at 12 months. Complication rates were similar between groups.

**Conclusion** DMEK had superior visual acuity results compared with UT-DSAEK at 6 and 12 months, with similar endothelial cell loss and complications rates. **Trial Registration: NCT02373137**

Monday, 3:54PM - 4:01PM

Session: PA079 Location: E450

### Corneal Infections and Keratoplasty: Perspectives From the AAO and PAAO

Abstract

Joint Session with the Pan-American Association of Ophthalmology (PAAO). This symposium will present the latest approaches to diagnosis and management of viral, fungal and protozoan corneal infections from the perspectives of experts from both the PAAO and AAO. After a series of three lectures, there will be a 15 minute panel discussion among six experts and a moderator. Then, the latest approaches to keratoplasty including endothelial keratoplasty, stromal lamellar keratoplasty and keratoprosthesis will be presented. This will also be followed by a 15 minute discussion among six experts with a moderator. This symposium will allow the attendee to hear about these important corneal topics from the perspective of both US-based and Pan-American based corneal experts.

Tuesday, 8:30AM - 10:00AM

Session: SYM49 Location: GRAND BALLROOM S100AB

**Julie M Schallhorn, MD**

## No Capsule, No Problem: Intrasccleral Haptic Fixation of IOLs

Abstract

**Synopsis** This lab will provide the opportunity for attendees to learn intrasccleral haptic fixation of three-piece IOLs. One-on-one wet lab instruction from experienced surgeons will be emphasized. Techniques covered will include the glued IOL technique (Agarwal) and the double-needle flanged-haptic technique (Yamane). Instructors will share surgical pearls for successful adoption of these techniques. **Objective** At the conclusion of this course, the attendee will be able to perform intrasccleral haptic fixation of three-piece IOLs using the glued IOL technique and the double needle flanged haptic technique.

**Fee:** \$

Saturday, 3:00PM - 5:00PM

Session: LAB103 Location: N228

## No Capsule, No Problem: Intrasccleral Haptic Fixation of IOLs

Abstract

**Synopsis** This Skills Transfer session will provide the opportunity for attendees to learn intrasccleral haptic fixation of three-piece IOLs. One-on-one wet lab instruction from experienced surgeons will be emphasized. Techniques covered will include the glued IOL technique (Agarwal) and the double-needle flanged-haptic technique (Yamane). Instructors will share surgical pearls for successful adoption of these techniques. **Objective** At the conclusion of this course, the attendee will be able to perform intrasccleral haptic fixation of three-piece IOLs using the glued IOL technique and the double-needle flanged-haptic technique.

**Fee:** \$

Sunday, 8:00AM - 10:00AM

Session: LAB106 Location: N228

## Refractive Surgery Original Papers

2:24 PA021 Surgeon Volume Is a Major Predictor of Complications in Refractive Lens Exchange

*Julie M Schallhorn, MD*

Sunday, 2:00PM - 3:30PM

Session: OP03 Location: S405

## Approach to Red Eye: Scleritis vs. Episcleritis

3:05 When to Patch Graft: Surgical Treatment of Scleritis

*Julie M Schallhorn, MD*

Abstract

*Cosponsored by the American Uveitis Society (AUS).* Scleritis is a potentially blinding ocular inflammatory disease targeting the eye wall that may be associated with life-threatening systemic conditions. Episcleritis is an annoying but non-visually threatening condition that may be difficult to differentiate from mild scleritis. Prompt recognition of scleritis and its differentiation from episcleritis, knowledge of the appropriate scleritis workup, and rapid institution of therapy for scleritis are vital not only to preserve vision but also possibly to preserve life. This session will cover all aspects of episcleritis and scleritis, including categorization, differential diagnosis and associated conditions, workup, and treatment. In addition to didactic talks, panels of ocular inflammatory disease experts will discuss illustrative cases highlighting the diagnosis and management of scleritis.

Sunday, 2:00PM - 3:30PM

Session: SYM18 Location: S406A

## Surgeon Volume Is a Major Predictor of Complications in Refractive Lens Exchange

Abstract

**Purpose** To describe the risk factors for complications during refractive lens exchange (RLE). **Methods** Retrospective review of all patients undergoing RLE at a large refractive surgery group from 2014 to 2016. Patients with intra- and postoperative complications were identified. A Cox proportional hazards model was developed, and hazard ratios (HR) were evaluated. **Results** A total of 18,969 eyes (10,206 patients) were included. Surgeon volume was the major predictor of both serious and nonserious complications. For each additional case per week per surgeon, there was a 2% decrease in the risk of a complication (HR = 0.98; 95% CI, 0.97-0.99;  $P = .009$ ). Increasing age was also a predictor of complications (HR = 1.03 per year; 95% CI, 1.01-1.05;  $P = .009$ ). **Conclusion** Surgeon volume and age are major predictors of complications in this population. No other factor was found to be significant.

Sunday, 2:24PM - 2:31PM

Session: PA021 Location: S405

### **Distinguishing Eyes with Post-LASIK Ectasia Using Scheimpflug Analysis**

Abstract

**Purpose** To evaluate Scheimpflug and clinical parameters to distinguish ectasia after LASIK eyes from normal post-LASIK controls. **Methods** Scheimpflug imaging was evaluated and ROC curves generated to determine area under the curve (AUC), sensitivity, and specificity for each variable. Logistic regression analysis was performed for combined variable models. **Results** In 31 ectasia and 923 control eyes, no individual metric yielded AUC > 0.77. Combining 10 Scheimpflug and clinical metrics (age, pachymetry, keratoconus index, index of height decentration, average pachymetric progression index, lateral shift of BFS, IS-value, estimated residual bed thickness, BADD, ARTmax) yielded AUC, 0.913; sensitivity, 85.2%; and specificity, 83.2%. **Conclusion** While individual metrics poorly distinguished the populations, a combination of age, residual bed thickness, anterior curvature, anterior asymmetry, and pachymetric and posterior surface metrics effectively distinguished the populations.

Monday, 12:45PM - 1:45PM

Session: PO467 Location: HALL A

### **M Reza Vagefi MD**

#### **Diagnosis and Management of Essential Blepharospasm and Hemifacial Spasm**

Abstract

**Synopsis** Patients with eyelid and facial spasms frequently present to ophthalmologists for evaluation or management. The diagnosis and treatment of essential blepharospasm and hemifacial spasm is straightforward and gratifying. Through lectures, video, and case presentations, participants will learn to manage these patients confidently. **Objective** This course will familiarize participants with the diagnostic features and current treatment options for essential blepharospasm, hemifacial spasm, and related facial dystonias.

Tuesday, 9:00AM - 10:00AM

Session: 610 Location: S403B