



AMERICAN ACADEMY
OF OPHTHALMOLOGY®

AAO 2021 News

NEW ORLEANS

20 Years of Cataract Spotlight

A Perspective From
David F. Chang, MD

**AAO
2021**

A circular gold seal with a serrated edge. Inside the seal, the word "HYDRUS" is written in a large, bold, sans-serif font, with "MICROSTENT" in a smaller font below it. Above the text is a cluster of small blue dots.

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These guidelines are established by the AAO to provide evidence-based guidance for best practices and quality eye care.

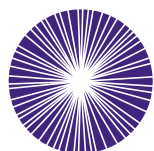
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1. Primary Open-Angle Glaucoma Preferred Practice Pattern[®]. Gedde, Steven J. et al. Ophthalmology 2020;128(1): 71-150

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AMERICAN ACADEMY
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Corporate Lunch during
AAO 2021.

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

SATURDAY, NOV. 13

First-Line Treatment in Diabetic Retinopathy and Diabetic Macular Edema: A Patient Case-Based Approach

Speaker: Nathan Steinle, MD

*Presented by Regeneron
Pharmaceuticals and designed
for US retina specialists.*

SUNDAY, NOV. 14

Navigating Dry Eye Disease: An Audience-Activated Adventure

Speaker: Jay K Mattheis, MD, MSPH,
FACS—Director, Peer Education for
Novartis - US Ophthalmics

*Dr. Mattheis is an employee of
Novartis. Presented by Novartis
Pharmaceuticals Corporation and
designed for US eye care specialists.*

MONDAY, NOV. 15

A Difference in Drug Delivery

Speakers: Ike Ahmed, MD
(moderator), Oluwatosin Smith, MD,
and Savak Teymoorian, MD

*Presented by Allergan, an AbbVie
Company and designed
for US ophthalmologists.*

These programs are non-CME and are developed independently by industry. They are not affiliated with the official program of AAO 2021 or Subspecialty Day. By attending a lunch, you may be subject to reporting under the Open Payments Program (Sunshine Act). Also, by attending a lunch, you consent to share your contact data, inclusive of National Provider ID, with the corporate partner.

**Ernest N. Morial
Convention Center**
Room R02-05, 2nd Floor

**Check-in and
Lunch Pickup**
12:15-12:45 p.m.
Lunches are provided on
a first-come basis.

Program
12:45-1:45 p.m.

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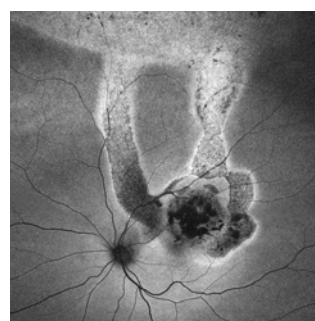
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From the Editor Welcome to AAO 2021!

The Academy is proud to present its 125th annual meeting, AAO 2021. This year, the meeting offers more than 50 symposia on topics, from infectious diseases in neuro-ophthalmology and same-day bilateral cataract surgery to artificial intelligence and big data. I recommend the quick-but-informative honorary lectures for updates in fields such as cornea or microbiology. Between sessions, you can explore the Expo, where hundreds of companies are displaying their products. While you are there, stop by the Academy Resource Center and the Industry Showcase Theater. And don't miss the opportunity to socialize—Sunday's Orbital Gala is the perfect place to reconnect with colleagues while supporting the Academy's vital education programs. (If you missed out on tickets, registration for the virtual event is free!) And last, the Closing Session features a video conversation between famed immunologist Anthony S. Fauci, MD, and Michael F. Chiang, MD, NEI director, about what the future holds. We hope that your time in this wonderful city is enjoyable and informative.

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



On the Cover Hemangioma Benign Neoplasm

Photo by Mark Clark, MFA, CRA
Wake Forest University
Winston-Salem, North Carolina

How Well Do You Know Anthony Fauci? Tick as Many Checkboxes as You Can

The Closing Session will feature a video conversation between famed immunologist Anthony S. Fauci, MD, and Michael F. Chiang, MD, NEI director, about what the future holds. Although Dr. Fauci has been everywhere in the press, there is much that people do not know about him. How many of the following facts are you aware of?

☐ He was born on Christmas Eve, 1940.

☐ His parents owned a pharmacy in Brooklyn—where his father was the pharmacist, his mother and sister handled the register, and he delivered prescriptions via bicycle.

☐ At St. Regis High School in 1958, the 5'7" Fauci captained the basketball team, which he led to an upset victory against a rival team, a notable accomplishment in light of the team's numerous losses in previous years.

☐ As an undergraduate, he attended College of the Holy Cross in Worcester, Massachusetts, where he majored in classics (with a premed concentration). He graduated first in his class from Cornell University Medical College (today Weill Cornell Medicine). He did both his internship and residency at The New York Hospital–Cornell Medical Center.

☐ In 1968, he joined the National Institute of Allergy and Infectious Diseases (NIAID) Laboratory of Clinical Investigation (LCI). In 1974, he became

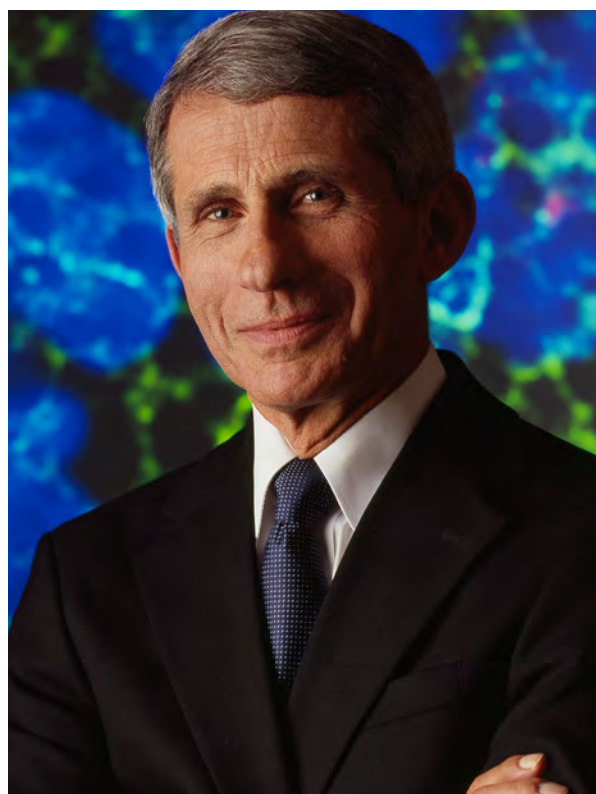
head of the LCI's Clinical Physiology Section. In 1980, he became chief of the NIAID Laboratory of Immunoregulation.

☐ In 1984, he became NIAID director. Since that time, he has been offered—and has declined—the position of director of the National Institutes of Health numerous times.

☐ Also in 1984, he ran the Marine Corps Marathon in 3 hours, 37 minutes.

☐ A 1985 survey of the members of the American Rheumatism Association, conducted by the Stanford University Arthritis Center, ranked Dr. Fauci's research into treatment for polyarteritis nodosa and granulomatosis with polyangiitis among the most important advances over the previous 20 years.

☐ In 2003, an academic publishing service, the Institute for Scientific Information, said of the 1983 to 2002 time frame: "Dr. Fauci was the 13th most-cited scientist among the 2.5 to 3.0 million authors in all disciplines throughout the world who published articles in scientific journals. Dr. Fauci was the world's 10th



DRS. FAUCI AND CHIANG. The NIAID and NEI chiefs chat by video during the Closing Session (event code Sym70). When: Monday, 3:45-5:00 p.m. Where: The Great Hall.

most-cited HIV/AIDS researcher in the period 1996-2006."¹

☐ Dr. Fauci has done much research into HIV and AIDS over the course of his career. His research has been instrumental in providing an understanding of how HIV progresses to AIDS. He has worked toward developing therapies, as well as toward a vaccine to prevent HIV infection.

☐ AIDS activists demanded that Dr. Fauci take action to save lives (for example, by making experimental treatment drugs available for gay men dying of AIDS). On one occasion, the activists protested at the NIH, setting up a mock graveyard, throwing rainbow-colored smoke grenades, and burning him in effigy.

☐ He realized that for the AIDS activists "to be so angry, they must be suffering. So instead of hiding, he tried to understand. He visited the LGBT Community Center in the middle of Greenwich Village and listened to what people had to say. He went to gay bathhouses in San Francisco and New York—sans suit and tie, he made sure to note—to get a sense of how the sexually transmitted virus was actually spreading."²

☐ In the wake of the 9/11/2001 attacks, Dr. Fauci became involved with the nation's defense against bioterrorism. In

addition to defending against various biological threats, this work includes prevention of the spread of infectious diseases.

☐ He was a primary creator of the U.S. President's Emergency Plan for AIDS Relief, which was introduced in 2003. The plan has saved millions of lives.

☐ In 2008, President George W. Bush awarded Dr. Fauci the Presidential Medal of Freedom—the United States' highest civilian honor—for his work in advancing the understanding and treatment of AIDS.

☐ In 2015, Dr. Fauci spent two hours each day treating a U.S. health care worker who had become infected with the Ebola virus in Sierra Leone. "He wanted to show his staff that he wouldn't ask them to do anything he wouldn't do himself," according to an article in *Science*.³

☐ In May 2020, Italy's Ambassador to the United States presented Dr. Fauci with the honor of "Knight of Grand Cross, Order of Merit of the Italian Republic" on behalf of the Italian President. The honor recognized his "exceptional career and outstanding contribution to the fight against Covid-19."⁴

☐ In 2021, the National Italian American Foundation introduced two Fauci Fellowships of \$50,000 each for post-doctoral research in infectious diseases. One grant is designated for an Italian researcher working in Italy, and the other grant is for a U.S.-based Italian-American researcher.

☐ Dr. Fauci has received many prestigious awards, such as the National Medal of Science, the George M. Kober Medal of the Association of American Physicians, the Mary Woodard Lasker Award for Public Service, and the Albany Medical Center Prize in Medicine and Biomedical Research.

1 <https://web.archive.org/web/20071030171118/http://www3.niaid.nih.gov/about/directors/biography/>.

2 <https://why.org/articles/dr-fauci-talks-death-threats-gay-bathhouses-and-ronald-reagan-with-fresh-airs-terry-gross/>.

3 *Science*. <https://www.sciencemag.org/news/2015/03/why-nihs-anthony-fauci-treating-ebola-patients-himself>.

4 https://ambwashingtondc.esteri.it/ambasciata_washington/en/sala-stampa/dall_ambasciata/2021/05/il-dott-anthony-fauci-insignito.html.

Dr. Chiang

Michael F. Chiang, MD, who will conduct an interview with Dr. Fauci at the AAO 2021 Closing Session, became director of the National Eye Institute in late 2020, succeeding Paul A. Sieving, MD, PhD. Prior to this position, he was Knowles Professor of



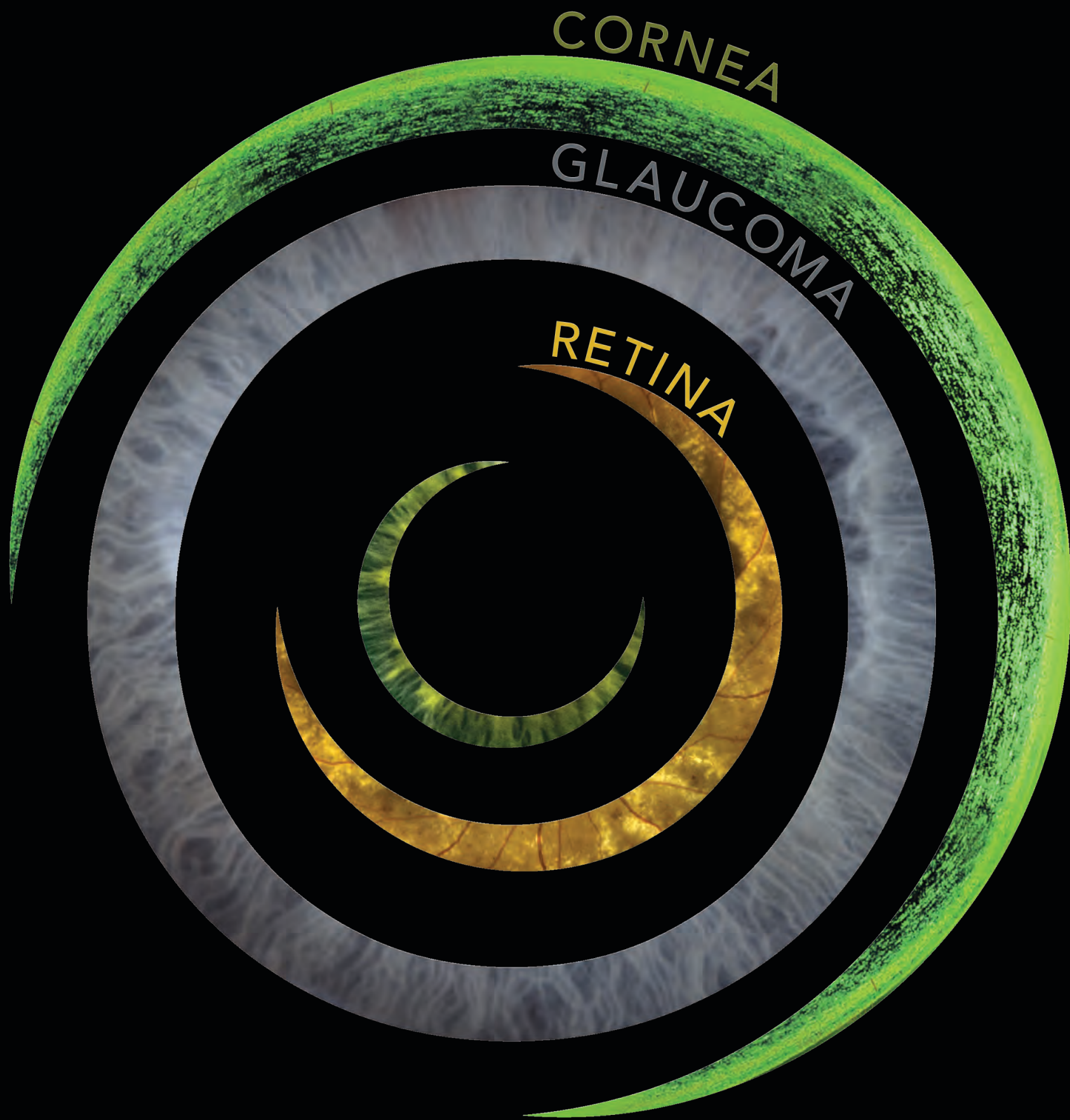
been an active member of the Academy, serving as chair of the Academy IRIS Registry Data Analytics Committee, chair of the Academy Task Force on Artificial Intelligence, chair of the Academy Medical Information Technology Committee, program

director for 2020 Pediatric Ophthalmology Subspecialty Day, and serving on the IRIS Registry Executive Committee and on the editorial boards for *Ophthalmology* and *EyeNet*.

Learn more. Read Dr. Parke's November 2020 Current Perspective editorial about Dr. Chiang at aao.org/eyenet/article/ophthalmologys-new-fauci.

Ophthalmology & Medical Informatics and Clinical Epidemiology and associate director of the Oregon Health & Science University Casey Eye Institute in Portland, where his clinical practice focused on pediatric ophthalmology and adult strabismus. He is board-certified in clinical informatics.

Formerly on the Academy Board of Trustees (2016-2019), Dr. Chiang has



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TRANSFORMING VISION

Meet Emily Y. Chew, MD Editor-in-Chief of *Ophthalmology Science*

This year, the Academy launched its latest clinical journal, *Ophthalmology Science*. What makes this publication different from the Academy's three earlier journals—and who's at the helm?

The journal's editor-in-chief is Emily Y. Chew, MD, who is well known for her work at the NEI in retina research.

What Sets *Ophthalmology Science* Apart?

In her inaugural editorial for *Ophthalmology Science*, Dr. Chew noted that the journal will differ from *Ophthalmology*, *Ophthalmology Glaucoma*, and *Ophthalmology Retina* in two significant ways.

First, instead of publishing studies that are primarily focused on guiding clinical management, *Ophthalmology Science* has set its sights on “studies that are preclinically focused, including translational research, basic science, early-phase clinical trial reports, and especially the growing field of bioinformatics and artificial intelligence [AI] applications in ophthalmology.”¹ Second, the new publication differs from its predecessors in that it is online and fully open-access.

From bench to bedside: Studies to bridge the gap. In discussing the journal's mission, Dr. Chew said that she believes that translational research holds “a great deal of value” that can be applied to the long process of taking discoveries from bench to bedside. “I believe *Ophthalmology Science* is made to bridge that gap, to make clinicians more aware of certain discoveries and any clinically

relevant issues that may allow us to glean information into the mechanisms of disease.

“The epidemiologic studies also provide important clues, so research in the clinical-basic science arena is bidirectional,” Dr. Chew added. And with regard to AI and big data, she said, “AI will have a big role to play going forward; informatics and big data is an up-and-coming field.” In recognition of the impact of AI, the journal will have a special issue devoted to informatics in 2022, guest edited by James D. Brandt, MD, Cecilia S. Lee, MD, and Aaron Y. Lee, MD.

Off to a good start. Initially, *Ophthalmology Science* is being published quarterly (the first two issues were published in March and June of this year). In considering the journal's reception to date by authors and readers, Dr. Chew said, “There are so many journals out there, and authors want the impact factor that a tried-and-true journal can offer. Yet here we are, launching something brand-new.” Despite that newness, the response has been overwhelmingly positive, she said. “I've been pleasantly surprised that so many authors have specifically asked” to submit their papers to *Ophthalmology Science*.



be talking about the next meal as we were eating the current one.” This emphasis on food and nutrition ended up having a long-lasting relevance in Dr. Chew's work on age-related macular degeneration (AMD). As she noted in her Jackson Memorial Lecture at AAO 2019, her mother cooked with goji berries, because they were said to be good for one's eyes—and as it turns out, the berries are a good source of lutein. Moreover, before tough exams, her father would cook fish for his children because of its reputation as “brain food.”² As we now know, both lutein and the omega-3 fatty acids found in fish have been found to be associated with decreased progression to late AMD.

Early Influences

Dr. Chew grew up on Vancouver Island, British Columbia. She describes her parents as “great in making us feel that we could do anything. They are Chinese immigrants who have lived through many challenges in China and Canada, but they are always positive. They raised us in Duncan, which is a small town. It was a beautiful place to grow up. They believed in us—and, like all immigrants, they wanted their children to excel in education and to achieve their dreams and goals.”

In addition, Dr. Chew said, “They were both excellent cooks. We would

regard to applying AI to their research. “It wasn't easy, but we were fortunate in that we had the dataset.”

And that dataset came from a serendipitous collaboration: “About five years ago, I co-mentored a student who was interested in natural language processing [NLP]. I thought, ‘I can do the ophthalmology part, but what do I know about NLP?’” She found a computer expert elsewhere in the NIH to help her work with the student—and even though the student has moved on, the collaboration has continued. “When we needed to incorporate AI into our research, our computer expert, Dr. Zhiyong Lu, was right there for us. This kind of networking is really important; you have to be open to what changes may come your way.”

Beyond Work

Dr. Chew is, like her parents, an avid cook: “I love to cook; it is one of my passions. I cook daily, and when I travel, I love coming home to my kitchen. I love that food is an expression of love and can be the glue that brings communities together. I also believe that we are what we eat; poor nutrition is the basis for chronic conditions.” She also is an avid gardener, along with her husband, Dr. Robert Murphy: “We love to garden; it is relaxing.”

Two of her daughters have followed their parents' path into medicine—one is a practicing ob/gyn, while the second is an ob/gyn resident—and the third daughter is an actor. In reflecting back on the challenges of balancing motherhood and career, she said, “I was kind of clueless, actually. I did see negative role models; there were women who were super focused on their career—and they had to be, as that was the condition of the times. But I knew that was not the life for me. I came from a big family of four children; there was a lot of laughter, a lot of fun—and I loved children and initially wanted to be a pediatrician! So the potential challenges never even dawned on me. I thought, ‘I'll make it work somehow.’ This was made possible because of the support of my husband.”

When she looks ahead, she does admit to one unfulfilled goal: “My dream is to learn to play the cello. It's such a beautiful instrument. It's so melodious, and there's so much emotion in the music.” However, she ruefully acknowledged, “I don't really have the time right now. It might have to wait until I'm semiretired.”



WITH FAMILY. At Belém Tower in Lisbon, Portugal. (Front) Son-in-law Drew Dixon, Erica, Emily, and Emma. (Back) Alison Dixon and Robert.

Research Focus

Dr. Chew has worked at the NEI since 1987. At present, she directs the institute's Division of Epidemiology and Clinical Applications (DECA) and heads DECA's Clinical Trials Branch.

Striving to put an early stop to AMD progression. She is perhaps best known for her role as the principal investigator in the Age-Related Eye Disease Studies (AREDS) and AREDS 2 nutritional trials, which have added substantially to our understanding of AMD development and progression. And she remains fully immersed in the field: “My goal is to find a method of preventing early AMD and its progression to reduce the burden of disease and treatment to the patients, their families, and society.”

Incorporating AI. Dr. Chew also remains fully responsive to new research directions. For instance, she said that she and her NEI colleagues came to a point at which they “needed to pivot” with

1 Chew EY. *Ophthalmology Science*. 2021;100012.

2 Chew EY. *Am J Ophthalmol*. 2020;335-347.

Fun Facts About David J. Noonan

Orbital Gala Special Honoree

David J. Noonan is the guest of honor at the 2021 Orbital Gala. Mr. Noonan joined the staff of the American Academy of Ophthalmology and Otolaryngology (AAOO) in 1972. He served as Deputy Executive Vice President and Chief Operating Officer for 37 years, shepherding the Academy through major milestones, including the separation of AAOO and expansion of the Academy into the organization we know today. Throughout his career, Mr. Noonan embraced change, and his guiding hand engineered the Academy's growth in educational offerings, advocacy, ophthalmic relations, and philanthropy. It is fitting to celebrate Mr. Noonan's years of service in 2021. His accomplishments highlight the Academy's achievements in the past and convey its commitment to excellence, which will continue into the decades ahead. Presented here are some fun facts about this year's honoree.

Academy

1 In 1979, the AAOO split into two successor organizations—one for ophthalmologists and another for otolaryngologists. Mr. Noonan and Bruce E. Spivey, MD, went to the brand-new American Academy of Ophthalmology Board of Trustees with a 30-page document convincing them to move the headquarters from Rochester, Minnesota, to San Francisco. Mr. Noonan moved the office, taking two staff people and 190,000 lbs. of office equipment and furniture.

2 Mr. Noonan served with three Academy CEOs and saw myriad firsts for the Academy, including the first joint annual meeting (with the International Council of Ophthalmology), the first D.C. office and advocacy efforts, and the first website. Looking back, he

feels three programs have had the greatest impact on the professional status of ophthalmology and ophthalmologists: the *Basic and Clinical Science Course*, the Code of Ethics, and the ONE (Ophthalmic News and Education) Network.

3 In 2007, Mr. Noonan was made an Honorary Life Fellow of the American Academy of Ophthalmology, which he maintains was a highlight of his career.

Professional

4 Mr. Noonan served as president of the Professional Convention Management Association (PCMA) and was the founding chair of their foundation. He is also a Fellow of the American Society of Association Executives. Through these organizations, he worked to set standards in meetings management and encouraged the Academy's meetings staff to actively participate in the PCMA programs to enhance the Academy's annual meeting.

5 In 1990, Mr. Noonan was inducted into the Events Industry Council's Hall of Leaders. He was nominated for his work to improve the association community and for the development of a benchmark textbook, *Professional Meeting Management: A Guide to Meetings, Conventions, and Events*.



Fly fishing books from the 1800s.

About the Orbital Gala

Now in its 18th year, the Orbital Gala is an annual fundraising and social event that takes place on Sunday during the annual meeting. Hosted by the Academy Foundation, this year's event includes a cocktail party, a silent auction, and celebration of its special honoree—this year, David J. Noonan—that includes presentation of a tribute book with personal messages to the honoree from those who donate \$250 or more.

All proceeds from the event benefit the Academy's education, quality of care, and service programs.

Event: Tickets for Sunday's gala from 6:00-8:00 p.m. at the House of Blues are sold out, but you can still join the festivities (for free!) online at aao.org/gala.

Tribute: To make a donation in honor of Mr. Noonan, go online to aao.org/foundation/tribute-gifts. The Foundation will notify him of your gift.



THE NOONAN YEARS. He started in 1972 with the AAOO and retired in 2009.

6 For years Mr. Noonan provided new staff with an orientation to the Academy. He was fond of concluding his talk with the statement, "If you go home each day knowing that you helped one ophthalmologist take better care of patients, you will have a worthwhile career at the Academy."

Personal

7 In the 1950s, Mr. Noonan participated in his high school theater department. One summer the Boston Pops Orchestra came to town under the famous conductor Arthur Fiedler, and Mr. Noonan was asked to join the tour of his native Wyoming and neighboring Montana to run the light board. He did such a good job that the following summer the tour director asked him to join the Russian Ballet on its tour of the same states.

8 Mr. Noonan is an avid fly fisherman. He owns a collection of 37 editions of *The Compleat Angler*, by Izaak Walton, first published in 1653. After the Bible and the collected plays of Shakespeare, this work is one of the most reprinted books in the English language. The oldest copy in his collection was published in 1808.



Fly fishing in Montana.

9 Mr. Noonan is also an equestrian. He and his wife have owned a horse and they seize the chance to ride during their domestic and international travels.

On a trip to Argentina, Mr. Noonan was invited to play in a mock polo game, which he found surprisingly easy. "I thought you would need all this arm strength to hit the ball, but you really don't because the horse is going 35 mph. You just have to make the connection and the power of the horse takes care of the rest."

10 While he was an undergraduate at St. Ambrose College in Davenport, Iowa, Mr. Noonan received room and board at a local hospital in exchange for being the night orderly in the emergency room. A 19-year-old without training, Mr. Noonan reported to the senior night nurse, who did most of the triage until a doctor could be called in. On three occasions, women in labor came in to the hospital very late at night, and Mr. Noonan was required to step in and help. He participated in childbirth by catching the babies and placing them with their mother.

There's a New Group: LGBTQ It's One of Six New Online Communities

In June, the Academy launched The Ophthalmology Community, a new platform that allows for online resource sharing and networking among members who share a common interest. Think of it as your favorite social media site, but just for ophthalmology. Currently, six groups have formed using this new technology. The groups are mostly targeted toward business and subspecialty interests and are used by hospitalists, practice managers, and cataract and refractive surgeon, among others. But one of the groups aligns with the Academy's DEI efforts (see below).

The LGBTQ group. The LGBTQ group of ophthalmologists is committed to advancing health equity for LGBTQ persons and equality for LGBTQ professionals. Its goal is to encourage discourse, build community, and create a space to connect around mentorship, research, and advocacy. It takes a multipronged approach to this initiative:

Visibility. Through The Ophthalmology Community, the group was created on Aug. 2. It is an online network of LGBTQ and LGBTQ ally Academy members who network, share content, and discuss topics relevant to this community. Membership is open to medical students, residents and practicing physicians. Complete a short application at aao.mobilize.io/users/sign_in in order to join this vibrant community.

Also, keep an eye on aao.org/lgbtq-community for new resources and developments.

Mentorship. The LGBTQ group aims to connect trainees and practicing physicians with more-senior LGBTQ mentors to help navigate the often-difficult deci-



LGBTQ RECEPTION. The leaders of the new LGBTQ group invite all AAO 2021 attendees to a reception at Ma Maison, Sunday, from 5:00-6:00 p.m. Ma Maison is located in the Ernest N. Morial Convention Center off Lobby C.

sions encountered in an ophthalmic career. A list of individuals interested in mentoring has been developed. Contact lgbtq@aao.org with a brief description of your objectives to be matched with a mentor.

Education. Educating others about this community is key to improved care. Below are a few selections of published works centered around communication techniques, the disparities encountered by LGBTQ patients, and other topics previously discussed by the Academy:

- **Video: How to Talk to Transgender Patients** (November 2018). Dr. César A. Briceño offers tips on how you can help chip away at the health disparities and stigma that the transgender population faces. aao.org/basic-skills/how-to-talk-to-transgender-patients
- **Is It Time to Reconsider Cornea Donation Guidelines?** (November 2020) This *EyeNet* article summarizes Puente et al's *JAMA Ophthalmology* article discussing the federal ban on corneal donation by men who have sex with men. aao.org/eyenet/article/time-to-reconsider-cornea-donation-guidelines

- **Status Report for Academy Council Advisory Recommendation: November 2020 (PDF).** The Colorado Society of Eye Physicians and Surgeons introduced a Council Advisory Recommendation requesting that the Academy lobby the FDA to revise its policy restricting corneal donation by men who have sex with men. The Academy Board of Trustees endorsed that proposal, and page 4 of this PDF describes the Academy's plans for addressing this issue. aao.org/Assets/1a051175-dc3b-4d20-a654-b4476ebb027a/637413931159370000/nov2020carreporta-pdf#page=4

- **How Wide Is the Academy's Lane?** (March 2020). In recent years, Academy members have written requesting that the organization formally issue a policy statement on subjects as diverse as vaccination, gender-based harassment, LGBTQ issues, climate change, landmines, sex trafficking, and immigration (to name just a few). Every time an issue comes up, the question arises, "Is this an appropriate issue for an Academy policy?" Put another way: "How wide is our lane?" aao.org/eyenet/article/how-wide-is-the-academys-lane

Partnership. The LGBTQ community is fortunate to have many allies who seek to join its goal of creating a more inclusive field. The Minority Ophthalmology Mentoring program (aao.org/minority-mentoring) is a partnership between the Academy and Association of University Professors of Ophthalmology that serves to increase diversity, equity, and inclusion in ophthalmology by connecting underrepresented students with mentorship, networking opportunities, and educational resources. Several LGBTQ group members participate as mentors.

The Academy LGBTQ Community Leaders

Peter Quiros, MD – Neuro-ophthalmology, University of California, Los Angeles
Valerie Biousse, MD – Neuro-ophthalmology, Emory University

Alexander Khammar, MD – Pediatric Ophthalmology, Medical College of Wisconsin

César Briceño, MD – Oculoplastic Surgery, University of Pennsylvania

Jessica Weinstein, MD – Vitreoretinal Surgery, University of Kentucky

Michael Puente, MD – Pediatric Ophthalmology, University of Colorado

David Ramirez, MD – Resident, University of Iowa

Reach out to LGBTQ@aao.org for answers to specific questions.

DEI Events at AAO 2021

Diversity, Equity, and Inclusion in Retina (event code Ret03). Pre-senter: Julia A. Haller, MD. When: Friday, 9:36-9:42 a.m. Where: The Great Hall.

Diversity and Inclusion in the Ophthalmic Practice (272). Senior instructor: Patricia Morris, MBA, COE. When: Saturday, 3:45-5:00 p.m. Where: Room 211-213.

Researching Eye Health Care Equity Amidst Workforce Disparity (Sym23). Chairs: Anne Louise Coleman, MD, PhD, and Angela R. Elam, MD. When: Sunday, 11:30 a.m.-12:45 p.m. Where: New Orleans Theater C.

Employee Recruitment and Retention Strategies That Champion Diversity (463). Senior instructor: Aimee Greeter. When: Sunday, 3:45-5:00 p.m. Where: Room 214.

DEI: Perspectives From Ophthalmology Leadership (Sym39). Chairs: Usiwoma E. Abugo, MD, and Nikisha Q. Richards, MD. When: Monday, 11:30 a.m.-12:45 p.m. Where: La Nouvelle Orleans AB.

Achieving Health Equity in Glaucoma Care (Sym42). Chairs: Yvonne Ou, MD, and Angela R. Elam, MD. When: Monday, 2:00-3:15 p.m. Where: Room 243-245.

Diversity, Equity, and Inclusion at the Academy

The Academy is committed to nurturing a diverse ophthalmologist community that optimally meets the complex eye care needs of a diverse patient population and of our communities. Specifically, the Academy Diversity Policy states that the "organization is best served by representation from the broadest possible diversity of member background, experience, and thoughts. . . . Beyond adhering to an organization-wide policy of nondiscrimination, the Board values the participation of individuals from diverse racial, religious, economic, national origin, sexual orientation, age, gender, and physical disability backgrounds."¹

In support of this statement, the Academy has taken many steps, from establishing two diversity-related task forces, and writing a new chapter for the *BCSC* (see page 10, under "Products"), to growing its Minority Ophthalmology Mentoring program, building out diversity resources for residents and fellows, and more.

DEI page. In June, the Academy launched a Diversity, Equity, and Inclusion webpage (aao.org/diversity-equity-and-inclusion), allowing it to share with members and the outside world the Academy's programs and progress toward greater diversity in ophthalmology.

¹ aao.org/about/policies/diversity



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Find Innovative Solutions at the Academy Resource Center

During AAO 2021, visit the Resource Center to explore helpful resources and products developed by the Academy and the American Academy of Ophthalmic Executives (AAOE). And don't miss out on the 10% discount.

Where to find the Academy Resource Center. At the Morial Convention Center, you can find the Academy Resource Center in Hall G, Booth 4039. If you're attending virtually, after you sign in to the AAO 2021 Virtual platform, a link in the Expo takes you to the Resource Center.

When will staff be on hand? Academy and AAOE staff will be available to answer your questions from Saturday through Monday, 9:00 a.m.-5:00 p.m. CST.

SERVICES

Academy Information

Where can you find the new *BCSC*? Who can talk to you about practice management? Where's EyePlay? Get all your Resource Center and annual meeting questions answered here.

Advocacy

Visit the Advocacy desk to get a summary of legislative issues, send a letter to Congress, and learn about OphthPAC and the Surgical Scope Fund.

Chat With the ABO

A representative from the American Board of Ophthalmology (ABO) will be available to answer questions at the Clinical Education product desk.

Coding Questions

Stop by the Coding desk to speak with experts about reimbursement, get critical coding updates, and obtain answers to your coding conundrums.

Complimentary Headshots

Drop in to the Headshot Lounge for a free professional photograph to use on your website or social media profile.

Conversations With the Experts

The AAOE is scheduling free 20-minute meetings with practice management consultants from Saturday through Monday, 9:00 a.m.-5:00 p.m.

Discounts and Free Shipping

Visit the Resource Center during AAO 2021 to learn about Academy and AAOE products and get a 10% discount and free shipping within the

United States and for most products. Ask an Academy associate for details.

EyeSmart

Visit the EyeSmart desk for a demonstration of aao.org/eyesmart and the Spanish version, aao.org/ojossanos. Learn how these resources for patients can benefit your practice.

Foundation

Visit the Foundation desk to learn how it supports the Academy's educational, quality-of-care, and service programs. You can also enroll as a volunteer for EyeCare America, an award-winning public service program; and current volunteers can order a recognition certificate and pick up a gift.

IRIS Registry

Visit the IRIS Registry (Intelligent Research in Sight) desk to speak with experts from Verana Health and FIGmd about the world's largest eye disease and clinical condition registry.

Member Services

Be sure to check out the Member Services desk to learn more about the Academy, American Academy of Ophthalmic Executives (AAOE), or the International Society of Refractive Surgery; pay your dues; or ask questions about your member benefits. You can also pick up an annual awards booklet that recognizes the 2021 Academy award recipients. Not a member? Apply for Academy membership while you're in New Orleans and save \$100 off the application, plus \$50 off the AAOE application fee (first-time members only).

New From the Academy

This area features all new products in one place. Be sure to ask for a demo of the Academy's new Ophthalmology Community.

The Ophthalmology Community

Learn about a pilot program of special-interest communities launched by the Academy where users can connect to share resources and evolve their body of knowledge.



PRODUCTS

New in Clinical Education

What's new in the 2021-2022 Basic and Clinical Science Course (BCSC). Each year, the 13-volume *BCSC* is reviewed by more than 100 ophthalmologists to ensure that it is as concise and current as possible. Each volume features videos, tables, self-assessment questions (with answers), photos and illustrations, and opportunities for earning AMA PRA Category 1 Credit.

While all 13 volumes have been updated, three of them have undergone major revisions:

- Section 5: Neuro-Ophthalmology
- Section 8: External Disease and Cornea
- Section 13: Refractive Surgery

Available Now: 2022-2023 BCSC

Social Determinants of Health Chapter.

The new Social Determinants of Health (SDOH) chapter, which will be included in the 2022-2023 *BCSC* in June 2022, is available now as a downloadable PDF on the Academy's Diversity, Equity, and Inclusion web page (aao.org/diversity-equity-and-inclusion). This important addition (Chapter 17) will be part of the minor revision of Section 1 (General Medicine), but the Academy has published it online ahead of print to make it accessible to all members as soon as possible. It also was published in the Subspecialty Day edition of *AAO 2021 News*, which was distributed in the convention center lobbies on Friday and Saturday.

Save 10% and get free shipping within the United States and Canada.

The Academy will ship free via FedEx Ground to the 50 U.S. states, Washington, D.C., and Canadian provinces only. Does not include U.S. territories. Applies only to product purchases at the Academy Resource Center, Saturday-Monday. The 10% discount does not apply to dues, annual meeting, courses, or other miscellaneous fees.

The chapter presents an evolving, high-level overview of social determinants of health. This initial chapter serves as a preview to the full-length version that will be included in the 2023-2024 *BCSC* major revision.

New edition! Practical Ophthalmology. An essential manual for beginning residents, now with more images and clinical protocols.

New PPP and OTAs. Stop by the Clinical Education product desk to see the Cataract in the Adult Eye Preferred Practice Pattern guidelines, updated for 2021. Several new *Ophthalmic Technology Assessments* have been published as well, including Botulinum Toxin Injection for the Treatment of Strabismus, Intraocular Lens Power Calculation in Eyes With Previous Excimer Laser Surgery for Myopia, and Home- and Office-Based Vergence and Accommodative Therapies for Treatment of Convergence Insufficiency in Children and Young Adults.

While you are visiting the Resource Center. Over the years, the Academy has developed a rich repository of educational resources. In addition to learning about this year's new products, you can ask Academy staff about the AAO Ophthalmic Education App; the AAO e-book app, which allows you to search across all the Academy's clinical education e-book titles; the *BCSC* Self-Assessment Program, which now features more than 4,000 high-yield questions; *Basic Principles of Ophthalmic Surgery* and *Basic Techniques of Ophthalmic Surgery*; the *Dictionary of Eye Terminology*, Seventh Edition, which uses plain-language definitions and full-color illustrations to make ophthalmic terminology accessible to everybody in your office; and more.

See Patient Education Resources
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Sunday, November 14, 2021

9:30 AM

A Difference in Drug Delivery

Oluwatosin Smith, MD

10:15 AM

Experience and Evidence: Insights on Chronic Dry Eye Management

Mark Milner, MD

10:45 AM

DME cases—Integrating Treatment Earlier in Diabetic Macular Edema

Daniel Kiernan, MD

11:45 AM

A Difference in Drug Delivery

Nathan Radcliffe, MD

12:30 PM

Surgical Pearls for Success

Inder Paul Singh, MD

1:15 PM

A Difference in Drug Delivery

Savak Teymoorian, MD

2:00 PM

PANEL DISCUSSION Overcoming the Unexpected: Managing Complex Cataract Surgeries

Zaina Al-Mohtaseb, MD; Kendall Donaldson, MD; and Cathleen McCabe, MD

3:15 PM

RVO Cases—Integrating Treatment Earlier in Macular Edema Following RVO

Gaurav Shah, MD

4:00 PM

The Key Elements of Effective Reimbursement in a Physician-Administered Treatment

Dawn Marsillo



Presentations and times are subject to change. These presentations are not affiliated with the official program of the American Academy of Ophthalmology 2021 Annual Meeting or any of its subsidiaries.

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cess to the most comprehensive library of patient education handouts in ophthalmology. It features more than 150 topics in both English and Spanish.

These handouts are easy to customize with your practice information. You can then print them in your office, as needed, in unlimited quantities.

While you are visiting the Resource Center. In addition to asking about the new handouts, you can explore the Academy's other popular patient education resources, including more than 40 preprinted brochures (including seven in Spanish) and a collection of video animations for use on your website or

patient portal, depicting eye anatomy, common eye conditions, and treatment options. New this year: Videos are close-captioned for the hearing impaired.

COVID and your patients. Digital patient education tools, such as the video collections, are more valuable than ever. As direct patient interaction has

become more limited since the pandemic, enhance your reach by showing treatment-specific informed consent videos on your website or patient portal. Use the Academy's subspecialty-specific video collections to reinforce your diagnosis and treatment messaging when patients are best able to focus—at home, with family, or any time it's convenient for them. Documenting use of these OMIC-approved videos helps to mitigate malpractice risk.

New in Practice Management

Conquering New E/M Documentation Guidelines for Ophthalmology. As of Jan. 1, 2021, Medicare has streamlined the requirements for using the office-based Evaluation and Management (E/M) codes. To understand what elements of the exam need to be documented under the new policies, Academy and AAOE experts have developed Conquering New E/M Documentation Guidelines, an online tutorial with accompanying workbook that includes step-by-step instructions, clinical examples, and worksheets. By passing the exam section of the tutorial, you can earn an electronic certificate of completion.

New! Ultimate Documentation Compliance Training for Scribes and Technicians online course. Understand how to meet payer documentation requirements for every patient visit.

Get your practice ready for 2022. Each year, there are changes to reimbursement codes and regulations, and each year the AAOE updates its arsenal of coding references:

- 2022 *Coding Coach: Complete Ophthalmic Coding Reference*
- 2022 *CPT: Complete Pocket Ophthalmic Reference*
- 2022 *Retina Coding: Complete Reference Guide*
- 2022 *ICD-10-CM for Ophthalmology: The Complete Reference*
- 2022 *Fundamentals of Ophthalmic Coding*
- 2022 *Coding Assistant for Subspecialties*
- 2022 *CPT Professional Edition*
- 2022 *HCPCS Level II Professional Edition*

While you are visiting the Resource Center. In addition to checking out the new and revised coding products (above) and setting up an appointment with a practice management expert (see "Conversations With the Experts," page 10), you can ask AAOE staff about the ophthalmology-specific practice management primers and references. These include:

- *The Lean Practice: A Step-by-Step Guide to Running an Efficient and Profitable Ophthalmic Practice;*
- *The Profitable Retina Practice* series;
- *The Dispensing Ophthalmologist* e-book;
- and much more.

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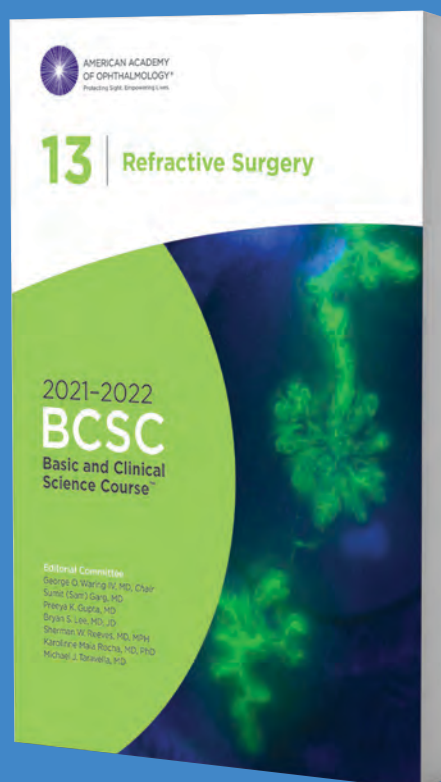
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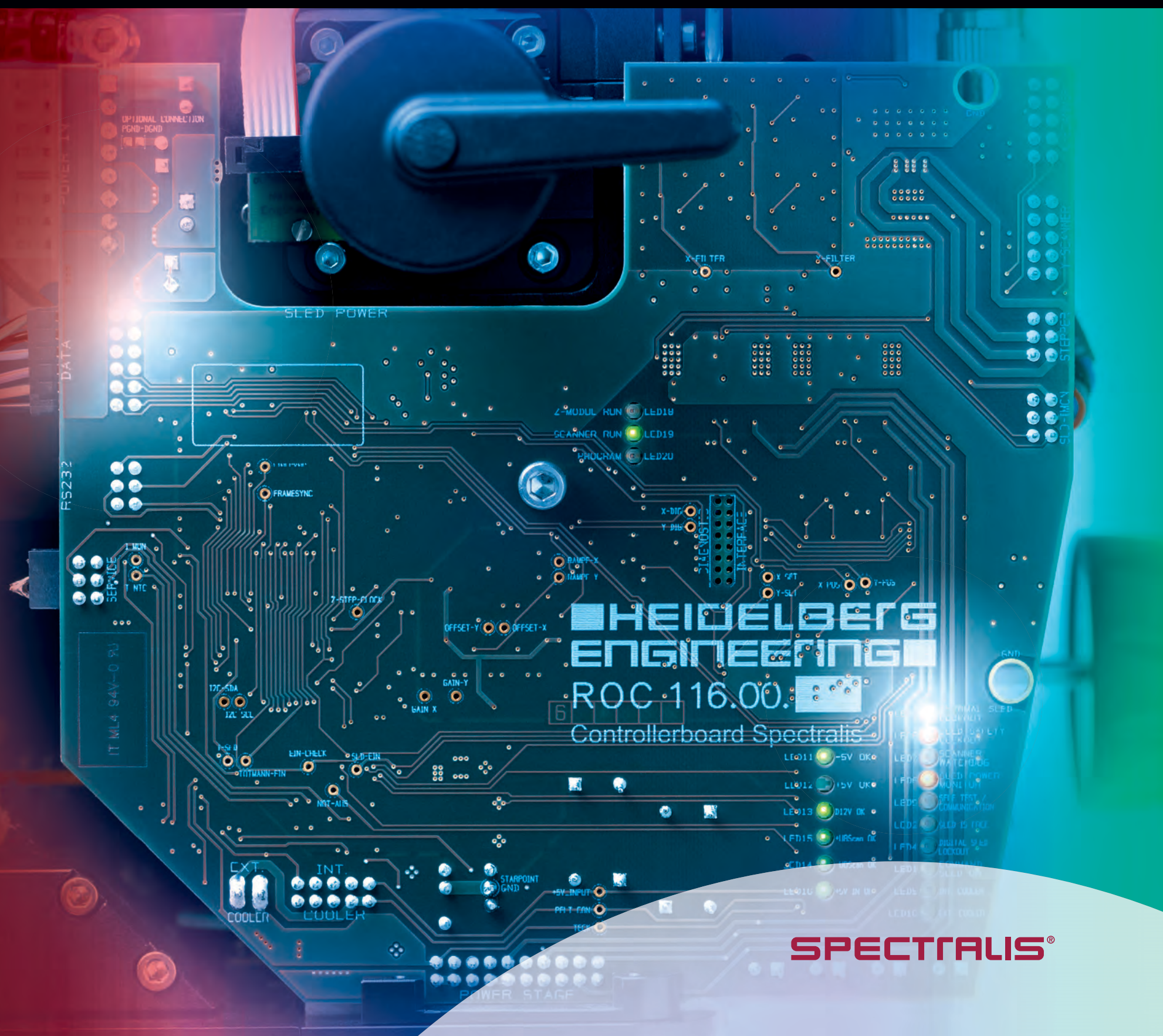
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20 Years of Cataract Spotlights: A Look at the Ever-Popular Session

This year marks the 20th anniversary of Cataract Spotlight, which takes place on Monday, Nov. 15. As in previous years, cataract experts will gather to discuss some of their most challenging cases. David F. Chang, MD, who created and continues to lead the session, offers an overview of how it all came to fruition.

Spectacular saves. Demoralizing outcomes. Innovative techniques. Each year's Cataract Spotlight session offers attendees a panoply of cataract challenges. In this Q & A, Dr. Chang takes a look at the highlights.

BEGIN AT THE BEGINNING What inspired the creation of the Cataract Spotlight?

As a member of the Annual Meeting program committee, I had been proposing a "Cataract Subspecialty Day" program for several years. I must have eventually worn Dunbar Hoskins down because he agreed to the idea in 2002.

His first two stipulations were that 1) it couldn't be a Subspecialty Day program, and 2) it had to be scheduled during the main meeting. And he had a third: I had to be willing to organize the program (always the danger of volunteering any suggestion). Thinking it couldn't hurt to ask, I requested the entire four-hour morning time slot, which I filled with 34 of the most prominent and popular cataract speakers lecturing on complications and challenging cases. Despite concerns that the session was far too long, attendance for that first Cataract Spotlight symposium exceeded everyone's expectations, and more than 1,000 attendees signed a list to receive handouts by mail because we hadn't printed enough.

What were some of the program's innovations?

In 2005, we introduced live audience polling, which made the program more interactive, and this continues to be a regular feature. I am grateful that the Academy was willing to try this despite the considerable cost of renting the polling system and 1,500 response pads. The inaugural Kelman Lecture was also that year, and Charlie's 13-year-old son Evan presented the plaque to Howard Fine.

In 2010, Cataract Spotlight became the first major symposium to show 3-D video. Not only did TrueVision provide thousands of cardboard 3-D glasses, but

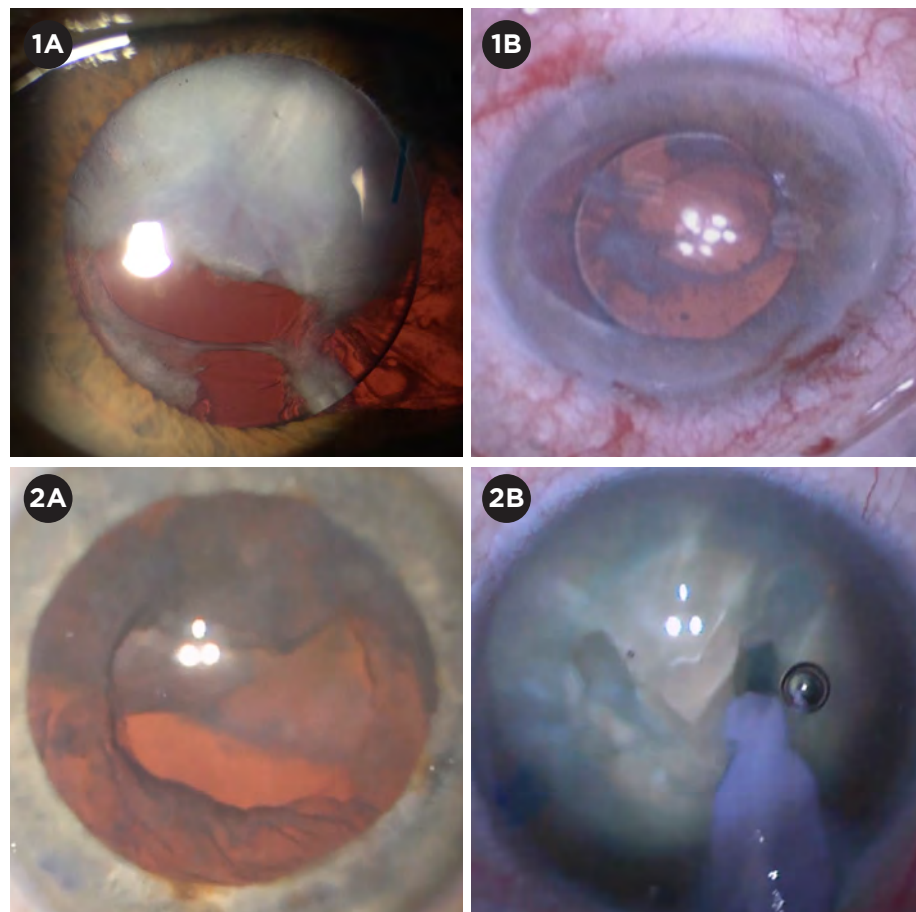
they also had to erect a special screen and twin projector tower—their first attempt at projecting 3-D video in a ballroom of that size. We also introduced virtual streaming in 2015. Thanks to this, one attendee gratefully wrote that she didn't have to miss the symposium because she could watch from home while breastfeeding her newborn. I presume that our content kept that infant asleep for all four hours.

Also, in 2009, the program committee created an all-day Cataract Monday by annually scheduling the ASCRS symposium and other cataract sessions in the same room during the afternoon.

EVOLUTION AND ENDURANCE How has the format evolved?

For the first six years, the symposium's theme rotated between complications, IOLs, and controversies, with each featuring more than 30 rapid-fire lectures. In 2008, we changed the focus to surgical decision-making by analyzing seven video cases showing complications and surgical challenges. These cases from the moderators' practices were paused at multiple points for the audience to decide (using their response pads) how to proceed.

Although we continued to have short lectures relevant to each presented case, we also moved permanently to a panel-



UNEXPECTED. (1A) This image shows retained cortex and a large stromal iris defect temporally. (1B) Following cortex removal and IOL centration, the defect persisted. (2A) The lens fell early in this case. (2B) A V-groove nucleofractis technique was used to eliminate the need for hydrodissection.

ist format. After voting and then seeing what their fellow attendees would do, the audience got to see how well the panelists could think on their feet before they saw the eventual outcome. We continue to use this case-based format—entitled "You Make the Call"—and it will be featured in this year's meeting.

Our other formats are called "M&M Rounds" and "My Top 5 Pearls." "M&M Rounds" debuted in 2011; for this, we asked 18 faculty members to share a complication video so that our audience could learn from their mistakes. Inspired by Bob Osher's willingness to show his worst complications, this was a deliberate departure from typical programs where the faculty showed their best surgical triumphs. Amar Agarwal annually stole the show with heart-stopping videos.

As for "My Top 5 Pearls," it was in-

troduced in 2016. Presenters concisely summarized just five pearls for their topic in a lightning fast, seven-minute talk, enforced by a visible timer counting down to a shot clock buzzer. As Steve Safran correctly inferred, the assignment was to serve just the meat without the potatoes.

Why do you think the Spotlight's popularity has endured?

As with the Subspecialty Day programs, attendees get a concentrated program—in this case, focused on cataract—and do not need to leave their seat all morning. Its popularity is entirely due to the all-star assembly of international faculty. I've had the privilege of comoderating with Howard Fine, Skip Nichamin, David Apple, Mark Packer, Bruce Wallace, Bill Fishkind, Mitch Weikert, and now Nicole Fram; the last five were my successors as chair of the Annual Meeting's Cataract Program Subcommittee.

One final note on staying power: We are still the only ophthalmology symposium where the moderators must endure more than four hours straight without a bathroom break, which has definitely become more challenging for me compared to 20 years ago!



THE PLACE TO BE. This year's session takes place Monday, Nov. 15, from 8:00 a.m. to noon in The Great Hall.

Women MDs in Ophthalmology

At AAO 2021, the Truhlsen-Marmor Museum of the Eye recounts the evolution of women's role in medicine throughout history. Hear the stories of early physicians who paved the way for female ophthalmologists today.

At AAO 2021, explore the history of women in medicine, early female ophthalmologists, and women Academy members. You'll learn about women practicing medicine in the 1800s and 1900s and the decline and rise of female physicians. You can even hear the recorded voices of women in the field by visiting the Truhlsen-Marmor Museum of the Eye (Hall G, Booth 3947).

Women in Medicine

In the 14th and 15th centuries, a formal medical education was not a requirement for practice, and women were known to apprentice in medicine much like their male counterparts. Women often performed surgery alongside a spouse or parent. In many European cities, women could even inherit medical practices.

Starting in the 17th century, medicine became more codified, and a formal education was required. Opportunities for women became scarce because education was expensive and, in many places, prohibited for girls and women. This left women to provide charitable services and family medicine outside of what was becoming the established medical field.

In the 18th century, Dorothea Erxleben studied at the University of Halle, one of the largest universities in Germany at the time, and she became the first formally qualified female physician in the world. At first, the university would not let Dr. Erxleben sit for her final exams. However, after she had practiced medicine for several years, it relented and awarded her medical degree in 1754. She was 39.

More women entered the field of medicine in the 19th century. By the mid-1800s, women began to earn medical degrees in multiple countries, including in the United States (1849), England (1865), France (1875), and Italy (1896). This is also the period in which women first became ophthalmologists.

Early Ophthalmologists

The first female ophthalmologist in the United States was Isabel Hayes Chapin Barrows, MD (1845-1913). She traveled for a year after medical school, studying ophthalmology in clinics in Vienna, Zu-

rich, Paris, and, finally, London. In 1870, she returned to America and became the first woman to practice ophthalmology in the United States. She had a private oculist practice in Washington, D.C., saw patients at Freedmen's Hospital, and lectured on eye and ear medicine at Howard University Medical College. She closed her practice after only three years to support her husband's budding political career.

Although Dr. Barrows learned her specialty in Europe, it was possible to get an education in the United States as well. For example, Amy Barton, MD (1841-1900) earned her medical degree at the Women's Medical College of Philadelphia in 1874. She then spent the next 13 years assisting George Strawbridge, MD, at Wills Eye Hospital. Upon Dr. Strawbridge's retirement, Dr. Barton returned to her alma mater, where she was named clinical professor of ophthalmology, likely the first woman in America to hold an ophthalmic professorship position.

Women of the Academy

When the American Academy of Ophthalmology and Otolaryngology (AAOO) was founded in 1896, membership was restricted only by education and years of medical practice. The bylaws made no mention of gender or race restrictions. Research into the historical records reveals that the first female member was either Alice Ewing, MD, or Mary Hollister, MD.

At the third meeting of the Academy, the program lists a paper presented by Alice Ewing, MD (1850-1902). There is no membership roll for 1898, so it is not possible to know if Dr. Ewing was a member of the Academy, but she was certainly the first woman to present a paper at an AAOO meeting. Dr. Ewing was an ENT specialist in Chicago. She earned her medical degree at Northwestern University Woman's Medical School in 1894, and in her paper, she stated that she had studied in Vienna.

The Academy's membership rolls have no distinctive female names until 1903, when Mary C. Hollister, MD, was listed. She remained a member of the Academy until 1905. Like Dr. Ewing,



FEMALE ACADEMY MEMBERS. Although women make up 25% of all Academy members today, annual meeting photos from 1911 (top) and 1947 (bottom) show early female Academy members in a much more male-dominated field.

Dr. Hollister earned her medical degree from Northwestern University Women's Medical School. After graduating in 1882, she interned at the Chicago Hospital for Women and Children and then opened a private, general medical practice in Iowa. Later she returned to Chicago, where she was assistant surgeon at the Illinois Charitable Eye and Ear Infirmary for five years. By 1896 she was listed as an instructor in ophthalmology and otology in the Women's Medical School and an attending oculist and aurist to the Mary Thompson Hospital for Women and Children in Chicago.

Today, women make up 25% of all Academy members, including in-training, practicing, and retired ophthalmologists worldwide.

Practicing Medicine

In the late 1800s and early 1900s, U.S. women had opportunities to study medicine at both all-female and coeducational medical schools. However, despite their medical educations, these early female practitioners had difficulty obtaining hospital privileges. Due to either professional or societal pressures, practices run by female physicians were often charitable infirmaries, which treated the poor and frequently were limited to the care of women and children.

One female ophthalmologist, Elizabeth Sargent, MD (1857-1900), reportedly "gave up her black silk commencement dress and deposited the proceeds with the Pacific Dispensary for Women and Children's hospital in San Francisco



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EXHIBIT HALL
MUSEUM OF THE EYE

to pay the rent to keep it open for another month.”¹ This is the same hospital where she would eventually be appointed ophthalmologist. This story has been cited as proof of Dr. Sargent's passion for children's health care. However, it could also be inferred that women physicians counted on the viability of charitable institutions for their careers.

Decline and Rise of Women Physicians

In 1910 the American Medical Association published the Flexner Report—a survey of medical schools conducted by Abraham Flexner on behalf of the Carnegie Foundation. The report condemned American medical education as inadequate. By 1920, the number of U.S. medical schools had dropped by 46%. As the number of openings decreased, medical schools openly stated their preference for male students to increase the school's prestige. By 1914, only 4% of all medical students were women.

U.S. women returned to medicine in real numbers only after two landmark pieces of legislation. The first was the Civil Rights Act of 1964, which made it illegal to discriminate against someone on the basis of race, color, religion, national origin, or sex. The second was the Education Amendments of 1972, specifically Title IX, prohibiting sex discrimination in any educational program or activity. When the law was passed in 1972, only 9% of medical degrees were going to women. Today, women earn nearly half of all medical degrees in the United States.

Hear Their Voices

Since 1985, the Academy has been building a collection of interviews and oral histories focused solely on ophthalmology. The collection at the Truhlsen-Marmor Museum of the Eye includes audio and video recordings of 133 significant figures in the history of medicine. Nineteen of those voices belong to women in the field.

During their interviews, these women openly discuss their training and challenges while universally praising their mentors for giving them the opportunities to learn and practice. In 2012, Marjorie Mosier, MD, recalled a conversation from the '60s: “The dean [of the medical school] said, ‘Well, you're too old and

the wrong sex, but we'll take a chance on you.’ All I wanted to hear was ‘we'll take a chance on you,’ so I was very grateful to him.”

Many recalled having to overcome



MARJORIE MOSIER, MD.

In the '60s, the Dean of Dr. Mosier's medical school told her, “you're too old and the wrong sex, but we'll take a chance on you.”

institutional biases. For instance, the doctor's lounge at most hospitals was meant for the exclusive use of men. Women physicians were expected to change in the nurses' lounge because it was expected that nurses would be female. In her 2010 interview, Susan Taub, MD, noted, “I worked very hard to petition and get that changed to ‘men and women’ instead of ‘nurses and doctors.’”

At the same time, women encouraged and mentored each other.

As Patricia Bath, MD, discussed in 2011, “Lois A. Young, MD, was the acting chief of ophthalmology at Howard while I was a student there, and she inspired not only myself but also eight or 10 of my classmates. We all decided to go into ophthalmology because of her.”

You can find a list of the museum's oral history collection at aao.org/oral-histories. You can view some transcripts online, and you can request others by writing to museum@aao.org.

More to Explore

Interested in learning more about the history of remarkable women ophthalmologists? In addition to attending this



PATRICIA BATH, MD. Dr.

Bath (above) credits Lois A. Young, MD, the acting chief of ophthalmology at Howard when she was a student, for inspiring her and a group of classmates to study ophthalmology.

year's museum exhibit (Hall G, Booth 3947), attend the museum's annual history symposium: “Contributions of Women in Ophthalmic Subspecialties” (Sym37, Monday at 9:45-11:00 a.m. in Room 243-245). Speakers include Gloria Fleming, MD, Natalie Afshari, MD, Eve Higginbotham, MD, Carol Shields, MD, Femida Kherani, MD, and Tracy Ravin, MD. These speakers will cover the topics of women and cataract surgery, cornea, glaucoma, ocular oncology, and plastic and reconstructive surgery, as well as the amazing career

of Ida Mann, MD, who was a pioneer in ophthalmology during the early and mid 1900s. (The symposium is cosponsored by the Truhlsen-Marmor Museum of the Eye and Women in Ophthalmology.)

¹ McPherson AR, Albert DM. *Ophthalmology*. 2015;122(6):1067-1069.

Meeting Veterans' Top Tips, Part 2: Be Bold in Your Networking

Make the most of AAO 2021's final two days. Two meeting veterans share some advice on navigating the meeting's extensive program, networking, and looking after your feet.

After last year's all-virtual meeting, Janice C. Law, MD, and Joanne Mansour, OCSR, are keen to catch up with old friends and make new ones.

Dr. Law—Set Aside Time to Try the Newest Equipment

Janice C. Law, MD, is a vitreoretinal surgeon at Vanderbilt Eye Institute in Nashville, Tennessee, where she spends a lot of time in the education arena as the Director of Medical Student Education and now Vice Chair for Education at Vanderbilt University Medical Center. She also works partly at the Veterans Hospital.

My first annual meeting—2005. When I first walked into McCormick Place for AAO 2005, it occurred to me that I had never seen so many ophthalmologists in one place! Looking through the schedule, I couldn't stop circling the numerous courses that I did not want to miss. I remember feeling like a rookie, not really knowing what to expect.

A change that I'm looking forward to—no tickets needed for instruction courses. While you still need tickets for some events, such as Skills Transfer labs, I am glad

that my AAO 2021 badge is an all-access pass to every instruction course. In the past, I often did not buy the course tickets in advance, only to find out I had to go back to the registration area to purchase them.

My top tip for getting the most out of the meeting—set goals and make a schedule. Create learning goals and a calendar. There are so many great courses that it's hard to get to them all unless you write them down and map out your journey. You also can't possibly make it to everything in person. Prioritize by what you want to focus on this year—and remember that you can now watch some sessions on demand. And don't forget to make time in your schedule for reunions and networking.

Biggest beginner's mistake—heels! Wear flats, not heels. This saves my feet so I can make it to all the great sessions throughout the convention center (and dance at the Global YO reception).

My meeting strategy has evolved—I now add a day to my schedule. I used to only come for a limited number of days, but now I try to stay one day later or arrive one day earlier. This gives me time to catch up with colleagues and friends. I also get recommendations from them on courses I might have overlooked and, in turn, I try to bring friends along to sessions I find valuable.

My most valued takeaway from a course—unfair question! This is too difficult. Every year I learn great tips, and this keeps me coming back for more. I always try to make Sue Vicchilli's coding sessions in the American Academy of Ophthalmic Executives (AAOE) section and a wellness talk or ergonomics course.

I also like to update myself on using technology in the classroom. Indeed, a memorable session was the 3-D-gonioscopy course. I still have the handout and the 3-D glasses. It was such a unique way to teach a skill and

clinical findings in a classroom setting.

A lucky win—now hanging in my dining room. I never win anything, but in 2019, I attended the Orbital Gala in San Francisco to support the Academy Foundation and the many programs that it funds. I put a bid on a piece of art that was absolutely stunning. It was a textured cross-sectional structure of the retina that was created by Dr. Adam Reynolds, an ophthalmologist in Idaho. I outbid my competition and came home with a great memento—and all for a great cause!

How has the annual meeting changed—more opportunities to connect beyond ophthalmology. I love the changes that have been made, such as the EyePlay Experience. It is not just a scientific meeting—it's an experience



DR. LAW: "I love how the meeting connects us—and not just as ophthalmologists, but in all the other aspects of who we are."



TAI CHI WITH CHAI TEA. At AAO 2019, Dr. Law (far right) focused on wellness during "Tai Chi With Chai Tea," one of the YO Lounge's Power Hour events.

and a chance to meet new people and do new things! I love how the meeting connects us not just as ophthalmologists, surgeons, and scientists, but also reflects the other aspects of who we are and what we like to do and see.

What I missed during the 2020 all-virtual meeting—getting to grips with the newest technology. I missed not being able to test-drive some of the new ophthalmic equipment and surgery machines on the exhibit floor. The Expo is always a draw for me, because I want to know the latest technology that is coming out and how it will help my patients and protect sight.

We are fortunate there are new advances in our field all the time.

And I definitely missed meeting new people and catching up with old friends.

My guilty pleasure at the annual meeting—the YO party on Sunday night. I always have a great time with friends at the Global YO reception on Sunday night! And thanks to my choice of daytime footwear—see "Biggest beginner's mistake," above—I am able to dance the night away.

Ms. Mansour—Breaking Down the Program Step-by-Step

Joanne Mansour, OCSR, started her career in ophthalmology in 1988 in Toronto, Canada. Since 2004, she has been the practice administrator at the Virginia Retina Center, which has four physicians and three satellite offices in and around

the Northern Virginia region. She currently serves as chair of the AAOE's Board of Directors.

My first annual meeting—2006. My first annual meeting was AAO 2006 in Las Vegas. Running into old friends at the annual meeting is always a highlight. Getting together for dinner and inviting along new acquaintances is just so valuable. The annual meeting is like a family reunion.

My top tip for getting the most out of AAO 2021—take a systematic approach to planning your schedule. I like using the Mobile Meeting

Guide [aao.org/mobile] as it helps to organize all the courses. My first step is to go through each category and add the courses that sound interesting to me and that may present a gap in my knowledge or may address a particular challenge that I currently have in my practice.

Next, I look at all the courses I have selected and usually find that I have many sessions that are double- and triple-booked. I look for courses where I may have overlap with other courses on my list. I also sometimes research presenters and see if the size and make-up of their practice is similar to mine. I will prioritize these talks, since I am likely to get more out of them.

While at the meeting, I will attend a course and sometimes, if I feel it is information I already know, I will switch rooms to attend one of the other courses



MS. MANSOUR: "The annual meeting is like a family reunion."

I was interested in during that time slot.

Biggest beginner's mistake—being too shy to talk to other attendees. During the AAOE program, you can learn a lot from your fellow attendees. Administrators are amazing people—they are just like you! They spend their days managing staff and the day-to-day. You can learn from them, and they can learn from you.

Be bold! If you just attended a class with another administrator, ask them what they thought about something you didn't understand. Ask what electronic health record (EHR) system they are using. Start the conversation. You will have a lifelong friend and someone you can reach out to when you need some advice.

My meeting strategy has evolved—seize the opportunity to network. I used to feel like I had to be in courses from 8:00 a.m. to 5:00 p.m. every day or I wasn't getting the most from the meeting. I've learned that a big part of the meeting is networking, so I try to spend some time in the AAOE Lounge.

What I missed during the 2020 all-

virtual meeting—networking in person.

With the pandemic and a virtual annual meeting last year, there is a lot of networking to catch up on this year! Not being able to see friends and interact with people who, as practice managers, have had shared experiences has been difficult, so I'm hoping to catch up this year after a long drought!

My guilty pleasure at the annual meeting—arriving early for a “me day.”

My husband is an ophthalmologist, so we usually come to the meeting a day earlier so he can attend the Subspecialty Day meetings. This gives me a day to myself in the city. I love to walk the city, get my nails done, engage in some retail stress reduction, and enjoy a quiet day before the meeting begins.

Reconnect at AAO 2021

Use Sunday and Monday to reconnect with old friends and make new ones.

Activate the Mobile Meeting Guide's messaging feature. The Mobile Meeting Guide (aao.org/mobile) includes a messaging feature that enables you to contact presenters and other attendees—but only if you enable that feature in the Mobile Meeting Guide's settings.

Take time to connect. There are breaks in the program at 9:15-9:45 a.m.; 11:00-11:30 a.m.; and 3:15-3:45 p.m.

Attend a reception. This year's receptions include the following:

Orbital Gala. While it is too late to buy tickets for this year's in-person gala, you can still attend online (aao.org/gala).
When: Sunday, 6:00-8:00 p.m. **Where:** House of Blues (if you have a ticket) or online.

YO Reception. Academy members who are in training or in their first five years of practice are encouraged to attend this year's YO Reception. **When:** Sunday, 9:00 p.m.-midnight. **Where:** Visit aao.org/yo for venue information.

Alumni societies and specialized interest group. Check the “Events” section of the Mobile Meeting Guide (aao.org/mobile) to find out when and where your society or association is meeting.

Enjoy the lounges. Schedule some time to relax and network:

AAOE Lounge: Room 201-202
Senior Ophthalmologist (SO)

Lounge: Room 224
Young Ophthalmologist (YO)

Lounge: Room 222

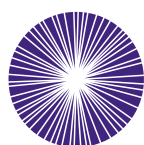
Try learning in a small group. Several events are designed on a smaller scale to facilitate attendee collaboration:

Academy Café: Room 271-273

Learning Lounge: Hall C, Booth 600
Poster Theater and Lounge: Hall C, Booth 200

Technology Pavilion: Hall C, Booth 145
Industry Showcase Theater: Hall D, Booth 1053

Use the Mobile Meeting Guide (aao.org/mobile) to see the schedules for these small-group-based sessions.



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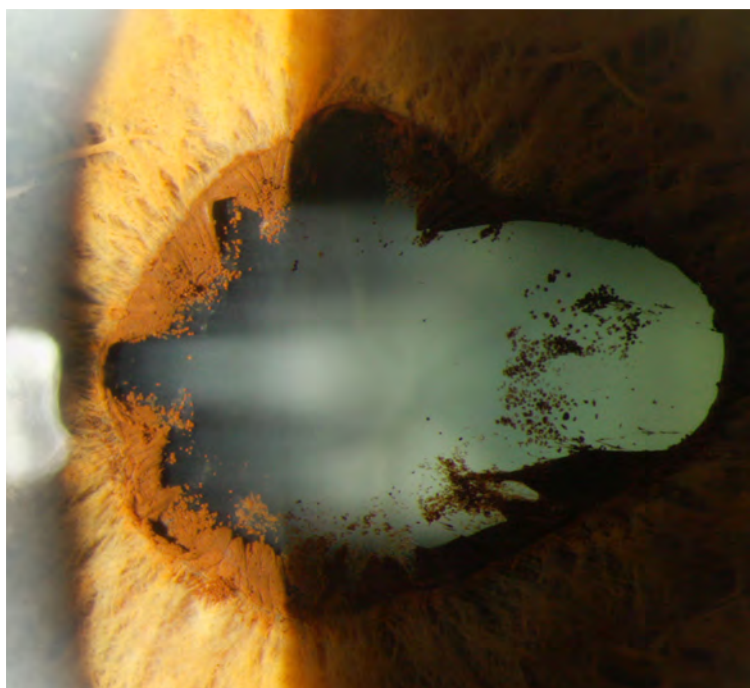
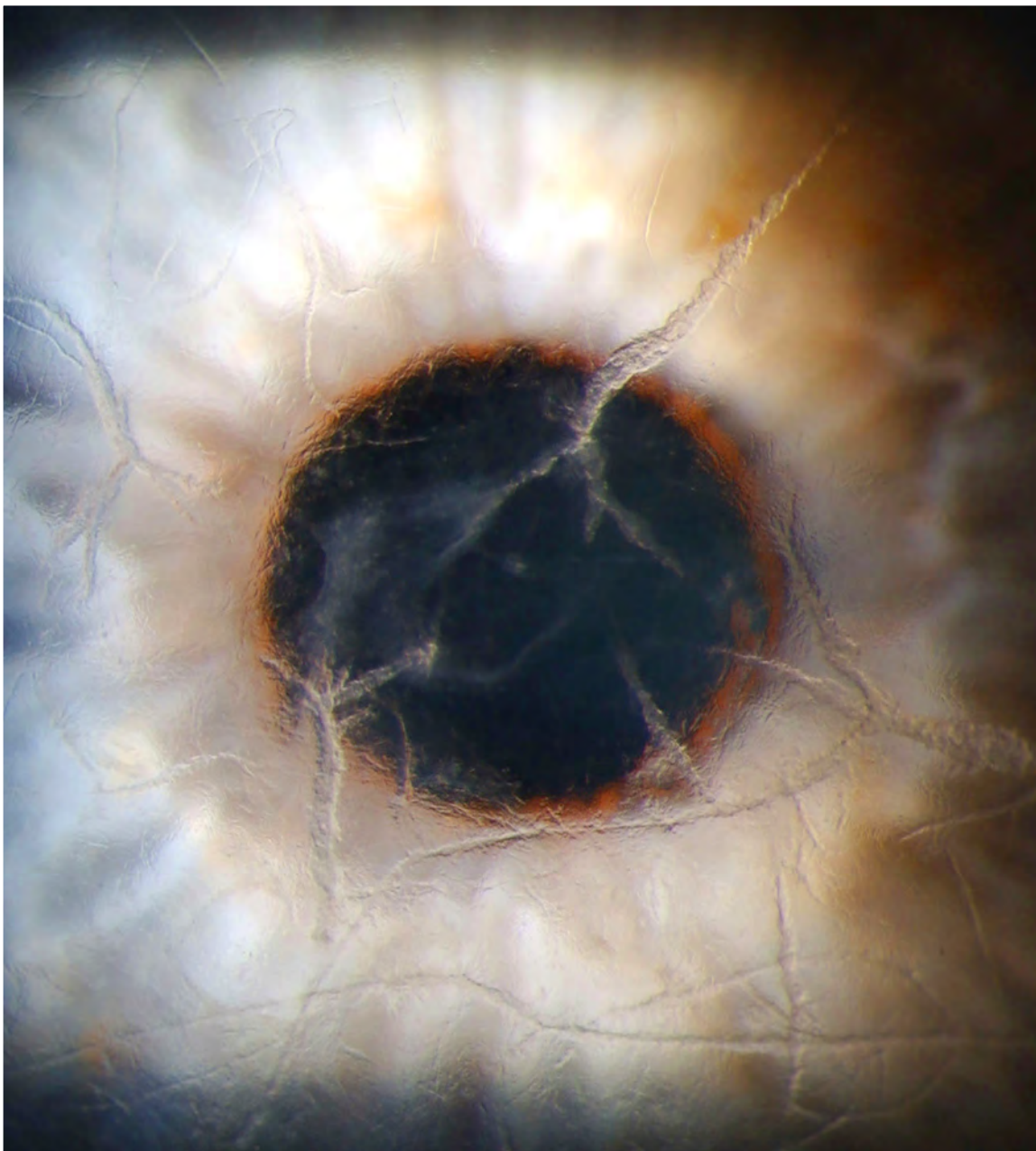


Winning Photography Is on Display

The photos shown here were selected from among the winners at the Ophthalmic Photographers' Society (OPS) Scientific Exhibit held virtually in the fall of 2020.

This fall OPS kicked off its virtual program with live presentations on Saturday, Oct. 23. Over the following four weeks, OPS offered more than 30 on-demand lectures. The program concludes on Nov. 20.

To see this year's winners, stop by the 2021 OPS Scientific Exhibit (Hall F, Booth 2727). You also can learn about OPS at www.opsweb.org.



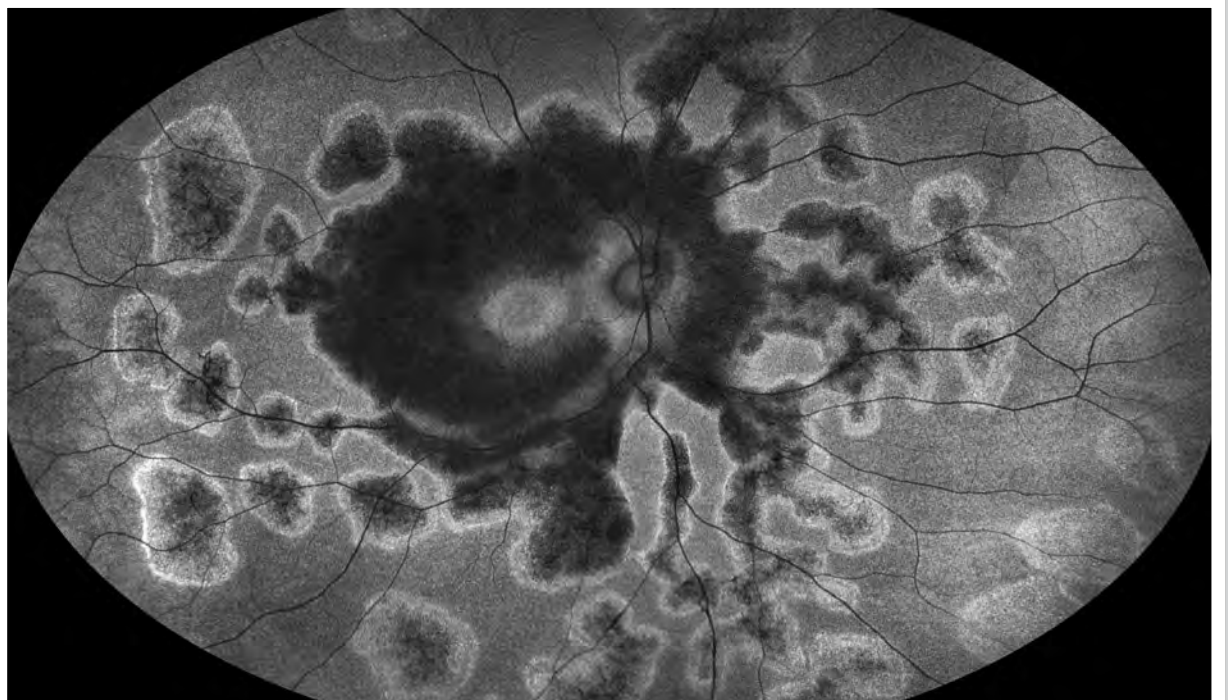
2020 OPS Exhibit Winners

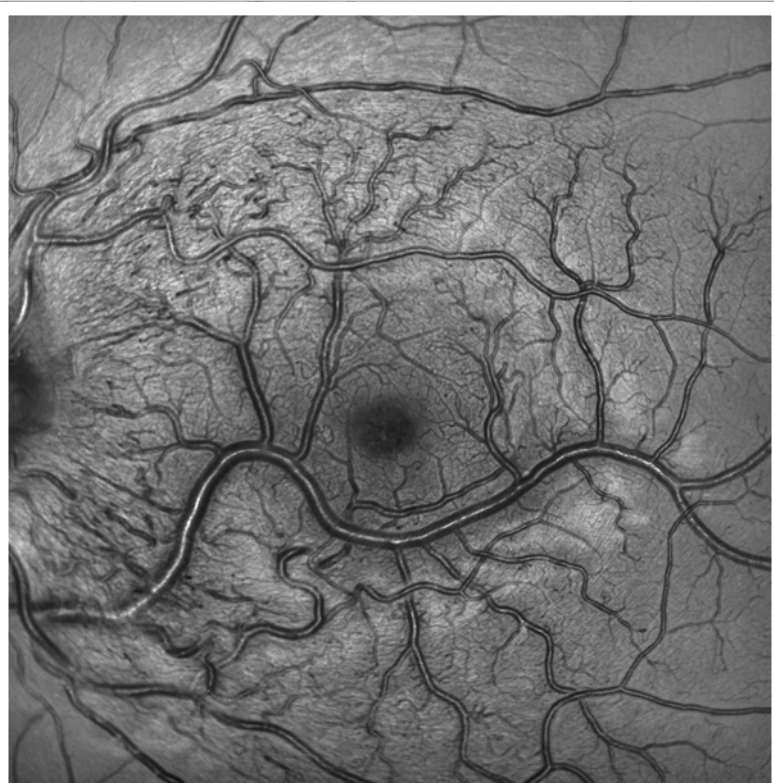
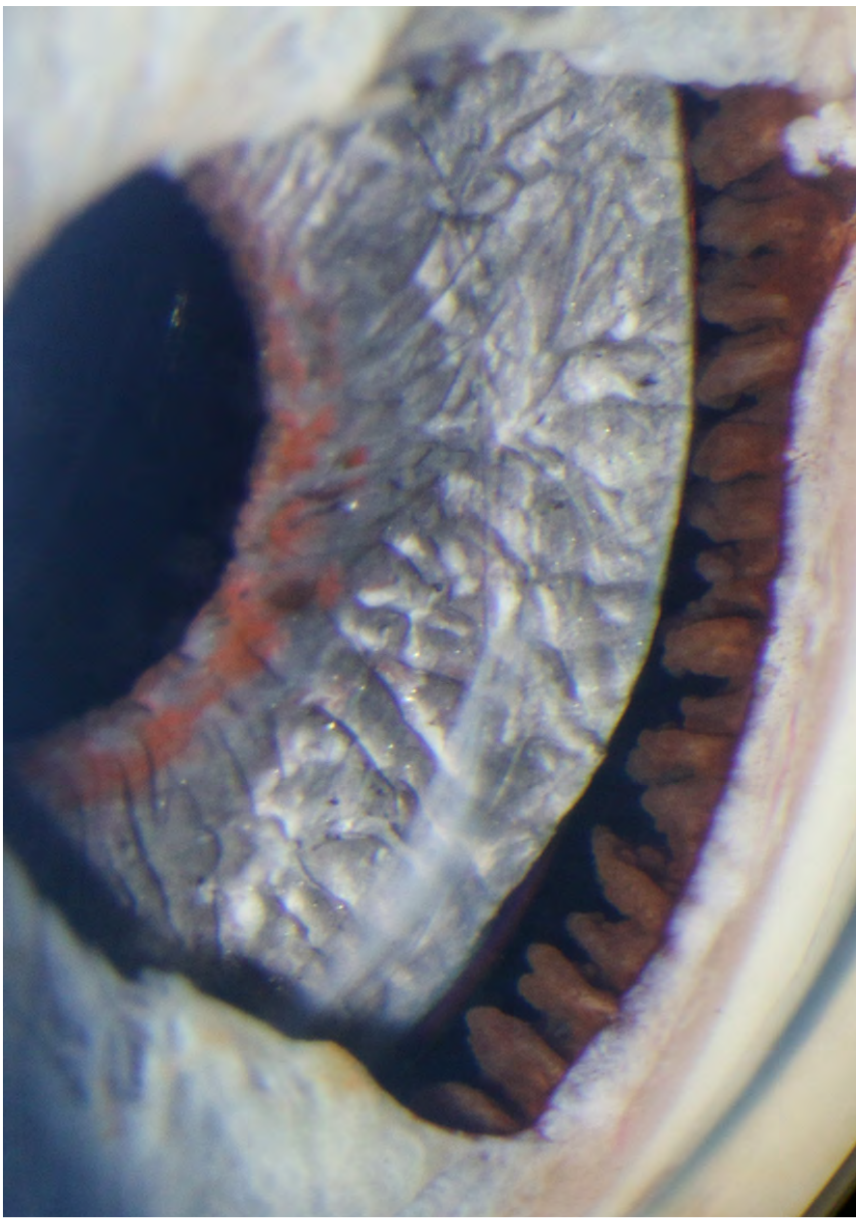
From left to right, and top to bottom.

Slit-Lamp Photography, Honorable Mention. *Synechia*. Jenny Kellogg, CRA, OCT-C, COMT, ROUB. University of Rochester, Flaum Eye Institute, Rochester, New York.

Slit-Lamp Photography, Second Place. *Lattice Dystrophy*. James Gilman, CRA, FOPS. University of Utah, Moran Eye Center, Salt Lake City.

Fundus Autofluorescence, Third Place. *RDH12 Mutation*. Sean Grout, OCT-C. University of North Carolina, Kittner Eye Center, Chapel Hill, North Carolina.





Gonio Photography, Honorable Mention. *Iris Prosthesis s/p Iris Melanoma.* Jaime Tesmer, CRA, OCT-C. Mayo Clinic, Rochester, Minnesota. Used with permission of Mayo Foundation for Medical Education and Research, all rights reserved.

Cross Categories, First Place. *Iris Microangioma.* Angela Chappell, CRA, OCT-C. Flinders Medical Centre, Bedford Park, South Australia.

Cross Categories, Second Place. *Stargardt's Disease.* Jody Troyer, CRA. University of Iowa Hospitals and Clinics, Iowa City, Iowa.

Monochromatic Photography, First Place. *Congenital Retinal Macrovesel.* Barbara Klemenc. University Eye Hospital Ljubljana, Ljubljana, Slovenia.

WHAT COULD SHE SEE THIS YEAR?

 **EYLEA[®]**
(aflibercept) Injection
For Intravitreal Injection

*Inspired by a real patient
with DME.*



**375
MATH
TESTS**

IMPORTANT SAFETY INFORMATION CONTRAINDICATIONS

- EYLEA is contraindicated in patients with ocular or periocular infections, active intraocular inflammation, or known hypersensitivity to aflibercept or to any of the excipients in EYLEA.

WARNINGS AND PRECAUTIONS

- Intravitreal injections, including those with EYLEA, have been associated with endophthalmitis and retinal detachments. Proper aseptic injection technique must always be used when administering EYLEA. Patients should be instructed to report any symptoms suggestive of endophthalmitis or retinal detachment without delay and should be managed appropriately. Intraocular inflammation has been reported with the use of EYLEA.
- Acute increases in intraocular pressure have been seen within 60 minutes of intravitreal injection, including with EYLEA. Sustained increases in intraocular pressure have also been reported after repeated intravitreal dosing with VEGF inhibitors. Intraocular pressure and the perfusion of the optic nerve head should be monitored and managed appropriately.
- There is a potential risk of arterial thromboembolic events (ATEs) following intravitreal use of VEGF inhibitors, including EYLEA. ATEs are defined as nonfatal stroke, nonfatal myocardial infarction, or vascular death (including deaths of unknown cause). The incidence of reported thromboembolic events in wet AMD studies during the first year was 1.8% (32 out of 1824) in the combined group of patients treated with EYLEA compared with 1.5% (9 out of 595) in patients treated with ranibizumab; through 96 weeks, the incidence was 3.3% (60 out of 1824) in the EYLEA group compared with 3.2% (19 out of 595) in the ranibizumab group. The incidence in the DME studies from baseline to week 52 was 3.3% (19 out of 578) in the combined group of patients treated with EYLEA compared with 2.8% (8 out of 287) in the control group; from baseline to week 100, the incidence was 6.4% (37 out of 578) in the combined group of patients treated with EYLEA compared with 4.2% (12 out of 287) in the control group. There were no reported thromboembolic events in the patients treated with EYLEA in the first six months of the RVO studies.

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EYLEA ACHIEVED RAPID, SUSTAINED OUTCOMES IN DME

Demonstrated efficacy outcomes in VISTA and VIVID, phase 3 anti-VEGF trials in DME (N=862)¹

Mean change in BCVA (ETDRS letters) at Year 1 from baseline^{1-5,*}

	Initial Gains (Month 5)		Primary Endpoint (Year 1)		Prespecified Exploratory Endpoint (Year 3)	
	VISTA	VIVID	VISTA	VIVID	VISTA	VIVID
EYLEA Q4	+10.3 (n=154)	+9.3 (n=136)	+12.5 (n=154)	+10.5 (n=136)	+10.4 (n=154)	+10.3 (n=136)
EYLEA Q8 [†]	+9.9 (n=151)	+9.3 (n=135)	+10.7 (n=151)	+10.7 (n=135)	+10.5 (n=151)	+11.7 (n=135)
Control	+1.8 (n=154)	+1.8 (n=132)	+0.2 (n=154)	+1.2 (n=132)	+1.4 (n=154)	+1.6 (n=132)

P<0.01 vs control at Year 1.

The analyses of these exploratory endpoints were not multiplicity protected and are descriptive only.

Year 2 data was consistent with results seen in Year 1.⁵

VISTA and VIVID study designs: Two randomized, multicenter, double-masked, controlled clinical studies in which patients with DME (N=862; age range: 23-87 years, with a mean of 63 years) were randomized and received: 1) EYLEA 2 mg Q8 following 5 initial monthly doses; 2) EYLEA 2 mg Q4; or 3) macular laser photocoagulation (control) at baseline and then as needed. From Week 100, laser control patients who had not received EYLEA rescue treatment received EYLEA as needed per re-treatment criteria. Protocol-specified visits occurred every 28 (±7) days.¹

In both clinical studies, the primary efficacy endpoint was the mean change from baseline in BCVA at Week 52, as measured by ETDRS letter score.¹

*Last observation carried forward; full analysis set.

[†]Following 5 initial monthly doses.

SEE WHAT EYLEA COULD DO FOR YOUR PATIENTS WITH DME AT HCP.EYLEA.US

anti-VEGF, anti-vascular endothelial growth factor; BCVA, best-corrected visual acuity; ETDRS, Early Treatment Diabetic Retinopathy Study; Q4, every 4 weeks; Q8, every 8 weeks.

ADVERSE REACTIONS

- Serious adverse reactions related to the injection procedure have occurred in <0.1% of intravitreal injections with EYLEA including endophthalmitis and retinal detachment.
- The most common adverse reactions (≥5%) reported in patients receiving EYLEA were conjunctival hemorrhage, eye pain, cataract, vitreous detachment, vitreous floaters, and intraocular pressure increased.
- Patients may experience temporary visual disturbances after an intravitreal injection with EYLEA and the associated eye examinations. Advise patients not to drive or use machinery until visual function has recovered sufficiently.

INDICATIONS

EYLEA® (aflibercept) Injection 2 mg (0.05 mL) is indicated for the treatment of patients with Neovascular (Wet) Age-related Macular Degeneration (AMD), Macular Edema following Retinal Vein Occlusion (RVO), Diabetic Macular Edema (DME), and Diabetic Retinopathy (DR).

References: 1. EYLEA® (aflibercept) Injection full U.S. Prescribing Information. Regeneron Pharmaceuticals, Inc. August 2019. 2. Korobelnik JF, Do DV, Schmidt-Erfurth U, et al. Intravitreal aflibercept for diabetic macular edema. *Ophthalmology*. 2014;121(11):2247-2254. doi:10.1016/j.ophtha.2014.05.006 3. Brown DM, Schmidt-Erfurth U, Do DV, et al. Intravitreal aflibercept for diabetic macular edema: 100-week results from the VISTA and VIVID studies. *Ophthalmology*. 2015;122(10):2044-2052. doi:10.1016/j.ophtha.2015.06.017 4. Data on file. Regeneron Pharmaceuticals, Inc. 5. Heier JS, Korobelnik JF, Brown DM, et al. Intravitreal aflibercept for diabetic macular edema: 148-week results from the VISTA and VIVID studies. *Ophthalmology*. 2016;123(11):2376-2385. doi:10.1016/j.ophtha.2016.07.032

Please see Brief Summary of Prescribing Information on the following page.



BRIEF SUMMARY—Please see the EYLEA full Prescribing Information available on HCP.EYLEA.US for additional product information.

1 INDICATIONS AND USAGE

EYLEA is a vascular endothelial growth factor (VEGF) inhibitor indicated for the treatment of patients with:

Neovascular (Wet) Age-Related Macular Degeneration (AMD), Macular Edema Following Retinal Vein Occlusion (RVO), Diabetic Macular Edema (DME), Diabetic Retinopathy (DR).

4 CONTRAINDICATIONS

4.1 Ocular or Periocular Infections

EYLEA is contraindicated in patients with ocular or periocular infections.

4.2 Active Intraocular Inflammation

EYLEA is contraindicated in patients with active intraocular inflammation.

4.3 Hypersensitivity

EYLEA is contraindicated in patients with known hypersensitivity to aflibercept or any of the excipients in EYLEA. Hypersensitivity reactions may manifest as rash, pruritus, urticaria, severe anaphylactic/anaphylactoid reactions, or severe intraocular inflammation.

5 WARNINGS AND PRECAUTIONS

5.1 Endophthalmitis and Retinal Detachments

Intravitreal injections, including those with EYLEA, have been associated with endophthalmitis and retinal detachments [see Adverse Reactions (6.1)]. Proper aseptic injection technique must always be used when administering EYLEA. Patients should be instructed to report any symptoms suggestive of endophthalmitis or retinal detachment without delay and should be managed appropriately [see Patient Counseling Information (17)].

5.2 Increase in Intraocular Pressure

Acute increases in intraocular pressure have been seen within 60 minutes of intravitreal injection, including with EYLEA [see Adverse Reactions (6.1)]. Sustained increases in intraocular pressure have also been reported after repeated intravitreal dosing with vascular endothelial growth factor (VEGF) inhibitors. Intraocular pressure and the perfusion of the optic nerve head should be monitored and managed appropriately.

5.3 Thromboembolic Events

There is a potential risk of arterial thromboembolic events (ATEs) following intravitreal use of VEGF inhibitors, including EYLEA. ATEs are defined as nonfatal stroke, nonfatal myocardial infarction, or vascular death (including deaths of unknown cause). The incidence of reported thromboembolic events in wet AMD studies during the first year was 1.8% (32 out of 1824) in the combined group of patients treated with EYLEA compared with 1.5% (9 out of 595) in patients treated with ranibizumab; through 96 weeks, the incidence was 3.3% (60 out of 1824) in the EYLEA group compared with 3.2% (19 out of 595) in the ranibizumab group. The incidence in the DME studies from baseline to week 52 was 3.3% (19 out of 578) in the combined group of patients treated with EYLEA compared with 2.8% (8 out of 287) in the control group; from baseline to week 100, the incidence was 6.4% (37 out of 578) in the combined group of patients treated with EYLEA compared with 4.2% (12 out of 287) in the control group. There were no reported thromboembolic events in the patients treated with EYLEA in the first six months of the RVO studies.

6 ADVERSE REACTIONS

The following potentially serious adverse reactions are described elsewhere in the labeling:

- Hypersensitivity [see Contraindications (4.3)]
- Endophthalmitis and retinal detachments [see Warnings and Precautions (5.1)]
- Increase in intraocular pressure [see Warnings and Precautions (5.2)]
- Thromboembolic events [see Warnings and Precautions (5.3)]

6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in other clinical trials of the same or another drug and may not reflect the rates observed in practice.

A total of 2980 patients treated with EYLEA constituted the safety population in eight phase 3 studies. Among those, 2379 patients were treated with the recommended dose of 2 mg. Serious adverse reactions related to the injection procedure have occurred in <0.1% of intravitreal injections with EYLEA including endophthalmitis and retinal detachment. The most common adverse reactions (≥5%) reported in patients receiving EYLEA were conjunctival hemorrhage, eye pain, cataract, vitreous detachment, vitreous floaters, and intraocular pressure increased.

Neovascular (Wet) Age-Related Macular Degeneration (AMD). The data described below reflect exposure to EYLEA in 1824 patients with wet AMD, including 1223 patients treated with the 2-mg dose, in 2 double-masked, controlled clinical studies (VIEW1 and VIEW2) for 24 months (with active control in year 1).

Safety data observed in the EYLEA group in a 52-week, double-masked, Phase 2 study were consistent with these results.

Table 1: Most Common Adverse Reactions (≥1%) in Wet AMD Studies

Adverse Reactions	Baseline to Week 52		Baseline to Week 96	
	EYLEA (N=1824)	Active Control (ranibizumab) (N=595)	EYLEA (N=1824)	Control (ranibizumab) (N=595)
Conjunctival hemorrhage	25%	28%	27%	30%
Eye pain	9%	9%	10%	10%
Cataract	7%	7%	13%	10%
Vitreous detachment	6%	6%	8%	8%
Vitreous floaters	6%	7%	8%	10%
Intraocular pressure increased	5%	7%	7%	11%
Ocular hyperemia	4%	8%	5%	10%
Corneal epithelium defect	4%	5%	5%	6%
Detachment of the retinal pigment epithelium	3%	3%	5%	5%
Injection site pain	3%	3%	3%	4%
Foreign body sensation in eyes	3%	4%	4%	4%
Lacrimation increased	3%	1%	4%	2%
Vision blurred	2%	2%	4%	3%
Intraocular inflammation	2%	3%	3%	4%
Retinal pigment epithelium tear	2%	1%	2%	2%
Injection site hemorrhage	1%	2%	2%	2%
Eyelid edema	1%	2%	2%	3%
Corneal edema	1%	1%	1%	1%
Retinal detachment	<1%	<1%	1%	1%

Less common serious adverse reactions reported in <1% of the patients treated with EYLEA were hypersensitivity, retinal tear, and endophthalmitis.

Macular Edema Following Retinal Vein Occlusion (RVO). The data described below reflect 6 months exposure to EYLEA with a monthly 2 mg dose in 218 patients following central retinal vein occlusion (CRVO) in 2 clinical studies (COPERNICUS and GALILEO) and 91 patients following branch retinal vein occlusion (BRVO) in one clinical study (VIBRANT).

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Issue Date: 08/2019 Initial U.S. Approval: 2011

Based on the August 2019 EYLEA® (aflibercept) Injection full Prescribing Information.

EYL.20.09.0052

Table 2: Most Common Adverse Reactions (≥1%) in RVO Studies

Adverse Reactions	CRVO		BRVO	
	EYLEA (N=218)	Control (N=142)	EYLEA (N=91)	Control (N=92)
Eye pain	13%	5%	4%	5%
Conjunctival hemorrhage	12%	11%	20%	4%
Intraocular pressure increased	8%	6%	2%	0%
Corneal epithelium defect	5%	4%	2%	0%
Vitreous floaters	5%	1%	1%	0%
Ocular hyperemia	5%	3%	2%	2%
Foreign body sensation in eyes	3%	5%	3%	0%
Vitreous detachment	3%	4%	2%	0%
Lacrimation increased	3%	4%	3%	0%
Injection site pain	3%	1%	1%	0%
Vision blurred	1%	<1%	1%	1%
Intraocular inflammation	1%	1%	0%	0%
Cataract	<1%	1%	5%	0%
Eyelid edema	<1%	1%	1%	0%

Less common adverse reactions reported in <1% of the patients treated with EYLEA in the CRVO studies were corneal edema, retinal tear, hypersensitivity, and endophthalmitis.

Diabetic Macular Edema (DME) and Diabetic Retinopathy (DR). The data described below reflect exposure to EYLEA in 578 patients with DME treated with the 2-mg dose in 2 double-masked, controlled clinical studies (VIVID and VISTA) from baseline to week 52 and from baseline to week 100.

Table 3: Most Common Adverse Reactions (≥1%) in DME Studies

Adverse Reactions	Baseline to Week 52		Baseline to Week 100	
	EYLEA (N=578)	Control (N=287)	EYLEA (N=578)	Control (N=287)
Conjunctival hemorrhage	28%	17%	31%	21%
Eye pain	9%	6%	11%	9%
Cataract	8%	9%	19%	17%
Vitreous floaters	6%	3%	8%	6%
Corneal epithelium defect	5%	3%	7%	5%
Intraocular pressure increased	5%	3%	9%	5%
Ocular hyperemia	5%	6%	5%	6%
Vitreous detachment	3%	3%	8%	6%
Foreign body sensation in eyes	3%	3%	3%	3%
Lacrimation increased	3%	2%	4%	2%
Vision blurred	2%	2%	3%	4%
Intraocular inflammation	2%	<1%	3%	1%
Injection site pain	2%	<1%	2%	<1%
Eyelid edema	<1%	1%	2%	1%

Less common adverse reactions reported in <1% of the patients treated with EYLEA were hypersensitivity, retinal detachment, retinal tear, corneal edema, and injection site hemorrhage.

Safety data observed in 269 patients with nonproliferative diabetic retinopathy (NPDR) through week 52 in the PANORAMA trial were consistent with those seen in the phase 3 VIVID and VISTA trials (see Table 3 above).

6.2 Immunogenicity

As with all therapeutic proteins, there is a potential for an immune response in patients treated with EYLEA. The immunogenicity of EYLEA was evaluated in serum samples. The immunogenicity data reflect the percentage of patients whose test results were considered positive for antibodies to EYLEA in immunoassays. The detection of an immune response is highly dependent on the sensitivity and specificity of the assays used, sample handling, timing of sample collection, concomitant medications, and underlying disease. For these reasons, comparison of the incidence of antibodies to EYLEA with the incidence of antibodies to other products may be misleading.

In the wet AMD, RVO, and DME studies, the pre-treatment incidence of immunoreactivity to EYLEA was approximately 1% to 3% across treatment groups. After dosing with EYLEA for 24-100 weeks, antibodies to EYLEA were detected in a similar percentage range of patients. There were no differences in efficacy or safety between patients with or without immunoreactivity.

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Risk Summary

Adequate and well-controlled studies with EYLEA have not been conducted in pregnant women. Aflibercept produced adverse embryofetal effects in rabbits, including external, visceral, and skeletal malformations. A fetal No Observed Adverse Effect Level (NOAEL) was not identified. At the lowest dose shown to produce adverse embryofetal effects, systemic exposures (based on AUC for free aflibercept) were approximately 6 times higher than AUC values observed in humans after a single intravitreal treatment at the recommended clinical dose [see Animal Data].

Animal reproduction studies are not always predictive of human response, and it is not known whether EYLEA can cause fetal harm when administered to a pregnant woman. Based on the anti-VEGF mechanism of action for aflibercept, treatment with EYLEA may pose a risk to human embryofetal development. EYLEA should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

All pregnancies have a background risk of birth defect, loss, or other adverse outcomes. The background risk of major birth defects and miscarriage for the indicated population is unknown. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2-4% and 15-20%, respectively.

Data

Animal Data

In two embryofetal development studies, aflibercept produced adverse embryofetal effects when administered every three days during organogenesis to pregnant rabbits at intravenous doses ≥3 mg per kg, or every six days during organogenesis at subcutaneous doses ≥0.1 mg per kg.

Adverse embryofetal effects included increased incidences of postimplantation loss and fetal malformations, including anasarca, umbilical hernia, diaphragmatic hernia, gastroschisis, cleft palate, ectrodactyly, intestinal atresia, spina bifida, encephalomeningocele, heart and major vessel defects, and skeletal malformations (fused vertebrae, sternebrae, and ribs; supernumerary vertebral arches and ribs; and incomplete ossification). The maternal No Observed Adverse Effect Level (NOAEL) in these studies was 3 mg per kg. Aflibercept produced fetal malformations at all doses assessed in rabbits and the fetal NOAEL was not identified. At the lowest dose shown to produce adverse embryofetal effects in rabbits (0.1 mg per kg), systemic exposure (AUC) of free aflibercept was approximately 6 times higher than systemic exposure (AUC) observed in humans after a single intravitreal dose of 2 mg.

8.2 Lactation

Risk Summary

There is no information regarding the presence of aflibercept in human milk, the effects of the drug on the breastfed infant, or the effects of the drug on milk production/excretion. Because many drugs are excreted in human milk, and because the potential for absorption and harm to infant growth and development exists, EYLEA is not recommended during breastfeeding.

The developmental and health benefits of breastfeeding should be considered along with the mother’s clinical need for EYLEA and any potential adverse effects on the breastfed child from EYLEA.

8.3 Females and Males of Reproductive Potential

Contraception

Females of reproductive potential are advised to use effective contraception prior to the initial dose, during treatment, and for at least 3 months after the last intravitreal injection of EYLEA.

Infertility

There are no data regarding the effects of EYLEA on human fertility. Aflibercept adversely affected female and male reproductive systems in cynomolgus monkeys when administered by intravenous injection at a dose approximately 1500 times higher than the systemic level observed humans with an intravitreal dose of 2 mg. A No Observed Adverse Effect Level (NOAEL) was not identified. These findings were reversible within 20 weeks after cessation of treatment.

8.4 Pediatric Use

The safety and effectiveness of EYLEA in pediatric patients have not been established.

8.5 Geriatric Use

In the clinical studies, approximately 76% (2049/2701) of patients randomized to treatment with EYLEA were ≥65 years of age and approximately 46% (1250/2701) were ≥75 years of age. No significant differences in efficacy or safety were seen with increasing age in these studies.

17 PATIENT COUNSELING INFORMATION

In the days following EYLEA administration, patients are at risk of developing endophthalmitis or retinal detachment. If the eye becomes red, sensitive to light, painful, or develops a change in vision, advise patients to seek immediate care from an ophthalmologist [see Warnings and Precautions (5.1)].

Patients may experience temporary visual disturbances after an intravitreal injection with EYLEA and the associated eye examinations [see Adverse Reactions (6)]. Advise patients not to drive or use machinery until visual function has recovered sufficiently.

From Academia to the Clinic

10 Eminent Speakers Talk About Current Issues

Whether you want a window into developments in colleagues' subspecialties or quick updates on your own field, consider attending an honorary lecture. These informative presentations by leaders in their fields are easy to fit into your schedule, as they are usually between 15 and 35 minutes long. Preview the highlights of these lectures below. Additional coverage appeared in the Friday AAO 2021 News. Most of these talks will be presented in person at AAO 2021. Through the virtual program, you can view all the talks on demand, and some lectures will be broadcasted live.

Note: All summaries were written in advance of AAO 2021. At time of press, not all lecture times had been finalized. Be sure to check the Mobile Meeting Guide, accessible at aao.org/mobile, for the most up-to-date information.

SUNDAY, Nov. 14

CORNEA

Castroviejo Lecture: Schnyder Corneal Dystrophy, Unraveling a Mystery: The Importance of One Rare Disease, presented by Jayne S. Weiss, MD.

When: Sunday, 2:47-3:14 p.m., during Sym29, *Recent Developments in the Management of Corneal Diseases*.

Where: La Nouvelle Orleans AB.

"Schnyder corneal dystrophy (SCD) is a rare disease caused by abnormal corneal lipid deposition. The formerly accepted name, Schnyder crystalline corneal dystrophy, impeded correct diagnosis. I found that only 50% of those affected with SCD had corneal



crystals. Those without crystals were inevitably misdiagnosed. Correcting the nomenclature of this one dystrophy led to my forming the International Committee for the Classification of Corneal Dystrophies, which updated all dystrophy nomenclature to reflect 21st century knowledge. Our finding of the causative gene and mutations in SCD proved their association with cholesterol metabolism. Subsequent discoveries demonstrated that this enzyme was involved with conversion of inactive to active vitamin K, showing for the first time that vitamin K metabolism impacted cholesterol metabolism."

Recent Developments in the Management of Corneal Diseases (2:00-3:15 p.m.) is cosponsored by the Cornea Society.

CORNEA

Whitney G. Sampson Lecture: Scleral Lenses: A Promise Fulfilled and a Platform for the Future, presented by Deborah S. Jacobs, MD.

When: Sunday, 8:41-9:03 a.m., during Sym15, *Innovations in Contact Lens Technology*.

Where: New Orleans Theater C.

"Scleral lenses are no longer a niche product in the hands of a few experts; they have entered the mainstream in the



United States and globally, changing lives for the better. Scleral lenses reduce the need for cornea transplantation in keratoconus,

improve quality of life for those incapacitated by ocular surface disease, and are a wonderful alternative to tarsorrhaphy. Not only that . . . scleral lenses are an exciting platform for advanced optics and for drug delivery, two areas of future impact."

Innovations in Contact Lens Technology (8:00-9:15 a.m.) is cosponsored by the Eye and Contact Lens Association.

MICROBIOLOGY

Jones-Smolín Lecture: Corneal Ulcers: Epidemics to Pandemics, presented by Eduardo C. Alfonso, MD.

When: Sunday, 10:37-10:58 a.m., during Sym18, *Corneal Ulcers: Beyond Topical Antimicrobial Therapy!*

Where: New Orleans Theater C.

"This talk will cover my efforts in the last 30 years to alert the world to the incidence of outbreaks of infections of the cornea,



first in 1981 when we described a series of patients with gonococcal conjunctivitis and keratitis caused by the use of a home remedy for the

treatment of viral conjunctivitis, to the linkage of *Pseudomonas* keratitis to soft contact lens wear, and to the epidemic of fungal keratitis due to the use of contact lens solutions, followed by the outbreaks of *Acanthamoeba* keratitis. The talk will highlight Dr. Gil Smolin's science fiction book *Reign of the Rat* about a pandemic, and it will present lessons learned and changes needed to reduce the incidence of corneal ulcers."

Corneal Ulcers: Beyond Topical Antimicrobial Therapy! (9:45-11:00 a.m.) is cosponsored by the Ocular Microbiology and Immunology Group. It highlights medical and surgical interventions.

OCULOPLASTICS

Wendell L. Hughes Lecture: Lessons Learned . . . 35 Years of Oculoplastic Practice, presented by Jeffrey A. Nerad, MD.

When: Sunday, 10:35-10:57 a.m., during Sym17, *Nightmares in Oculofacial Plastic Surgery: Managing Your Worst Complications*.

Where: Room 243.

"The technical aspects of taking care of patients are taught extremely well in residency and fellowship programs.



During the first half of my career, I was passionately consumed by every technical detail of our trade, loving to learn more advanced

and complicated procedures. Over time, I realized that I was missing some of the great pleasures of my practice: truly 'caring' for my patients. Not that I didn't take good care of them, but I was missing something very important in my role as a physician—being there for my patients as both a doctor and a human being. It seems to me that only through experience and mentorship from others can we learn the importance of truly caring for our patients.

"I hope that I can share with you some ways that I have learned to care for my patients and also share with you the passion and fulfillment of having the most important job on this earth: improving the health and lives of our patients. Nothing is more important."

Nightmares in Oculofacial Plastic Surgery: Managing Your Worst Complications (9:45-11:00 a.m.) is cosponsored by the American Society of Ophthalmic Plastic and Reconstructive Surgery.

OCULOPLASTICS/PROSTHETICS

Ruedemann Lecture: Fat Chance of Being Right: An Ocularist Perspective, presented by Kurt V. Jahrling, BCO.

When: Sunday, during Sym28, *It's All in the Details: A Look at Oculoplastic Procedures and Ocular Prosthetic Methods*.

Where: New Orleans Theater C.

"The historical challenge of achieving the best possible result after evisceration and enucleation has



involved implants ranging from the glass ball to porous implants with peg systems and countless experiments in between. The mantra has been to use as

large an implant as possible to replace the eye volume lost. What is really the make-or-break element for the best outcome? It's adipose tissue and where it ends up. In this ocularist's view, socket angle, lid function, prosthesis retention, motility transference, and artistic replication are all affected by fat volume as much as implant volume."

It's All in the Details: A Look at Oculoplastic Procedures and Ocular Prosthetic Methods (2:00-3:15 p.m.) is cosponsored by the American Society of Ocularists.

REFRACTIVE SURGERY

2020/2021 Barraquer Lecture: Aha Moments in the Corneal Response to Injury, presented by Steven E. Wilson, MD.

When: Sunday, 4:33-4:57 p.m., during Sym31, *Controversies in Cataract and Refractive Surgery*.

Where: La Nouvelle Orleans AB.

"Excellent outcomes, and many of the complications, in refractive surgery procedures such as PRK, LASIK, and SMILE



are related to the corneal cellular responses to the surgical procedure. From keratocyte apoptosis to the mechanism of action of mitomycin-

C to scarring stromal fibrosis (late haze), this talk highlights many of the insights derived from studies on corneal wound healing responses to refractive surgery. A better understanding of the corneal response to injury is essential to improve outcomes and manage complications in refractive surgery patients."

Controversies in Cataract and Refractive Surgery (3:45-5:00 p.m.) is cosponsored by the International Society of Refractive Surgery.

UVEITIS AND IMMUNOLOGY

C. Stephen and Frances Foster Lecture on Uveitis and Immunology: A Practical Framework for Management of Retinal Vasculitis, presented by Narsing A. Rao, MD.

When: Sunday, 11:30 a.m.-12:30 p.m., during Sym38, *C. Stephen and Frances Foster Lecture on Uveitis and Immunology*.



Where: La Nouvelle Orleans C.
"Retinal vasculitis is a poorly understood, vision-threatening vascular inflammation that presents

challenges when it comes to establishing definitive clinical diagnosis and subsequent treatment. Such challenges are due in part to trying to fulfill the gold standard of vasculitis through histopathological demonstration of the vessel wall inflammation. Although retinal imaging and fluorescein angiography can be helpful in the clinical diagnosis of retinal vasculitis, several nonvasculitis entities can present with clinical features virtu-

ally identical to true vasculitis, including sheathing and fluorescein leakage from retinal vessels.

“Retinal vasculitis can occur in association with systemic disorders, including autoimmune, collagen vascular, infectious, and others. In direct contrast, it can also be isolated to the retina without evidence of systemic disorders. Thus, patients who are suspected of having retinal vasculitis require extensive laboratory workup and

usually a consultation with a rheumatologist to exclude systemic disorders as well as to manage current and evolving immunomodulatory and biological agents. In the C. Stephen and Frances Foster Lecture, I will provide a framework on the clinical approach to etiologic diagnosis and will discuss the management of retinal vasculitis with aim of improving visual outcome and minimizing complications related to therapeutic interventions.”

C. Stephen and Frances Foster Lecture on Uveitis and Immunology (11:30 a.m.-12:30 p.m.).

MONDAY, Nov. 15

CATARACT

Charles D. Kelman Lecture: *Niche Devices for Special Eyes*, presented by Michael E. Snyder, MD.

When: Monday, during Spo3, Spotlight on Cataract Complications.

Where: The Great Hall.

“Some patients present with unusual and uncommon, but important, problems for which traditional treatments may be insufficient. This lecture will be a fast-paced, mostly video-based medley of peculiar surgical cases solved by niche devices. Some devices fall into the compassionate-use realm, while other devices are either newly approved, around but uncommon, or used in a nontraditional way. Cases will include nanophthalmic, aniridic, zonulopathic, traumatized, and irradiated eyes—and even pre-phthical eyes! Each case celebrates the individuality of patients, their unique needs, and the creativity with which innovators and industry have responded to those needs.”

Spotlight on Cataract Complications (8:00 a.m.-12:00 p.m.) For a history of this event see “20 Years of Cataract Spotlights” on page 14.

GLAUCOMA

Robert N. Shaffer Lecture: *Navigating Between Scylla and Charybdis: An Evidence-Based Guide to Minimizing Overtreatment and Undertreatment of Patients With Glaucoma*, presented by Dale K. Heuer, MD.

When: Monday, 2:52-3:14 p.m., during Sym42, *Achieving Health Equity in Glaucoma Care*.

Where: Room 243.

“During my training, there was an old saw to the effect that the majority of patients being treated for glaucoma are being overtreated, while a small minority are being substantially undertreated. Regrettably, I think that observation is still true, although

perhaps not to the same extent now. My Robert N. Shaffer Lecture, entitled ‘Navigating Between Scylla and Charybdis: An Evidence-Based Guide to Minimizing Overtreatment and Undertreatment of Patients With Glaucoma,’ will provide a rational and practical approach to treatment decisions, as well as to appropriate visit and testing frequency, for glaucoma suspects and patients with manifest glaucoma. The approach is based on multiple readily available clinical findings, including IOP, cup-to-disc ratio, visual field indices, central corneal thickness, and presence of optic disc hemorrhages, which can be used individually to qualitatively influence our decisions related to treatment and surveillance frequency; alternatively, many can be used collectively to provide more quantitative direction for care.”

Achieving Health Equity in Glaucoma Care (2:00-3:15 p.m.) is cosponsored by Prevent Blindness.

PROFESSIONALISM AND ETHICS

Dr. Allan Jensen and Claire Jensen Lecture in Professionalism and Ethics: *Navigating the Confusing World of Research Versus Innovative Treatment: Ethical and Regulatory Issues*, presented by Jerry A. Menikoff, MD, JD.

When: Monday, 11:30 a.m.-12:30 p.m., during Sym22, *Dr. Allan Jensen and Claire Jensen Lecture in Professionalism and Ethics*.

Where: Room 243.

“In the early days of the COVID-19 pandemic, physicians struggled with how to treat their patients who had this previously unknown virus. Among other issues, if the benefits from off-label repurposing of a particular drug were unproven, when was it proper for a physician to go ahead and use that drug for a patient, versus enrolling the patient in a clinical trial to help determine the drug’s efficacy? As described in Susan Dominus’ compelling Aug. 5, 2020, *New York Times* article, these situations could become tense, ‘pitt[ing] doctor vs. doctor’ and generating accusations of ‘witchcraft.’¹ While this type of scenario was highlighted by the pandemic, the issues it raised are not new, and they will continue to recur. Surprisingly, the world of ophthalmology has played a prominent role in the history of trying to understand and deal with this difficult dilemma. This session will discuss issues relating to determining when a physician’s activities constitute research or the provision of innovative care, and the ethical and regulatory consequences of falling into each of those categories.”

¹ <https://www.nytimes.com/2020/08/05/magazine/covid-drug-wars-doctors.html>.

Dr. Allan Jensen and Claire Jensen Lecture in Professionalism and Ethics (11:30 a.m.-12:30 p.m.).

MEET UP AT THE EXPO

Want to tour the exhibit hall with a colleague? There are several convenient locations to meet up:

Official Meeting Points. There are two designated Meeting Points at the front of Hall G, near the charging stations.

EyePlay Experience. Enjoy a cooking demo, charge your electronic devices, challenge a colleague to a game of Ping-Pong or Jenga, get assistance at the Tech Bar, relieve some stress with the Comfort Animal pet program, or just hang out in the EyePlay booth (Hall H, Booth 5214).

Academy Resource Center. While waiting to meet a colleague, find out about the latest Academy products and services (see page 10) at the Resource Center (Hall G, Booth 4039).

Museum of the Eye Exhibit. Learn about pioneer women ophthalmologists at The Truhlsen-Marmor Museum of the Eye’s AAO 2021 exhibit (Hall G, Booth 3947).

For more information about this year’s Expo, including exhibitor booth locations, use the Mobile Meeting Guide (aao.org/mobile).



ETHICS EVENTS

Get ethics-specific CME credit by attending the following thought-provoking instruction courses and symposia below.

Telehealth in Ophthalmology: Ethical Considerations in Virtual Patient Care (event code 821V). Senior instructor: Ron W. Pelton, MD, PhD. *When:* On-demand only. *Where:* Virtual.

Sexual Harassment in Ophthalmology: How Do I Protect Myself, My Practice and My Trainees in the #MeToo Era? (805V). Senior instructor: Michelle T. Cabrera, MD. *When:* On-demand only. *Where:* Virtual.

How Would You Respond? Handling Ethical Practice Dilemmas (408). Senior instructor: Carla J. Siegfried, MD. *When:* Sunday, 9:45-11:00 a.m. *Where:* Room 203.

Dr. Allan Jensen and Claire Jensen Lecture in Professionalism and Ethics (Sym22): *Navigating the Confusing World of Research Versus Innovative Treatment: Ethical and Regulatory Issues*, presented by Jerry A. Menikoff, MD, JD. *When:* Monday, 11:30 a.m.-12:30 p.m. *Where:* Room 243.

Diversity, Equity and Inclusion: Perspectives From Ophthalmology Leadership (Sym39). Chairs: Usiwoma E. Abugo, MD, and Nikisha Q. Richards, MD. *When:* Monday, 11:30 a.m.-12:45 p.m. *Where:* La Nouvelle Orleans AB.

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**- Dr. Jonathan S. Myers, MD,
Wills Eye Glaucoma Service**

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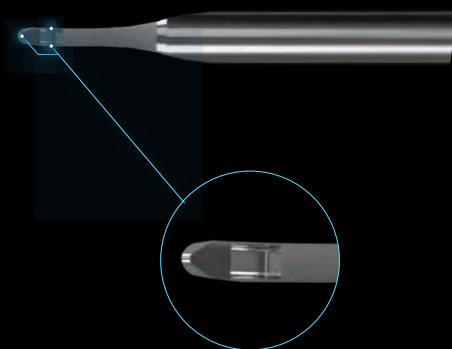
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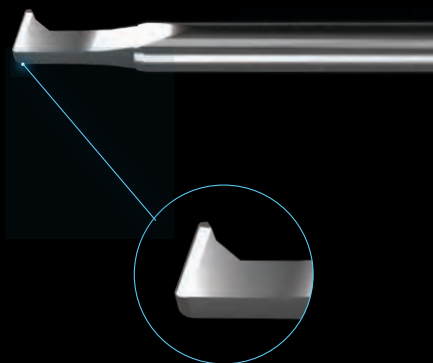


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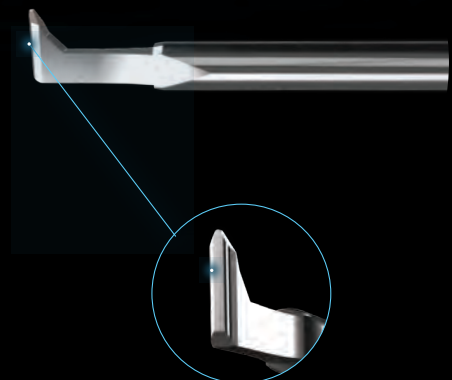
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