



AMERICAN ACADEMY of OPTOMETRY TIMES



Details on today's plenary session, p.5



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A Sunny Salutation From the Academy and WCO

Optometry's future is so bright, optometrists will have to wear shades—especially at this year's Orlando meeting.

The American Academy of Optometry (AAO) and the World Council of Optometry (WCO) welcome you to sunny Florida for Academy 2019 Orlando and the 3rd World Congress of Optometry.

The Lectures & Workshops and Scientific Program Committees have put in countless hours preparing an outstanding program for you over the next five days.

Our motto, "All CE, All the Time," means that you can get credit for that poster session, paper session or lecture.

The Academy is now a COPE-accredited provider, so the Scientific Program and Residents Day are

now also COPE approved. Got 15 minutes to spare? Attend a paper or poster session and accrue credit!

Download the Academy.19 meeting planner app as your resource for education and events this year. Track your CE unofficially, build out your schedule, see live video footage of the meeting and discover all this joint meeting will offer. Don't forget to use it to conveniently complete your education evaluations.

A Future of Opportunities

Today's Plenary Session, "Today's Research, Tomorrow's Practice®: WHO World Vision Report: Opportunities for Optometry to Make



Enjoy the Orlando sun, but cool off while you earn CE in the convention center.

an Impact" will be held in Valencia AB from 10am to 12pm. Drs. Alarcos Cieza, Sandra Block and Kovin Naidoo will discuss the findings and implications of the *World Vision Report* for optometry internationally and for North America.

There will be a break today from

12 to 1pm when you can purchase lunch at a variety of locations in the convention center. If you have pre-registered for the Industry Innovations: Lunch + Learn sessions, those will take place in the Hyatt Regency and Rosen Plaza hotels.

• **Wednesday.** This morning, you can attend the joint Optometric Glaucoma Society (OGS) and AAO symposium from 8 to 10am in Tangerine WF2 with speakers Drs. Michael Chaglasian, Louis Pasquale, Uday Kompella and Shan Lin. As another option, this morning from

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Researchers Flip the Script at OGS Meeting

Presenters revealed surprising insights into glaucoma at an event yesterday.

The hunt for glaucoma's origins continues. While science has yet to identify the disease's very first impacts, the morning presentations at the Optometric Glaucoma Society's (OGS) 18th annual scientific meeting on Tuesday morning showed that researchers are uncovering ever-smaller changes associated with glaucomatous damage. The invited speakers explained the latest research on how to monitor such changes and how those changes open up new possibilities.

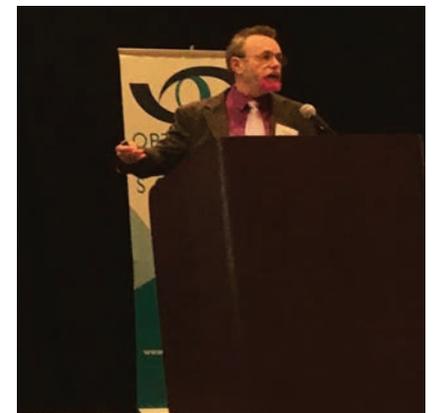
IOP Hits the Rim

The opening presenter discussed research that helped illuminate how glaucoma behaves. Laura Pardon, OD, MS, FAAO, who was last year's OGS Ezell Fellow honoree,

referred to her lab work that used non-human primate models to investigate the optic nerve head's response to short-term intraocular pressure (IOP) modulation. She found that the neuroretinal rim is sensitive to changes in IOP. Additionally, her team discovered that the residual thinning of the neuroretinal rim persists for at least two hours after IOP reduction and that changes to the minimal rim width appear to have no relation to any expansion of the Bruch's membrane opening (BMO) or posterior movement of the BMO or anterior lamina cribrosa surface.

Nerve Revelations

Research Excellence Awardee William Swanson, PhD, FAAO, spoke on how *en face* retinal nerve



At the OGS meeting, William Swanson, PhD, FAAO, questioned the wisdom of pre-perimetric treatment.

fiber layer (RNFL) images capture the divide between structural and functional changes in glaucoma patients.

See OGS, Page 3

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[†]HA is an inactive ingredient

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OGS 2019 Featured Top Clinical Investigators



Louis Pasquale, MD, discussed the curious case of a patient with an unusual nailbed presentation.



Continued from Page 1

At the center of his presentation loomed the question: “How did we end up treating glaucoma suspects, many of whom didn’t need it instead of treating those who already had field loss?” He says it’s due to the mindset that glaucoma patients should be treated before perimetric loss. The argument, he says, was that if you treat them early, you can prevent serious damage. However, analysis of the ocular hypertension treatment study data shows that delaying treatment doesn’t really cause any change in long-term outcomes.

Thus, hunting for a pre-perimetric structural change may not head off functional damage after all. Dr. Swanson claims the research that led to that thinking was improperly analyzed, and his opinion is reflected by a number of other early 21st century researchers, including Don Hood, Ted Garway-Heath and Ron Harwerth.

Adapt and Excel

In place of evaluating the RNFL, perhaps ODs should focus on the trabecular meshwork (TM). With the research Brett King, OD, FAAO, discussed, they may soon be able to image the TM using adaptive optics gonioscopy *in vivo*. The anatomy of the TM is elemental in understanding glaucoma, but clinical imaging of this biological

structure is poor and complicated. Several imaging techniques (e.g., ultrasound biomicroscopy, AS-OCT) give doctors indirect insight into the TM’s health, but don’t actually image the tissue itself. With adaptive optics, a technology usually reserved for posterior segment imaging, Dr. King’s team may have finally discovered a way to directly view a live TM.

Dr. King’s research was published this past September in *Translational Vision Science & Technology*.¹ He also thinks, with greater technological advancements, a possibility for deeper imaging—perhaps into the walls of Schlemm’s canal—may exist.

Back to the Clinic

While all of this research is vital, the eye care physician’s job is to treat the individual patient. That was the centerpiece of the research on nitric oxide that Louis Pasquale, MD, presented. Dr. Pasquale recalled a fascinating case in which he noticed something unusual about his patient’s fingernails—they were darkened and broken. She told Dr. Pasquale a dermatologist had previously dismissed the presentation as a fungal infection, but Dr. Pasquale had a different diagnosis—primary open-angle glaucoma (POAG) secondary to an impairment of nitrous oxide signaling. Why? Because reduced

resting nailfold capillary blood flow is present in POAG independent of covariates such as blood pressure, pulse and IOP.²

In the final presentation of the morning, Uday Kompella, PhD, pulled the curtain back on some of the sustained antiglaucoma drug delivery methods in the pipeline. In truth, sustained-release devices for glaucoma go back nearly 45 years, but with a number of new options on the horizon, these devices may finally be on the verge of redefining glaucoma care. Drug-imbued contact lenses are especially interesting as their benefits last, even after the

lenses are removed. Dr. Kompella also discussed the potential of punctal plug-based delivery devices and intracameral implants.

The OGS consistently hosts the top minds in glaucoma. The group’s joint session with the American Academy of Optometry is this morning from 8 to 10am in Tangerine WF2. ●

1. King B, Burns S, Sapoznik K, et al. High-resolution, adaptive optics imaging of the human trabecular meshwork in vivo. www.researchgate.net/publication/335774416_High-Resolution_Adaptive_Optics_Imaging_of_the_Human_Trabecular_Meshwork_In_Vivo. September 2019. Accessed October 22, 2019.

2. Cousins C, Chou J, Greenstein S, et al. Resting nailfold capillary blood flow in primary open-angle glaucoma. *Br J Ophthalmol*. 2019;103(2):203-7.

TODAY’S HIGHLIGHTS

What does the Scientific Program have in store? The Scientific Program Committee has designed a program this year that offers attendees different options in paper and poster sessions. Here are a few highlights:

• **Special Evening Poster Event:** On Thursday posters will be defended by their respective authors at a two-hour evening event from 4:30–6:30pm in WD1. Check your badge for a complimentary drink voucher and join us for some CE credit before heading out to dinner!

• **Hot Topics Paper Sessions:** Thursday morning, except for the Hirsch Research Symposium, lectures will not begin until 9am. From 8–9am, join us for one of the following sessions:

1. Hot Topics in Pediatrics and Binocular Vision, W224 EFG
2. Hot Topics in Glaucoma: Structure and Function, Tangerine WF1
3. Hot Topics in Anterior Segment, Tangerine WF2
4. Hot Topics in Artificial Intelligence, Tangerine WF 3/4

• **Super Sessions:** This year’s program includes three Super Sessions that feature papers and posters in the same session. Topics include Glaucoma (Wednesday, 1–3:45pm, W224 ABC), Myopia (Thursday, 9am–12pm, W224 ABC) and Contact Lens (Thursday, 1:30–4:30pm, W224 ABC).

• **Keynote Speakers:** This year the committee is pleased to welcome two keynote speakers. Dr. Mae Gordon will provide the keynote during the Glaucoma Super Session: New Concepts on Wednesday at 1pm in W224 ABC. The second keynote speaker is Dr. Christina Master who will speak during the Trauma & Concussions Paper Session on Saturday from 10am–12pm.

Paper Sessions for Wednesday, October 23:

Category	Room	Time
P-01: Papers: CITT-ART	W224 ABC	8–9:45am
P-02: Glaucoma Super Session: New Concepts with Keynote by Mae Gordon, PhD	W224 ABC	1–3:45pm
P-03: Papers: Effects of Blue Light	W224 EFG	1–2pm
P-04: Papers: Vision and Driving	W224 EFG	1–2:45pm
P-05: Papers: Amblyopia	W224 EFG	3:15–5pm
P-06: Papers: Retinal Physiology & Visual Pathways	W224 ABC	3:45–5pm

Annual Meeting Promises Unparalleled Education

Continued from Page 1

8 to 10am in W222, you can attend “Ezell Fellows Present: Public Health/Epidemiology Potpourri.” This year marks the 10th anniversary of the Ezell Fellows Present program, where three former American Academy of Optometry Foundation Ezell Fellowship recipients at different stages of their careers share their research. This session will include Drs. Nicole Carnt, Charlotte Joslin and Dean VanNasdale who will discuss anterior segment infectious eye diseases and national health datasets used to assess vision impairment.

- **Thursday.** Please join us tomorrow, 8 to 10am in W331, for the Monroe J. Hirsch Research Symposium to learn about “Gene Therapy for Ocular and Neurologic Disorders.” Drs. Stephen Russell, Abbot Clark and Byron Lam will discuss different approaches to save or restore sight in patients with degenerative disease.

- **Friday.** From 10am to 12pm in W331, join us for a joint educational

program with the American Academy of Ophthalmology, “Addressing the Global Myopia Burden,” presented by Drs. Michael Repka, Jeffrey Wallace, Donald Mutti, Judy Kim and David Berntsen.

The Fry and Prentice Lectures, which will be held Friday, 8 to 9am in W331, will feature presentations by the Charles F. Prentice and Glenn A. Fry Awardees. Prentice awardee Dr. Raymond Applegate will speak on “Delivering on the Promise of Wavefront Sensing: Personalizing Corrections.” The Fry awardee, Dr. Susan Cotter, will give her lecture, “Pediatric Eye Disorders: Clinical Conundrums & Lessons Learned.”

- **Saturday.** Come celebrate the innovators and leaders of the profession as we recognize their achievements at the Joint American Academy of Optometry and World Council of Optometry Recognition Gala and Awards Program on Saturday, October 26, 7 to 10pm in the Plaza International Ballroom of the Hyatt Regency.

To the Market

In the exhibit hall you can experience new products and technologies to take your practice to the next level. Choose from more than 175 exhibiting companies. The exhibit hall is open Wednesday, 5pm to 7:30pm; Thursday, 10am to 6:30pm with student focus hour from 10am to 11:30am and an Attendee Reception from 5pm to 6:30pm; and Friday, 10am to 3pm.

Join us for free lunch in the hall on Thursday and Friday! Be sure to also join us for our Vision Theater sessions—informative, commercial programs taking place in a constructed theater on the exhibit hall floor (RSVP required).

Please plan to support the American Academy of Optometry Foundation and the future of optometric education and research at the meeting. You can participate in the Foundation’s Silent Auction at exhibit hall booth #331. New this year at the booth will be a graphic



From CE sessions to the exhibit hall, this year’s meeting is chock full of opportunity to boost your eye care prowess.

recorder capturing meeting events and conversations on canvas. Stop by to watch the artistic talent of the recorder as the meeting unfolds. Also plan to join in the fun of the Alcon Foundation’s Hoop it Up 20/20 Challenge event at booth #231. Attendees will shoot virtual free throws to trigger a \$25,000 donation to the Foundation.

The WCO is pleased to bring the global world of optometry together to provide opportunities for education, collaboration and networking during this joint meeting. The WCO 3rd World Congress will bring a few new events, including their 3rd President’s Forum, the Global Summit on Optometric Education and the WCO General Assembly.

The President’s Forum takes place from 8am–12pm Saturday, October 26, is an invitation-only event that provides a platform wherein the highest level of decision makers and key partners of our profession come together to discuss the current development of optometry and the desired impact that it envisages in the broader health agenda around the world. The theme of the 3rd President’s Forum will be “Optometry’s Role in Addressing the Changing Face of Technology, Public Health and Clinical Care.” With the new direction of the World Health Or-

ganization towards universal health coverage and competencies, the focus of the forum will be to discuss how optometry can play a larger role with the changing face of health care. It is imperative that going forward, vision is included as an integral part of universal health coverage and is recognized as a substantial health issue.

You won’t want to miss the Global Summit on Optometric Education from 8am to 12pm Sunday, October 27, in WE2. The Summit will be an interactive session to provide educators from optometric educational programs from around the globe the opportunity to share education philosophies/teaching methods, discuss challenges facing institutions, opportunities for networking, prospects for potential collaboration in academic and research areas, and provide mechanisms for exchange of manpower. The Summit is organized by the WCO in partnership with the AAO and the Association of Schools and Colleges of Optometry. Faculty and administrators of optometry programs from across the globe are invited to attend and contribute to this critical discussion.

Held at the end of the Congress, the WCO Annual General Assembly will be held from 5:45pm to 7:30pm on Sunday. The new WCO President will be inaugurated and the committee chairs and new board will be introduced. WCO Country Members are invited to discuss and vote on decisions regarding the organization and reports of previous and future activities are presented. All WCO members and interested parties are invited to attend.

Whether you’re a first year OD student or a seasoned practitioner, you’re sure to find your inspiration for excellence at Academy 2019 Orlando and 3rd World Congress of Optometry! Be sure to mark your calendar for next year’s meeting, Academy 2020 Nashville, October 7-10, and save the date for the 4th World Congress of Optometry in Melbourne, Australia, September 2-4, 2021. ●

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TODAY 10am–12pm VALENCIA AB

Plenary '19: Eye Care on the World Stage

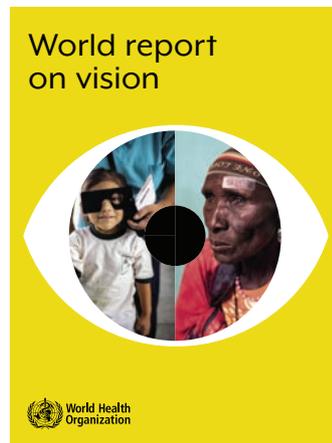
Optometry responds to a WHO report that sheds light on global vision impairment challenges.

This morning's Plenary session will focus on the many crucial healthcare shortcomings revealed in the recent *World Report on Vision*, which documented in painstaking detail the plight of the 2.2 billion people who suffer from vision loss. Of those, fully one billion have preventable disease. Attendees will learn more about the World Health Organization's (WHO) efforts to tackle the extensive disease and blindness burdens across the world.

First, Alarcos Cieza, PhD, from the WHO, will discuss the report's findings that aging populations, changing lifestyles and limited access to eye care are among the main drivers of rising vision impairment—especially in rural areas. Those with low incomes, women, people with disabilities and ethnic minorities are also disproportionately affected.

Next, Kovin Naidoo, OD, PhD, FFAO, and Sandra Block, OD, MPH, FFAO, will discuss the impact of the report on vision care in North America. Dr. Naidoo is senior vice president of inclusive business, philanthropy and social impact at Essilor and Dr. Block is the regional representative for North America in the World Council of Optometry.

Dr. Naidoo will review the WHO report through a practice's lens. He will discuss how the scope and definition of optometry varies around the world and its current lack of relevance in public health systems. "The need for eye care extends beyond vision-impairing conditions," explains Dr. Naidoo. "It is driven by conditions, such as dry eye and conjunctivitis, that must not be overlooked, as they are among the main reasons for people to seek eye health care services in all countries."



- Unaddressed refractive error (123.7 million)
- Cataract (65.2 million)
- Glaucoma (6.9 million)
- Corneal opacities (4.2 million)
- Diabetic retinopathy (3 million)
- Trachoma (2 million)
- Unaddressed presbyopia (826 million)

The WHO says it is committed to working with countries to improve delivery of eye care, in particular through primary health care, to improving health information systems for eye care and to strengthening the eye care workforce.

Dr. Block's presentation, "Taking Care of People in North America Into the Next Generation," will propose a way for optometry to fit into the report's sustainable development goals and steps toward universal health coverage. She will discuss how the profession can address the shift to integrate eye care into the concept that the WHO presents.

Dr. Naidoo believes that optometry should view the WHO report as an opportunity, not a challenge, and that the United States can play a role in supporting global actions. "This report magnifies the role of optometry in both the developed and the developing world,"

says Dr. Naidoo. "It is a strong call to action for optometry and should be a major motivator for the profession to play a leading role in eye care globally."

The Academy is certain that the profession will step up and answer the call. As one of the world's leading vision care membership and advocacy associations, the Academy accredits optometrists and encourages the highest standards of evidence-based care, a key component of the WHO's path forward.

"We believe this report will galvanize the issue and trigger a coordinated effort," says Barbara Caffery, OD, PhD, FFAO, outgoing president of the Academy. "AAO is ready to put the full weight of our organization behind this global effort." ●

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Student and Resident Events

Attending the AAO's student and resident events is a great way to mingle with other future leaders of optometry.



STUDENT EVENTS

Luxottica Student Welcome: Fashion Focus

Wednesday, 7:30–9:30pm
Orlando Ballroom, Hyatt Regency
Come experience fashion, frames and fun at this students-only reception.

Special Student Focus Exhibit Hours

Thursday, 10–11:30am
WD2 & WE1

Students will have a special opportunity to meet and network with exhibitors in attendance as well as participate in a chance to win a variety of exciting prizes. While you're there, stop by the Academy membership booth in the Exhibit Hall to ask a Fellow any question you have about membership or the Academy.

Student and Resident Awards Lunch

Thursday, 12–1pm
Valencia Ballroom W415CD

This luncheon will honor the best student scientific program presenters from Academy 2018 San Antonio and the 2019 student and resident travel fellowship recipients.

Essilor Academic Challenge at Academy Stadium

Thursday, 8–10pm
Hyatt Regency, Plaza International Ballroom G-K

The Essilor Academic Challenge held at Academy Stadium in Orlando will determine which school has what it takes to be crowned the champion. Academic teams from the schools and colleges of optometry will compete against each other in an entertaining environment to see which team has what it takes to win the coveted title. Attendees will also be invited to join the after-party to celebrate

the winning team.

Residency & Graduate Program Fair

Friday, 12–3pm
Valencia Ballroom W415CD

Generously sponsored by Johnson & Johnson Vision, Vision Source and ASCO.

This event is designed for students to learn more about various residency and graduate programs. Staff from schools and programs will be available to answer questions.

Resident/Practitioner Networking Event

Friday, 5–6:30pm
Hyatt Regency, Ballroom PQ

Network with practitioners from the US and abroad looking to hire residency trained ODs in the near future. RSVP required.

RESIDENT EVENTS

Resident Day

Saturday, 8am–12pm, 1:30–3:30pm
W221, WD1

This is a forum where residents have the opportunity to present their interesting case reports or the results of their research projects! Papers will be presented 8am–12pm and posters, 1:30–3:30pm. This special, COPE-approved event is only for current residents to showcase their work with meeting attendees.

Residents Day Luncheon

Saturday, 12–1:15pm
WD1

Generously sponsored by Alcon and CooperVision

Enjoy this opportunity to meet and network with residents from other programs. Don't forget to submit your Candidacy for Fellowship application during the meeting to be entered into a prize drawing! Winners will be announced at the luncheon.

Residents Day Reception

Saturday, 3:30–4:30pm
WD1

Generously sponsored by CooperVision and Alcon

Celebrate the end of Residents Day by enjoying complimentary refreshments and mingling with your peers.

INDUSTRY INNOVATIONS LUNCH + LEARN

Did you sign up for a Lunch + Learn session when you registered? These industry-sponsored sessions directly follow the Plenary. Each 45-minute presentation provides take-home value from optometric leaders, plus complimentary lunch. **All sessions have been filled** but those who have pre-registered can find their session here:

- **The Next Big Thing for Your New Contact Lens Patients**
Sponsored by Alcon
Rosen Plaza, Grand Ballroom C, Level 1
- **Insights in Dry Eye Management**
Sponsored by Allergan
Hyatt Regency, Florida Ballroom A, Convention Level
- **Did You See That? A Clinical Discussion of Everyday Complex Cases**
Sponsored by Bausch + Lomb
Rosen Plaza, Grand Ballroom D, Level 1
- **Focused on the Future: Understanding Myopia Management for a Brighter Tomorrow**
Sponsored by CooperVision & Essilor
Hyatt Regency, Plaza International Ballroom EF, Convention Level
- **Innovation to Build Your Practice**
Sponsored by Johnson & Johnson Vision
Hyatt Regency, Ballroom N, Convention Level
- **Guidelines for Preventing Avoidable Vision Loss in AMD**
Sponsored by Maculogix
Rosen Plaza, Salon 9/10, Level 2
- **Practice Building—Technology to Enhance Patient Care and Profitability**
Sponsored by Optos
Rosen Plaza, Salon 13/14, Level 2
- **Retinal Disease in Diabetes Patients and the Impact of Treatment**
Sponsored by Regeneron
Hyatt Regency, Orlando Ballroom L, Convention Level
- **Tear Care: Interrupting the MGD Cascade**
Sponsored by Sight Sciences
Hyatt Regency, Orlando Ballroom M, Convention Level
- **Expand Your Horizons: Using Diagnostics to Capture the Complete Story**
Sponsored by Zeiss
Hyatt Regency, Florida Ballroom B, Convention Level

JOIN THE CONVERSATION

Academy 2019 Orlando and 3rd World Congress of Optometry on Twitter

Follow the Academy (@aaopt) and the World Council of Optometry (@worldcouncilopt) on Twitter for the latest meeting updates. Don't forget to use the official meeting hashtags #Academy19 and #WCOCongress19.



Academy on Facebook

Visit www.facebook.com/aaopt to like the Academy's page, a great place to stay connected to your colleagues and get up to date information on the annual meeting. Check back after the meeting to view photos of the exciting sessions and events from Academy 2019 Orlando and 3rd World Congress of Optometry.



TODAY 3-4PM ROOM W222

The Ins and Outs of Corneal Crosslinking

This afternoon, you can get an update on lessons learned and consider future directions.

If you're looking to get your foot in the door with corneal crosslinking (CXL), you're in the right place. Attendees will leave today's "Corneal Crosslinking in North America: Lessons From a Decade" talk with a better understanding of the recently FDA-approved technique and its role in optometry.

Clark Chang, OD, FAAO, and Langis Michaud, OD, FAAO, will begin the session by discussing the most common condition CXL treats: keratoconus. While its etiology isn't fully understood, keratoconus is prevalent and is often associated with other ocular disorders and systemic abnormalities such as Down syndrome, obstructive sleep apnea, dry eye and glaucoma—highlighting the importance of early intervention and treatment. This is where CXL comes into play.

The minimally invasive procedure, introduced internationally in 2003, helps to halt keratoconus progression by strengthening and stabilizing tissue through a chemical reaction among collagen fibers. It wasn't until 2016, however, that it was FDA-ap-

Photo: Brian Chou, OD



In just three years since its FDA approval, crosslinking has revolutionized management of keratoconus. Find out the latest thinking today.

proved in the US. Indications include adults with progressive keratoconus, patients younger than 18 with keratoconus and patients with post-refractive surgery ectasia. The duo of doctors will cover different CXL methods, such as epi-off or epi-on and accelerated or standard, and the expected outcomes and potential complications of each.

"Given CXL's good safety profile and high efficacy in keratoconus stabilization, it's important to note that the benefits of CXL are most impactful when treatment is offered early," Dr. Chang notes. He adds that in the earlier stages of keratoconus, CXL can help prevent unnecessary vision loss and improve the longevity of refractive treatment.

CXL may be on the newer side in the United States, but Canada has had more than a decade of experience with it. Dr. Michaud will share the lessons he's learned with the audience, including the need for prompt referral, when to use which method, how to educate patients and the importance of close monitoring. Dr. Chang will add his experience of how to detect keratoconus early, when to perform CXL and the necessity of continued management. A phase III trial of epi-on, accelerated, oxygen-enhanced CXL is already underway, according to Dr. Chang. Be sure to attend today's lecture to learn the basics so you can stay up-to-date on the latest and greatest in CXL before it takes off without you. ●



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The Academy 2019 Orlando and 3rd World Congress of Optometry exhibit hall is the perfect place to experience cutting-edge products and services. Badges are required for admission.

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AccuLens.....	625
Acuity Pro Software.....	929
Adit.....	226
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Alcon.....	916
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CenterVue.....	1034
Int'l Association of Contact Lens Educators.....	730
Choroideremia Research Foundation.....	829
Clerio Vision.....	722
Coburn Technologies.....	702
Color My World by Vivid Eyes.....	1231
Compulink Healthcare Solutions.....	316
Contamac.....	632
CooperVision.....	809
Corporate Optometry.....	225
DemandForce.....	1534
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Deux Mains Designs.....	123
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Doctible.....	1707
Elektron Eye Technology.....	324
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Horizon Therapeutics.....	533
Hoya Vision Care & Optikam Tech.....	1519
Icare Tonometers.....	517
IDOC.....	408
Illuminix Industries.....	206
Marco.....	516
Maxivision.....	301
Indigo Iris Designs.....	1312
Indigo Systems.....	1425
Innova Systems.....	1719
Invision Magazine.....	417
Irisvision.....	1421
Johnson & Johnson Vision.....	1201
Kala Pharmaceuticals.....	1227
Keeler Instruments.....	1213
Kentucky College of Optometry.....	623
Konan Medical USA.....	1211
Wolters Kluwer Health.....	601
Lombart Instrument.....	519
Lumenis.....	618
Luneau Technology USA.....	1501
M&S Technologies.....	1412
MacuHealth.....	1500
MacuLogix.....	203
Marco.....	516
Maxivision.....	301
MedPhoto Manager.....	1700
MedTech International Group.....	1028
Menicon America.....	609
Midwestern U. Arizona College of Optometry & Chicago College of Optometry.....	616
Myco Industries/AB Max.....	511
National Board of Examiners in Optometry.....	305
Nat. Org. for Albinism and Hypopigmentation..	720
National Vision.....	707
Nidek.....	1338
Norwood Device & Diagnostics.....	529
Nova Southeastern University.....	303

Exhibit Hall Hours: Wednesday 5–7:30pm • Thursday 10am–6:30pm • Friday 10am–3pm

Special Events: Opening Night Welcome Reception ~ Wednesday 5–7:30pm

Student Focus Hours ~ Thursday 10–11:30am

Lunch in the Exhibit Hall ~ Thursday and Friday 11:30am–1:30pm

Attendee Reception ~ Thursday 5–6:30pm

Lounge 131	Alcon Foundation "Hoop it Up" 231	American Academy of Optometry Foundation 331	Espansione 535 634 Horizon Contamac 533 632 Norwood Device & Diagnostics Virtual Field 630 SEE Int'l 529 628	Valley Contax 635 734 Tangible Science 633 Prudential Advisors 732 Evevance Pharma 730 Zeavision 728	Aventic 735 NuSight Medical 832 Topcon Medical Systems Arbor Eyewear 830 VRmagic 828
Eyes of the World 116	Diaton Adit 127 226 Konan Medical Zilia 125 224 Deux Mains Air Force Recruiting 123 222	Gyroscope Thera. 227 Elektron Eye Tech Corporate Optometry 225 324	Vivid Vision Digital Health Care 327 426 Eyenovia Vispero 323 422	Regeneron 423	SBH The Dry Eye Dr. 525 624 Western U. Optometry VOSH 523 622 Ocular Innovations 521 Lumenis Lombart 519 618 Icare Arizona & Chicago 517 616
	Brien Holden Vision Institute 117	Vision Assoc. Surgenex 221 320 Valley Contax Compulink 217 316	Sight Sciences 317		
Lounge 100	EyeSpace Euclid Systems 111 208 Rx Loupes Illuminix 107 206	Volk Optical 209	Quidel IDOC 311 408 PlenOptika 309 408 Eyecare Live Visionary Optics 307 404 NBEO 305 404 Nova SE Solution-reach 303 402 MaxiVision Synerg-Eyes 301 400	Menicon America 609	Myco Industries Weave 511 610 Optometry Times Visionary 509 608 CareCredit Specsby 507 606
	Haag-Streit USA/Reliance 101	Macu-Logix PCON & Healo 203 304 BEBRF 201 300 Heine Eye Care and Cure 201 300	Optos Frames Data 501 604 Younger Optics 602 Visioneering Tech. 600		
		ENTRANCE			

EyePromise.....	728	Horizon Therapeutics.....	533	Luneau Technology USA.....	1501
Eyeris.....	1608	Hoya Vision Care & Optikam Tech.....	1519	M&S Technologies.....	1412
EyeSpace.....	111	Icare Tonometers.....	517	MacuHealth.....	1500
EyeVance Pharmaceuticals.....	629	IDOC.....	408	MacuLogix.....	203
Florida Optometric Insurance Services.....	1239	Illuminix Industries.....	206	Marco.....	516
Fortifeye Vitamins.....	1604	Indigo Iris Designs.....	1312	Maxivision.....	301
Frames Data.....	604	Indigo Systems.....	1425	MedPhoto Manager.....	1700
Vispero.....	422	Innova Systems.....	1719	MedTech International Group.....	1028
Globecek.....	1702	Invision Magazine.....	417	Menicon America.....	609
Good-Lite Company.....	1401	Irisvision.....	1421	Midwestern U. Arizona College of Optometry & Chicago College of Optometry.....	616
Guardion Health Sciences.....	1711	Johnson & Johnson Vision.....	1201	Myco Industries/AB Max.....	511
Gyroscope Therapeutics.....	227	Kala Pharmaceuticals.....	1227	National Board of Examiners in Optometry.....	305
Haag-Streit USA/Reliance.....	101	Keeler Instruments.....	1213	Nat. Org. for Albinism and Hypopigmentation..	720
Healthy Eyes Advantage.....	1605	Kentucky College of Optometry.....	623	National Vision.....	707
Heart of America Eye Care Congress.....	934	Konan Medical USA.....	1211	Nidek.....	1338
Heidelberg Engineering.....	717	Wolters Kluwer Health.....	601	Norwood Device & Diagnostics.....	529
Heine USA.....	201	Lombart Instrument.....	519	Nova Southeastern University.....	303
		Lumenis.....	618		

Vision Group 835	Heart of America 930	Optovue 933	CenterVue 1034	Florida Optometric Insurance Services 1239	Nidek 1338	Vision Theater 1 1339	Lounge & Learn 1539	Vision Theater 2 1739	
833	932	933	OptiLanes 1032	Color My World 1231	Vision Impact 1330	Telscreen 1331	RightEye 1430	Public Health Section/ Vision in Aging SIG 1733	
Designer Drugs 831	BlephEx 930	931	Diopsys 1030	Kala Pharmaceuticals 1227	Penta-Vision 1326	Review of Optometry 1327	UMSL Optometry 1428	Fellows Doing Research 1727	
Choroideremia 829	NovaSight 928	Acuity Pro 929	MedTech 1028	AFOS 1435	Demand-Force 1534	EyeCare Partners 1433	WCO 1530	American Academy of Optometry 1527	
Alcon 916				Novartis Pharmaceuticals 1219				Indigo Iris Designs 1425	Vision Service Plan 1520
				Restrooms and Show Management Offices				ABO-NCLE 1423	
CooperVision 809				Allergan 909				Irisvision 1421	Essilor of USA 1619
Bausch + Lomb 801				Keeler Inst. 1213				Precision Vision 1419	Scope Health 1721
Johnson & Johnson Vision 1201				iMatrix 1312				Weave 1518	Innova Systems 1719
Sun Ophthalmics 1409				Salus Univ. PCO 1313				M&S Tech. 1412	Guardian Health Sciences 1711
Eyeris 1608				Konan Medical 1211				Art Optical 1311	American Board Cert. 1709
Puppies 1609				Modern Optometry 1310				Optometric Arch. 1410	Doctible 1707
Novabay 1405				Spark Thea. 1504				Novartis Pharmaceuticals 1219	Healthy Eyes 1605
Good-Lite 1401				Macu-Health 1500				Novartis Pharmaceuticals 1219	Globebeek 1702
Ocutech 1505				Fortifeye Vitamins 1604				Novartis Pharmaceuticals 1219	Zoomax 1603
Designs for Vision 1503				Ocusoft 1600				Novartis Pharmaceuticals 1219	Bernell 1601
Luneau 1501				MedPhoto 1700				Novartis Pharmaceuticals 1219	MedPhoto 1700
Bio-Tissue 1701				Novartis Pharmaceuticals 1219				Novartis Pharmaceuticals 1219	Novartis Pharmaceuticals 1219

ENTRANCE

Novabay Pharmaceuticals.....	1405	Precision Vision.....	1419	Spark Therapeutics.....	1504	Vision Service Plan.....	1520
NovaSight.....	928	Primary Care Optometry News & Healio.....	304	Specsy.....	606	Visionary.....	608
NuSight Medical.....	832	Prudential Advisors.....	732	Sun Ophthalmics.....	1409	Visionary Optics.....	404
Ocular Innovations.....	521	Public Health & Environmental Vision Section and Vision in Aging SIG.....	1733	Surgenex.....	320	Visioneering Technologies.....	600
Oculus.....	822	Quantel Medical.....	700	SynergEyes.....	400	Vital Tears.....	1426
Ocusoft.....	1600	Quidel.....	311	Tangible Science.....	633	Vivid Vision.....	327
Ocutech.....	1505	Regeneron Pharmaceuticals.....	423	Telscreen.....	1331	Vmax Vision.....	605
OptiLanes.....	1032	Reichert Technologies.....	816	The Dry Eye Doctor.....	624	Volk Optical.....	209
Opto Multimedia.....	806	Review of Optometry.....	1327	The Pixel Fund – Puppies.....	1609	VOSH International.....	622
Optometric Architects.....	1410	RightEye.....	1430	Think About Your Eyes.....	1431	Vrmagic.....	828
Optometry Times.....	509	RxLoupes.....	107	Topcon Medical Systems.....	729	Weave.....	610
OptoPrep.....	704	ScienceBased Health.....	525	TruForm Optics.....	419	Weave.....	1518
Optos.....	501	Scope Health.....	1721	Univ. MO St. Louis College of Optometry.....	1428	Western University College of Optometry.....	523
Optovue.....	933	SEE International.....	628	Valley Contax.....	217	World Council of Optometry.....	1530
Paragon Vision Sciences.....	718	Novartis Pharmaceuticals.....	1219	Virtual Field.....	630	Younger Optics.....	602
Salus University PA College of Optometry.....	1313	Sight Sciences.....	317	Vision Associates.....	221	Zeiss.....	701
PentaVision.....	1326	Solutionreach.....	402	Vision Group Holdings.....	835	Zilia.....	224
PlenOptika.....	309			Vision Impact Institute.....	1330	Zoomax.....	1603

TOMORROW 8–9AM

Hot Topics for Early Birds

Four morning courses pack in a bundle of research on childhood vision, glaucoma diagnosis and the role of AI.

Maybe you're not an early riser, but for those who can manage to down a coffee and arrive at the Orange County Convention Center by 8am, a truly special award awaits. This year's meeting will be featuring a series of early-morning "Hot Topic" sessions tomorrow morning. Altogether, the four courses will tackle 11 issues.

The "Hot Topics in Pediatrics and Binocular Vision" presentation will host speakers Tara Alvarez, PhD, of the New Jersey Institute of Technology, Krystal Schulle, OD, FAAO, of the University of Houston and Susan Cotter, OD, MS, FAAO, of Marshall B. Ketchum University.

Dr. Alvarez will present the findings of a study on vision therapy and tracking its progress using functional

magnetic resonance imaging. Dr. Schulle will review the latest findings of the Bifocal Lenses in Nearsighted Kids (BLINK) study connecting myopia and retinal findings. Finally, before the hour is up, Dr. Cotter will discuss the findings of a study on low-dose bevacizumab for retinopathy of prematurity patients.

Down the hall, "Hot Topics in Glaucoma: Structure and Function," will host Hin Cheung, OD, of the Indiana School of Optometry, and Mahdi Hedayat, OD, of the optometry department of the Albuquerque VA Medical Center. Their talks will reveal new ways to monitor glaucoma by using attenuation coefficient data and OCT imaging.

A third session, "Hot Topics in Anterior Segment," will include a

Lectures & Locations

- **Hot Topics in Pediatrics and Binocular Vision** W224 EFG
- **Hot Topics in Glaucoma: Structure and Function** Tangerine WF1
- **Hot Topics in Anterior Segment** Tangerine WF2
- **Hot Topics in Artificial Intelligence** Tangerine WF3/4

trio of speakers who will address anterior segment issues by discussing recent research on adenoviral conjunctivitis, sustained-release drug delivery devices and in-office meibomian gland treatments.

The fourth session, "Hot Topics

in Artificial Intelligence," looks at eye care's newest partner in the fight against disease: artificial intelligence (AI). The University of New South Wales (UNSW) School of Optometry and Vision Science's Nahida Akter, PhD, will speak on AI models that learn to detect glaucoma.

Another UNSW-based speaker, Jack Phu, OD, FAAO, will discuss whether patients can be classified along a continuum of angle closure disease based on quantitative anterior segment OCT parameters.

Christopher Clark, OD, PhD, of the Indiana School of Optometry, will close out the hour with a look into the ability to detecting retinal changes using machine learning in patients with diabetes who have not yet developed retinopathy. ●

TODAY 2–4PM TANGERINE WF3/4

Boost Your Oral Med Prescribing Prowess

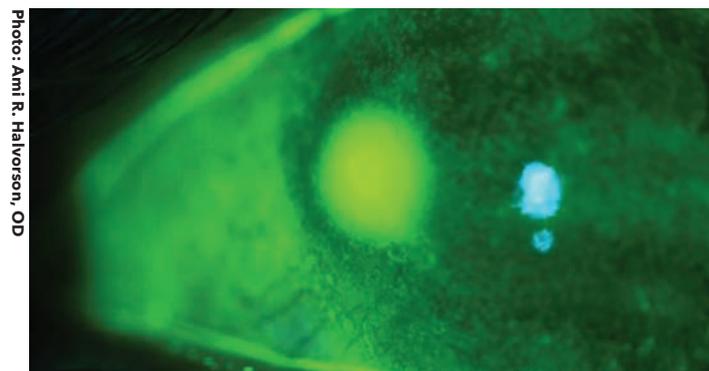
All you really need is more confidence—and some sound clinical advice.

Optometry fought long and hard for the scope expansion that now allows ODs everywhere (except Maine) to prescribe oral medications. But many clinicians may still hesitate to whip out their prescription pad, even when it's necessary. This afternoon, Jane Grogg, OD, FAAO, director of Indiana University's Health Center Eye Clinic and a clinical professor at IU School of Optometry, will provide attendees the knowledge they need to wipe away any concerns and confidently prescribe the right medication when a patient is in need. Her lecture, which is designated as continuing education with examination, will focus on the common clinical presentations that often warrant oral treatment and will delve into the pharmaceutical options at the OD's disposal.

While many clinical presentations may be a no-brainer, some

may take a little extra care. Patients who are pregnant, for example, are just as likely as any other to present with an ocular condition that requires an oral antibiotic. Rather than undertreat the patient, clinicians should be comfortable prescribing a safe option such as erythromycin, azithromycin or amoxicillin—all of which have a historic category B FDA rating and are routinely used during pregnancy.^{1,2}

Oral steroids are another drug category giving some ODs pause, particularly given the chance of increased intraocular pressure with their use. But many patients with inflammatory conditions—such as uveitis, recalcitrant episcleritis, inflammatory orbital pseudotumor, giant cell arteritis and acute allergic blepharodermatoconjunctivitis—do well with an oral steroid. These medications are also often used in



Tobramycin, with a historical FDA category B rating, is commonly used for pregnant patients diagnosed with bacterial keratitis.

conjunction with oral antivirals, yet another drug class ODs should be familiar with. An oral antiviral agent is a common initial therapy for herpes zoster ophthalmicus to lessen the severity and duration; however, steroids are contraindicated for herpes simplex keratitis, a crucial distinction.³

Throughout the session, Dr. Grogg will walk attendees through many different dosing concerns, side effects and contraindications

to ensure everyone is comfortable prescribing for even the most complicated patient case.

The goal of the lecture, according to Dr. Grogg, is to encourage and build confidence in the use of oral medications in the optometric setting. ●

1. Lynch CM, Herold AH, Sinnott JT, Holt DA. Use of antibiotics during pregnancy. *Am Fam Physician.* 1991;43(4):1365-8.
2. Nahum GG, Uhl K, Kennedy DL. Antibiotic use in pregnancy and lactation: what is and is not known about teratogenic and toxic risks. *Obstet Gynecol.* 2006;107(5):1120-38.
3. Sendrowski DP, Maher J. Claim victory over viral conjunctivitis. *Rev Optom.* 2016;153(6):78-86.

TODAY 1–2pm ROOM W331

Is It Urgent or Emergent? Learn How to Tell

Your patient's vision—and even their life—may depend on it.

Unsure of the difference between urgent and emergent cases? Looking to learn more about how to proceed when a true ocular emergency walks through your door? Then don't miss today's session presented by Carlo J. Pelino, OD, FAAO, and Joseph J. Pizzimenti, OD, FAAO, "Identifying True Ocular Emergencies of the Posterior Pole."

The pair will open the talk with a refresher on the definitions of ur-

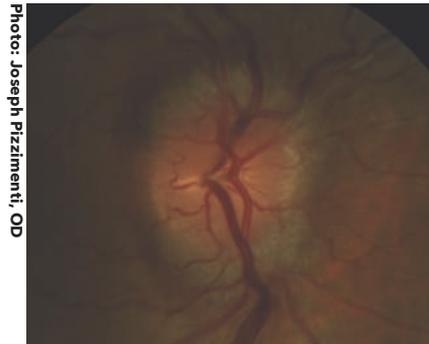


Photo: Joseph Pizzimenti, OD

Disc edema is just one life-threatening emergency you should be ready for.

gency and emergency. Knowing how to differentiate between the two, Dr. Pelino notes, is crucial when deciding how to execute effective management strategies to provide the best visual outcomes. This includes training front desk staff on presentation and identification so that when a patient calls, your team can respond in a timely manner with an appropriate management plan and referral, when necessary, he says.

Drs. Pelino and Pizzimenti will then introduce the "10 A-Club"—10 emergent conditions to

keep in mind when seeing patients. They'll follow up with details on the etiology, presentation, testing protocol, treatment, expected outcomes and follow-up procedures of several emergent matters—all of which optometrists should be aware of. These include artery occlusion, optic neuropathy, hypertension and open globe injury.

ODs need to be ready for anything that could be sitting in their chair. This session will prepare you for the worst with action items to help save your patient's vision. ●

What is the AAOF?

The American Academy of Optometry Foundation is one of the optometry profession's largest sources of scholarships, fellowships, residency support and grants. The mission of the Foundation is to develop and provide financial support for optometric research and education in vision and eye health to improve clinical patient care.

With support from endowments, generous donors and corporate partners, the Foundation has provided more than \$5 million in education and research support to deserving recipients over the last 10 years.



**HOOP
IT UP
2020
CHALLENGE**

Support the Foundation

- **Hoop It Up 20/20 Challenge (booth 231).** Be sure to visit the Alcon Foundation and compete by shooting as many virtual baskets as possible. When the goal of 2,020 virtual baskets is reached, the Alcon Foundation will donate \$25,000 to the AAOF to fund optometric education and research programs.

- **Meet the 2019-2020 Ezell Fellows (booth 331).** Stop by to meet the new William C. Ezell Fellows. Discuss their cutting-edge research and see how your support will impact the future of the profession.

- **Silent Auction (booth 331).** Be sure to stop by the Foundation booth in the exhibit hall to view and bid on an array of exciting items!

- **Graphic Recorder (booth 331).** New this year is a graphic recorder capturing real-time conversations in text and images. Be sure to stop by and watch his artistic vision of the meeting unfold.

Lens Engraving

Volk Optical is providing complimentary lens engraving at booth 209. As an appreciation, stop by Foundation booth 331 and donate.

You can also bid on Silent Auction items provided by Volk Optical at the Foundation's booth. ●

Earn up to 19 CE Credits*

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REVIEW
EDUCATION GROUP



CHARLESTON, SOUTH CAROLINA

Date: November 1-3, 2019 **Program Chair:** Paul M. Karpecki, OD, FAAO

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Charleston, SC 29403
Phone: 843-723-3000

Faculty:
Marc Bloomenstein, OD, FAAO
Douglas K. Devries, OD
Jack Schaeffer, OD, FAAO
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CONTINUING EDUCATION WITH EXAMINATION (CEE) CREDITS AT ACADEMY 2019 ORLANDO AND 3RD WORLD CONGRESS OF OPTOMETRY

The courses listed below will be presented with an option to take an exam, administered by the University of Houston College of Optometry. All CEE exams are offered online. All are welcome to attend the courses without taking the exam. Instructions to request the exams are available at the Education Desk.

Wednesday, October 23				
Time	Course #	Course Title	Lecturer(s)	Room
2–4pm	OP-01	Oral Medications for the Optometrist: Who, What and When	Jane Grogg	Tangerine WF3/4
3–5pm	BV-04	Evaluation and Management of Abnormal Head Postures	Suzanne Wickum	W230 CD
Thursday, October 24				
Time	Course #	Course Title	Lecturer(s)	Room
9–11am	AS-06	Therapeutic Treatment Tales: Fact or Fiction	Tammy Than, Blair Lonsberry	Tangerine WF3/4
10am–12pm	PS-08	Diagnosis and Treatment of Peripheral Retinal Disease	Mohammad Rafieetary	Tangerine WF2
10am–12pm	SD-05	Trauma Drama: Cases of Mechanical Ocular Inquiry	Julie Tyler	W315 AB
1:30–3:30pm	PS-09	AMD - How to Improve Outcomes and Help Prevent Blindness	Damon Dierker, Brad Sutton	Tangerine WF1
1:30–3:30pm	GO-07	The Oculoplastic Optometric Physician	Selina McGee	W331
2:30–4:30pm	GO-09	Pediatrics for the Primary Care Optometrist	Marianne Boltz	W230 CD
3:30–5:30pm	LV-05	Clinical Optics for Low Vision Rehabilitation	David Lewerenz	W232
3:30–5:30pm	SD-09	Understanding Clinical Significance of Common Retinal Lesions	Thomas Freddo	W331
3:30–5:30pm	OP-03	Oral Pharmaceuticals in Anterior Segment Disease	Nathan Lighthizer, Blair Lonsberry	Valencia AB
Friday, October 25				
Time	Course #	Course Title	Lecturer(s)	Room
8–10am	GO-16	The Use of VEPs, ERGs, and EOGs and Updates in Clinical Practice	Kimberley Poirier-Schmidt, Sherry Bass	W224 DH
8–10am	OP-04	Complications of Pharmaceuticals Every Optometrist Should Know	Greg Caldwell, Tracy Offerdahl	Tangerine WF2
9–11am	SD-13	Uveitis Associated with Systemic Disease	Megan Hunter, Michelle Marciniak	Tangerine WF1
10am–12pm	AS-10	Microbial Keratitis: Bacterial and Non-Bacterial Update	Joseph Shovlin, Michael DePaolis, Paul Karpecki	Tangerine WF2
2–4pm	RS-02	Unlocking the Potential of Refractive Surgery in Your Practice	Kyle Sandberg, Roberto Saenz, Michael Shumski	W230 CD
2–4pm	NO-11	Pathways to a Proper Diagnosis	Kelly Malloy, Lorraine Lombardi	Tangerine WF3/4
4–6pm	OP-05	Pain Management for the OD	Jane Grogg	Tangerine WF3/4
Saturday, October 26				
Time	Course #	Course Title	Lecturer(s)	Room
8–10am	SP-02	Lids and Lashes on the Cutting Edge	Spencer Johnson	W231
8–10am	NO-12	Neuro-ophthalmic Disorders Update	Joseph Sowka, Greg Caldwell, Jessica Steen	Tangerine WF2
1–3pm	SD-15	Hypertension: When Things Go Awry Not Only in the Eye	Kimberley Poirier-Schmidt, Carlo Pelino	Tangerine WF3/4

FELLOWS DOING RESEARCH

FDR Special Interest Group Study

Did you see the T-Rex mascot last year? The Fellows Doing Research SIG is back with our annual exhibit hall booth project. This year we will be looking at the accuracy of a visual acuity platform using augmented reality to measure test distance, comparing it against a standard digital M&S visual acuity system. Please come on by booth 1727 with friends and colleagues to be a subject and help us get some solid and much needed data in this space.



Social Events and Receptions

Attendee Exhibit Hall Welcome Reception

Wednesday, 5–7:30pm

The American Academy of Optometry and World Council of Optometry welcome all attendees to Academy 2019 Orlando and the 3rd World Congress of Optometry at this reception. Come enjoy a drink and a bite to eat while you catch up with your friends and colleagues.

Evening Poster Special Event

Thursday, 4:30–6:30pm

On Thursday, posters are limited to a single evening session combined with a cocktail hour including a complimentary drink with meeting registration. Plan to stop by for some CE before heading out to dinner!

Exhibit Hall Attendee Reception

Thursday, 5–6:30pm

Australia Party

Friday, 9pm–1am

Hosted by the Brien Holden Vision Institute and the American Academy of Optometry. Enjoy great live music and, as always, the Fosters will be flowing!

Joint World Council of Optometry and American Academy of Optometry Gala Dinner and Awards Ceremony

Saturday, 7–10pm

Join us for an extravagant evening of camaraderie, celebration and recognition. Bring friends and family as we recognize new Academy Fellows and Diplomates and awards recipients. Black tie optional. To celebrate the international flavor of this joint meeting, attendees are encouraged to wear traditional outfits from their country. Gala tickets are not included with registration fees and can be purchased for \$25 each.

Section on Cornea, Contact Lenses and Refractive Technologies Awards and Max Schapero Lecture

Please join us today from 4–5pm to hear the Section on Cornea, Contact Lenses and Refractive Technologies Awards and Max Schapero Lecture in room W221. The Founders' Award recipient will also be recognized.

Max Schapero Memorial Lecture

Philip B. Morgan, PhD,
MCOptom, FAAO

The Quest for the Invisible Lens



Founders' Award

S. Barry Eiden, OD, FAAO



TOMORROW 8–10am ROOM W331

Gene Therapy: Bridge the Science-Patient Care Gap

Novel therapies may soon address glaucoma, retinal disease and more.

This year's annual research symposium in honor of the late Dr. Monroe J. Hirsch will focus on one of optometry's hottest topics: gene therapy for ocular and neurologic disorders. Moderated by Chris A. Johnson, PhD, DSc, FAAO, the session will feature three experts who will delve into contemporary issues in gene therapy for many conditions ODs are already familiar with: Leber congenital amaurosis, Leber hereditary optic neuropathy and glaucoma.

Stephen Russell, MD, will kick off the session with a discussion of the current treatments for Leber disease, which now include gene therapy with the first FDA-approved drug for inherited disease, introduced in late 2017, Luxturna (voretigene neparvovec, Spark Therapeutics). Dr. Russell will cover the drug's development, human testing and application, with a concentration on its vitreoretinal surgical delivery and the pertinent

findings during the pre- and post-op patient evaluation.

Abbot Clark, PhD, FARVO, will then introduce gene therapy for glaucoma, including its potential and its challenges

Byron L. Lam, MD, will conclude

the talk with a discussion on gene therapy for Leber hereditary optic neuropathy.

Dr. Lam will use a clinical case example of the condition to lead into its causes and clinical manifestations. He will then talk about

current therapy options and the promise of new gene therapy treatments, including the challenges researchers face in bringing it to the clinic. He will wrap up his section of the symposium with future treatment considerations. ●

CET COURSES FOR WEDNESDAY, OCTOBER 23

Select courses have been submitted and approved for Continuing Education and Training (CET) points valid for optometry and optical professionals registered in the United Kingdom. Each course will be worth 1 CET point.

Wednesday, October 23				
Time	Course #	Course Title	Lecturer(s)	Room
8–9am	AS-01	Pediatric Bumps, Lumps, and Tumors	Nidhi Rana	W231
9–10am	CL-02	The Science of Soft Contact Lens Fitting	Beth Kinoshita, Matthew Lampa, Mark Andre	W221
1–2pm	PS-02	Choroidal Pathology: Vascular, Inflammatory and Tumors	Michael Yapp	Tangerine WF1
2–3pm	CL-04	Acknowledging and Eliminating Contact Lens Visual Discomfort	Erin Rueff	W221
4–5pm	PS-05	Diabetic Retinopathy: An Update in the Anti-VEGF Era	Kuniyoshi Kanai	Tangerine WF3/4

AFOS Meeting Kicks Off Events in Orlando

Members of the Armed Forces Optometric Society (AFOS) reported Tuesday at 0800 hours to the Rosen Plaza for their annual meeting at the AAO conference to focus on ocular conditions impacting their unique patient subset. With breakfast and coffee in hand, attendees made their way to the general session conference room where they spent the greater part of the day.

Virtual Health, Real Problems

Jennifer Stowe, OD, MBA, FAAO, and James Elledge, OD, MBA, FAAO, led the first session, “Developing Virtual Health for Operational Optometry.” They defined virtual health as the use of electronic information, imaging and communication technologies to provide and support health care when distance separates the participants.

Dr. Stowe recalled first getting involved with this platform after Hurricane Maria destroyed Puerto Rico in September 2017. “This was a national disaster that demanded a national response,” she said. But limited access to the island made providing aid difficult. This is how Mobile Medic and the Special Medical Augmentation Response Team (SMART) came to fruition. The two provide remote care for anything from general surgery and trauma to infectious disease and optometry. Partaking in these virtual care endeavors, the duo of doctors learned the importance of taking a complete patient history and knowing the eye care basics. They also realized even the best-laid plans can go awry, calling Hurricane Maria “the perfect storm,” as both virtual health initiatives had great prospects, but the medics had not been thoroughly prepared.

Drs. Stowe and Elledge then turned their attention to diabetes. They noted that only 60% of the diabetic population receives timely eye exams. The other 40% doesn’t, in large part because of limited access. The diabetic retinal imaging with virtual evaluation (DRIVE) is a virtual health advancement geared toward patients who haven’t been seen recently or who don’t have an up-to-date eye exam. The presenters stressed that this is a



Drs. Stowe and Elledge outline the DRIVE process.

screening tool meant not to replace comprehensive eye exams but to encourage follow-up eye care.

They also covered other virtual health efforts, such as Pacific Asynchronous Telehealth (PAT), FOX-TROT—which targets unsecured locations through a secure app—and telehealth remote observation of ocular pressure (TROOP) for glaucoma.

Drs. Stowe and Elledge concluded their presentation by emphasizing that virtual health is here to stay and optometrists need to define it before it is defined for them.

Double Vision, Double Trouble

Paula Luke, OD, FAAO, followed the virtual health course with, “Double Double Toil and Trouble with Double Vision.”

Dr. Luke opened the discussion by noting that common etiologies of monocular diplopia include astigmatism, keratoconus and cataracts, while binocular diplopia could be a result of strabismus. She added that diplopia could also be secondary to systemic diseases such as thyroid ophthalmopathy, myasthenia gravis or multiple sclerosis. Diplopia is associated with sensory anomalies, including visual confusion and sensory fusion disruption syndrome and causes muscle palsy or paresis to the oculomotor, trochlear and abducens nerves.

To diagnose diplopia, Dr. Luke recommended evaluating eyelid position, facial sensation, orbicularis strength and ocular motility and looking out for exophthalmos. Other tests worth conducting include version, duction, forced duction, cover (both distance and near) and concomitancy.

Dr. Luke suggested managing diplopia with contact lenses to correct refractive error or prism. Going the prism route, ODs could prescribe ground-in prism when diplopia is stable and not too extreme, Fresnel press-on prism to trial different amounts

of prism and see what works best or reverse prism. She also identified vision therapy as a good alternative when lenses and prism aren’t viable. Dr. Luke also mentioned interventional treatments, such as Botox and surgery, occlusion and monovision with corrective lenses to make the patient functionally monocular. At the end of the day, however, she said motility treatment is usually the easiest fix.

“Our job is to help the patient by preventing diplopia and allowing them to see safely,” Dr. Luke told the audience. She wrapped up the session by emphasizing that the goal is always to protect the patient, preserve the eye and prevent diplopia.

Looking Ahead

After continuing their education with back-to-back morning courses, attendees were excused to browse the exhibits, then invited to participate in a series of breakout sessions leading into lunch. The latter half of the day included talks on sports-related concussions and military refractive surgery cases followed by grand rounds and a session on laser eye protection for aircrew members. A closing reception rounded out the AFOS annual meeting for 2019. ●

TODAY 3–5pm TANGERINE WF1

With Acute Vision Loss, Act Fast

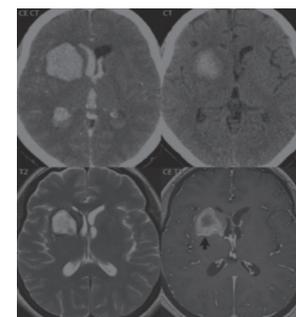
When a patient reports with sudden vision loss, time is of the essence and it takes an organized approach to make the best use of that time. According to presenters James Fanelli, OD, FAAO, Leonard Messner, OD, FAAO and Lorraine Lombardi, PhD, if you find yourself in this situation, you’ll want to keep five key points of this lecture in mind:

1. Identify underlying disease process.
2. Locate whether the disease origin is outside or inside the CNS.
3. Look for ocular signs and symptoms of vascular disease.
4. Perform a neurovascular disease work-up.

5. Consider management options.

Using some real-world case samples and experiences of their own, the presenters will walk attendees through the steps of a variety of conditions that may be lurking when patients suddenly lose vision or their vision is obstructed.

Salus University’s Dr. Lombardi will share her special neurological expertise to provide an overview of how the communications between heart and brain can impact vision. Some of the conditions the team will discuss in-



Brain imaging is essential for hemorrhagic stroke patients.

clude atrial fibrillation, Carotid and vertebral diseases and stroke.

Some ocular manifestations of cerebrovascular disease include Hollenhorst plaques—which originate from degenerating atheroma from carotid or the aorta—and Fischer plugs—which are

platelet/fibrin emboli originating from carotid and heart valves.

The team will present an in-depth review of how various conditions obstruct vision that any doctor can take back to their clinic. ●

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Westin Snowmass Conference Center

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APRIL 16-19, 2020 - AUSTIN, TX

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MAY 29-31, 2020 - SAN DIEGO, CA

Manchester Grand Hyatt

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JUNE 5-7, 2020 - ORLANDO, FL

Disney Yacht & Beach Club

Program Chair: Paul M. Karpecki, OD, FAAO

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NOVEMBER 6-8, 2020 - PHILADELPHIA, PA

Philadelphia Marriott Downtown

Program Chair: Paul M. Karpecki, OD, FAAO

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See www.reviewsce.com/events for any meeting schedule changes or updates.

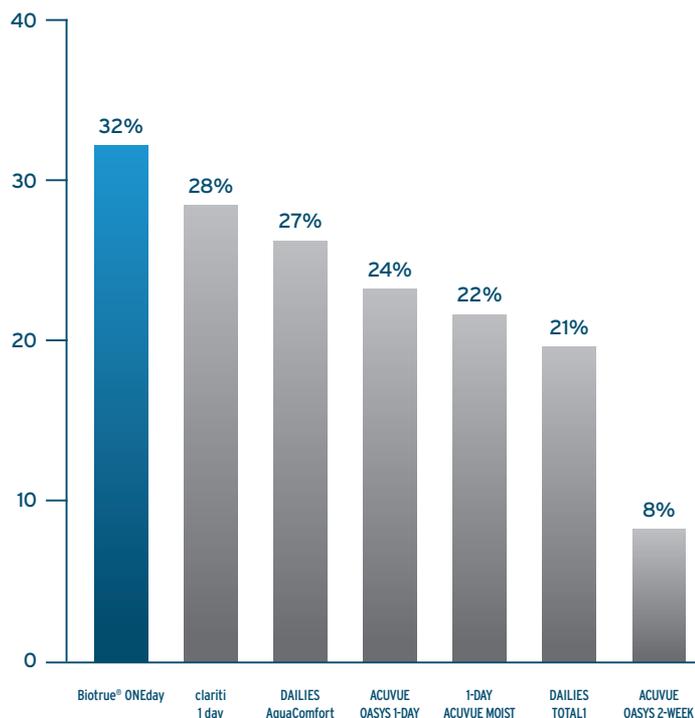


LOOK NO FURTHER

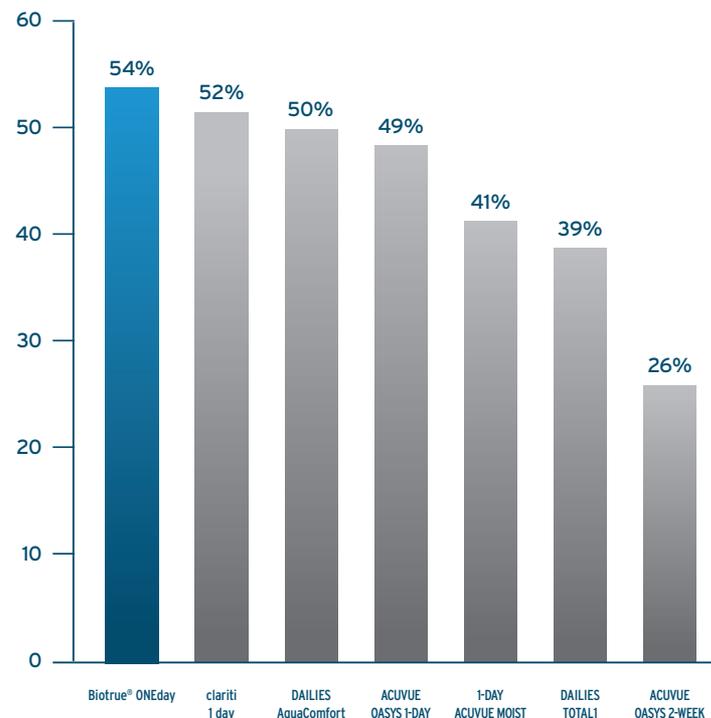
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†Purchased an annual supply of contact lens brand in 2017 and then repurchased an annual supply of the same brand in 2018.

REFERENCE: 1. Data on file. Bausch & Lomb Incorporated. 3rd Party Industry Report. 2017-2018.

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