



AMERICAN ACADEMY™  
OF OPHTHALMOLOGY

# EyeNet Academy News

AAO 2016 EDITION  
CHICAGO

## Imaging Devices A Cheat Sheet for Comparison Shopping



**AAO 2016**  
In conjunction with APAO  
**INNOVATE**

# ASTIGMATISM MANAGEMENT



**Bridging the gap to cataract refractive surgery.**

Introducing the

# PalmScan PRO

Your Complete Biometry Solution

**A-SCAN**

**KERATOMETER**

E-Z Tip Immersion



**SURGICAL  
PACHYMETER**

**MOBILE B-SCAN**

## Features

Portable, Battery Powered, Cost Effective  
Large, Color Touch Screen Tablet  
WiFi, BlueTooth, USB Interface  
Customizable - up to 4 Probes can be added



FLOOR MOUNT



Highest Performance  
Best Value  
**Pen Pachymeter  
FASTPACH**



Qualifies for 50%  
ADA Tax Credit

AAO CHICAGO OCT. 15-18, 2016

ASCRS 2017 LOS ANGELES - MAY.6-10, 2017

Toll Free (866) 730-0663 [www.micromedinc.com](http://www.micromedinc.com)

**NOTICE:** This publication was printed in advance of Subspecialty Day and AAO 2016. For the most up-to-date information, check the Program Search ([aao.org/program-search](http://aao.org/program-search)) or the Mobile Meeting Guide ([aao.org/mobile](http://aao.org/mobile)). American Academy of Ophthalmic Executives®, EyeNet®, EyeSmart™, IRIS® Registry, ONE®, and Preferred Practice Patterns™ are trademarks of the American Academy of Ophthalmology®. All other trademarks are the property of their respective owners. © 2016 American Academy of Ophthalmology.

## 4 The President's Awards

William L. Rich III, MD, on how this year's honorees have influenced him and the profession.

## 6-8 2016 Laureate Interview

Matthew "Dinny" Davis, MD, looks back on a lifetime immersed in ophthalmology.

## 10 Volunteering Overseas

How to get started, and what to expect.

## 12-16 "Is There a Doctor on Board?"

What to do during an in-flight medical emergency.

## 17-18 Advocacy Q&A

Your colleagues give tips and strategies for connecting with lawmakers.

## 19 Museum of Vision

The history of eye care in the Asia-Pacific.

## 20-23 Guide to Imaging Vendors

Imaging devices, PACS, and DICOM compliance.

## 24-26 Honorary Lectures, Part 2

Preview 11 of this year's named lectures.

## From the Editor

### Welcome to Chicago!

The Academy is proud to present its 120th annual meeting, AAO 2016: Innovate. Today, it kicks off with the Opening Session, featuring the Academy President's address, by William L. Rich III, MD,

FACS; the Academy Chief Executive Officer's address, by David W. Parke II, MD; and presenta-

tion of the Academy's highest honors, with the Laureate Recognition Award going to

Matthew D. Davis, MD. In addition, Francesca Casadio, PhD, will give the Michael F. Marmor, MD, Lecture in Ophthalmology and the Arts, titled "The Alchemy of Color in 19th Century Art," followed by the Jackson Memorial Lecture by Douglas D. Koch, MD, "Hiding in Plain Sight: The Enigmatic Cornea and IOL Calculations."

This year, there are 50 symposia on a broad range of topics, from case-based corneal conundrums

to clinical dilemmas in neuro-ophthalmology to areas of controversy regarding cataract surgery preferred practices. Please note, as well, that 3 new Skills Transfer labs have been added—Advanced Suturing: Scleral and Iris Fixation of PC IOLs Plus Intraocular Knot Tying; Laser Retinopathy for Retinal Breaks: Simulation Workshop; and Smartphone Fundus Photography—definitely worth checking out. Be sure to make time for these and other stimulating activities at this year's meeting. Refer to the contents of this *Academy News* and [aao.org/eyenet/academy-live](http://aao.org/eyenet/academy-live) for additional information. We hope that your time in Chicago is enjoyable and informative.

Ruth D. Williams, MD

Chief Medical Editor, *EyeNet Magazine*



## On the Cover Von Hippel-Lindau

Photo by Mike Arango  
National Eye Institute  
Bethesda, Maryland

## The 2016 Presidential Awards The Reasons Behind Dr. Rich's Choices

**W**hen selecting the 2016 Guests of Honor, Academy President William L. Rich III, MD, FACS, wanted to recognize those individuals who contributed to his life as an ophthalmologist and who reflect the best qualities of the profession. These are the outward-looking faces of the Academy—those who have imparted the organization's goals and aspirations to their communities.

Here, Dr. Rich details the specific reasons for these selections, as well as those for the Special Recognition Award and the Distinguished Service Award. Today, Sunday, Dr. Rich will recognize these award recipients at the AAO 2016 Opening Session, which takes place from 8:30 to 10:00 a.m. in North, Hall B.

### GUEST OF HONOR

#### Stephen A. Kamenetzky, MD

"In order for a medical society and its membership to adopt new technology and improve patient care, financial stability must be achieved for both the organization and the physician. Only then can robust educational and quality improvement programs be developed and implemented.



"I'm honoring Dr. Kamenetzky because he has quietly worked for over 30 years as a vol-

unteer to ensure the financial health and security of the Academy and the profes-

sion. After the merger with the American Association of Ophthalmology in 1981, the Academy agreed to assume the new responsibility for advocacy and socioeconomics. I was assigned to be chairman of the Liaison Information Committee. A part of my duties was giving 6 hours of lectures at the annual meeting on the topic of practice management. During one of these lectures, Dr. Kamenetzky approached me, mentioning that he too gave the same talks to young ophthalmologists and residents at Washington University in St. Louis. From that moment on, he became my model for volunteerism at the Academy.

"Over the years, he has chaired the Practice Management Committee, the Health Policy Committee, and Ophthalmic Mutual Insurance Company (OMIC). He has also designed the documentation guidelines for evaluation and management services and spent 20 years successfully leading Academy efforts at the AMA Relative Value Scale Update Committee (RUC).

"Dr. Kamenetzky has been an example for all ophthalmologists—and all professional societies—with his brilliant insights, analysis, and humor."

### GUEST OF HONOR

#### A. Raymond Pilkerton Jr., MD

"Dr. Pilkerton is the reason I am an ophthalmologist. I met him when I was a medical student at Georgetown University Medical School, where I took a fourth-year elective in ophthalmology. His passion for the specialty was obvious;

however, more meaningful to me was the way he interacted with patients with severe retinal disease. His equanimity, patience, and caring were all incredibly influential.



"I left Georgetown to do a surgical internship at San Francisco General Hospital and then a planned residency in orthopedic surgery. But I always carried around with me a visual image of Dr. Pilkerton's professionalism. It impacted me. When I completed my internship in San Francisco, I called him and asked about an ophthalmology residency back at Georgetown. My career as an ophthalmologist was then set in motion.

"Dr. Pilkerton left academia over 30 years ago and formed The Retina Group of Washington with William S. Gilbert, MD. It's now the premier group in the Baltimore/Washington, D.C., area, with 24 dedicated retinal specialists. The most important reason for this success is Dr. Pilkerton's emphasis on quality, empathy, and always 'doing the right thing.' You can be a great surgeon, but if you don't buy into the culture of listening to patients and respecting your staff and everyone in the health care team, your career will be an uphill battle.

"He is a role model and mentor and is held in high esteem by the Washington, D.C., ophthalmic community."

### GUEST OF HONOR

#### James A. Loreto, MD

"Not only does ophthalmology need financial stability and role models to improve care—we also need men and women in the trenches every day turning that knowledge and technology into improved eye health for our patients. Dr. Loreto exemplifies this and all that is good about our profession.

"Dr. Loreto and I share a long history. We met the first day of my Georgetown residency. He was also my chief resident at the VA. Since then, we have been lifelong friends, professional confidants, and fishing and bicycling partners. For 30 years, he practiced high-quality, ethical care and was a superb surgeon respected by his patients and admired by his fellow ophthalmologists. He took the time to attend courses, educate himself about all of the new surgi-



cal approaches, and share this knowledge with colleagues. For example, we consulted one another throughout our young careers to find our way through the avalanche of conflicting evidence and poor science during the move from intracapsular surgery to IOLs and phacoemulsification.

"For these reasons, Dr. Loreto is recognized as a proxy for all of those ophthalmologists working hard on a daily basis to improve quality care in an ethical manner."

### SPECIAL RECOGNITION AWARD European Board of Ophthalmology

"We are honoring the European Board of Ophthalmology (EBO) for its strong and sustained partnership with the Academy in developing and formally endorsing the *Basic and Clinical Science Course* for use in Europe and for its successes as a certifying body.

"Founded in 1992 in London, the EBO is a specialized agency of the European Union of Medical Specialists. The organization's mission is to safeguard and harmonize the highest standards of ophthalmology care and training across Europe."

Accepting the award is EBO President Peter J. Ringens, MD, PhD.

### DISTINGUISHED SERVICE AWARD

#### Association of University Professors of Ophthalmology

"We are honoring the Association of University Professors of Ophthalmology (AUPO) for its critical role in academic ophthalmology and for supporting undergraduate and graduate education in ophthalmology and ophthalmic research.

"For 50 years, the AUPO has strived to strengthen ophthalmology departments across both the United States and Canada. The organization has also dedicated itself to promoting leadership opportunities for department chairs, program directors, and other faculty members and to fostering ethical practice and excellence in eye care."

Accepting the award are AUPO President Oscar A. Cruz, MD, and Steven E. Feldon, MD, MBA, AUPO Executive Vice President.



## FOR THE RECORD

**ANNUAL BUSINESS MEETING.** Notice is hereby given that the Annual Business Meeting of the American Academy of Ophthalmology will be held on Sunday, Oct. 16, in North, Hall B of the McCormick Place Convention Center in Chicago, 10:15-10:45 a.m.

The order of business shall be:

Call to order • Report of the president • Report of the executive vice president/CEO • Election of fellows and members • New business • Announcements and notices • Adjournment.

As stated in the bylaws of the Academy, the order of business of each Annual Business Meeting may be amended by an affirmative vote of a majority of the voting fellows and members present and voting at the meeting.

**CALLING ALL VOTING MEMBERS AND FELLOWS.** Remember to cast a ballot for the next President-Elect, Senior Secretary for Ophthalmic Practice, Secretary for Annual Meeting, and Trustees-at-Large. Voting opens on Monday, Oct. 17, and closes on Tuesday, Nov. 15, at noon CST. You can vote either online or by mail ballot. If you vote both online and by mail, only the latter ballot will be counted. To vote online, visit the Academy home page ([aao.org](http://aao.org)) and follow the link to the voting site.

Candidate information is posted in the McCormick Place Grand Concourse. After Nov. 17, you also can visit [aao.org/about/governance/elections](http://aao.org/about/governance/elections) to read candidate biographies and election results.

# THE POWER OF PREEMPTION

OMIDRIA® is the first and only FDA-approved drug that provides continuous intracameral delivery of NSAID and mydriatic/anti-miotic therapy during cataract surgery<sup>1</sup>

LEARN MORE AT  
AAO BOOTH #4536

## CHOOSE OMIDRIA FOR YOUR NEXT CATARACT SURGERY PATIENT

- Preempt miosis and inhibit postoperative pain<sup>1</sup>
- Block the surgically induced inflammatory cascade with the first and only NSAID FDA-approved for intracameral use<sup>1</sup>
- Eliminate the risks and liabilities of compounded products by using FDA-approved, GMP-manufactured OMIDRIA
- Avoid reimbursement difficulties by using broadly covered OMIDRIA and the OMIDRIAssure™ services (OMIDRIAssure.com)\*

### IMPORTANT SAFETY INFORMATION

OMIDRIA (phenylephrine and ketorolac injection) 1% / 0.3% must be added to irrigation solution prior to intraocular use.

OMIDRIA is contraindicated in patients with a known hypersensitivity to any of its ingredients. Systemic exposure of phenylephrine may cause elevations in blood pressure.

Use OMIDRIA with caution in individuals who have previously exhibited sensitivities to acetylsalicylic acid, phenylacetic acid derivatives, and other nonsteroidal anti-inflammatory drugs (NSAIDs), or have a past medical history of asthma.

The most commonly reported adverse reactions at 2-24% are eye irritation, posterior capsule opacification, increased intraocular pressure, and anterior chamber inflammation.

Use of OMIDRIA in children has not been established.

### INDICATIONS AND USAGE

OMIDRIA is added to ophthalmic irrigation solution used during cataract surgery or intraocular lens replacement and is indicated for maintaining pupil size by preventing intraoperative miosis and reducing postoperative ocular pain.

**Reference:** 1. OMIDRIA [package insert]. Seattle, WA: Omeros Corporation; 2015.

**Please see the Full Prescribing Information at [www.omidria.com/prescribinginformation](http://www.omidria.com/prescribinginformation).**

\*Individual insurance coverage and policies may vary, and Omeros does not guarantee insurance coverage or payment. Omeros offers payments under the OMIDRIAssure "We Pay the Difference" program on behalf of qualifying patients. OMIDRIAssure is subject to change without notice.

Visit [www.omidria.com](http://www.omidria.com)



OMEROS®, the OMEROS logo®, OMIDRIA®, and the OMIDRIA logo® are registered trademarks and OMIDRIAssure™ is a trademark of Omeros Corporation.  
© Omeros Corporation 2016, all rights reserved. 2016-131



**OMIDRIA®**  
(phenylephrine and  
ketorolac injection) 1% / 0.3%

## Researcher and Recruiter

### The 2016 Academy Laureate, Matthew D. Davis, MD

**M**atthew Dinsdale “Dinny” Davis, MD, is best known for his key role in developing and conducting the landmark Diabetic Retinopathy Study (DRS); however, he believes that his role in recruiting outstanding people for the ophthalmology department at the University of Wisconsin Medical School in Madison may be equally, or perhaps even more, important. His greatest motivating force? His desire for the department to become the very best it could be.

“Over the years, I’ve learned to do the best that I can in every endeavor and to accept that success is often partial,” he said. “It’s been sort of a life lesson.” Dr. Davis attributes this lesson to his firstborn son, Matthew. “He had Down syndrome, and he was greatly loved by our family. One of the most important things I learned in life was from him: It was to do the best you can within your limits, to accept what ability you have, and to be forgiving of yourself.”

Dr. Davis receives the Laureate Recognition Award during the Opening Session, which takes place Sunday, 8:30-10:00 a.m., in North, Hall B.

#### Early Years

Dr. Davis was immersed in ophthalmology from the outset. His father, Frederick Allison Davis, MD, practiced in Madison and was the inaugural chair of the ophthalmology division in the surgery department of the University of Wisconsin Medical School in 1925. “My father was eager to have my older brother, Frederick Jefferson Davis, and me follow in his footsteps. He loved his profession, particularly the small part of his time that he devoted to ophthalmic pathology, but he refrained from being too directive,” Dr. Davis said. “By nature, I was interested in many things and reluctant to choose one too soon. So, why not choose ophthalmology, a specialty that kept many options open, included research and/or clinical practice, and allowed for the use of both medical and surgical approaches, while pleasing my father as well?”

Dr. Davis proceeded to earn his medical degree at the University of Pennsylvania. He then completed an internship and residency at the University of Wisconsin Hospital in Madison, although his residency was interrupted by 2 years of active duty in the U.S. Naval Reserve during the Korean War. When he returned, he went to Boston to finish coursework for his residency and had an extra 6

months to fill. “One of my father’s friends, Trygve Gunderson, was practicing ophthalmology in Boston, and he told my father that the latest, most fascinating thing in the field was Charles Schepens’ retina program. I spoke to Dr. Schepens, and he was kind enough to accept me for a 6-month fellowship at the Massachusetts Eye and Ear Infirmary, even though most of his fellows then came for a year. That’s how I got into retina.”

#### Fellowship With Dr. Schepens

Dr. Schepens, known as the founder of modern retinal surgery, was a pivotal force in Dr. Davis’ professional development. “Dr. Schepens was very kind and gentle, and I learned perseverance in spades from him,” he said. “Putting on his binocular indirect ophthalmoscope and getting to see the far peripheral retina with stereopsis and with scleral depression—which just meant pushing a little bit on the eye through the eyelid and bringing the peripheral retina into view and elevating it a little bit—was like being able to palpate an abdomen and, at the same time, seeing into the abdomen. You were seeing into the eye, and you could also palpate it. It was, and still is, absolutely amazing. It was clearly a huge breakthrough.”

During the fellowship, Dr. Schepens taught him the scleral buckling technique, which, although considered radical at the time, soon became the standard treatment for retinal detachment. Dr. Davis completed the fellowship in 1956. He then returned to Madison and joined his father, brother, and their colleagues in ophthalmic practice and started as a part-time faculty member in ophthalmology at the University of Wisconsin Medical School. “Initially, many of my retinal detachment patients were referred for reoperation after failure of an initial operation elsewhere,” he said. “Some were very challenging, and I was very thankful for all that Dr. Schepens had taught me.”



**FUNDUS PHOTOGRAPH READING CENTER.** To grade retinal photographs collected in the DRS trial, Dr. Davis established the University of Wisconsin Fundus Photograph Reading Center in 1970—the first centralized, independent reading center for randomized clinical trials of retinal diseases.

#### Ophthalmology at the University of Wisconsin Medical School

Peter A. Duehr, MD, who trained and practiced with Dr. Davis’ father, was chairman of the ophthalmology division at the time that Dr. Davis returned to Wisconsin. “Dr. Duehr and I both wanted ophthalmology to develop into an outstanding department, but funds and space were very limited and medical school politics were complicated. We were able to persuade several graduates from our residency program to obtain subspecialty training elsewhere and return to our division as part- or full-time faculty members. Some of them have become national leaders in their subspecialties.” In 1970, the division achieved the status of an independent department, and Dr. Davis served as its first full-time chairman from 1970 to 1986. “Now we were able to recruit nationally. My goal was to find people who looked promising and to give them broad latitude in dividing their time between clinical practice and research. We attracted some very good people during my term as chair, and my successors have continued to do so,” he said. “Perhaps the challenge that has been my principal focus throughout my career has been to try to help make ophthalmology at the University of Wisconsin the best it can be.”

#### The DRS: A Landmark Clinical Trial

Dr. Davis is best known for his seminal work in diabetic retinopathy clinical trials, beginning with his position as the national chair for the DRS. At that time, approximately half of patients diagnosed with proliferative diabetic retinopathy would be legally blind within 5 years. Over the next few decades, that percentage dropped to 5%, and the DRS was a critical component in that success.

When the DRS began in 1971, it was the first major clinical trial funded by the National Eye Institute (NEI). In 1976, Dr. Davis and his collaborators published a pivotal paper based on the DRS findings, showing the substantial benefit of scatter laser photocoagulation in treating diabetic retinopathy. This finding was revolutionary because it ran counter to prevailing clinical opinion. Dr. Davis also chaired the follow-up trial, the Diabetic Retinopathy Vitrectomy Study, which demonstrated that vision was significantly better for some patients with very severe diabetic retinopathy if they had early vitrectomy surgery, as opposed to deferred surgery. These trials created standard of care treatments that are still used, and they stand as models of clinical research.

“Four decades and many clinical trials later, I am impressed with how fortunate we were to have Dinny as the chairman of the first major multicenter clinical trial in ophthalmology,” said Frederick L. Ferris III, MD, director of the Division of Epidemiology and Clinical Applications and the clinical director at the NEI. Dr. Ferris noted that “there was much skepticism about whether a clinical trial could be done in a disease with such variable outcomes and about the idea of doing multicenter randomized clinical trials at all. Many thought that careful individual physician follow-up of treated patients with reports on cohort outcomes was the better approach. There was general skepticism about whether it was possible to use standard photography and a reading center.”

But, as Dr. Ferris explained, “Dinny had the perfect collaborative personality to make things work—he is a great listener and leader. His insistence on focusing on the results of the clinical trial and letting the community develop standard practices based largely on those results, but also on clinical necessities, was brilliant. He is my model for the perfect study chairman.”

Dr. Davis said, “I had all kinds of people to help, such as Fred Ederer and

# THIS IS YOUR OPENING.

Make a once-in-a-lifetime difference with the safe MIGS procedure  
for cataract patients with glaucoma.



The complete procedure.

AAO Booth 626

800.GLAUKOS (452.8567)

Glaukos.com

**iStent**<sup>®</sup>  
TRABECULAR  
MICRO-BYPASS  
STENT SYSTEM

**INDICATION FOR USE.** The iStent<sup>®</sup> Trabecular Micro-Bypass Stent (Models GTS100R and GTS100L) is indicated for use in conjunction with cataract surgery for the reduction of intraocular pressure (IOP) in adult patients with mild to moderate open-angle glaucoma currently treated with ocular hypotensive medication. **CONTRAINDICATIONS.** The iStent<sup>®</sup> is contraindicated in eyes with primary or secondary angle closure glaucoma, including neovascular glaucoma, as well as in patients with retrobulbar tumor, thyroid eye disease, 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 PAS, rubeosis, and other angle abnormalities or conditions that would prohibit adequate visualization of the angle that could lead to improper placement of the stent and pose a hazard. The iStent<sup>®</sup> is MR-Conditional meaning that the device is safe for use in a specified MR environment under specified conditions, please see label for details. **PRECAUTIONS.** The surgeon should monitor the patient postoperatively for proper maintenance of intraocular pressure. The safety and effectiveness of the iStent<sup>®</sup> has not been established as an alternative to the primary treatment of glaucoma with medications, in children, in eyes with significant prior trauma, chronic inflammation, or an abnormal anterior segment, in pseudophakic patients with glaucoma, in patients with pseudoexfoliative glaucoma, pigmentary, and uveitic glaucoma, in patients with unmedicated IOP less than 22 mmHg or greater than 36 mmHg after "washout" of medications, or in patients with prior glaucoma surgery of any type including argon laser trabeculoplasty, for implantation of more than a single stent, after complications during cataract surgery, and when implantation has been without concomitant cataract surgery with IOL implantation for visually significant cataract. **ADVERSE EVENTS.** The most common post-operative adverse events reported in the randomized pivotal trial included early post-operative corneal edema (8%), BCVA loss of  $\geq 1$  line at or after the 3 month visit (7%), posterior capsular opacification (6%), stent obstruction (4%) early post-operative anterior chamber cells (3%), and early post-operative corneal abrasion (3%). Please refer to Directions for Use for additional adverse event information. **CAUTION:** Federal law restricts this device to sale by, or on the order of, a physician. Please reference the Directions for Use labeling for a complete list of contraindications, warnings, precautions, and adverse events.



**DRIVING THE DIABETIC RETINOPATHY STUDY (DRS).** According to Dr. Ferris, Dr. Davis (second from the left, at a Data Monitoring Committee meeting) “was able to develop consensus among the large and diverse DRS Research Group. This was particularly important because we were creating logistics and methods for clinical trials, most of which are routine today but were new then. This involved developing the multiple committee infrastructure, including the Data Monitoring Committee and Policy Advisor Groups, where reaching consensus was critical prior to publishing results.”

Rick Ferris at the NEI, Genell Knatterud and Chris Klimt at the coordinating center, and all of the ophthalmologists and other personnel at the clinical centers. I got in on the ground floor because during the late 1960s, my colleagues and I at the University of Wisconsin had documented the natural course of diabetic retinopathy, first in serial color-coded retinal diagrams drawn by Yvonne Magli, our medical illustrator, using binocular

ophthalmoscopy and later, when the Zeiss fundus camera became available to us, in stereo photographs. Our findings, particularly when presented as scientific exhibits, were so impressive that I was asked to help with this trial.”

Dr. Davis emphasized that the DRS was a joint effort. “You may notice that almost all of the DRS papers are authored by the DRS Research Group. We didn’t want any one name on them be-

cause we wanted the whole group to get equal credit. It was mainly a group effort, and the other members of the group have not gotten enough credit.”

#### **The Fundus Photograph Reading Center**

To grade retinal photographs collected in the DRS trial, Dr. Davis established the University of Wisconsin Fundus Photograph Reading Center (FPRC) in 1970—the first centralized, independent reading center for randomized clinical trials of retinal diseases. At the center, Dr. Davis and his collaborators developed photographic standards and systems for analyzing the characteristics of the lens and retina, and they designed quality-control systems to increase accuracy and assess reproducibility. To this day, FPRC works with researchers from around the world to analyze photographs of the retina and assess changes over time.

#### **Classification of Diabetic Retinopathy and AMD**

Finally, Dr. Davis and his collaborators developed the modified Airlie House classification of diabetic retinopathy and, later, the Early Treatment Diabetic Retinopathy Study severity scale, as well as the Age-related Eye Disease Study scales for age-related macular degenera-

tion. “Dr. Davis is well known for his careful and complete data analysis,” said George B. Bartley, MD, editor-in-chief of *Ophthalmology* and soon-to-be CEO of the American Board of Ophthalmology. “These classifications remain the gold standards not only for studying these disorders but also for providing direct patient care around the world.”

Despite the extraordinary amount of hard work and dedication that Dr. Davis put into his career and the profession, he believes that he owes much to being in the right place at the right time. “A lot of luck was involved, from being in Boston in 1955 to the fact that my father knew Trygve Gunderson and asked for his advice—that was the biggest stroke of luck I ever had,” he said. “More luck arrived when Ms. Magli, a graduate in fine arts who applied for a secretarial job, rapidly mastered binocular indirect ophthalmoscopy and stereo fundus photography and joined me in following patients with diabetic retinopathy early in my career when I had time to do it.” He also considers himself extremely fortunate to have met the collaborators he worked with. “My mentors were my father and his partner, Peter Duehr, as well as Charles Schepens. From them I learned many lessons. Perhaps the most important were gentleness and perseverance.”

## Elegant in design, Precise in action



Visit us at  
booth #4521



# INSIGHTS COME TO LIGHT

AT BOOTH 1408

## Saturday, October 15, 2016

- 9:30 AM**  
**Complex Cases in  
Cataract Surgery**  
Eric Donnenfeld, MD
- 10:00 AM**  
**Expanding Options in  
Ab-Interno Glaucoma Surgery**  
Nathan M. Radcliffe, MD
- 10:30 AM**  
**New Insights in Diabetic  
Macular Edema**  
David Eichenbaum, MD
- 11:00 AM**  
**The Science Behind Neurostim  
and Ophthalmology**  
John Sheppard, MD
- 11:30 AM**  
**From Studies to Clinical Use:  
Diabetic Macular Edema Data  
and Case Review**  
Brian Chan-Kai, MD
- 12:00 PM**  
**Episcleral Venous Fluid Wave:  
Intraoperative Evaluation of the  
Trabecular Outflow Pathway**  
Davinder Grover, MD
- 12:30 PM**  
**Nasty Cataracts: Prevention  
and Management  
of Complications**  
Robert Osher, MD
- 1:00 PM**  
**Strategies for the  
Rock-Hard Nucleus**  
David Chang, MD

- 1:30 PM**  
**Glaucoma: Which Surgery for  
Which Patient?**  
Jonathan S. Myers, MD
- 2:00 PM**  
**The Key Elements of  
Effective Intravitreal  
Injection Reimbursement**  
Angela Chambers
- 2:30 PM**  
**Understanding the Signs &  
Symptoms Disconnect**  
Richard Adler, MD



**3:00 PM**  
**Retina FIRST  
Writers' Award  
Ceremony**

## Sunday, October 16, 2016

- 9:30 AM**  
**Management of  
Subluxated IOLs**  
Bonnie Henderson, MD
- 10:00 AM**  
**DMEK Pearls**  
Neda Shamie, MD
- 10:30 AM**  
**New Insights in Diabetic  
Macular Edema**  
Ashkan Abbey, MD
- 11:00 AM**  
**Managing Uveitis-Glaucoma-  
Hyphema Syndrome With  
Complex IOL and  
Glaucoma Surgery**  
Arsham Sheybani, MD

- 11:30 AM**  
**From Studies to Clinical Use:  
Diabetic Macular Edema Data  
and Case Review**  
Michael Singer, MD
- 12:00 PM**  
**Surgical Techniques for the  
Complex Cataract Patient**  
Terry Kim, MD
- 12:30 PM**  
**Managing Glaucoma With  
Surgical and Medical Options**  
E. Randy Craven, MD

- 1:00 PM**  
**The Science Behind Neurostim  
and Ophthalmology**  
John Sheppard, MD
- 1:30 PM**  
**Ab-Interno Glaucoma Surgery:  
Procedures for the 21st  
Century Glaucoma Surgeon**  
Oluwatosin U. Smith, MD

- 2:00 PM**  
**Iris Repair, Reconstruction,  
and Replacement**  
Brandon Ayres, MD

- 2:30 PM**  
**The Key Elements of  
Effective Intravitreal  
Injection Reimbursement**  
David Baczewski

- 3:00 PM**  
**Advances in Glaucoma Surgery**  
Robert J. Noecker, MD



**4:00 PM**  
**Resident  
Writer Award  
Ceremony**

## Monday, October 17, 2016

- 9:30 AM**  
**Lowering IOP in the Real World**  
Ronald L. Gross, MD
- 10:00 AM**  
**New Insights in Diabetic  
Macular Edema**  
Jeremy Wolfe, MD
- 10:30 AM**  
**New Insights in Diabetic  
Macular Edema**  
Joseph Coney, MD
- 11:00 AM**  
**New Insights in Diabetic  
Macular Edema**  
María H. Berrocal, MD
- 11:30 AM**  
**New Insights in Diabetic  
Macular Edema**  
Charles Wykoff, MD, PhD

- 12:00 PM**  
**The Science Behind Neurostim  
and Ophthalmology**  
Preeya Gupta, MD

- 2:00 PM**  
**The Key Elements of  
Effective Intravitreal  
Injection Reimbursement**  
Angela Chambers

Booth 1408



© 2016 Allergan. All rights reserved. All trademarks are the property of their respective owners. Presentation times and speakers are subject to change. These presentations are not affiliated with the official program of AAO 2016. NON102135 09/16 162167

## How to Get Involved in Mission Work Make an Impact Here and Abroad

**A**re you interested in volunteering your time and medical expertise here in the United States or overseas? Here's how to get started—and what to expect—from this type of service.

### Assess Your Options

**Are you a resident?** Not so long ago, U.S. residency programs typically didn't integrate overseas experiences into their educational program, with one rare exception being the well-established relationship between Aravind Eye Hospital and Wilmer Eye Institute. However, global ophthalmology rotations are becoming more common now that the Accreditation Council for Graduate Medical Education (ACGME) has made overseas education permissible within ophthalmology program requirements.

"Because residents are not yet competent or qualified to practice independently, the home institution must engage in a program letter of agreement [PLA] with the hosting site in order for the extramural experience to be considered part of the educational curriculum," said Andreas Lauer, MD, vice-chair for education and professor of ophthalmology at the Oregon Health & Science University's (OHSU) Casey Eye Institute in Portland. "The PLA clearly outlines the duration of time that the resident will spend at the location, defines the expected learning experience and who will supervise and evaluate the resident, details the scope of patient care involved, and describes the institutional protections the resident will receive."

**Are you a fellow?** Currently, 5 formal global eye care fellowships are offered through academic institutions:

- Truhlsen Eye Institute's Prevention of Global Blindness Fellowship (Univer-

sity of Nebraska; [www.unmc.edu/eye/residencies-fellowships/fellowship/index.html](http://www.unmc.edu/eye/residencies-fellowships/fellowship/index.html))

- Moran Eye Center's Moran International Fellowship (University of Utah; <http://medicine.utah.edu/ophthalmology/education/fellowship/international.php>)
- Dean McGee Eye Institute's Global Eye Care Fellowship (University of Oklahoma; [dmei.org/fellowship-programs](http://dmei.org/fellowship-programs))
- Emory Eye Center's Global Ophthalmology Fellowship (Emory University; [www.eyecenter.emory.edu/education/global\\_ophthalmology\\_fellowship.htm](http://www.eyecenter.emory.edu/education/global_ophthalmology_fellowship.htm))
- Wills Eye Center for Academic Global Ophthalmology Fellowship (Wills Eye Hospital; [www.willseye.org/academic-global-ophthalmology-fellowship](http://www.willseye.org/academic-global-ophthalmology-fellowship)).

"These are the best avenues for people who want to pursue global eye care; however, less formal programs are available," said Michael Feilmeier, MD, who completed the first fellowship offered by Moran Eye Center in 2009 and went on to create a 1-year fellowship program at Truhlsen Eye Institute, where he is now medical director of the international division of ophthalmology.

### Are you a midcareer or senior MD?

Consider these organizations that seek to serve the visually impaired.

- Orbis International. The "flying eye hospital" is one of the oldest models for bringing surgical knowledge and skills to doctors in developing countries. Orbis now serves more than 90 countries and trains thousands of medical professionals each year ([www.orbis.org](http://www.orbis.org)).
- Seva Foundation. Working with local partners in 20 different countries, Seva strives to create self-sustaining programs ([www.seva.org](http://www.seva.org)).
- Himalayan Cataract Project (HCP). Initially founded to establish a sustainable infrastructure for eye care in the Himalaya, HCP now has programs in 7 countries ([www.cureblindness.org](http://www.cureblindness.org)).
- EyeCare America (ECA). ECA provides an opportunity to volunteer in the United States. Sign up with the Academy's EyeCare America program to treat uninsured and underinsured patients without charge ([www.aao.org/eyecare-america](http://www.aao.org/eyecare-america)).

### Know Before You Go

**Expect the unexpected.** Not everyone has the moxie to work in locations where things can be unpredictable. "If you have international travel experience, you probably understand that the unexpected is almost always to be expected, which requires patience and flexibility. And,



**BUILDING BLOCKS.** Dr. Siatu'u, shown here in his Pago Pago office, is collaborating with OHSU's Dr. Lauer (below, right).

although you are there to share your expertise, you are also a guest and must be respectful even if procedures are different from what you might be accustomed to," said Grace Sun, MD, assistant professor of ophthalmology and head of the residency program at Weill Cornell Medical College in New York.

**Seek long-term, sustainable improvements.** "The best kind of mission work involves creating connections that build with each visit. The goal is to develop long-term and mutually beneficial relationships that improve the existing situation in an underserved location and to facilitate these changes in a sustainable way," said Dr. Feilmeier.

**Ten important considerations.** According to Drs. Feilmeier, Lauer, and Sun, these are the top 10 things that every

BY LESLIE BURLING-PHILLIPS,  
CONTRIBUTING WRITER.

physician should know or do before engaging in a mission:

1. Think about not only where you want to go and your goals but also where you will have the greatest impact.
2. Go to a country that welcomes you—not just somewhere you want to visit.
3. During your first few trips, go with someone who is experienced with the particular site you're visiting.
4. Study and respect local customs.
5. Focus on the sustainability of your service and work toward the long-term improvement of eye care delivery.
6. Make sure that all of your credentialing is up to date. Depending on your destination, you might need to apply for a temporary medical license.
7. Make sure that your malpractice insurance is up to date and will cover you while serving abroad.
8. Interpreters are provided in most locations, but it is helpful to learn the words used during a basic eye exam.
9. Go to a travel clinic and get the appropriate immunization(s).
10. Take advantage of Academy resources. Go to the Global Ophthalmology (GO) Guide at [aao.org/goguide](http://aao.org/goguide) and scroll down to "Education" for 3 online CME courses from the Johns Hopkins Bloomberg School of Public Health. The Academy is also developing an EyeCare Volunteer Registry; if you're interested in volunteering or if you work with an organization that offers volunteer opportunities, email [intoutreach@aao.org](mailto:intoutreach@aao.org).

## A Creative Partnership

Spanning 5 islands and 2 coral atolls, and serving as home to approximately 55,000 people, American Samoa had only 1 ophthalmologist—and he was slated to retire. Without assistance, the population of this U.S. territory in the middle of the South Pacific would potentially be left without eye care.

"David J. Wilson, our chairman, thought that training someone to serve that community would be an important contribution to global health," said Dr. Lauer. A reciprocal arrangement was established between OHSU and the Lyndon B. Johnson Tropical Medical Center at Pago Pago, the capital of American Samoa. "The premise behind the initiative was to enable individuals to visit our program and learn from our team, and for our team to learn from other medical communities," he said. As part of this program, Benjamin Siatu'u, MD, went to Oregon for some intensive training in ophthalmology. Now back in Samoa, he is working with Casey Eye Institute to finish building up the other critical elements of a regional eye care program (for more information, go to [www.ohsu.edu](http://www.ohsu.edu) and search for "Vision in American Samoa").



AAO 2016  
In conjunction with APAAO  
INNOVATE

### MORE AT THE MEETING

**Young Ophthalmologists: Making an Impact Around the World (227).**

**When:** Sunday, 11:30 a.m.-12:30 p.m. **Where:** N135. **Access:** Free.

**How to Start Volunteering Now (B169).** **When:** Tuesday, 7:30-8:30 a.m. **Where:** Hall A. **Access:** Ticket required.

**Opportunities for Senior Ophthalmologists (Sym48).** **When:** Tuesday, 10:15-11:15 a.m. **Where:** Grand Ballroom S100c. **Access:** Free.

# Working together. Naturally.



SLT

ABiC

Both SLT and ABiC™ work to control IOP by a process of restoration of the natural outflow pathways. This is in contrast to traditional glaucoma surgeries and other MIGS procedures, which attempt to mechanically change or bypass the pathway of aqueous outflow.

SLT stimulates a process of cellular regeneration to create a healthier, more porous TM structure. On average, SLT achieves a 30% reduction in IOP when used as a first-line therapy.

ABiC™ is a new ab-interno MIGS procedure that flushes out the natural outflow channels, without damaging tissue, to achieve an average IOP reduction of 30%\*.

**Be among the first to preview the new TANGO REFLEX at AAO 2016: SLT, Laser Vitreolysis, Capsulotomy and Iridotomy procedures from one advanced laser system.**



**VISIT ELLEX AT THE 2016 ANNUAL MEETING OF THE AAO, EXHIBIT #2731**

\*E&OE. © 2016. Ellex Medical. \* 228-eye ABiC 12-Month Case Series Data, presented at ASCRS 2016. Data on file. Ellex Medical.

**ABiC** ellex

# “Is There a Doctor on Board?” No Time to Lose!

When you hear the call, time is of the essence. Make sure you’re armed with information and prepare yourself for in-flight medical emergencies.

**T**housands of physicians will be flying home at the conclusion of AAO 2016. And thousands of times every year, attendants on U.S. airliners call on their physician passengers for help with a medical emergency. “With the frequency of at least 1 medical emergency in every 600 flights, the bottom line is: It’s likely to happen to you, if you fly enough,” said William J. Brady, MD, a Charlottesville, Va., emergency physician who coauthored a review of in-flight emergencies published in the *New England Journal of Medicine*.<sup>1</sup> Of course, ophthalmologists are unlikely to encounter an eye care emergency at 30,000 feet—“I’m still waiting for the time I can run to the rescue for a patient with contact lens overwear, but that just doesn’t happen,” Preston H. Blomquist, MD, said with a laugh. But they may be called upon to handle other medical situations—and physicians who have provided medical assistance aboard airplanes stress the importance of preparing in advance to help the plane’s crew cope with these medical emergencies.

## Priority 1: Life Support

A 2013 study reported that cardiac arrests are very rare (accounting for 0.3% of medical emergencies on U.S. commercial airliners), but they were responsible for 86% of the in-flight medical emergencies that resulted in death.<sup>2</sup> Consequently, knowing how to use an automated external defibrillator (AED) is crucial, Dr. Brady said. “I would recommend that ophthalmologists become comfortable with the AED, which is very easy to operate and can be lifesaving when used appropriately in the early phases of cardiac arrest.”

Neuro-ophthalmologist Lynn K. Gordon, MD, PhD, learned this 3 years ago, when she and her husband, pathologist Jonathan Braun, MD, PhD, were flying to Texas. “A man on our plane collapsed in the aisle right next to us. At first he was able to talk, but within seconds his breathing stopped and his pulse ceased,” recalled Dr. Gordon, at the University of

California, Los Angeles.

Aided by a medical resident and a medical student who also were on board, they started CPR and readied the plane’s AED. “We had to use the AED to shock him multiple times. The plane made an emergency landing while we were all on the floor with him, and he survived,” she said.

Dr. Gordon credits her quick, automatic reaction in this cardiac crisis to her certification in basic life support, which she keeps current as a condition of practicing part time at the Los Angeles VA hospital. “This experience taught me that you need to maintain your certification, so you’ll be on autopilot when an emergency happens,” she said. “Sure, we ophthalmologists have been through medical school, and we all know the basics. But you have to keep up your skill level, and I think everybody has an obligation to do this.”

## Ethical and Legal Issues

**A duty to volunteer?** Ophthalmic physicians have an ethical obligation to assist with medical emergencies that arise in flight, said Charles M. Zacks, MD, who practices in Portland, Maine, and is a past chairman of the Academy Ethics Committee.

“We’ve all taken an oath to help where we can,” he said. Ophthalmologists shouldn’t fail to respond to the call. Even if you aren’t fully knowledgeable about the passenger’s condition, he said, “almost any reasonable intervention is better than nothing at all.”

One does not need to be an emergency specialist to help these patients, Dr. Brady emphasized. “In my opinion, the ability of the doctor to be at the patient’s side and assist simply by being there and talking to them can provide a fair amount of comfort and aid.”

**Protection from liability.** The U.S. Aviation Medical Assistance Act of 1998 broadly protects providers of emergency care on airplanes from liability if a patient is harmed by the lack of appropriate medical equipment or by the refusal of the pilot to divert the plane. Dr. Zacks said he has had no hesitation in the past when flight attendants asked for help with a medical emergency. “If an ophthalmologist is called on to respond in an emergency, and they don’t do so out of



**IT CAN HAPPEN ANY TIME.** A medical emergency can arise even in the most routine flights. Would you be ready to help?

some concern for liability—that’s not a well-founded fear.”

**The “gross negligence” exception.** However, the act does not protect providers of emergency care from liability for their own “gross negligence,” Dr. Brady said. For instance, a physician who has been drinking alcohol during the trip might need to think twice before volunteering to help, he said. “That is one of the situations in which a provider can get him- or herself into a certain degree of trouble.”

## Tools for Airborne Crises

**The tool between your ears.** The best resource in a medical emergency is the doctor’s brain, said Dr. Brady. “That’s the most important diagnostic tool that

you have—in terms of looking at your patient, talking to your patient, examining your patient, and trying to come up with what you think is the problem that has to be addressed.”

**Know your medical kit.** Commercial passenger planes in the United States are required by law to carry medical kits containing at least 1 AED, basic first-aid and resuscitation supplies, and a limited number of medications. “It’s a very austere environment in terms of what you can do diagnostically and what you can do therapeutically,” Dr. Brady said. (See “Emergency Medical Kits” on page 16.)

In addition to being familiar with using an AED, said Dr. Blomquist, it’s helpful for traveling ophthalmologists to know in advance what they can expect

## Steps for In-Flight Medical Emergencies

Dr. Brady and his coauthors recommend that medical providers who respond to in-flight medical emergencies take the following steps:

- Introduce themselves and state their medical qualifications
- Ask the passenger for permission to treat, if feasible
- Request access to the medical kit or automated external defibrillator, as needed
- Use a language interpreter, if necessary, but be aware of patient privacy
- Take a patient history, perform a focused physical examination, and obtain vital signs
- Administer treatments within the scope of their qualifications, with the patient remaining seated, when possible
- Recommend diversion of the flight if the patient’s medical condition is critical
- Communicate and coordinate with ground-based medical resources
- Continue to provide care until the emergency medical condition is stabilized or care is transferred to other qualified medical personnel
- Document the patient encounter

SOURCE: Nable JV et al. *N Engl J Med*. 2015;373(10):939-945.

# Introducing: MaxRx Prescriber Portal™ for Dropless, LessDrops and IV Free orders!

SIMPLE

EFFICIENT

SECURE



Dropless Cataract  
Therapy™



Combination  
Eye Drops



Sublingual Conscious  
Sedation

## HOW IT WORKS:

- Setup an account for you and your staff
- Enter your prescription
- Order arrives immediately at the pharmacy

## WHAT YOU'LL FIND:

- Immediate confirmation
- Real time order status updates
- Tracking number once it ships

## SIGN UP TODAY:

[www.imprimisrx.com/portal](http://www.imprimisrx.com/portal)



Visit us at AAO Booth #362

the medical kit to contain—something he admits to not knowing until his first experience with an emergency on a flight to London. In that instance, a man was feeling faint after combining blood pressure medication with alcohol. “It was only afterward that I found out that they had a complete medical kit on board the plane. It would have been nice to have a sphygmomanometer and a stethoscope, which the crew didn’t offer to me. Now I know to ask for them,” said Dr. Blomquist, at the University of Texas Southwestern Medical Center in Dallas.

The treatment device that he and Dr. Brady would most like to see added to the medical kit is an epinephrine autoinjector to treat severe multisystem allergic reactions and anaphylaxis. Federal legislation to require this is under consideration, Dr. Brady said.

**Electronic assistance.** Because he has been asked to help with in-flight emer-

gencies on several trips, Dr. Blomquist said that he has downloaded electronic versions of medical references to his smartphone. “I travel with several iPhone apps beyond just the *Wills Eye Manual*. I have several free apps, including the *Merck Manual*, *Epocrates*, *Outlines in Clinical Medicine*, the *Physician’s Desk Reference*, drug interaction tables, and a nice little app from Memorial Sloan Kettering called *About Herbs*, so you can also know about the interactions with herbal medications that a patient may be on,” he said. And he recently added a PDF copy of Dr. Brady’s review paper<sup>1</sup> to this collection of smartphone references.

**Ground-based assistance.** Typically, a flight attendant relays information about the patient’s condition to the plane’s pilot, who in turn might radio for advice from a ground-based medical consultant, Dr. Brady said. The consultant also can give treatment advice to the volunteer

physician, if requested, and guide the decision whether to divert the airplane, and can organize the medical response on the ground.

**Diversion to a nearby airport.** In the most critical emergencies, the pilot may ask the volunteer physician for a recommendation about diverting the plane to the nearest airport, to allow hospital treatment. However, the final decision about diversion belongs to the pilot.

### Treatment Options

**Cardiac-related symptoms.** More than half of the patients who require medical assistance during a flight are suffering from cardiac symptoms (8%), respiratory symptoms (12%), or syncope/presyncope (37%), Dr. Brady reported in his *NEJM* article.<sup>1</sup>

Aspirin or nitroglycerin pills in the medical kit might be an appropriate intervention for some patients, but they

should be used cautiously, the review warned. In cases of syncope or presyncope, laying the patient down in the aisle with feet elevated might be sufficient, but persistent hypotension might require intravenous fluids (from the medical kit).

**Other emergencies.** Less commonly, aircraft passengers require assistance due to seizures and postictal states (5.8%), psychiatric issues (3.5%), stroke (2%), and complications from diabetes (1.6%), Dr. Brady and his coauthors wrote.

**Minimal medical kits.** Onboard treatment options are limited. For instance, the dextrose that is supplied in the medical kit can be used to treat hypoglycemia, but only empirically—because the kits do not contain a glucometer. And in psychiatric cases in which the passenger cannot be calmed, improvised restraints might be required to prevent physical injuries, because the medical kit contains no sedatives. *Continued page 16*

### PUT TO THE TEST

## Members Called to Duty

### Thomas A. Weingeist, MD, PhD

I have been on a number of flights where the crew has asked for medical assistance. I usually wait to respond, but then offer assistance. The last time when I came to help, an ICU nurse was already talking with the patient and I—partly joking and partly seriously—told her that she could probably handle this better than I. We both took over care of the patient and gave



him oxygen. Because our patient was not in need of cardiac or respiratory assistance, we told the flight attendants we would watch him for the next hour of our flight but that they should advise the pilots to have EMTs available at the gate when we arrived at the Sea-Tac airport.

Everyone remained calm and seated until the patient was taken off the plane. Nothing heroic was needed except to keep people calm. The airlines and passengers were happy to avoid the cost and inconvenience of an emergency landing.

I know ophthalmologists who carry small bags with instruments and have come to the aid of patients on trans-Atlantic flights. Don’t expect thanks from the airline, though—I didn’t receive any. (Though I do still treasure the look on the flight attendant’s face after our initial conversation. When I stood up to help, she asked me if I was a real doctor. I couldn’t help myself and said, “No, but I play one on TV,” as I handed her my emeritus professor business card from the University of Iowa.) We are, after all, Eye M.D.s.

### Philip Lempert, MD

Several years ago, I was on a flight reading a *JAMA* report on artificial mitral valve fractures when a flight attendant came running down the aisle calling for a doctor. A disheveled young man, deeply cyanotic, was lying face down on the floor in front of the bathroom. An ER nurse and I knelt and were moving him onto his back when a woman ran up behind us. In a loud voice, she said, “I’m his wife, and before you get started you should know that he’s a lawyer and hates doctors.”



My assumption was that she was distraught when the large irregular scar on the center of his chest became visible. The thought that he had a cracked mitral valve flashed through my mind. We had started CPR and he was less cyanotic and was sputtering.

“Do you have an artificial heart valve?” I asked.

“No,” he said forcefully.

“What is the scar on your chest from?”

“Oh, that. The doctor didn’t know what he was doing!”

“What do you mean?”

By this time, our patient was more animated, and the other passengers were staring at us.

“I was skating on a pond when I was a boy and fell through the ice. It took 20 minutes to get me out, and by the time I got to a hospital there was no pulse or blood pressure. The first doctor who saw me did everything wrong.”

“What did he do wrong?”

“He opened my chest and massaged my heart. He could have done closed chest massage!” he hissed emphatically through his clenched teeth.

By this time the nurse and I were edging away and considering which false names we would give him. It turned out that he had an upper respiratory infection. The combination of that cold, with reduced oxygen level in the plane’s cabin, and urinating caused postural hypotension and his collapse.

The lessons that might be derived from this experience are the following:

- The idea of privacy while kneeling over a patient in the aisle of a plane with dozens of people trying to see what you are doing is a nice, but entirely unrealistic, goal.
- Don’t expect gratitude, or even appreciation, from the patient. The grateful individuals are usually the flight crew and the people who will not be delayed by a medical emergency landing.
- Despite this, we, as physicians, have a moral obligation to assist to the best of our abilities.

### David K. Emmel, MD

Thirty years ago, I was flying out of LAX on the red-eye and was delayed 2 hours before boarding and 2 hours on the tarmac waiting for clearance. Shortly after takeoff and a quick meal—they served them in those days—I was thinking only about sleep when I heard the announcement “Is there a doctor on the plane?” It was a 747, and, yes, I was the only physician or health care provider on board!



I was led to the back of the plane by a very frightened flight attendant to find a nicely dressed middle-aged man, rigid and straight as a board, wedged in his seat in the very last row.

It is hard to recall my precise thought process 30 years later, but it is not hard to remember that I was pretty terrified. The gentleman could not speak, but there was a briefcase under his feet, and inside I found a vial of insulin and syringes. He must have administered insulin in the airport anticipating a meal shortly after boarding. There were no medical kits on planes in those days; no stethoscopes or blood pressure cuffs, let alone defibrillators; and certainly no dextrose solution. Oral was out of the question, so my treatment options were limited to recommending an emergency landing. Minutes after landing, my “patient” was awake and alert and no doubt wondering what he was doing in an ambulance on the way to an ER in St. Louis.

Thirty years later and 30 minutes after leaving AAO 2015 in Las Vegas, I heard the same announcement—thankfully, this time I was not alone.

**AzaSITE**<sup>®</sup>  
(azithromycin ophthalmic solution) 1%

**NOW! In stock and  
widely available**

**FREE  
PRODUCT  
SAMPLES**



Stop by AAO 2016  
**AKORN**  
**BOOTH #1503**

**A one-size-fits-many treatment: oxygen.** Supplemental oxygen is available on airplanes, and it can be used empirically to ease symptoms for patients with a variety of conditions, Dr. Brady and his coauthors wrote. These include cardiac-related symptoms, syncope, stroke, dyspnea, and other conditions that cause respiratory compromise.

### CPR: A-B-C to C-A-B

In 2010, the American Heart Association (AHA) changed its CPR recommendations from A-B-C (airway-breathing-compressions) to C-A-B, and the 2015 AHA Guidelines Update upheld this change.

**The rationale.** In the Highlights of the 2010 American Heart Association Guidelines for CPR and ECC, the AHA states, “The vast majority of cardiac arrests occur in adults, and the highest survival rates from cardiac arrest are reported among patients of all ages who have a witnessed arrest and an initial rhythm of ventricular fibrillation (VF) or pulseless ventricular tachycardia (VT). In these patients, the critical initial elements of BLS [basic life support] are chest compressions and early defibrillation. In the A-B-C sequence, chest compressions are often delayed while the responder opens the airway to give mouth-to-mouth breaths, retrieves a barrier device, or gathers and assembles ventilation equipment. By changing the sequence to C-A-B, chest compressions will be initiated sooner and the delay in ventilation should be minimal (i.e., only the time required to deliver the first cycle of 30 chest compressions, or approximately 18 seconds; when 2 rescuers are present for resuscitation of the infant or child, the delay will be even shorter). Most victims of out-of-hospital cardiac arrest do not receive any bystander CPR. There are probably many reasons for this, but one impediment may be the A-B-C sequence, which starts with the procedures that rescuers find most difficult, namely, opening the airway and delivering breaths. Starting with chest compressions might encourage more rescuers to begin CPR.”

Although data are lacking as to whether this change increases the chances of survival compared to A-B-C, evidence does show that the revised C-A-B approach results in reducing the window of time to the first chest compression.

### “Doctors on Board” Programs

Some airlines reward doctors for volunteering their services with special discounts. Lufthansa, for example, provides the following items if you sign up to be called upon in a crisis:

- 5,000 “Miles & More” (a European frequent flier program) award miles.
- A copy of the *Handbook of Aviation Medicine and Inflight Medical Emergencies*.

- A “Doctor on Board” luggage label.
- A one-time promotion code worth 50 euros toward the physician’s next flight on Lufthansa.
- Special promotions and discounts.
- The opportunity to attend a course

offered by Lufthansa’s Medical Service in cooperation with the German Academy for Aviation Medicine. The course does offer CME credit, but there is a fee to attend.

Be sure to check with your preferred

airline to see if they offer a similar program.

1 Nable JV et al. *N Engl J Med*. 2015;373(10):939-945.

2 Peterson DC et al. *N Engl J Med*. 2013;368(22):2075-2083.

## Emergency Medical Kits

The FAA, which stipulates the medical supplies that airliners must have on board, last updated its regulations in 2001 to mandate that the majority of U.S.-registered commercial aircraft carry AEDs, which may be used to shock the heart back into a normal rhythm, and that some additional medications and equipment be added to the medical kits. The required medications include: a non-narcotic pain killer; IV fluids for dehydration or low blood pressure; an antihistamine to treat allergic reactions; an inhaler for asthma; aspirin and nitroglycerin for a heart attack; IV dextrose for low blood sugar; epinephrine for allergic reactions or asthma; and epinephrine, atropine, and lidocaine as an adjunct to CPR. The kits must also contain a stethoscope and a manual blood pressure cuff as well as some other supplies. Other items may be available as well, depending on the airline.

SOURCE: Nable JV et al. *N Engl J Med*. 2015;373(10):939-945, based on FAA requirements for all commercial airliners in the United States.

## Case Study in Medical Kits: Southwest Airlines

In addition to a first aid kit, Southwest carries a variety of kits to serve many different kinds of emergencies.

**Fast response kit.** This contains tools and supplies needed to prepare a victim for AED pad application and personal protection:

- 2 pairs high-risk gloves
- 1 CPR mask
- 1 razor
- 1 towel
- 1 pair medical grade scissors

**Emergency medical kit.** For use by medical personnel including MDs, DOs, DDSs, EMTs, PAs, nurses, and paramedics.

Sealed compartment contents:

*IV equipment, yellow bag*

- Syringes (3 sizes)
- Needles (6 in 3 sizes)
- IV tubing
- IV catheters
- Saline solution
- Sharps shuttle
- 1-in. tape
- Tourniquet
- Trauma shears (blunt-tipped)

*Airway, blue bag*

- Oropharyngeal airways
- CPR masks (3 sizes)
- Manual resuscitation device with oxygen tubing

*Medications, orange bag*

- 50% dextrose injection (50 cc)
- Epinephrine (2 in 2 concentrations)
- Acetaminophen tablets
- Diphenhydramine tablets
- Diphenhydramine injectable
- Nitroglycerin tablets
- Lidocaine injectable
- Albuterol inhaler
- Aspirin tablets
- Atropine
- High-risk gloves (pair)

### What You Can Expect

#### Assessment supplies

Sphygmomanometer, stethoscope, gloves

#### Airway and breathing

Oropharyngeal airways, bag-valve masks (3 sizes), CPR masks (3 sizes)

#### Intravenous access

IV administration set, 500 mL saline solution, needles, syringes

#### Medications

Analgesic tablets, non-narcotic; antihistamine tablets; antihistamine, injectable; aspirin; atropine; bronchodilator inhaler; dextrose, 50%; epinephrine, 1:1,000 solution; epinephrine, 1:10,000 solution; intravenous lidocaine; nitroglycerin tablets

Unsealed compartment contents:

- Blood pressure cuff (sphygmomanometer), stethoscope, and antiseptic wipes.

**Cabin clean-up bag.** This zippered, red canvas bag contains the following:

- 4 personal protective equipment kits (see details below)
- 4 syringe tubes (see details below)
- 1 shaker of absorbent powder
- 4 red biohazard waste disposal bags
- 1 WN-1104 *Bloodborne Pathogen Incident/Exposure Quick Reference Guide*

- 5 WN-1202 *Southwest Airlines Bloodborne Pathogen Possible Exposure/Exposure Incident Investigation Forms*
- 5 WN-1203 *Hepatitis B Virus (HBV) Vaccination Acceptance/Declination Statement Forms*

- 2 restraints and removal tool in a sealed orange pouch

**Personal protective equipment kits.** These should be used whenever the potential for splash or spraying of blood and/or bodily fluids exists.

- 1 gown 49 x 80 in.
- 2 pair high-risk gloves, small and large
- 1 eye shield/mask with ear loops
- 4 absorbent pads to wipe up spills
- 2 spill cover pads to cover large spills
- 4 antimicrobial hand wipes
- 1 red biohazard waste disposal bag with tie
- 1 instruction sheet for using items in kit

**Biohazard clean-up kit.** Use this kit to clean up after any incident involving bodily fluids. It contains the following:

- 2 pairs high-risk gloves, small and large
- 1 eye shield/mask with ear loops
- 1 bag absorbent powder
- 1 disposable waste scoop
- surface-disinfectant wipe
- 4 antimicrobial hand wipes
- 1 Sani-Cloth (germicidal wipe)
- 4 absorbent pads
- 1 red biohazard waste disposal bag with tie
- 1 brown waste bag with tie

# Your Colleagues' Experiences With Advocacy

Connect with your lawmakers to help implement change—your colleagues discuss tips and strategies for how to get started and what to expect.

**H**ave you ever wondered whether your advocacy can really make a difference? Surveys show that, in fact, constituents who personally communicate with



Dr. Chavis

their lawmakers are more influential than lobbyists and news editors. Below, your colleagues discuss their experiences and share tips for delivering a pro-ophthalmology message that resonates with legislators and helps create the changes you want to see. Pamela S. Chavis, MD, is a retired neuro-ophthalmologist based in Charleston, S.C., and David M. Lehmann, MD, practices at Ophthalmic Surgeons and Consultants of Ohio at The Eye Center in Columbus, Ohio.



Dr. Lehmann

## Q. Have you always been interested in advocacy and politics?

**Dr. Chavis:** No, not at all—it always seemed remote and not a valuable use of time. What difference could I make?

**Dr. Lehmann:** I have always been interested in politics. I've always enjoyed discussing issues with family and friends, and I've worked on political campaigns in the past. It seemed natural to be involved in the discussions about issues related to ophthalmology.

## Q. What prompted you to get involved in advocacy on behalf of ophthalmology?

**Dr. Chavis:** In Virginia in 2004, an optometry bill expanding optometric scope of practice (HB 856) came into the Virginia Senate after being approved by the House. It appeared to have been funded between one accounting cycle and the next and appeared suddenly. The Virginia Society of Ophthalmology (now Virginia Society of Eye Physicians and Surgeons [VSEPS]) and Cal Whitehead (a lobbyist at the time for VSEPS) were active in dealing with this surprise and

informing ophthalmologists. Dr. Mary Price and I went to many Senate offices and spoke to senators and/or their legislative assistants. Dr. Price brought her model of the eye and explained carefully the intricacies of eye diseases and surgery. The bill was put into the Senate subcommittee on health accordingly.

**Dr. Lehmann:** I had not been active in a structured way on behalf of ophthalmology. I saw the promotions for Congressional Advocacy Day several years ago and it sounded interesting—a way to talk to the decision-makers involved in the legislation affecting our practices.

## Q. What have your experiences been like (good and bad) thus far?

**Dr. Chavis:** On Feb. 19, 2004, I was the designated speaker representing VSEPS and the Medical Society of Virginia at the State of Virginia Senate Subcommittee on Health hearing on the optometry bill that I mentioned. Through this experience, I learned that the political process can work through the personal encounter as well as through formal channels. It was worth every effort to accomplish this. The optometry advocates were informed not to come back for a long time.

**Dr. Lehmann:** My experiences have been uniformly good, and I'm not just saying that. Our representatives seem genuinely interested in what we have to say. They seem to like talking to physicians, as we are a respected profession. You can tell they have a personal stake in our issues. Everybody has his or her own doctor, and everybody has family members who need care.

## Q. What is your philosophy regarding political fundraising and advocacy, and how it has evolved over the years?

**Dr. Chavis:** Initially, it felt awkward to do political fundraising, but it is a political reality. Being involved in advocacy is a no-brainer—which, as a neuro-ophthalmologist, I say carefully!

**Dr. Lehmann:** The representatives I've met got into politics and sought elective office because they were genuinely interested in improving things in the country. They really do want to do the right thing.

I feel strongly about communicating with our legislators. I think it's very



**ADVOCACY IN ACTION.** From left to right: Erica R. Alvarez, MD, Advocacy Ambassador participant; Alexis Mancini, MD; Katherine E. Duncan, MD; Rep. Andy Harris, MD (R-Md.); Mary Louise Z. Collins, MD, Councilor, Maryland Society of Eye Physicians and Surgeons (MSEPS); John T. Thompson, MD, Councilor Emeritus, MSEPS; and Usiwoma E. Abugo, MD.

important to understand that what we are really doing is being advocates for our patients—who are the same people our legislators serve. We are all on the same team. I think all individuals have to decide for themselves about fundraising. It's a political reality that lawmakers have to raise money to campaign. If you have a good representative whose vision you share, it seems a good idea to support his/her reelection.

## Q. How would you address concerns that advocacy actions do not directly impact policy?

**Dr. Chavis:** Our experience in Virginia has been exactly the opposite, due perhaps to our great leadership and mobilization—we were a team.

**Dr. Lehmann:** If by “direct,” you mean someone thinking that they will walk into a meeting and their representative will have an “Aha!” moment and do something dramatic, then they are correct. It's a slow process. Policy is complicated and multifaceted, and changes occur incrementally. As a physician, you can be a trusted resource along the long road of policy making.

## Q. What recommendations would you make to your colleagues who feel they don't have time to get involved?

**Dr. Chavis:** Ophthalmic care and the ability to sustain our practices are always worth the effort. Our continued effort is the gift back to our profession and our patients; we have been blessed to be physicians and ophthalmologists and need to convey this to the next generation of physicians and to our patients,

who trust that they will get great care. There is a well-used expression that “all politics are local”—well, really, all politics have a personal side. It was the informed relationship that we built that carried the day, and it has made me realize that we have to continue this endeavor. The profession that we love depends upon this effort on our part, and the patients that we love deserve the effort.

**Dr. Lehmann:** It sounds glib to say, “You don't have time not to,” but it's true. There are concerned legislators and talented, knowledgeable legislative aides interested in doing what they feel will help the country and their constituents. They need all the information on an issue to make decisions. We can provide that information so they make the best decisions for our patients.

## Q. Do you have any tips for your colleagues on how to establish a relationship with their legislators and their legislators' staff?

**Dr. Chavis:** It is a great personal experience to get to know our representatives. They can be exceptional.

**Dr. Lehmann:** I try to keep in mind the following:

- **Be patient.** These folks and their staff are very busy.
- **Be prepared.** Know the specific issues they are facing, not just the global vision about ophthalmology.
- **Be a resource.** If aides need specific information you don't have, find it for them.
- **Be appreciative.** If the representative has been supportive on an issue, recognize it and thank them.
- **Be active locally.** Once you leave D.C.,



# AAO 2016

In conjunction with APAO  
**INNOVATE**



## Navigate AAO 2016 with the Mobile Meeting Guide at [aao.org/mobile](http://aao.org/mobile)



Supported by Zeiss

Get complete program information, evaluations, exhibitor list, handouts, shuttle schedule and more.

For assistance or questions:

- View tutorial videos at [aao.org/mmg](http://aao.org/mmg)
- Email: [support@apprisor.org](mailto:support@apprisor.org)

Protecting Sight. Empowering Lives.™

## ADVOCACY ADVICE

communication doesn't stop. They are, after all, your local representatives. Stay in touch and participate in functions throughout the year.

• **Be nice.** Talk about the issues, but also talk a little about the common things you share. In general, these are good people who are doing their best. They make a lot of sacrifices, missing time with their families and sacrificing financially as well. Sometimes they won't agree with you, but that's OK. Continue to work with them in a constructive fashion to convey your points, even if that happens next month or next year.

### EVENTS AND RESOURCES AT AAO 2016

Visit the Advocacy desk at the Academy Resource Center (Booth 508) to learn more about the Academy's advocacy efforts, send a letter to Congress, and find out how the Surgical Scope Fund works for you. In addition, the OphthPAC fundraising booth (Grand Concourse, Level 3) will have a Pin Your Politics game. For a \$10 OphthPAC investment, you get one try at pinning the tail on the donkey or the trunk on the elephant for the chance to win a \$250 Visa gift card. Also, be sure to attend the following sessions for insight on how to get involved.

**Fall Council Meeting (Spe14).** Members of the Academy Council (an advisory body to the Board of Trustees) and leaders of ophthalmic state, subspecialty, and specialized interest societies will discuss the latest advocacy news and provide take-home messages and action items during this Council of Advocates session. Members can attend as guests. **When:** Sunday, 11:30 a.m.-5:00 p.m. **Where:** Fairmont Chicago, Imperial Ballroom. **Access:** Register at [aao.org/council](http://aao.org/council).

**Q&A with FDA—CDRH (Spe16).** Have questions about the device approval process? Want to talk about new FDA initiatives? Need answers about the latest news affecting ophthalmic products? Submit your questions to the Academy, and FDA experts will give you the information you need to know! **When:** Sunday, 12:45-1:45 p.m. **Where:** Room N427a. **Access:** Free.

**Resident Training Programs in VA and DOD: Issue and Challenges for the Future (Spe22).** Representatives from the Association of Veterans Affairs Ophthalmologists and the Society of Military Ophthalmologists will discuss issues and challenges facing VA and DOD residency training programs. Discussion topics will include trauma training, expansion of residency positions to improve access to care, and possible opportunities for collaboration between the VA and the DOD. **When:** Monday, 12:45-1:45 p.m. **Where:** Room N427a. **Access:** Free.

### Attend the MYF in 2017

Mid-Year Forum (MYF) is one of the Academy's most significant yearly meetings, bringing the ophthalmology community together to drive change and shape our profession's future. Join your colleagues April 26-29, 2017, in Washington, D.C., to learn about changes that impact how you practice and develop strategies for implementing new programs into your patient-care approach.

**Congressional Advocacy Day (CAD).** Our success as a profession depends on smart legislation. Attend CAD (free to members) on April 27 to help educate Congress about fair Medicare physician payment, regulatory burden reduction, and other policies that affect the way we deliver care.

Learn more at [aao.org/myf](http://aao.org/myf).

## Your Impact: What the Data Show

The Congressional Management Foundation polled congressional staff on which advocacy strategies are most effective in swaying a federal legislator's decisions. The survey found the following:

- **Your efforts stimulate action:** 94% of staffers said that constituent visits to the lawmaker's district office have some or a lot of influence on an undecided member of Congress—more than any other influence group or strategy.
- **Representing your patients turns heads:** 96% said that lawmakers pay attention when a constituent who represents other constituents comes to the table.
- **It can be as easy as an email or a social media post:** 57% said that email and the Internet have made senators and representatives more accountable to their constituents, and 64% think that Facebook is an important way to understand constituents' views.

To view the full survey, visit [www.congressfoundation.org/projects/communicating-with-congress/perceptions-of-citizen-advocacy-on-capitol-hill](http://www.congressfoundation.org/projects/communicating-with-congress/perceptions-of-citizen-advocacy-on-capitol-hill).

**MEET YOUR LAWMAKERS.** Austin Pharo, MD (left), and Sen. William Morgan "Bill" Cassidy, MD (R-La.).



# History of Ophthalmology in the Asia-Pacific

From ancient texts to ophthalmoscopes to couching needles, the Museum of Vision's booth contains 8 display cases of artifacts from all over the Asia-Pacific region.

Visit the Museum of Vision at Booth 704 to see "History of Ophthalmology in the Asia-Pacific," an exhibit about the ancient roots of ophthalmology found in Asia. Because AAO 2016 is held in conjunction with the Asia-Pacific Academy of Ophthalmology, the museum is taking this opportunity to celebrate this unique ophthalmic heritage largely unknown in the West. The exhibit features 8 display cases containing a total of 37 items from India, Japan, China, Sri Lanka, and the Philippines, including the 3 that are highlighted below.

**Check out Monday's history symposium.** Learn more about the fascinating history of ophthalmology in the Asia-Pacific region at "Giants in Asia-Pacific Ophthalmology" (Sym34). Speakers from Australia, China, Japan, and South Korea will discuss ancient practitioners, early modern legends, great discoveries, and

innovations. **When:** Monday, 12:15-1:45 p.m. **Where:** Grand Ballroom S100c. **Access:** Free.

## **Fu's Precious Book of Ophthalmology**

A 17th century depiction of the theories of ophthalmology, this encyclopedic account by Fu Renyu, about whom little is known, contains almost 20,000 characters and was the main reference work in the field from the time it was published in 1644 until well into the 18th century—and it is still in print. The 3 volumes were compiled and edited by Fu's son, Fu Guodong, and his son-in-law, Zhang Wenkai. The books include detailed case studies, practical drawings for 108 eye diseases, and more than 300 prescriptions. Fu begins by describing and illustrating the eye and its components, then depicts several surgical procedures, such as the removal of cataracts.

The book also includes sections on acupuncture (including the elements of wood, fire, earth, metal, and water), moxibustion, cataractopexy (couching) with a golden needle, the 8 regions of the whites of the eyes, the theory of 5 orbiculi, and the relationship between the eyes and Zang-Fu channels and collaterals. Fu also describes eye ointments and medicines that can be used externally.

## **Netsuke**

In earlier centuries, Japanese men and women wore a traditional article of clothing called a *kimono*. Kimonos had no pockets, so the Japanese hung cases or purses called *sagemono* from their belts (known as *obi*). To secure the *sagemono*, small carved toggles, or *netsuke*, were used. Netsuke came in a large variety of shapes and materials, mostly ivory or wood. The 2 parts of the word—"ne" + "tsuke"—mean "root" and



**SPECTACLES CASE, CHINA, 1780.** This spectacles case made of sandalwood with semiprecious stone inlay depicts a scene from the 15th-century book *Three Kingdoms*, by Luo Guanzhong.



**NETSUKE, JAPAN, 19TH CENTURY.** The netsuke in the Museum of Vision's collection all have one thing in common: eyeglasses.

"to attach." While these fasteners began as utilitarian and functional objects, they evolved over time to become artistic creations with remarkable craftsmanship, including elaborate carving and lacquering using exotic and rare materials such as coral, whale bone, and tiger teeth. Netsuke can include mundane objects from daily life, such as the one pictured, or even depictions of gods, myths, and religious symbols. Toward the end of the 19th century, netsuke use began to decline as Japanese people began to make the transition to Western clothing. However, netsuke production continued—and it continues today—as they are viewed as valuable works of art around the world.

## **Spectacle Case: Three Kingdoms**

*Three Kingdoms*, by Luo Guanzhong, is an epic novel of classical Chinese culture. This historical and also mythical story is set in the volatile years in the waning of the Han dynasty and ends with the reunification of the country in 280 CE. The tale describes hundreds of characters but focuses mainly on the 3 kingdoms vying

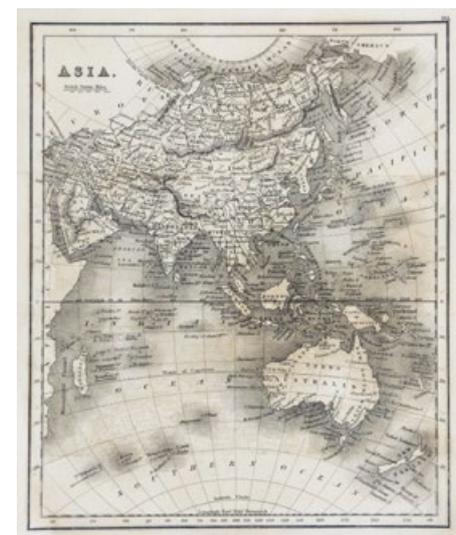
for control of China during this turbulent time. The novel spans almost 100 years and details personal plots, military battles, and more during this tripartite struggle. *Three Kingdoms* contains 800,000 words and 120 chapters, and it has been named one of the Four Great Classical Novels of Chinese literature—indeed, its regional influence has been compared to that of Shakespeare. On this spectacles case, the character Ju-Gurliang is treading through the snow in pursuit of the plum flower. Attached to the case are rust-colored tassels, a small carved Buddha, a stone bead, and an endless knot, which is one of 8 significant Buddhist symbols along with the conch, fish, lotus, parasol, vase, dharmachakra, and victory banner.

## **Did You Know?**

- *Sushruta Samhita*, written by Maharshi Sushruta in 600 BCE India, includes the world's first description of cataract surgery.
- The first medical school in China was established by the T'ang Dynasty in 624 CE.
- An archeological site in Sri Lanka dating to 800 CE holds the world's oldest evidence of a hospital.
- The Majima School of Ophthalmology in Japan, founded in 1357, kept its teachings a secret, letting students copy only 1 scroll as a memory device.



**FUSHI YANKE SHENSHI YAOHAN (FU'S PRECIOUS BOOK OF OPHTHALMOLOGY), CHINA, 1644.** This illustration is from a 3-book set from the Ming Dynasty that includes diagnoses for 108 eye diseases along with both surgical and nonsurgical treatment options.



# Devices, PACS, and DICOM Compliance: What You Need to Know

Looking for a new OCT or scanning laser ophthalmoscope? Consider a DICOM-compliant model.

**E**lectronic health record (EHR) and image management systems must receive data from digital imaging devices, such as OCT, corneal topographers, and fundus cameras. In the past, device vendors used proprietary formats for the exchange of this informa-

tion. Now a single, common standard is becoming more important with the proliferation of imaging devices and the necessity of transferring imaging data to EHRs—not to mention to the correct patient record. A standard called Digital Imaging and Communications in Medi-

cine (DICOM) allows for this exchange.

Any practice that uses an EHR or image management system will want to be sure that future purchases of digital imaging equipment conform to the DICOM standard. (For more about EHRs, see “IRIS Registry—Compatible EHRs,” in the *Friday Academy News*.)

**The table.** The Academy contacted vendors of imaging devices and PACS (picture archiving and communication

systems) that had completed their Virtual Exhibition company information by mid-June in order to conduct a survey of DICOM compliance for imaging devices. The results of this survey are reported below.

**See how it works.** Sponsored by the Academy with help from Carl Zeiss Meditec, The Electronic Office (Booth 121) shows how EHR and digital imaging systems can easily communicate and how

COMPANY NAME	CANON				CARL ZEISS MEDITEC							
Booth number	3803				3826							
PRODUCT NAME AND VERSION	Image-Spectrum (v5.x)	RICS (v4.x)	RK-F2	TX-20	ATLAS 9000 (v3.0)	CIRRUS HD-OCT 5000 and 500	CIRRUS Photo 600 and 800 (v2.0)	FF450 <sup>plus</sup> with VISUPAC <sup>†</sup> (v4.5)	FORUM (v4.1)	Humphrey Field Analyzer 3 (HFA3) (v1.3)	Humphrey Field Analyzer - HFA II-i Series (v5.1)	
Conforms to DICOM standards and IHE profiles for ordering ophthalmic imaging and measurement studies. Supports the automated input of patient demographics (i.e., DICOM Modality Worklist as defined by IHE Basic Eye Care Workflow)	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	
Documents completion and interpretation of ophthalmic imaging and measurement studies (i.e., DICOM Modality Performed Procedure Step [MPPS] and Storage Commitment as defined by IHE Eye Care Advanced Workflow)	Y (Storage Commitment), N (MPPS)	N (Storage Commitment), Y (MPPS)	N	N	N	Y (Storage Commitment except for EPDF Storage)	Y (Storage Commitment)	N	Y (Storage Commitment)	Y (Storage Commitment)	Y (Storage Commitment)	
<b>Implements the following DICOM Storage SOP Classes:</b>												
Secondary Capture	Y	Y	N	N	Y	N	Y	N/A	Y	N/A	N/A	
Encapsulated PDF	N	N	N	N	Y	Y	Y	N/A	Y	Y	Y	
Ultrasound Image	N	N	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	
Fundus Photography Image	Y	Y	N/A	N/A	N	Y	Y	Y	Y	N	N/A	
Ophthalmic Coherence Tomography Image	N	N/A	N/A	N/A	N/A	Y	P	N/A	Y	N/A	N/A	
Macular Grid Thickness and Volume Report	N*	N/A	N/A	N/A	N/A	N	N	N/A	Y	N/A	N/A	
Axial Measurements (Biometry)	N	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	N/A	N/A	
Visual Field—Static Perimetry Measurements	N*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	N	
Ophthalmic Thickness Map	N*	N/A	N/A	N/A	N/A	N	N	N/A	P	N/A	N/A	
Corneal Topography Map	N*	N/A	N/A	N/A	N	N/A	N/A	N/A	P	N/A	N/A	
Wide-Field Ophthalmic Photography Image	N	N/A	NR	NR	N/A	N	N	N	P	N/A	N/A	

Y=Yes, currently includes this feature; P=plans to include this feature (and date of expected inclusion, if available); N=No, does not include this feature, and there are no immediate plans to include it; N/A=not applicable; NR=no response. \* Captures printed report directly. † Implements DICOM Supplement 15: Visible Light Photography. ‡ Additional charges may apply. § Alpha D III Non-Mydriatic Color



they can exchange data and images. This data exchange helps with the consistent handling of patient identifiers across different systems, from patient registration to appointment scheduling and beyond. DICOM automation of workflow can be used in different practice settings, regardless of whether you have an image

management system or whether your EHR supports the standard. Be sure to stop by for a demo!

**Ask vendors about patient privacy.** When talking with vendors of imaging device and PACS products, be sure to ask about their policies for securing PHI (protected health information). Do

they comply with HIPAA regulations? Priorities include system security, access control, auditing of user access, and use of data encryption when transmitting images over the Internet.

**Visit the Virtual Exhibition.** Find the most up-to-date list of exhibitors who have self-identified as “Digital Imaging,” “Imaging,” “Imaging Systems,” or “Image Management System (PACS)” at [aao.org/virtualexhibition](http://aao.org/virtualexhibition).

**IHE Eye Care Connectathon and Showcase.** The Academy thanks Marco, Carl Zeiss Meditec, and Topcon for their participation in the 2016 IHE Eye Care Connectathon.

**DISCLAIMER:** All information and claims are those of the vendors and have not been verified, nor does the appearance of the product constitute an endorsement of the company or product by the American Academy of Ophthalmology, *EyeNet Magazine*, or *Academy News*.

TABLE CONTINUES ON NEXT PAGE

								CLARITY MEDICAL SYSTEMS	HAAG-STREIT DIAGNOSTICS			HEIDELBERG ENGINEERING	KOWA AMERICAN
								2335	2319			2344	2303
Humphrey Matrix 800 (v8.02)	IOLMaster 500 (v7.7)	IOLMaster 700 (v1.50)	VISUCAM Models 224 and 524 (v6.0)	VISU-CONNECT 500 (v1.1.1)	VISUSCREEN 100/500 (v2.4.1.18)	VISUSCOUT 100 With VISUSCOUT Viewing Software† (v4.05)		Retcam3, Retcam Shuttle	LENSTAR LS 900 (i8.1.x.x)	OCTOPUS 600 (i8.1.x.x), OCTOPUS 900 (i8.1.x.x)	Slit Lamp Imaging Module IM 600/900 (i8.1.x.x)	Spectralis OCT (v5.4 and higher)	Myd and NonMyd Cameras <sup>5</sup>
Y	Y	Y	Y	Y	Y	Y	N	Y (but no procedure comments)	Y	Y	Y	Y	Y
N	N	Y (Storage Commitment)	N	N	Y (Storage Commitment)	N	N	N	N	N	N	P (2016/2017)	Y
N/A	Y	N/A	N/A	N/A	N/A	N	Y	Y	Y	Y	Y	P (2016/2017)	NR
Y	Y	Y	N/A	Y	N/A	N/A	N	Y	Y	Y	Y	Y	Y
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	Y	N/A	N/A	Y	N	N/A	N/A	N/A	N/A	Y	Y
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	N
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N	P	N/A	N/A	N/A	N/A	N	N	N/A	N/A	N/A	N/A	NR
N	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N	N/A	N/A	N/A	N/A	N	N/A	N/A	N/A	N/A	N/A	NR
N/A	N	N	NR	N/A	N/A	N/A	Y	N/A	N/A	N/A	N	N/A	N

Fundus Camera; Genesis D Hand-Held Color Mydriatic Fundus Camera; Genesis Df Hand-Held Color Mydriatic Fundus Camera with Fluorescein Angiography; NonMyd 7 Non-Mydriatic Color Fundus Camera; VX-10 Mydriatic Color and Fluorescein Angiography Camera; VX-20 Mydriatic and Non-Mydriatic Color and Fluorescein Angiography Camera with Fundus Autofluorescence; WX-3D Non-Mydriatic Color Fundus Camera Simultaneous Stereo. **Data current as of June 17, 2016.**

EXHIBIT  
IMAGING VENDORS

COMPANY NAME	MARCO OPHTHALMIC						NIDEK				OCULUS
Booth number	2326						3836				3844
PRODUCT NAME AND VERSION	ARK-1 Series Auto Ref/K <sup>++</sup>	AFC-330 Fundus Camera <sup>++</sup>	LM-600 and LM-1800 Series Lensmeters <sup>++</sup>	NT-510 NCT and M3/Tonoref II AutoRef/K/NCT <sup>++</sup>	OPD-III Wavefront Aberrometer <sup>++</sup>	RT-3100/5100 Digital Refractors <sup>++</sup>	AFC-330 Non-Myd Camera	F-10 Scanning Laser Ophthalmoscope	RS 3000 Advance	US 500, US 4000, and US-4000 AB Echo Scan	Pentacam (v1.17)
Conforms to DICOM standards and IHE profiles for ordering ophthalmic imaging and measurement studies. Supports the automated input of patient demographics (i.e., DICOM Modality Worklist as defined by IHE Basic Eye Care Workflow)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Documents completion and interpretation of ophthalmic imaging and measurement studies (i.e., DICOM Modality Performed Procedure Step [MPPS] and Storage Commitment as defined by IHE Eye Care Advanced Workflow)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
<b>Implements the following DICOM Storage SOP Classes:</b>											
Secondary Capture	N/A	N/A	N/A	N/A	N/A	N/A	Y	Y	Y	Y	Y
Encapsulated PDF	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Ultrasound Image	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NR	Y	N/A
Fundus Photography Image	N/A	Y	N/A	N/A	N/A	N/A	Y	Y	NR	N/A	N
Ophthalmic Coherence Tomography Image	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Y	N/A	N
Macular Grid Thickness and Volume Report	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NR	N/A	N/A
Axial Measurements (Biometry)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NR	N/A	N/A
Visual Field—Static Perimetry Measurements	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NR	N/A	N/A
Ophthalmic Thickness Map	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	NR	N/A	N
Corneal Topography Map	N/A	N/A	N/A	N/A	Y	N/A	N/A	N/A	NR	N/A	N
Wide-Field Ophthalmic Photography Image	N/A	N/A	N/A	N/A	N/A	N/A	NR	NR	NR	NR	N/A

OPTOS		OPTOVUE		PHOENIX CLINICAL	QUANTEL MEDICAL	TOPCON								VISBION	ZIEMER
3355		944		1671	1439	3144								NA	1445
California	Daytona	AngioVue, Avanti, iScan, iVue, and RTVue SD-OCT	iCam NonMyd Fundus Camera	ICON	Aviso (5.00)/Aviso S (5.01)	3DOCT-2000 and 3DOCT-1 Fastmap	EZ-Lite 2	IMAGE-net 5	IMAGE-net 6	IMAGE-net Connect	SP-1P	Synergy ODM	TRC-NW400	O-PACS	Galilei Dual Scheimpflug Analyzer
Y	Y	Y	Y	P (12/16)	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y
N	N	N	N	P (12/16)	Y	N	P (2017)	Y	N	P (2017)	P (2017)	P (2017)	Y	Y	Y
Y	Y	Y	Y	Y	NR	N	Y	Y	N	Y	Y	Y	Y	Y	Y
Y	Y	P (07/17)	P (07/17)	N	NR	Y	P (2017)	N	P (2017)	Y	N	Y	N	Y	Y
N/A	N/A	N/A	N/A	N	Y	N/A	N/A	N/A	N	Y	N/A	Y	N/A	Y	N/A
Y	Y	P (07/17)	P (07/17)	Y	NR	Y	Y	Y	P (2017)	Y	N	Y	Y	Y	N/A
Y	Y	P (07/17)	N/A	N	NR	Y	N/A	N/A	P (2017)	Y	N/A	Y	N/A	Y	N
N/A	N/A	N	N/A	N	Y	N/A	N/A	N/A	N/A	N	N/A	P (2017)	N/A	Y	N/A
N/A	N/A	N/A	N/A	N	NR	N/A	N/A	N/A	N/A	N	N/A	P (2017)	N/A	Y	N
N/A	N/A	N/A	N/A	N	NR	N/A	N/A	N/A	N/A	N	N/A	P (2017)	N/A	Y	N/A
N/A	N/A	N	N/A	N	NR	N/A	N/A	N/A	N/A	N	N/A	P (2017)	N/A	Y	N
N/A	N/A	N/A	N/A	N	NR	N/A	N/A	N/A	N/A	N	N/A	P (2017)	N/A	Y	N
Y	Y	N/A	N/A	Y	NR	N/A	N/A	N	N	N	N/A	P (2017)	N/A	Y	N/A

†† Requires MarcoConnect software with DICOM option enabled. Data current as of June 17, 2016.

## From Academia to the Clinic 11 Eminent Speakers Preview Their Talks

**W**hat's the buzz among neuro-ophthalmologists? What makes the oculoplastics specialists tick? Whether you want a window into your colleagues' subspecialties or quick updates in your own field, consider attending an honorary lecture. They are easy to fit into your schedule, as they are usually about 15 to 35 minutes long. Eleven of these lectures, as described by the distinguished lecturers themselves, are highlighted below, and 10 more were featured on pages 24 and 25 of the Friday *Academy News*.

### SUNDAY, Oct. 16

#### MICROBIOLOGY

**Jones/Smolin Lecture: *Trachoma, From Control to Eradication***, presented by Thomas M. Lietman, MD.

**When:** Sunday, 4:49-5:09 p.m., during Sym18, *Rethinking the Ophthalmologist's Approach to Inflammatory Diseases of the Ocular Surface*.

**Where:** Room E450.

"Only a single human infectious disease, smallpox, has been eradicated by a public health program—we're now on the verge of eradicating several. Two of these are eye diseases: trachoma and river blindness. Trachoma was once the leading cause of blindness worldwide. While the last active case in the United States was in the 1970s, the disease remains endemic in areas of sub-Saharan Africa, such as Ethiopia.



Programmatic efforts have been geared just to control blinding trachoma, but scientific studies suggest that eradication is feasible."

*Rethinking the Ophthalmologist's Approach to Inflammatory Diseases of the Ocular Surface (3:45-5:14 p.m.)* is cosponsored by the Ocular Microbiology and Immunology Group.

#### MEDICAL EDUCATION

**Straatsma Lecture: *Career Choices in Ophthalmology***, presented by Steven J. Gedde, MD.

**When:** Sunday, 4:32-4:52 p.m., during Sym17, *Mentoring Educational Leaders*. **Where:** E350.

"Several interesting trends have developed in ophthalmology. The proportion of graduating residents pursuing fellowship training has steadily increased. Differences in the level of compensation have emerged relating to subspecialty type. Geographic variation exists in the number of ophthalmologists per capita.



"Physicians-in-training are confronted with a series of choices that direct them down a specific career pathway. This lecture will explore factors influencing career decisions among ophthalmologists. Understanding trends in ophthalmology and determinants of career choices may prove useful in establishing workforce planning strategies to meet future eye care needs."

*Mentoring Educational Leaders (3:45-5:15 p.m.)* is cosponsored by the Association of University Professors of Ophthalmology.

**Excellence in Medical Student Education Lecture: *Inspiring Learners to Learn***, presented by Rukhsana G. Mirza, MD

**When:** Sunday, 4:52-5:12 p.m., during Sym17, *Mentoring Educational Leaders*.

**Where:** E350.

"Medicine is changing so rapidly that our role as educators is to create a framework for learning. We must inspire our students to bridge gaps of knowledge. We need to teach them to think beyond what is current, to look up relevant trials, and to ask important questions that will take us to the next level. We need to start with a solid framework of core knowledge and utilize interactive teaching techniques. We must embrace new technology such as simulation that may provide a platform for learning complicated concepts faster and asynchronously. Finally, we need to be effective mentors and advisors to guide students to maximize their potential. We are lucky to be in a role to affect the educational journey of the next generation of doctors. We are ambassadors of such an exciting specialty that is so impactful on quality of life. Our goal is to make ophthalmology relevant for all medical students. This is good for our students, our specialty, and medicine as a whole."



*Mentoring Educational Leaders (3:45-5:15 p.m.)* is cosponsored by the Association of University Professors of Ophthalmology.

### MONDAY, Oct. 17

#### ORGANIZED MEDICINE

**Parker Heath Lecture: *Assessing Late Stage Physicians, the State of the Art***, presented by Stephen R. Permut, MD, JD.

**When:** Monday, 9:19-9:44 a.m., during Sym23, *The Evolving Regulatory, Clinical and Legal Environment for Assessing Late Career and Senior Ophthalmologists*.

**Where:** Grand Ballroom S100c.

"The current state of the evaluation of the aging physician will be discussed. There are still no clear answers, and many concepts are in conflict: 1) There are legitimate concerns about discriminatory regulatory policies and procedures. 2) Any remediation should be supportive, ongoing, and proactive. 3) Research suggests that physician com-



petence, practice performance, manual dexterity, and visuospatial ability decline with age, but there are wide variations. 4) Physicians 65 and older are an essential part of the physician workforce, particularly in light of an impending/existing physician shortage. 5) There are a limited number of valid tools for measuring competence or practice performance. 6) It is difficult to demonstrate an association between neurocognitive testing, competence, and practice performance. 7) Some attributes needed to deliver quality health care—wisdom, resilience, compassion, tolerance of stress—may increase with aging."

*The Evolving Regulatory, Clinical, and Legal Environment for Assessing Late Career and Senior Ophthalmologists (8:30-10:00 a.m.)* is cosponsored by the American Medical Association Ophthalmology Section Council.

#### GLAUCOMA

**Robert N. Schaffer Lecture: *Glaucoma Population Management***, presented by George A. Cioffi, MD.

**When:** Monday, 9:34-9:59 a.m., during Sym31, *The Virtual and Mobile Glaucoma Office*.

**Where:** Grand Ballroom S100ab.

"Given the population growth, particularly among high-risk groups, there is a global increase in the burden of glaucoma. When coupled with stagnant numbers of caregivers, this issue is amplified. These factors have challenged traditional care models for both those at risk and those afflicted. Potential solutions include risk-targeted screening, telemedicine, and other novel delivery approaches, as well as preventive medicine strategies. As traditional approaches have fallen short of addressing the current challenges, the ophthalmic community must develop new solutions. By proposing and testing new diagnostic and therapeutic models, we can collectively provide better care for our patients."

*The Virtual and Mobile Glaucoma Office (8:30-10:00 a.m.)* is cosponsored by Prevent Blindness America.



#### PROFESSIONALISM AND ETHICS

**Dr. Allan Jensen & Claire Jensen Lecture: *Ophthalmology Took a Stand!*** presented by Alfred Sommer, MD, MHS.

**When:** Monday, 10:20-10:45 a.m., during Sym28, *Dr. Allan Jensen & Claire Jensen Lecture in Professionalism and Ethics*.

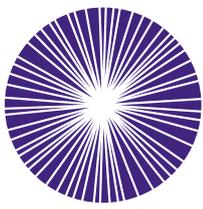
### EyeCare America: A Reception for Volunteers

EyeCare America (ECA), the largest public service program in American medicine, has helped more than 1.8 million people since its inception in 1985. As a thank-you to its 6,000 volunteers, ECA will be hosting its 2nd annual Volunteer Recognition Reception. Invitations were sent to all ECA volunteers (use the invitation as your ticket for entry). Network with colleagues, enjoy nibbles and libations, and leave with a special recognition gift. **When:** Sunday, 3:00-5:00 p.m. **Where:** Museum of Vision, Booth 704.

**To volunteer or support the program**, stop by the ECA table at the Resource Center (Booth 508), visit [aao.org/eyecare-america](http://aao.org/eyecare-america), or send an email to [eyecareamerica@aao.org](mailto:eyecareamerica@aao.org).

**THANK YOU.** The reception is open to all ECA volunteers.





AMERICAN ACADEMY™  
OF OPHTHALMOLOGY

## Enjoy AAO 2016 All Year-Round

AAO 2016 Meetings  
on Demand

## SAVE 10%

When you purchase this  
product during AAO 2016

- Academy Resource Center,  
Booth 508
- Grand Concourse



View your favorite presentations again or see what you missed with AAO 2016 Meetings on Demand.

Watch full-motion videos featuring live audio and screen capture – on your own schedule, from any location, and on your PC, Mac or mobile device.

Choose just the individual Subspecialty Day meetings or AAOE Program you're most interested in, or save when you buy the complete package, which includes highlights from AAO 2016.

[aao.org/store](http://aao.org/store)

PROGRAM  
NAMED LECTURES

**Where:** Room S406a.

“Medical school and residency taught us our clinical skills, to the degree they were modern at the time. If we were both lucky and observant, we also learned the ‘art’ of caring for patients in an ethical and professional manner. But my generation quickly experienced the shock of the real world—not all our brethren were both ethical and professional. The Academy responded to our concerns and recognized the need to police our own ‘house.’ The third annual Jensen Lecture will focus on how the Academy created crucial bulwarks for self-regulation that support the profession and protect the best interests of patients.”



*Dr. Allan Jensen & Claire Jensen Lecture in Professionalism and Ethics (10:15-11:15 a.m.)*

**CATARACT**

**Charles D. Kelman Lecture: The Next Big Thing?** presented by Roger F. Steinert, MD.



**When:** Monday, 11:40 a.m.-12:15 p.m., during Spo2, *Spotlight on Cataract: Complicated Phaco Cases—My Top 5 Pearls.*  
**Where:** North, Hall B.

“The future of refractive and cataract surgery has been placed on a brief hold. Interesting concepts seem to come along but are too often swallowed up in the valley of regulation and cost. Why is this? And how can we make it easier for new technologies and concepts to emerge and be fruitful? Some hints of progress are emerging as government, private industry, and physicians recognize the problem and the need for collaboration to allow new technologies and concepts to grow and succeed. Several examples of new and exciting concepts will be examined in my lecture.”

*Spotlight on Cataract: Complicated Phaco Cases—My Top 5 Pearls (8:15 a.m.-12:15 p.m.)*

**NEW! UVEITIS AND IMMUNOLOGY**

**C. Stephen and Frances Foster Lecture: Immunosuppression for the Uveitides: Current Status and Future Directions,** presented by Douglas A. Jabs, MD, MBA.

**When:** Monday, 12:50-1:15 p.m., during Sym35, *C. Stephen and Frances Foster Lecture on Uveitis and Immunology.*  
**Where:** Room S406a.

“The uveitides are a collection of more than 30 diseases characterized by intra-ocular inflammation. Although a few diseases may have a good prognosis and

not need treatment, the large majority, if untreated, have high rates of visual impairment and blindness.



The more severe uveitides often are chronic diseases, requiring chronic suppressive therapy. Over the past 2 decades, a body of evidence has emerged, demonstrating that systemic immunosuppression can yield superior outcomes for the more severe uveitides and that, when used properly, these drugs can be administered safely. Biologic agents are emerging as an important addition to the therapeutic armamentarium for the uveitides.”

*C. Stephen and Frances Foster Lecture on Uveitis and Immunology (12:45-1:45 p.m.)*

**REFRACTIVE SURGERY**

**Barraquer Lecture: Keratoconus: Progressive Management of a Progressive Disease,** presented by Alaa M. ElDanassoury, MD.

**When:** Monday, 4:55-5:15 p.m., during Sym43, *Therapeutic and Refractive Crosslinking.*  
**Where:** Grand Ballroom S100ab.



“Only 2 decades ago, the treatment options for keratoconus were hard contact lenses and penetrating keratoplasty, with nothing in between. In the late 1990s, modern deep anterior lamellar keratoplasty and intracorneal ring segments presented surgeons with safer and more predictable procedures. Subsequently, the advent of corneal crosslinking preserved vision for thousands of patients, and modern phakic IOLs and customized ablation enabled surgeons to also address visual rehabilitation. Today, with the advances in diagnostics and availability of new, effective techniques, the questions are when is the best time to treat and whether a combined or staged treatment approach is better for a given patient.”

*Therapeutic and Refractive Crosslinking (3:45-5:20 p.m.) is cosponsored by the International Society of Refractive Surgery.*

**TUESDAY, Oct. 18**

**PATHOLOGY/ONCOLOGY**

**Zimmerman Lecture: Changes in Diagnosis and Treatment of Orbital Tumors in 50 Years,** presented by Zeynel A. Karcioglu, MD.

**When:** Tuesday, 9:27-9:57 a.m., during Sym44, *Advances and Update on the Diagnosis and Treatment of Tumors of the Eye and Ocular Adnexa.*



**Where:** Room E450.  
“The diagnosis and management of orbital and adnexal neoplasia continue

to evolve, with advances in diagnostic imaging, molecular pathology, biopsy techniques, and new treatment models of chemotherapy, immunotherapy, surgery, and radiation. Some orbital and peri-orbital tumors have transformed their presentation and their clinical behavior because of the ongoing changes in the global environment and social and epidemiologic occurrences. The effective treatment of orbital tumors depends on accurate diagnosis and proper utilization of new therapeutic methods under ever-changing epigenetic influences. This Zimmerman Lecture offers an ephemeral window to the past developments in orbital tumors, outlines the baseline of our present practice, and forecasts developments in this field over the next decade or so.”

*Advances and Update on the Diagnosis and Treatment of Tumors of the Eye and Ocular Adnexa (8:30-10:00 a.m.) is cosponsored by the American Association of Ophthalmic Oncologists and Pathologists.*

**NEURO-OPHTHALMOLOGY**

**William F. Hoyt Lecture: Can a Unique Little Specialty Show Us Some Per-vasive Issues With the Old and New Models of Health Care Delivery?**

presented by Larry P. Frohman, MD.

**When:** Tuesday, 9:34-9:59 a.m., during Sym47, *Clinical Dilemmas in Neuro-Ophthalmology: Who to Admit and Why?*

**Where:** Room S406a.



“In contradiction to fundamental laws of supply and demand, 2 decades of payment policies have led to some medical specialties being both in short supply and undervalued. This paradox has resulted in increasingly long waits to see some specialties, the specialties become seemingly less attractive, and thus a dearth of new trainees enter the fields.

“Evolving models of health care delivery hold the promise of increasing patient access to most types of health care providers and may diminish costs and improve outcomes for most patients/conditions. However, patients who need care in understaffed fields may, in the future, be unable to locate a specialist with the requisite expertise in their problems. Preventing the sickest and most complex patients from seeing physicians with the most expertise might lead to increased cost and deleterious outcomes—outcomes contrary to the goals of health care reform.

“We will examine the delivery of neuro-ophthalmic care in the United States and overseas to see if we can identify strategies to ensure that patients have access to such specialists in the future.”

*Clinical Dilemmas in Neuro-Ophthalmology: Who to Admit and Why? (8:30-10:00 a.m.) is cosponsored by the North American Neuro-Ophthalmology Society.*

**ETHICS EVENTS**

Get an hour of ethics CME by attending any of the following events.

**An Introduction to Error Disclosure for Ophthalmologists (225).**

**When:** Sunday, 11:30 a.m.-12:30 p.m. **Where:** S403b. **Access:** Academy Plus course pass.

The didactic section of this course discusses current trends toward mandatory error disclosure and summarizes the experiences of providers who have adopted a disclosure culture. Attendees will watch a video of a sample disclosure conversation and then break into small groups for case presentations.

**Expert Witness Survival Skills: Tips and Tools From Ethics Committee**

**Case Reviews (416).** **When:** Monday, 9:00-10:00 a.m. **Where:** S102d. **Access:** Academy Plus course pass.

This course presents practical concepts such as basing testimony on sound scientific principles, avoiding bias, maintaining objectivity, understanding the standard of care, causal relationships, and the distinction between negligence and maloccurrence, among others.

**Dr. Allan Jensen & Claire Jensen Lecture in Professionalism and Ethics (Sym28).**

**When:** Monday, 10:15-11:15 a.m. **Where:** S406a. **Access:** Free.

The Academy’s Preferred Practice Patterns (PPPs) provide guidance for quality eye care in the pattern of practice (as opposed to the care of a particular individual). “Ophthalmology Took a Stand!” given by Alfred Sommer, MD, MHS, looks at the creation of the PPPs, whether the recommendations are being followed, if monitoring is occurring, and how we can assure there is neither unnecessary care nor denial of needed services.

**The Code of Ethics: A Shield in Litigation (525).** **When:** Monday, 4:30-5:30 p.m.

**Where:** S103a. **Access:** Academy Plus course pass.

Using a hypothetical malpractice litigation scenario, this course highlights several components of ethical practice: adequate informed consent, appropriate perioperative care, and compliant advertising practices. The dramatization demonstrates that compliance with the Academy’s Code of Ethics not only benefits your patients and practice but could also prove advantageous or even decisive in your defense against allegations of medical negligence. Ophthalmic Mutual Insurance Company (OMIC) policyholders who attend are eligible for a risk management premium discount. *This session is cosponsored by OMIC.*



## Ophthalmic Squeeze Dispenser

Innovation based on experience

- Multidose System designed for unpreserved formulations
- Unrivalled microbiological safety
- Convenient and intuitive handling

Delivering solutions, shaping the future.



**xiidra**<sup>™</sup>  
(lifitegrast  
ophthalmic solution) 5%

# NIICE TO

**Xiidra improved patient-reported symptoms of eye dryness and improved signs of inferior corneal staining. So help your patients get to know Xiidra.**

**Check it out at [Xiidra-ECP.com](http://Xiidra-ECP.com)**

Four randomized, double-masked, 12-week trials evaluated the efficacy and safety of Xiidra versus vehicle as assessed by improvement in the signs (measured by Inferior Corneal Staining Score) and/or symptoms (measured by Eye Dryness Score) of Dry Eye Disease (N=2133).

The safety of lifitegrast was evaluated in 5 clinical studies. 1401 patients received at least one dose of lifitegrast (1287 of which received Xiidra). The most common adverse reactions (5-25%) were instillation site irritation, dysgeusia, and reduced visual acuity.

# MEET YOU

The only prescription eye drop FDA-approved to treat both the signs and symptoms of Dry Eye Disease

## Indication

Xiidra™ (lifitegrast ophthalmic solution) 5% is indicated for the treatment of signs and symptoms of dry eye disease (DED).

## Important Safety Information

In clinical trials, the most common adverse reactions reported in 5-25% of patients were instillation site irritation, dysgeusia and reduced visual acuity. Other adverse reactions reported in 1% to 5% of the patients were blurred vision, conjunctival hyperemia, eye irritation, headache, increased lacrimation, eye discharge, eye discomfort, eye pruritus and sinusitis.

To avoid the potential for eye injury or contamination of the solution, patients should not touch the tip of the single-use container to their eye or to any surface.

Contact lenses should be removed prior to the administration of Xiidra and may be reinserted 15 minutes following administration.

Safety and efficacy in pediatric patients below the age of 17 years have not been established.

**For additional safety information, see accompanying Brief Summary of Safety Information on the following page and Full Prescribing Information on [Xiidra-ECP.com](http://Xiidra-ECP.com).**



## BRIEF SUMMARY:

Consult the Full Prescribing Information for complete product information.

## INDICATIONS AND USAGE

Xiidra™ (lifitegrast ophthalmic solution) 5% is indicated for the treatment of the signs and symptoms of dry eye disease (DED).

## DOSAGE AND ADMINISTRATION

Instill one drop of Xiidra twice daily (approximately 12 hours apart) into each eye using a single use container. Discard the single use container immediately after using in each eye. Contact lenses should be removed prior to the administration of Xiidra and may be reinserted 15 minutes following administration.

## ADVERSE REACTIONS

### Clinical Trials Experience

Because clinical studies are conducted under widely varying conditions, adverse reaction rates observed in clinical studies of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice. In five clinical studies of dry eye disease conducted with lifitegrast ophthalmic solution, 1401 patients received at least 1 dose of lifitegrast (1287 of which received lifitegrast 5%). The majority of patients (84%) had  $\leq 3$  months of treatment exposure. 170 patients were exposed to lifitegrast for approximately 12 months. The majority of the treated patients were female (77%). The most common adverse reactions reported in 5-25 % of patients were instillation site irritation, dysgeusia and reduced visual acuity. Other adverse reactions reported in 1% to 5% of the patients were blurred vision, conjunctival hyperemia, eye irritation, headache, increased lacrimation, eye discharge, eye discomfort, eye pruritus and sinusitis.

## USE IN SPECIFIC POPULATIONS

### Pregnancy

There are no available data on Xiidra use in pregnant women to inform any drug associated risks. Intravenous (IV) administration of lifitegrast to pregnant rats, from pre-mating through gestation day 17, did not produce teratogenicity at clinically relevant systemic exposures. Intravenous administration of lifitegrast to pregnant rabbits during organogenesis produced an increased incidence of omphalocele at the lowest dose tested, 3 mg/kg/day (400-fold the human plasma exposure at the recommended human ophthalmic dose [RHOD], based on the area under the curve [AUC] level). Since human systemic exposure to lifitegrast following ocular administration of Xiidra at the RHOD is low, the applicability of animal findings to the risk of Xiidra use in humans during pregnancy is unclear.

## Animal Data

Lifitegrast administered daily by intravenous (IV) injection to rats, from pre-mating through gestation day 17, caused an increase in mean preimplantation loss and an increased incidence of several minor skeletal anomalies at 30 mg /kg /day, representing 5,400-fold the human plasma exposure at the RHOD of Xiidra, based on AUC. No teratogenicity was observed in the rat at 10 mg /kg /day (460-fold the human plasma exposure at the RHOD, based on AUC ). In the rabbit, an increased incidence of omphalocele was observed at the lowest dose tested, 3 mg /kg /day (400-fold the human plasma exposure at the RHOD, based on AUC), when administered by IV injection daily from gestation days 7 through 19. A fetal No Observed Adverse Effect Level (NOAEL) was not identified in the rabbit.

## Lactation

There are no data on the presence of lifitegrast in human milk, the effects on the breastfed infant, or the effects on milk production. However, systemic exposure to lifitegrast from ocular administration is low. The developmental and health benefits of breastfeeding should be considered, along with the mother's clinical need for Xiidra and any potential adverse effects on the breastfed child from Xiidra.

## Pediatric Use

Safety and efficacy in pediatric patients below the age of 17 years have not been established.

## Geriatric Use

No overall differences in safety or effectiveness have been observed between elderly and younger adult patients.

## NONCLINICAL TOXICOLOGY

### Carcinogenesis, Mutagenesis, Impairment of Fertility

*Carcinogenesis:* Animal studies have not been conducted to determine the carcinogenic potential of lifitegrast.

*Mutagenesis:* Lifitegrast was not mutagenic in the *in vitro* Ames assay. Lifitegrast was not clastogenic in the *in vivo* mouse micronucleus assay. In an *in vitro* chromosomal aberration assay using mammalian cells (Chinese hamster ovary cells), lifitegrast was positive at the highest concentration tested, without metabolic activation.

*Impairment of fertility:* Lifitegrast administered at intravenous (IV) doses of up to 30 mg/kg/day (5400-fold the human plasma exposure at the recommended human ophthalmic dose (RHOD) of lifitegrast ophthalmic solution, 5%) had no effect on fertility and reproductive performance in male and female treated rats.



Manufactured for: Shire US Inc., 300 Shire Way, Lexington, MA 02421.

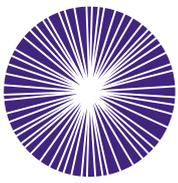
For more information, go to [www.Xiidra.com](http://www.Xiidra.com) or call 1-800-828-2088.

Marks designated ® and ™ are owned by Shire or an affiliated company.

©2016 Shire US Inc.

US Patents: 8367701; 9353088; 7314938; 7745460; 7790743; 7928122; 9216174; 8168655; 8084047; 8592450; 9085553 and pending patent applications.

Last Modified: 07/2016 S13681



# EyeNet Corporate Lunches

*EyeNet® Magazine* helps you make the most of your learning time at AAO 2016 by bringing you free corporate educational program lunches\* onsite at McCormick Place.

These conveniently located industry-developed lunches ensure that you maximize your education in Chicago during the break between sessions.

## **Room E353b, Lakeside**

McCormick Place

## **Check-in and Lunch Pickup**

12:15-12:30 p.m. Lunches are provided on a first-come basis.

## **Program**

12:30-1:30 p.m.

---

## **Programs**

### **Saturday, Oct. 15    Diabetic Eye Disease: Clinical Challenges and Practical Tips for Multidisciplinary Disease Management**

**Speakers:** Mandeep Brar, MD (endocrinologist), W. Lloyd Clark, MD, John W. Kitchens, MD

*Supported by Regeneron Pharmaceuticals*

### **Sunday, Oct. 16    A Novel Therapy for DME Patients Requiring Persistent Treatment**

**Speakers:** Nathan M. Radcliffe, MD, Christopher D. Riemann, MD, Veeral S. Sheth, MD, MBA, FACS

*Supported by Alimera Sciences*

### **Monday, Oct. 17    Cataract Surgery: Life Is Beautiful When the Pupil Behaves**

**Speakers:** Johnny L. Gayton, MD, Richard L. Lindstrom, MD, Robert H. Osher, MD, Keith A. Walter, MD, Robert J. Weinstock, MD, Elizabeth Yeu, MD

*Supported by Omeros Corporation*

---

**Check [aao.org/eyenet/corporate-lunches](http://aao.org/eyenet/corporate-lunches) for updated program information.**

---

\* These programs are non-CME and are developed independently by industry. They are not affiliated with the official program of AAO 2016 or Subspecialty Day. By attending a lunch, you may be subject to reporting under the Physician Payment Sunshine Act.

---



STOP BY AT AAO 2016  
**AKORN BOOTH  
#1503**

## Introducing Our New RxDirect Service

Patients save significantly on their prescription and have it delivered directly to their door at no extra charge



# 100% PRESERVATIVE-FREE

  
**ZIOPTAN**<sup>®</sup>  
(tafluprost ophthalmic  
solution) 0.0015%

  
**Cosopt**<sup>®</sup> **PF**  
(dorzolamide HCl - timolol maleate  
ophthalmic solution) 2% / 0.5%

Cosopt is a registered trademark of Merck Sharp & Dohme Corp and is used under license. ZIOPTAN is a registered trademark of Merck Sharp & Dohme Corp and is used under license.

**Santen** ZIOPTAN is licensed by Santen Pharmaceutical Co., Ltd.

 **AKORN**

©2016 Akorn, Inc. All rights reserved. P640 REV 08/16