



AMERICAN ACADEMY of OPTOMETRY TIMES



This year's photo contest winners, p.10



Exhibitor listing and hall map, p.8



Future Academy meeting cities and dates, p.4

Plenary 2018: Don't Fear the Future

Openness to technology and some old fashioned "can-do" spirit can help guide optometry through a period of radical change.

It all comes down to attitude. That was the overarching theme of yesterday's Plenary Session, "The Future of Health Care Delivery," which brought together three authorities on the changes that will affect healthcare, big and small. The field is at a crossroads, compelled to react to outside forces like sweeping new changes to federal health reimbursement policy and the impact of new technologies for delivery of care. Doctors can be proactive and embrace change—or ignore these trends and just hope to weather the coming storm.

In an impassioned case for the former, the session covered optometrists'

expanding roles and responsibilities, the importance of examining the underpinnings of their clinical decisions, and benefits of telemedicine.

Up For Grabs

Ezekiel Emanuel, MD, of the University of Pennsylvania started the session off with a sobering look at the inadequacies of the present American health care system and future trends that will help optometrists and other professionals as healthcare shifts. He noted that despite the exorbitant amount the United States spends on healthcare annually—as much as the entire GDP of Germany—the rate of life expectancy



Dr. Emanuel discusses the eight "Trends in Future Health Care."

over the last four decades has not continued to expand in proportion to the money spent on healthcare, especially when compared to 23 other

countries within the same time frame (see chart, p. 3). Dr. Emanuel noted, as a pediatrician would phrase it, "America fell off the growth curve."

He explained that the difference that is holding the United States back is the way the country delivers care. Dr. Emanuel cites unnecessary services and inefficient care as important issues to deal with, where practitioners deliver more expensive care with little to no improvement in outcomes. Nevertheless, he remains optimistic. "When the United States focuses on something, it can be the best in the world," Dr. Emanuel said.

See PLENARY, Page 3

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Busting the Dry Eye Myths

It's time clinicians retire these old, outdated and downright incorrect approaches.

Dry eye disease (DED) is a moving target. Not only do patients present with a mixed bag of signs and symptoms, they respond to treatments differently. Likewise, the wisdom doctors have accumulated isn't set in stone. This puts practitioners at risk for falling behind in what the research has to say. Salus University educator Alan Kabat, OD, FAAO, was on hand yesterday morning to set the record straight. He presented on seven persistent misconceptions to a room so full, some attendees were turned away at the door.

Myth 1: Excess Tearing Equals Dry Eye

Dr. Kabat explained, dry eye is one of several differential diagnoses to consider when patients present with excessive tearing, or epiphoria.

These include allergic conjunctivitis, punctal stenosis, lagophthalmos and conjunctivochalasis. In fact, in dry eye disease, reflex tearing is a symptom that follows ocular irritation. A recent study of patients presenting with epiphora found that only 4.7% had reflex tearing (DED) as the etiology. Adherence to a hard and fast rule such as diagnosing all epiphoric patients with dry eye could lead patients down a treatment path that won't relieve their symptoms.

Myth 2: Reduced TBUT with Staining is Dry Eye

While it's true that diminished tear breakup time (TBUT) can reveal dry eye, it is also associated with corneal dysfunctions, such as basement membrane dystrophy. Limbal stem cell deficiency can also mimic unusu-



Dr. Kabat guides a packed room on their dry eye misconceptions.


al TBUT. In fact, he explained, the most recent Tear Film and Ocular Surface Society's Dry Eye Workshop report (TFOS DEWS II) suggests "tear film stability can be affected by fluorescein temperature, humidity and air circulation."¹

See DRY EYE, Page 6

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*HA is an inactive ingredient.

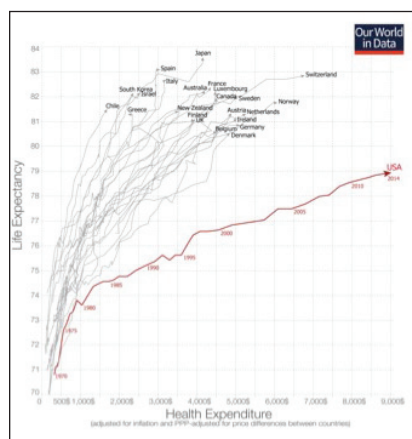
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Plenary Session Asks ODs to Embrace the Future

Continued from Page 1

Dr. Emanuel presented eight future trends of high-value care: (1) private-sector driven changes, (2) a shift towards value-based payment, (3) VIP care for chronic conditions, (4) greater use of non-physician providers, (5) the deinstitutionalization of care, (6) the performance measurement standards of physicians and other providers, (7) the incorporation of behavioral health in regular care and, lastly, (8) excessively high drug prices.



Dr. Emanuel's lecture included what he proclaimed "the most depressing slide of health policy" (US is in red).

The growing need for eye care and ever-changing methods of delivery allow optometrists to continue to increase their capacity to assess and screen their patients for specific diseases. Expansion of responsibilities includes treating glaucoma, prescribing antibiotics, and performing laser surgery and injections under certain states legislation.

Dr. Emanuel instructed the audience to be ready and prepared for whatever transformations may occur to the world of healthcare. He believes that in the future, health professionals will focus more on care for chronic diseases, on mental health and on moving patients to lower-cost facilities—Walmart and CVS are already providing some low-level care, and this is sure to increase. Stay informed, be prepared and roll with the changes, he advised.

Making the GRADE

Gordon Guyatt, MD, of McMaster University in Ontario applied his three principles of evidence-based medicine for situations that optometrists can use to deliver the best care. The three principles: (1) the need for systematic summaries of the best evidence found in the literature, (2) the need to have rules and hierarchies for use of such evidence and (3) the need to recognize that the values and preferences of individual practitioners and patients also strongly influence clinical decisions.

Dr. Guyatt believes optimal clinical care involves access to systematic summaries of the best evidence via systematic reviews and meta-analyses. Without them, there is a high risk of clinicians focusing on unrepresentative pieces of evidence. He then proposed a more sophisticated hierarchy of evidence that acknowledges limitations in randomized trials and also considers issues of precision, consistency and directness of evidence instead of solely study design.

He also introduced the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) framework, which judges the quality of evidence and recommendations that organizations present. According to Dr. Guyatt, "Recommendations are weak when the certainty in evidence is low, when there is a close balance between desirable and undesirable consequences, when there is substantial variation or uncertainty in patient values and preferences and when



Dr. Guyatt educates the Plenary audience on evidence-based medicine.

interventions require considerable resources." Strong recommendations suggest that all or almost all persons would choose that intervention.

But the push for scientific rigor shouldn't crowd out the value of 'gut instinct' and personal preference, he noted. The values individual doctors accumulate through years of practice, and the choices patients make about their own care, are crucial and affect every clinical choice made. As an example, only low quality evidence bears on the optimal frequency of follow-up when managing glaucoma. In such situations, patients' preferences—the inconvenience and burden associated with return visits vs. the risk of missing progression that would warrant increasing intensity of treatment—become highly important.

Tools of evidence-based medicine should include the ability to quantify the magnitude of benefits and risks of alternative management strategies—but there needs to be an experienced and empathetic doctor wielding those tools.

Framework of the Future

Anthony Cavallerano, OD, FAAO, of New England College of Optometry prefaced his lecture on telemedicine by joking he wasn't going to provide any recommendations for which new product to buy on the showroom floor. It's not about any one particular product. Rather, he believes that telemedicine will establish a framework that clinicians can use in their missions to improve access to quality eye care around the globe.

Providing healthcare education and disease screening to patients remotely rather than face to face may be disconcerting to some, but



Dr. Cavallerano presents an overview of the technical, business and clinical aspects of telemedicine.

"can create an environment that improves outcomes, provides more care for more individuals—the right place, the right care, the right time."

Regarding his patients' reception to telemedicine outreach, Dr. Cavallerano said he has seen that patients are far more intrigued, interested and devoted to the convenience aspect of care than he or his colleagues could have even imagined. He noted that presenting images and data on their ocular anatomy through artificial intelligence and virtual reality helped patients adhere to treatment. "When patients can monitor their own vital statistics involved in their own care, outcomes improve," Dr. Cavallerano stated.

He then discussed how telemonitoring research has shown that hospital readmissions and home nursing visits have decreased while also lowering overall costs. Patients and caregivers using telehealth technologies have reported increased satisfaction with their treatments.

Dr. Cavallerano is confident that optometrists will know how they each will use telemedicine in their respective offices, as the concept will fundamentally mean something different to everybody. "There is no universal approach to using technology in practice, but telemedicine is here to stay and is already changing the paradigm for many aspects of the field outside of delivering care," Dr. Cavallerano concluded. ●

TODAY 3pm–5pm STARS AT NIGHT BALLROOM B4

More Meds in Store: How Do they Fit In?

Find out what's new, both on the shelves and in the pipeline.

It's an exciting time for pharmaceutical development in eye care, as several new and upcoming options are aiming to halt disease and make patients more comfortable. This afternoon, optometric stalwart Alan G. Kabat, OD, a professor at Salus University in Elkins Park, PA, will share his wealth of knowledge about the therapeutic field, the newest products it has to offer and even a little insider information on what's to come.

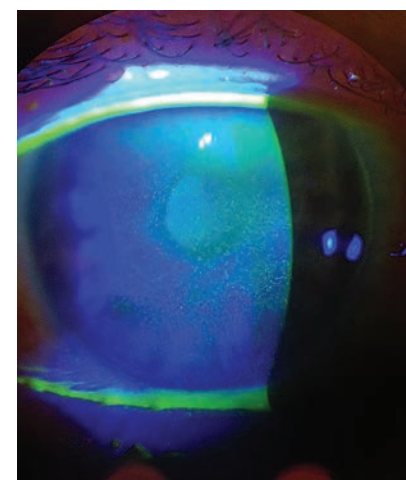
The course will begin with a look at five anterior segment conditions: dry eye, allergic conjunctivitis, conjunctival hyperemia, infectious conjunctivitis and ocular inflammation. Dry eye disease in particular has

a plethora of new drugs entering the market, including the cyclosporine compounds Seciera (cyclosporine A, Sun Pharma), CyclASol (cyclosporine A, Novaliq) and Klarity-C (cyclosporine, chondroitin sulfate, Imprimis). RegeneRx, Mimetogen and Novaliq are also working on non-cyclosporine dry eye solutions.

Dr. Kabat will also explain the status of numerous advances in glaucoma therapies, such as Vyzulta (latanoprostene bunod, Bausch + Lomb), which just passed one year of FDA approval, Rhopressa (netarsudil, Aerie) and Roclatan (netarsudil, latanoprostene, Aerie), the latter of which is still in Phase

III studies. Rhopressa and Roclatan belong to a class sometimes referred to as rho-kinase (or ROCK) inhibitors. These therapies are unique in that, rather than attempt to enhance unconventional outflow through the uveoscleral pathway, they're designed to increase actomyosin contraction in the smooth muscle-like cells of the trabecular meshwork in an attempt to reestablish outflow.

Finally, the presentation will cover what the OD needs to know about Luxturna (voretigene neparvovec-rzyl, Spark Therapeutics), a one-time gene therapy product designed to improve functional vision for patients with RPE65-mediated inherit-



After a long period of dormancy, the dry eye market is heating up with several new drugs.

ed retinal dystrophy. This treatment was FDA approved late last year.

Dr. Kabat will review patient selection, mechanism of action and contraindications for each of the medications in the three disease groups. ●

JOIN US AT THESE FUTURE ACADEMY MEETINGS!

Academy 2019 Orlando and 3rd World Congress of Optometry
October 23-28, 2019

Academy 2020 Nashville
October 7-10, 2020

Academy 2021 Boston
November 3-6, 2021

Academy 2022 San Diego
October 26-29, 2022

Academy 2023 New Orleans
October 11-14, 2023

Academy 2024 Washington DC
November 6-9, 2024

Academy 2025 Boston
October 8-11, 2025

RESEARCH SPOTLIGHT

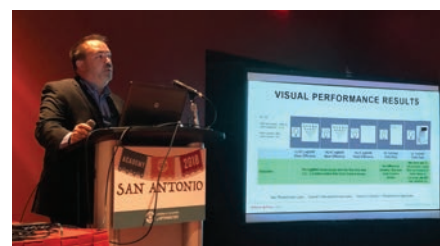


A Contra-lateral Comparison of the Visual Effects of Clear vs. Photochromic Contact Lenses

Billy Hammond, Lisa Renzi-Hammond, John R. Buch, Jessica L. Cannon, Youssef Toubouti

Two studies being presented at Academy 2018 highlight the performance of a new photochromic contact lens being developed by Johnson & Johnson Vision.

In a study assessing whether the lens could improve visual function when subjects were exposed to simulated sunlight conditions, 61 subjects were randomized to wear senofilcon A lenses with and without a photochromic additive. Photostress recovery time was 44% faster, glare discomfort was reduced by 39%, glare disability improved by 36% and chromatic contrast was enhanced by 33% in patients using the photochromic lens, Billy Hammond, PhD, and his team recently found. Not only do these lenses prevent vision impairment when wearers experience light stress, but the team discovered that they also significantly improve visual function.



The Impact of Photochromic Contact Lenses on Daytime and Nighttime Driving Performance

John R. Buch, Jessica L. Cannon, Youssef Toubouti

In the second study, patients wearing the photochromic contact lenses while driving during the day and at night performed the same as or better than when wearing non-photochromic lenses, John Buch, OD, MS, FFAO, and his team observed. Since these lenses automatically darken in the presence of ultraviolet and high-energy visible light by absorbing visible wavelengths and reducing retinal illuminance, there was concern that they may negatively impact vision, a worry not borne out by these results. The study tested performance using a closed-circuit driving track with different routes and conditions and assessing several factors, including pedestrian recognition, hazard detection, lap time, lane keeping and sign recognition and distance. Tests of 24 participants demonstrated the non-inferiority of the photochromic lenses relative to the controls.

The above summaries were presented at the AAO press conference yesterday. Dr. Buch will give a full presentation of his study **today** in this session:

• **Hot Topics in Anterior Segment** Thursday 8–9am, Hemisfair Ballroom C1

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Busting the Dry Eye Myths

Continued from Page 1

Dr. Kabat's solution is to rely on non-invasive instead.

Myth 3: Drops Only Mask Symptoms

You may consider artificial tears something that merely masks the disease, not a viable therapy. That's true for some patients, but for those in early stages of mild DED, regular use of quality lubricants as well as environmental adjustments, dietary changes and behavioral modifications can lead to results. A lot of variability exists in the research, and your particular patient's presentation must be considered.

"Please, don't rule out the benefits of artificial tears in favor of pharmaceuticals," Dr. Kabat said.

Myth 4: Restasis Doesn't Work

Despite some anecdotal reports from optometrists, Restasis does, in fact, block the production of inflammatory cytokines. What it can do, essentially, is reduce activated T-lymphocytes, reduce biomarkers of conjunctival apoptosis and reduce pro-inflammatory cytokines; it has a beneficial effect on the conjunctival epithelium. And, of course, it increases tear production and Schirmer scores. It may, however, take three to six months to kick in and, Dr. Kabat says, that's where patients get frustrated.

"It's not that it doesn't work," he said. "The problem is it doesn't work fast enough to satisfy our patients' expectations." Those patients' expectations are the optometrist's responsibility, he adds. Patients want that pain or dryness gone immediately, which is understandable, but ODs must learn to manage their expectations appropriately.

Myth 5: Punctal Occlusion Will Only Make Matters Worse

Because of all the inflammatory mediators involved in the process, "I've heard it said that [applying punctal plugs] is like bathing the

ocular surface in a toxic soup," Dr. Kabat said. However, studies show that these devices can in fact improve signs and symptoms for some patients. For instance, the DEWS II report supports using them in patients who have DED associated with a rapid tear break-up time, patients with aqueous deficiency secondary to systemic disease (e.g., Sjögren's syndrome), those taking systemic medications that reduce tear production (e.g., antidepressants), symptomatic contact lens wearers and others.

Myth 6: Contact Lenses are Contraindicated in Moderate to Severe Dry Eye

This one's more of a half truth than an outright myth, as the contact lenses themselves can harm patients if they're made of the wrong materials, Dr. Kabat observed. For instance, high-water contact HEMA lenses can exacerbate symptoms in patients with marginal dry eye. But some materials are safe, even in patients with moderate DED.

In fact, patients with some severe forms of dry eye can benefit from devices such as bandage lenses and "in some patients, it's been a life-altering bandage option." In patients where conventional therapies such as pharmaceuticals have failed, sclerals and bandages should be considered, he says.

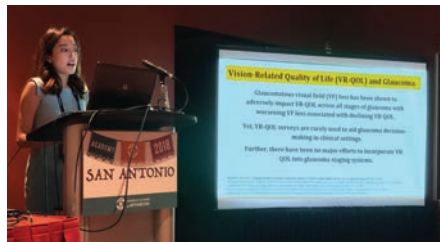
Myth 7: Dry Eye Has No Visual Implications

According to Dr. Kabat, visual stability is often the first casualty. Fluctuating vision is indeed the first sign he often notices in patients and studies he presented back him up.² A lot of these patients might not be reporting symptoms, but visual issues during daily activities, such as driving, watching television, reading and using a computer, can foretell dry eye. ●

1. Jones L, Downie LE, Korb D, et al. TFOS DEWS II Management and Therapy Report. *Ocul Surf*. 2017 Jul;15(3):575-628.

2. Koh S. Mechanisms of Visual Disturbance in Dry Eye. *Cornea*. 2016 Nov;35 Suppl 1:S83-S88.

RESEARCH SPOTLIGHT



Employing Vision-Related Quality of Life Scores to Stage Glaucomatous Visual Field Loss

Tran N. Bianconi, Michael Sullivan-Mee, Denise Pensyl, Suchitra Katiyar

Bilateral 24-2 visual field (VF) index scores correspond well with the stage of glaucoma a patient is experiencing and could be used to estimate patients' quality of life impact, researchers from New Mexico recently discovered. A study of 206 eyes of 103 subjects used vision-related quality of life (VR-QOL)-based staging to classify subjects as mild, moderate or advanced disease. When visual field data from 24-2 and 10-2 VF testing were compared by VR-QOL stage, the 24-2 VFI value was the only one significantly different between each stage. Representing her team, Tran Bianconi, OD, noted that this finding suggests average index scores may estimate patient-specific VR-QOL. "While classification of glaucoma severity is critical for clinical management, there is no single staging system that has been universally adopted for our clinical use," Dr. Bianconi said. Quality of life has been shown to correlate with glaucoma severity and could be used to develop a universal glaucoma staging system.

The above summary was presented at the AAO press conference yesterday. Dr. Tran will give a full presentation of the study **today** in this session:

• **Hot Topics in Glaucoma: New Horizons**, Thursday 8-9am, Hemisfair Ballroom C2

Public Health and Environmental Vision Section Awards and Henry B. Peters Lecture

Please join us today from 5-6pm to hear the Public Health and Environmental Vision Section Awards and Henry B. Peters Lecture in Room 008B, River Level:

Henry B. Peters Memorial Award in Public Health and Environmental Vision

Provided by the American Academy of Optometry Foundation

Robert Newcomb, OD, MPH, FAAO

"Optometrists in America: Not Enough? Just Right? Need More?"



Dr. Newcomb

NEW!

Tonight, 7:45-9pm in Exhibit Hall 1
(Cash bar reception starts at 7pm)

Essilor Academic Challenge at Academy Stadium

This event 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. All are welcome! Join us to cheer on your fellow students or your alma mater.



TODAY'S HIGHLIGHTS

Laura Pardon, OD, MS, FAAO, will be recognized during the Student and Resident Award Lunch today at noon in the Stars at Night Ballroom B4. Her presentation at Academy 2017 Chicago was selected as the best student scientific presentation overall.

Hot Topics Paper Sessions, Today, 8–8:50am

Lectures won't begin until 9am this morning, so join us at a Hot Topic Paper Session for some CE and information on the latest developments in the field:

- Hot Topics in Anterior Segment (Hemisfair Ballroom C1)
- Hot Topics in Glaucoma: New Horizons (Hemisfair Ballroom C2)
- Hot Topics in Pediatric and Binocular Vision (Hemisfair Ballroom C3)

Special Evening Poster Event, Tonight, 4–6pm in Exhibit Hall 3

Stop by for CE and a complimentary cocktail (with ticket) during this special evening poster session. This will be a fun way to catch up on some of the latest research that will shape our profession in the years to come! Posters will be available to view starting at 9 am. Poster topics will include:

- Cornea/ Anterior Segment/ External/ Dry Eye
- Systemic & Other Disease
- Glaucoma
- Neuro-Ophthalmic & Orbit
- Binocular Vision
- Academy Information Posters
- Pediatric Optometry
- Low Vision
- Visual Function/Perception
- Neuro-Ophthalmic & Orbit

Paper Sessions for Thursday, November 8:

Category	Room	Time
P-08: Scleral Lens Super Session	304	9:15am–12pm
P-09: Public Health and Eye Care Delivery	303	10am–12pm
P-10: Optometric Education: How We Teach	303	1–2:15pm
P-11: Myopia Super Session	304	1–3:45pm
P-12: Age-related Macular Degeneration	303	2:30–3:45pm

Vision Theater Sessions

These informative, commercial programs will be conducted by exhibitors in a specially constructed theater on the exhibit floor. Grab some lunch and have a seat! Pre-registration is required. Tickets were provided at registration.

Thursday, November 8

Company	Time-Slot	Location	Speaker	Title
Bausch + Lomb	12:05–12:35pm	EAST	Jeffry Gerson, OD, FAAO	Making Sense of Ocular Nutrition
Spark Therapeutics	12:40–1:20pm	EAST	Meghan Marino DeBenedictis, MS, LGC, Med	Genetic Testing in the Dawn of Precision Medicine
PRN	1:25–1:55pm	EAST	J. James Thimons, OD	A Paradigm-Shifting opportunity for Your Diabetic Patients
Glaukos	12:05–12:35pm	WEST	Justin Schweitzer, OD and Michael Chaglasian, OD	iStent inject: New MIGS on the Block
Bausch + Lomb	12:40–1:20pm	WEST	Jason Jedlicka, OD, FAAO	A Novel Scleral Lens Multifocal
Bausch + Lomb	1:25–1:55pm	WEST	Shelley Cutler, OD, FAAO	Scleral Lens Troubleshooting

Company	Time-Slot	Location	Speaker	Title
Sun Ophthalmics	12:05–12:35pm	EAST	Paul M. Karpecki, OD, FAAO	A New Treatment Option for Dry Eye Patients
Allergan	12:40–1:20pm	EAST	Selina McGee, OD	The Science Behind Neurostimulation and Optometry
Glaukos	1:25–1:55pm	EAST	Arthur Medina, OD and Joseph Kavanagh, MD	Collaborative Approach to iStent inject® Implementation
Bausch + Lomb	12:05–12:35pm	WEST	Jeffry Gerson, OD, FAAO	Making Sense of Ocular Nutrition
Johnson & Johnson	12:40–1:20pm	WEST	Carol Alexander, OD, FAAO	The Future of Contact Lenses for Optometry
Sight Sciences	1:25–1:55pm	WEST	Scott Schachter, OD Consultant Whitney Hauser, OD	The TearCare System: Intelligent Innovation

Friday, November 9

Company	Time-Slot	Location	Speaker	Title
Bausch + Lomb	12:05–12:35pm	EAST	Jeffry Gerson, OD, FAAO	Making Sense of Ocular Nutrition
Spark Therapeutics	12:40–1:20pm	EAST	Meghan Marino DeBenedictis, MS, LGC, Med	Genetic Testing in the Dawn of Precision Medicine
PRN	1:25–1:55pm	EAST	J. James Thimons, OD	A Paradigm-Shifting opportunity for Your Diabetic Patients
Glaukos	12:05–12:35pm	WEST	Justin Schweitzer, OD and Michael Chaglasian, OD	iStent inject: New MIGS on the Block
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Johnson & Johnson	12:40–1:20pm	WEST	Carol Alexander, OD, FAAO	The Future of Contact Lenses for Optometry
Sight Sciences	1:25–1:55pm	WEST	Scott Schachter, OD Consultant Whitney Hauser, OD	The TearCare System: Intelligent Innovation

EXHIBIT HALL DETAILS

The Academy 2018 San Antonio exhibit hall is the perfect place to experience cutting-edge products and services. Remember, badges are required for admission to the exhibit hall.

Al Care.....	1546
AAO Sections & SIGS.....	1119
Acculens.....	2131
Acuity Pro/VisionScience Software.....	1823
Akorn Pharmaceuticals.....	942
Alcon Foundation.....	927
Alcon Laboratories.....	1331
Allergan.....	1342
American Academy of Optometry.....	1033
American Academy of Optometry Foundation.....	1027
American Academy of Orthokeratology and Myopia Control.....	1223
American Board of Certification in Medical Optometry.....	744
American Board of Opticianry – National Contact Lens Examiners.....	846
American Board of Optometry.....	837
Armed Forces Optometric Society.....	2247
Art Optical Contact Lens.....	1937
Association of Schools and Colleges of Optometry.....	1555
Bausch + Lomb.....	1843
Beauty and Beyond.....	1523
Bernell.....	948
BioTissue.....	1518
BirdEye.....	845
Blanchard Contact Lenses.....	2036
BlephEx.....	2143
Brien Holden Vision Institute.....	735
Bruder Healthcare Company.....	1227
Bryn Mawr Communications.....	1718
CareCredit.....	2121
Chadwick Optical.....	1933
Choroideremia Research Foundation.....	1857
Clearlens.....	949
Cliara.....	1855
Coburn Technologies.....	1522
Collaborative Eyecare.....	723
Compulink Healthcare Solutions.....	1829
CooperVision.....	1635
Crystal Practice Management.....	1521
Designs for Vision.....	1628
DGH Technology.....	2043
Digital Health Care Professionals.....	745
Digital Heat Corp.....	742
Diopsys.....	946
Doctible.....	831
Elsevier.....	1219
Envision University.....	727
Eschenbach Optik.....	1634
eSight.....	835
Essilor Custom Contact Lens Specialists.....	1954
Essilor.....	1055
Ethis Healthtech.....	724
Euclid Systems Corporation.....	2055
Eye Care and Cure.....	1926
Eye Designs.....	943
Eye Photo Systems.....	1321
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Hadley Institute for the Blind & Visually Impaired.....	748
Hai Laboratories.....	2135
Health and Social Sector Analysis.....	2149
Heart of America Eye Care Congress.....	957
Heidelberg Engineering.....	947
Heine USA.....	1935
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 Thursday: 10–11am (Student Focus Hours)
 Thursday: 11am–6pm (Lunch in the Exhibit Hall)
 Friday: 10am–3pm (Lunch in the Exhibit Hall)

Stop by to see the latest technologies and services, and talk with company representatives about how their products can make your practice grow. Lunch will be provided in the Exhibit Hall Thursday and Friday.

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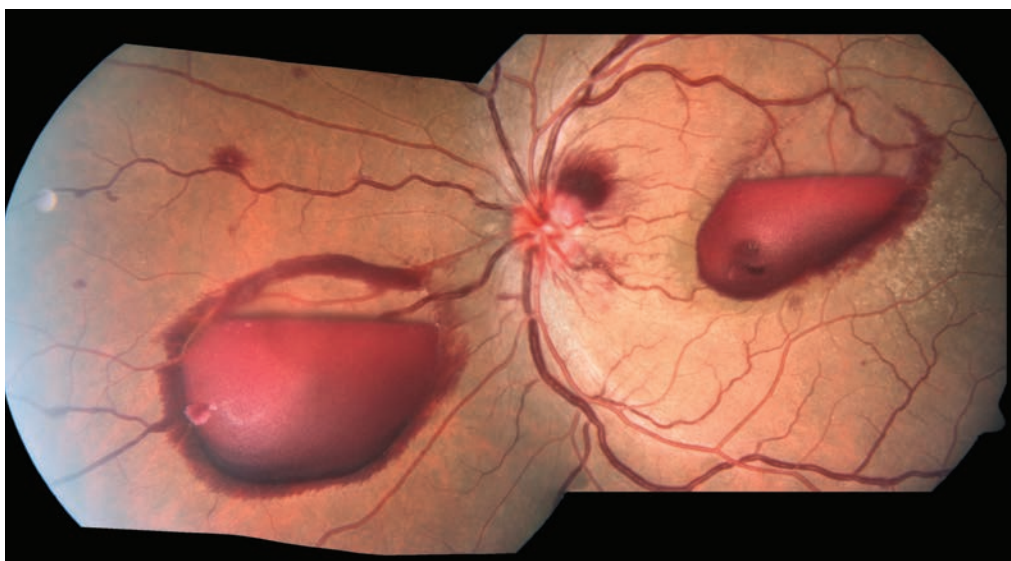
2018 Ocular Photography Contest Winners

The 2018 Comprehensive Eye Care Section's Annual Ocular Photography Contest received 177 image submissions from 119 different optometrists. The submissions were divided into anterior and posterior segment categories, which received 97 and 80 submissions, respectively. Grand prizes were awarded for the two categories, and four honorable mentions were handed out for from the combined submissions.

Submissions were graded in seven categories—each assigned a numerical value between one and 10—focus, exposure, field of view, difficulty of capturing image, absence of distracting elements, lighting and visual impact (“wow” factor). The total scores from 11 optometrist judges were averaged to determine the winners.

Special thanks to our judges: Anthony DeWilde, Amy Huddleston, Amanda Jimenez, Albert Nemiroff, Jason Powell, Glenn Saxon, Mollie Saxon, Melissa Turner, Karen Wadhams, Janis Winters and Bryan Wolynski.

Grand Prize: Posterior Segment



Krushna Gopal Panda, M. Optom
L V Prasad Eye Institute, Bhubaneswar, India

Valsalva Retinopathy

Imaging system used: Zeiss FF-450 Fundus Camera

Color fundus image of a 40-year-old male with valsalva retinopathy and history of vision reduction in his left eye for three days. Fundus images of the left eye showed a subhyaloid hemorrhage in the macular area and inferonasal quadrant.

Grand Prize: Anterior Segment

Parthasarathi Kalaiselvan, M. Optom
School of Optometry and Vision Science, University of
New South Wales

Special acknowledgement to: L V Prasad Eye Institute,
Hyderabad, India

The prominent dome-shaped cornea is seen in keratoconus with pellucid marginal corneal degeneration

Image system used: Canon DS126251 mounted on Haag-Streit BX 900 Photo Slit Lamp

A 28-year-old female visited the contact lens clinic with a chief complaint of a gradual decrease in distance visual acuity. She was diagnosed with keratoconus with pellucid marginal corneal degeneration in both eyes.



Honorable Mentions



Honorable Mention #1:

Robert Yacoub, OD

Southern California College of Optometry at Marshall B. Ketchum University

Metastatic Amelanotic Choroidal Melanoma with Characteristic "Leopard Spots"

Imaging system used: Zeiss Visucam NM/FA

Patient presented with complaints of floaters and decreased vision in his left eye. Significant medical history included cancer, but patient was never treated because he lost his health insurance. Patient was referred to an ocular oncologist after metastatic amelanotic choroidal melanoma was confirmed. Notice that the front aspect of the melanoma has a mushroom shape as it has broken through Bruch's membrane. An associated superficial intraretinal hemorrhage is noted temporal to the macula.



Honorable Mention #4

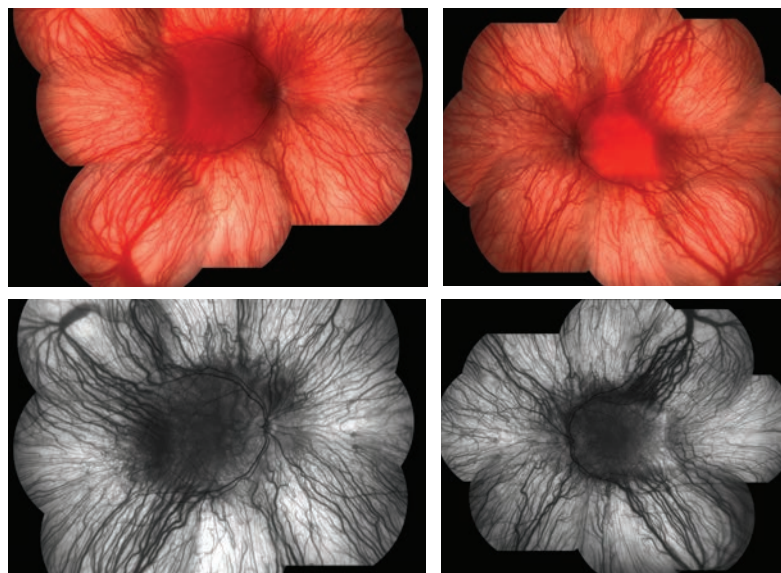
Mark Marquez, OD

Special acknowledgement to: John Ora, OD
VA Southern Nevada Healthcare System, North Las Vegas, NV

Congenital Retinal MacrovesSEL OD

Image system used: TRC 50DX Type IA

A 47-year-old Caucasian male with a congenital retinal macrovesSEL OD and a history of leakage noted on fluorescein angiography in 2004. Focal laser was subsequently performed on the areas of leakage, leaving a corrugated foveal contour depicted on ocular coherence tomography and a resulting visual acuity of 20/25. No apparent leakage on his most recent fluorescein angiography, performed in June of 2018, was discovered. The aberrant vessels are shown to cross the horizontal raphe into the macular region, which also depicts previous focal laser scars.



Honorable Mention #2:

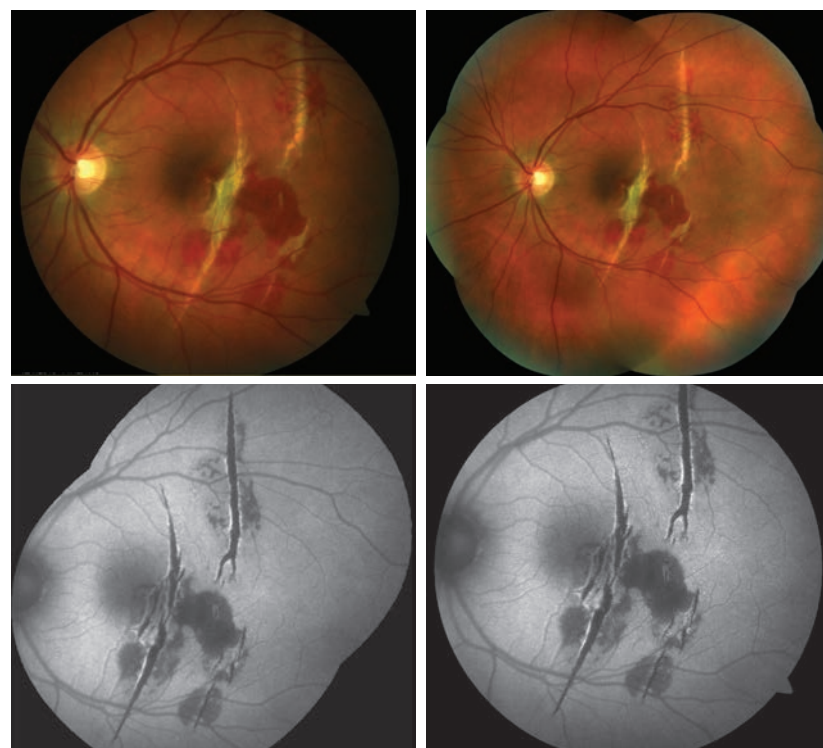
Uttaravilli Vinodh Kumar,
B. Optom

LV Prasad Eye Institute, GMRV
Campus, Visakhapatnam, India

Ocular Albinism

Image system used: Zeiss FF-450 IR+

A 17-year-old female with diminution of vision and nystagmus since age six. Both eyes show iris transillumination with albinotic fundi and absence of foveal pit on biomicroscopy examination. Color fundus photo and red-free image of the patient with ocular albinism with clear delineation of underlying choroidal vessels due to absence of melanin pigment.



Honorable Mention #3

Betty Wang, OD

Special acknowledgement to: Letitia C. Adams, ophthalmology
photographer

Orlando VAMC Lake Baldwin Eye Clinic, Orlando, Florida

Traumatic Choroidal Rupture with Subretinal Hemorrhage OS

Image system used: Zeiss Visucam NM/FA Camera

A 48-year-old male presents to clinic one month after being hit in the left eye. He was diagnosed with a traumatic choroidal rupture with subretinal hemorrhage OS affecting the macula and extending into the inferior posterior pole. BCVA was reduced to 20/100⁻¹ and was previously 20/20.

CONTINUING EDUCATION WITH EXAMINATION (CEE) CREDITS AT ACADEMY 2018 SAN ANTONIO

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 by mail or online. All are welcome to attend the courses without taking the exam. Instructions to request the exams are available at the Education Desk.

Thursday, November 8				
Time	Course #	Course Title	Lecturer(s)	Room
9–11am	SD-05	Diabetes in 2018	A. Paul Chous, Jeffry Gerson	Cockrell Theatre
10am–12pm	RS-03	Rapid Fire: Lasers, Lenses and Inlays, Oh My!	Kyle Andrew Sandberg, Gregory Parkhurst, Roberto Saenz, Jeffrey Augustine	214
10am–12pm	OP-04	Oral Medications for the Optometrist	Jane Ann Grogg	Stars at Night Ballroom B1
1–3pm	SD-10	A Logical Approach to Sorting Out Lumps and Bumps of the Conjunctiva	Thomas Fredo	Stars at Night Ballroom B4
2–4pm	GL-05	Glaucoma Suspect: When to Diagnose and When to Treat	Austin Lifferth, Michael Cymbor	Hemisfair Ballroom C1
3–5pm	SD-12	Metabolic Syndrome and Its Role in Retinal Vascular Disease	Jeffrey Joy	214
Friday, November 9				
Time	Course #	Course Title	Lecturer(s)	Room
8–10am	PS-09	AMD — How to Improve Outcomes and Help Prevent Blindness	Damon Dierker, Brad Sutton	Hemisfair Ballroom C2
10am–12pm	OP-06	What a Pain In the Eye: Pain Management for the OD	Jane Ann Grogg	Hemisfair Ballroom C1
10am–12pm	GO-09	Pediatrics for the Primary Care Optometrist	Marianne Boltz	302
3–5pm	OP-07	Pharmaceutical Update 2018	Greg Caldwell, Tracy Offerdahl	Stars at Night Ballroom B1
4–6pm	NO-12	An Organized Approach to the Patient with Multiple Sclerosis	James Fanelli, Leonard Messner, Lorraine Lombardi	Stars at Night Ballroom B4
4–6pm	GO-11	The Use of Electrodiagnostic Testing (VEP, ERG and EOG) in Clinical Practice	Sherry Bass, Kimberly Poirier-Schmidt	Hemisfair Ballroom C2
Saturday, November 10				
Time	Course #	Course Title	Lecturer(s)	Room
8–10am	OP-08	Eye Care Update – Part I	Ron Melton, Randall Thomas	Hemisfair Ballroom C1
9–11am	NO-14	An Organized Approach to the Patient with NeuroVascular Disease	James Fanelli, Lorraine Lombardi, Wendy Stone	Hemisfair Ballroom C3
10am–12pm	OP-09	Eye Care Update – Part II	Ron Melton, Randall Thomas	Hemisfair Ballroom C1
2–4pm	GO-18	Diagnosis and Management of Refractive Error in Infants and Young Children: Current Perspectives	Susan Cotter, Tawna Roberts	Hemisfair Ballroom C2
3–5pm	AS-21	The Herpes Group	Joseph Shovlin, Greg Caldwell, Michael DePaolis, Andrew Mick	214

Exhibit Hall A Popular Draw Across Eye Care

Optometrists young and old—as well as other professionals working in eye care—crowded around the closed doors just before the grand opening of the exhibit hall on Wednesday afternoon, eager to walk the aisles and fill their tote bags. When the clock struck 4pm, they were finally invited in to peruse the latest in technological advances from new space-age diagnostic devices to the coming year’s most stylish collections of frames.

Exhibitors were seen inviting attendees to give their gadgets a whirl, take home some tchotchkes and even meet some of the minds behind the equipment on display.

Eye care publishers were also on hand to meet their readers and offer samples of their works.

The exhibit hall will be open until 6pm today and reopen at 10am tomorrow morning for a specially designated student hour. The rest of the attendees may join them at 11am. ●



Optometrists flood into the exhibit hall for the first time at the annual AAO meeting in San Antonio to learn the latest and greatest their colleagues from all over the world have to offer.

TODAY 1–3pm COCKRELL THEATRE

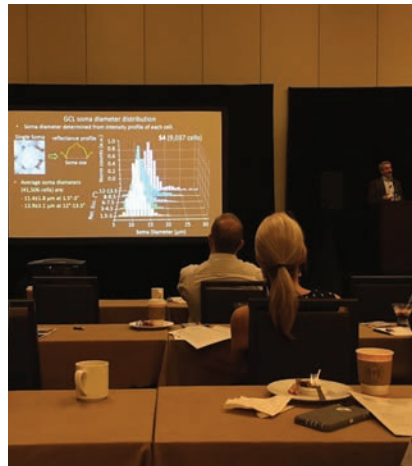
Joint Symposium: Eye on Imaging

OD-MD summit presents technological progress in visualizing and documenting ocular structures.

Imaging technologies are revealing biological structures to today's doctors that previous generation's would have never been able to see *in situ*. Ocular imaging—much of it non-invasively—has become an elemental tool for optometrists and ophthalmologists alike, which is why the two academies are joining forces once again this year to keep apprised of the latest devices, their potential and their limitations.

The American Academy of Optometry–American Academy of Ophthalmology joint symposium will provide an update on the anterior segment, retinal and glaucoma applications of ocular-imaging and their clinical implications.

Donald T. Miller, PhD, an educator at Indiana University's School of Optometry will speak on the capacity of imaging instruments to unveil the retinal ganglion com-



Donald T. Miller, PhD, presented to the Ocular Glaucoma Society on Tuesday. He'll be reprising his talk on imaging the layers of the ganglion complex today.

plex—the cells that die in glaucoma. He'll outline how fundus photography, optical coherence tomography (OCT), scanning laser ophthalmos-

copy (SLO) and visual fields can accomplish this and change the way physicians monitor glaucoma. He'll also review the literature on combining adaptive optics with OCT to image inner retinal layers.

Hiroshi Ishikawa, MD, a professor of ophthalmology at New York University's Langone School of Medicine will present on what the future may hold for glaucoma monitoring and what eye care physicians can learn about the disease from monitoring newly discovered biomarkers.

Glaucoma isn't the only disease impacted by these new techniques. Even the anterior segment is ripe for discovery. Consultant Adrian Glasser, PhD, will discuss how magnetic resonance and ultrasound biomicroscopy can help provide quantitative measurements of accommodative changes in some

phakic young patients or older presbyopic patients.

Stacey Choi, PhD, of Ohio State University's College of Optometry, will talk about how a combination of adaptive optics, OCT and a scanning laser ophthalmoscope can create a high resolution, three-dimensional image of the human retina *in vivo* and how that could be used to diagnose and monitor retinal diseases with greater accuracy than ever previously possible.

New technologies, innovative applications of existing technologies and important discoveries regarding structure and function promise to inspire continued progress in the decades ahead and the optometry/ophthalmology joint summit is the breeding ground for that inspiration.

Drs. Joel Schuman, Susana Chung and Jay S. Duker are also among those slated to speak. ●

Did you know that the Academy is more than just a meeting?

We invite you to become a Fellow of the American Academy of Optometry (FAAO) and to join a group of professionals dedicated to the highest standards in patient care. Visit the Academy's membership booth in the Exhibit Hall (#1033) to meet current Fellows of the Academy, ask questions, and learn more about the Candidacy for Fellowship process. Also, if you submit your Candidacy for Fellowship application during the meeting, we will waive the application fee (that's a savings of \$60)!

We also invite you to join us for the Fellowship Information Session being held TODAY from 3–4pm in Room 006AB, River Level.

Attention OD Students, Residents and Post-Doctoral Students!

Stop by the booth to pick up Academy information or apply for student membership.

Did you graduate from optometry school in 2018? If so, submit your Candidacy for Fellowship application by the end of the year and we will waive your 2019 Academy dues. Visit the Academy booth for more information.

RESEARCH SPOTLIGHT



Accommodative Behavior and Hyperopic Defocus in Children Viewing Electronic Devices

Raman P. Sah, Viswa Ramasubramanian, Neeraj K. Singh, Dawn Meyer, Christina Nguyen-Canter, Olivia Reed, Arthur Bradley, Pete S. Kollbaum

Due to the increased use of electronic media by children, a recent study explored the characteristics of accommodative behavior in emmetropic and myopic children to a variety of targets displayed on electronic devices. While it found no evidence that electronic displays produce large accommodative lags, the 19-subject study found that—as previously shown with adult subjects—closer viewing distance, reduced environmental lighting, monocular viewing and the increase in angular size associated with near viewing all increase the accommodative lag and thus the amount of hyperopic defocus that these children experienced. The study found that all children accommodated normally, with typical or smaller than usual accommodative lags (mean emmetropic lag = 0.53D, mean myopic lag = 0.32D), but, as shown previously, most subjects experienced lags at near.

The above summary was presented at the AAO press conference yesterday. Dr. Sah will give a full presentation of the study **today** in this poster session:

• **Thursday Evening Poster Event, Thursday 4–6pm, Exhibit Hall 3**

Forget What You Thought You Knew About Glaucoma

Approaching glaucoma from an unconventional perspective was the theme of yesterday's OGS/AAO Joint Symposium.

In a Wednesday morning session during the Joint Symposium of the Optometric Glaucoma Society (OGS) and the American Academy of Optometry (AAO), a speaker asked attendees to temporarily suspend a well-accepted notion about glaucoma.

"I'm going to ask you to ignore something you've all been taught, which is that glaucoma is irreversible," said L. Jay Katz, MD, chief of the Wills Eye Glaucoma Service and a professor of ophthalmology at the Sidney Kimmel Medical College. "That's what we've all been taught over the years—that whatever vision you've lost to glaucoma is the way you're going to be. And the best we're going to do is to stabilize your disease."

Dr. Katz urged individuals to keep an open mind as he reviewed a growing body of evidence revealing improvements in glaucoma during his talk, "Is Glaucoma a Reversible Disease?"

The presentation offered an overview of glaucoma pathophysiology, the optic nerve and the visual pathway and a look at factors influencing retinal ganglion cell (RGC) survival, current treatment strategies, clinical examples of reversibility, and systematic studies uncovering structural and functional improvements in glaucoma.

A Change in Thinking

In the 1980s, George L. Spaeth, MD, a world-renown researcher at Wills Eye Hospital, wrote an editorial in *Archives of Ophthalmology* that shook up the field. He suggested in the piece that the endpoint or target when treating a glaucoma patient should no longer be stability but rather objective signs of improvement.

This new idea spawned decades of research focused on such an approach. In 1989, Dr. Katz' team used three masked glaucoma specialists to review optic disc stereophotographs and visual fields (VFs) taken before and after clinical course patient treat-

ments. The investigators found that one in five individuals showed less ocular disc cupping, and one in three showed better VFs.

"This was highly correlated with the amount of pressure reduction," Dr. Katz said. "In other words, those patients who had virtually no pressure reduction were not the ones who showed any improvement in either of those parameters."

A decade later, Mark Lesk, MD, used scanning laser tomography analyses to reveal the reversal of optic disc cupping after glaucoma surgery. Of the patients with a 40% reduction in IOP, 85% had improvements apparent with the imaging technology. And in 2016, Michael Waisbourd, MD, also showed with optical coherence tomography (OCT) mitigation in the nerve fiber layers and VFs of patients with pressure reductions.

That same year, Joseph Caprioli, MD, published retrospective findings on automated perimetry and a large series of VFs highlighting that, in more than 50% of patients who underwent trabeculectomy resulting

"I'm going to ask you to ignore something you've all been taught, which is that glaucoma is irreversible."

- L. Jay Katz, MD

in marked pressure drops, the magnitude of IOP decrease correlated with long-term postoperative improvements.

Though many of these functional enhancements were demonstrated with subjective tests, recently, more objective parameters have been employed. For example, electrophysiologists have used pattern electroretinography to show RGC improvements in patients with marked pressure reduction.

New Pathways to Uncover Improvements

Recently, in addition to IOP, researchers have assessed blood

pressure and ocular hemodynamics to gauge betterments in glaucoma patients. And technologies, such as color doppler imaging and OCT angiography are revealing positive changes in ocular flow patterns with pressure lowering.

In addition, studies have shown some degree of disease amelioration using common IOP-reducing medications as well as the adjustment of intracranial pressure through new goggle technology developed by John Berdahl, MD, to reverse papilledema. At the molecular level, research is showcasing greater RGC health and cell survival using the addition of neurotrophins.

Dr. Katz also discussed glaucoma therapy strategies, such as electrical stimulation of the visual pathway to improve VFs, along with the RGC neuroprotective role that stem cells will have in the future and more than 30 gene mutations aiding researchers in designing genetic therapies.

"I think that glaucoma, in certain patients, may be reversible with our conventional therapy by just lowering

intraocular pressure; it's clearly related to the magnitude of the pressure reduction," Dr. Katz said. "But there are also areas that are very exciting for us, windows of opportunity in terms of improving the ocular hemodynamics, introducing neurotrophins and other strategies for the future."

In addition, during yesterday's symposium, Arthur J. Sit, MD, a glaucoma specialist in the Department of Ophthalmology at the Mayo Clinic in Rochester, MN, discussed causes and clinical significance of IOP variability, and Robert M. Feldman, MD, chair of the Department of Ophthalmology, and Richard S.

Ruiz, Distinguished University Chair at the Cizik Eye Clinic of the University of Texas Health Science Center at Houston Medical School, offered wisdom on refractive surgery and glaucoma based on his 20 years of clinical experience. ●

RESEARCH SPOTLIGHT



Intraocular Pressure and Intracranial Pressure Measurement with Continuous Wireless Telemetry to Quantify Translaminar Pressure Difference in Nonhuman Primates

Jessica V. Jasien, Brian C. Samuels, James M. Johnston, J. Crawford Downs

Translaminar pressure differences (TLPD) and telemetry should allow researchers to test the hypothesis that intraocular pressure, intracranial pressure (ICP) and/or TLPD contribute independently to glaucoma onset and/or progression. Jessica V. Jasien, MEd, a doctoral candidate from the University of Alabama at Birmingham, suggests on behalf of a team that developed an implantable pressure telemetry system. Tested in a primate study, the device showed that mean ICP was higher during sleep, resulting in lower nocturnal TLPD. Cerebrospinal fluid pressure, one of the driving components of TLPD, is an important factor in glaucoma pathogenesis.

The findings above were presented at the AAO press conference yesterday. Dr. Jasien will give a full presentation of the study **today** in this session:

● **Hot Topics in Glaucoma: New Horizons**
8–9am, Hemisfair Ballroom C2

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Manchester Grand Hyatt

Program Chair: Paul Karpecki, OD, FAAO



May 17-19, 2019 - NASHVILLE, TN

Gaylord Opryland

Program Chair: Paul Karpecki, OD, FAAO



NOVEMBER 1-3, 2019 - BALTIMORE, MD

Renaissance Baltimore Harborplace

Program Chair: Paul Karpecki, OD, FAAO

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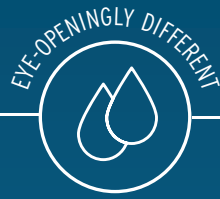


*Approval pending



**16th Annual Education Symposium
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