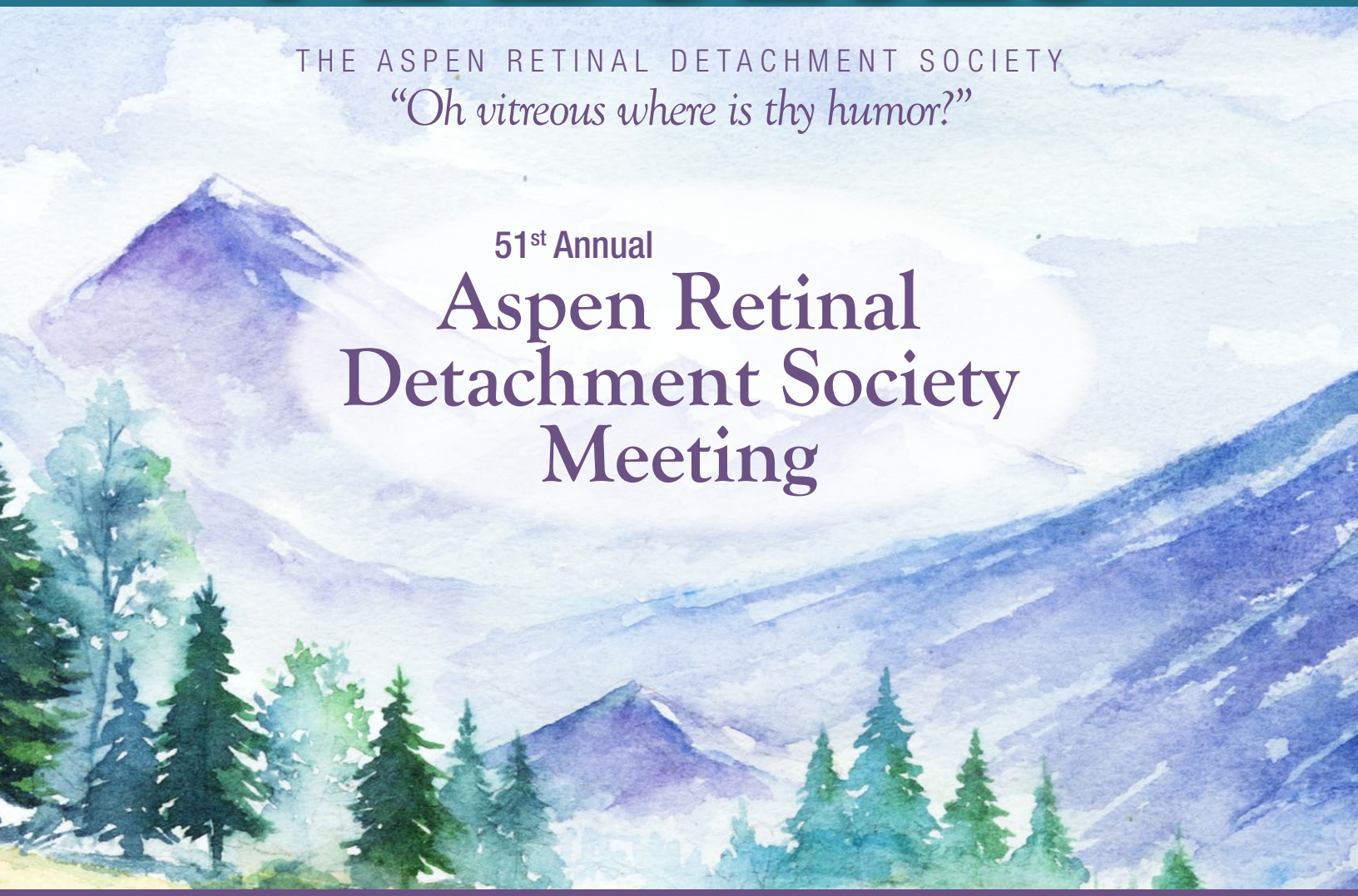
ARDS2023

THE ASPEN RETINAL DETACHMENT SOCIETY

"Oh vitreous where is thy humor?"



51st Annual
Aspen Retinal Detachment Society Meeting

MARCH 4-8, 2023 • SNOWMASS, COLORADO

Beaumont

ACCREDITATION AND CREDIT DESIGNATION

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INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, this activity has been planned and implemented by Beaumont Health, Medical Conference Planners Intl., and Aspen Retinal Detachment Society. Beaumont Health is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Beaumont Health designates this live activity for a maximum of ***12.0 AMA PRA Category 1 Credit(s)™.*** Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ARDS2023

Dear Colleagues,

Welcome to the 51st Annual Meeting of the Aspen Retinal Detachment Society (ARDS). This cherished gathering moves into its second half-century and continues its unique format of in-depth presentations followed by engaging (riotous?) discussions of vitreoretinal diseases and surgery.

Speakers at ARDS have been remarkable leaders in the field of retina, and many of our most significant advances were first discussed at this meeting. Remarkably, nothing has stopped the ARDS meeting – much like our specialty overall, we have continued through pandemic, economic turmoil, and terrorism.

Although the pandemic is mercifully waning, we will fully comply with Colorado's and the Viceroy's safety recommendations. Our experiences over the past two meetings have demonstrated safe and highly productive in-person meetings. We will continue our recent inclusion of industry-sponsored morning sessions (for those interested) that will feature case-based interactive discussions.

Our Named Lecturers this year will, as always, be a high point in the program. The Founders Lecture will showcase Dr. Gregg T. Kokame, a highly accomplished retinal specialist who continues in the footsteps of his esteemed mentor Dr. J. Donald M. Gass, as he presents his data on Management of Exudative AMD Based on Anatomic Subtypes. The Taylor Smith & Victor Curtin Lecture by Dr. Giovanni Staurenghi (brilliant, elegant, and the second-best mogul skier on the faculty) will feature his pinnacle insights and cutting-edge instrumentation in retinal imaging.

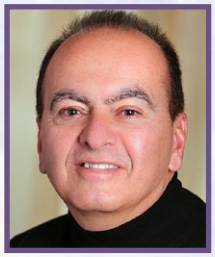
Our faculty speakers truly represent the ARDS commitment to both advancement and education within our field. Innovative surgeon and gifted athlete Dr. Allen C. Ho will describe new delivery methods for gene and cell-based therapies and then provide an update on their applicability to AMD. Surgical pioneer and special international guest Dr. Zofia A. Nawrocka will discuss the latest data on her revolutionary ILM flap technique and then ask us to re-evaluate the role of vitrectomy for diabetic macular edema. A second special international guest and surgical giant Dr. Stratos V. Gotzaridis will offer his sage experience on the management of subretinal fluid during detachment surgery and then demonstrate the Carlevale IOL technique that has become the favorite of many in the world for secondary implantation.

Dr. Charles C. Wykoff, dually talented as a superb clinician and researcher, will share his thoughts about potentially reversing ischemia in the diabetic retina, and then reveal his up-to-the-minute understanding of the management of geographic atrophy. This will no doubt inspire intense discussion with Dr. Tarek S. Hassan, longtime and persuasive influencer ARDS, who will also tackle geographic atrophy and then pivot to his sophisticated views on office-based vitreoretinal surgery. Dr. Susan B. Bressler, whose medical retina expertise is simply unequalled at the meeting (or actually, anywhere) will assist us all by demystifying biosimilars, and will share her current data-based strategy for management of diabetic macular edema. Astonishingly talented, and inexplicably clear for a world-famous uveitis specialist, Dr. Steven Yeh will not only provide our much-needed annual update on advances in uveitis but will also demonstrate his real-world use of suprachoroidal triamcinolone acetate in the management of non-infectious uveitis.

In addition to the vigorous discussion after each talk, there will also be several expert panels. Don D'Amico will moderate a (buckle-bashing, no doubt) "All Things Surgical Retina" panel, Tim Murray will expertly moderate an "All Things Medical Retina" panel—and do his best to control an insanely talented group, and Dr. Tarek S. Hassan will host a wide-ranging "Innovations in Retina and Retinal Practice" panel—the broadest title for any offering at the meeting consistent with the wide breadth of his interests. You, the participants, will be actively engaged in all these topics, and please bring your latest ideas and burning questions to the meeting.

For the ARDS leadership, the uniqueness of this meeting, its caliber and impact, owe much to the incredible individuals who have spoken over more than five decades but ALSO to our amazing members whose targeted questions and impactful comments anchor ARDS at its clinical roots. We look forward to seeing you!

Best regards,



Donald J. D'Amico, MD
Program Director

Timothy G. Murray, MD, MBA
Program Director

Karen Baranick
President, Medical Conference Planners Intl.

Guest Faculty

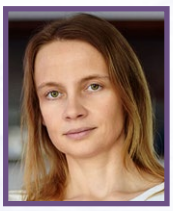
Susan B. Bressler, MD
Johns Hopkins University
Baltimore, MD

Stratos V. Gotzaridis, MD
My Retina Athens Eye Center
Athens, Greece

Tarek S. Hassan, MD
Associated Retinal Consultants
Royal Oak, MI

Allen C. Ho, MD
Wills Eye Hospital
Philadelphia, PA

Gregg T. Kokame, MD, MMM
Retina Consultants of Hawaii
Honolulu, HI
FOUNDERS LECTURE



Zofia A. Nawrocka, MD, PhD
Nawroccy Ophthalmology
Lodz, Poland

Giovanni Staurenghi, MD
University of Milan
Milan, Italy
TAYLOR SMITH & VICTOR CURTIN LECTURE

Charles C. Wykoff, MD, PhD
Retina Consultants of Texas
Houston, TX

Steven Yeh, MD
University of Nebraska
Omaha, NE

Program Directors

Donald J. D'Amico, MD
Weill Cornell Medicine
Ophthalmology
New York, NY

Timothy G. Murray, MD, MBA
Murray Ocular Oncology and Retina
Miami, FL

Meeting Planner

Karen Baranick
Medical Conference Planners International
Los Angeles, CA

Founders

William O. Edward, MD
1930-2012

Ottiwell W. Jones, III, MD
Spokane, WA

Meeting Notes Editor

R.V. Paul Chan, MD, MSc, MBA
UIC/Illinois Eye and Ear Infirmary
Chicago, IL

12th ANNUAL FOUNDERS LECTURE

MONDAY, MARCH 6, 2023 • 6:55 PM

Management of Exudative Macular Degeneration Based on Anatomic Subtypes

GREGG T. KOKAME, MD, MMM

Gregg T. Kokame received his M.D. from the UCLA School of Medicine with honors in Alpha Omega Alpha. He completed ophthalmology residency at the Jules Stein Eye Institute/UCLA, and vitreoretinal surgery fellowship at the Bascom Palmer Eye Institute in Miami. He is Chief of Ophthalmology and Clinical Professor at the University of Hawaii School of Medicine. He is founder and director of The Hawaii Macula and Retina Institute and The Retina Center at Pali Momi affiliated with Hawaii Pacific Health since 1993 with over 70 national or international clinical trials. He was the first to do the bionic eye surgery in the Asia Pacific region in March of 2015, and the first to do gene therapy for any medical disease in Hawaii in November of 2021. He received his business degree in organizational development (Master of Medical Management) from the USC Marshall School of Business. His sabattical was at the world-renowned Moorfields Eye Hospital in London in 2000 with Professors Alan Bird and Zdenek Gregor.

Dr. Kokame is a member of the American Academy of Ophthalmology (Honor Award - 1999, Secretariat Award – 2008 & 2022, Senior Achievement Award – 2014), Macula Society, Retina Society, and American Society of Retina Specialists (ASRS) (Honor Award – 2001; Senior Honor Award – 2003; FASRS – 2022). He was admitted to the prestigious American Ophthalmological Society in 2015 after acceptance of his thesis on treatment and multimodality diagnostic testing polypoidal choroidal vasculopathy. He received the Gass Medal from the Macula Society in 2021.

Dr. Kokame's chief research interests are exudative macular degeneration, polypoidal choroidal vasculopathy, ethnic variations in macular disease, macular hole surgery, management of dislocated and subluxated intraocular lenses, new pharmacologic development in retinal diseases, and imaging techniques for macular disease. He has published over 110 papers, delivered over 210 lectures throughout the USA, Asia, Europe and the Middle East with over 130 invited lectures.

Founders Honorees

2012 Steve T. Charles, MD
2013 Joan W. Miller, MD
2014 Carl D. Regillo, MD
2015 Dean Eliott, MD
2016 Mark W. Johnson, MD
2017 Mark S. Humayun, MD, PhD
2018 Maria H. Berrocal, MD
2019 Allen C. Ho, MD
2020 Glenn J. Jaffe, MD
2021 Dennis P. Han, MD
2022 H. Culver Boldt, MD
2023 Gregg T. Kokame, MD, MMM

41st ANNUAL TAYLOR SMITH & VICTOR CURTIN LECTURE

TUESDAY, MARCH 7, 2023 • 6:50 PM

Advances in Retinal Imaging

GIOVANNI STAURENGHI, MD

Giovanni Staurenghi, MD is presently Professor of Ophthalmology and Chairman of the University Eye Clinic and Director of the University Eye Clinic Department of Biomedical and Clinical Science "Luigi Sacco" at the Luigi Sacco Hospital in Milan, Italy.

He received his medical degree at the University of Pavia and his residency training at the University of Milan, both in Italy. He was a research fellow and, subsequently, a visiting scientist at the Schepens Eye Research Institute. His research, publications, and lectures have an important bearing on retinal degeneration; his work is focused on different types of imaging and treatment.

Dr. Staurenghi is a member of the Macula Society, The Association for Research in Vision and Ophthalmology (ARVO), Ophthalmic Photographers' Society, and American Academy of Ophthalmology. He was a member of the Annual Meeting Program Committee of ARVO from 2008 to 2010. He is a scientific advisor for the Digital Angiography Reading Center and visiting professor and consultant for the Belfast Ophthalmic Reading Center at the Central Angiographic Resource Facility.

Dr. Staurenghi is a member of the editorial board of IOVS. He is a reviewer for many international scientific journals including the American Journal of Ophthalmology, Archives of Ophthalmology, British Journal of Ophthalmology, European Journal of Ophthalmology, Graefe's Archives of Ophthalmology, International Ophthalmology, IOVS, Ophthalmology, Ophthalmologica, and Retina.

Taylor Smith & Victor Curtin Honorees*

1983	Thomas M. Aaberg, Sr., MD	1994	Charles P. Wilkinson, MD	2005	Thaddeus P. Dryja, MD	2016	Neil M. Bressler, MD
1984	Robert E. Morris, MD	1995	George W. Blankenship, MD	2006	Jerry A. Shields, MD	2017	Gary W. Abrams, MD
1985	Michael Shea, MD	1996	Mary Lou Lewis, MD	2007	Mark S. Blumenkranz, MD	2018	Daniel F. Martin, MD
1986	Alexander Ray Irvine, Jr., MD	1997	Donald J. D'Amico, MD	2008	Allan E. Kreiger, MD	2019	Yale L. Fisher, MD
1987	William H. Spencer, MD	1998	Stanley Chang, MD	2009	Alexander R. Gaudio, MD	2020	Carol L. Shields, MD
1988	Victor T. Curtin, MD	1999	Harry W. Flynn, Jr., MD	2010	Carmen A. Puliafito, MD, MBA	2021	Robert L. Avery, MD
1989	Alan Bird, MD	2000	Ian J. Constable, MD	2011	David W. Parke, II, MD	2022	Timothy G. Murray, MD, MBA
1990	J. Donald M. Gass, MD	2001	Thomas R. Friberg, MD	2012	J. Brooks Crawford, MD	2023	Giovanni Staurenghi, MD
1991	Robert J. Brockhurst, MD	2002	William S. Tasman, MD	2013	Michael T. Trese, MD		
1992	Stephen J. Ryan, MD	2003	Evangelos S. Gragoudas, MD	2014	Julia A. Haller, MD		
1993	Wayne E. Fung, MD	2004	Steve T. Charles, MD	2015	George A. Williams, MD		

**Prior to 2017, this lecture was known as the Taylor Smith Lecture.*

ARDS 2023

PROGRAM AT A GLANCE

Saturday

MARCH 4

4:00 – 9:00 PM
Registration

6:00 – 9:00 PM
Welcome Dinner

Sunday

MARCH 5

7:30 – 9:00 AM
Satellite Symposium with Breakfast (non-CME)^

7:30 – 8:00 AM
Breakfast

8:00 – 9:00 AM
Wet AMD and DME First-Line Treatment Outcomes: Case Study Review and Interactive Discussion
Daniel F. Kiernan, MD
(Sponsored by Regeneron Pharmaceuticals, Inc.)

3:30 – 7:30 PM
Exhibits

4:00 – 4:20 PM
Surgical Delivery Strategies of Gene and Cell Therapy
Allen C. Ho, MD

4:20 – 4:35 PM
Discussion

4:35 – 4:55 PM
Is the Temporal Inverted ILM Flap Technique Really Suitable for Any Macular Hole Case?
Zofia A. Nawrocka, MD, PhD

4:55 – 5:10 PM
Discussion

5:10 – 5:30 PM
Tips and Tricks for Management of Specific Retinal Detachment Presentations
Gregg T. Kokame, MD, MMM

5:30 – 5:45 PM
Discussion

5:45 – 6:15 PM
Break

6:15 – 6:35 PM
Reduce the Surgical Time by Not Completely Draining the Subretinal Fluid in Retinal Detachment Cases
Stratos V. Gotzaridis, MD

6:35 – 6:50 PM
Discussion

6:50 – 7:30 PM
PANEL 1:
All Things Surgical Retina
Moderator:
Donald J. D'Amico, MD
Panelists:
Stratos V. Gotzaridis, MD
Allen C. Ho, MD
Gregg T. Kokame, MD, MMM
Zofia A. Nawrocka, MD, PhD

Monday

MARCH 6

7:30 – 9:00 AM
Satellite Symposium with Breakfast (non-CME)^

7:30 – 8:00 AM
Breakfast

8:00 – 9:00 AM
Early Identification and Management Strategies for Patients with Diabetic Macular Edema
David Eichenbaum, MD
(Sponsored by Allergan, an AbbVie Company)

3:30 – 7:30 PM
Exhibits

4:00 – 4:20 PM
Retinal Non-Perfusion in Diabetic Retinopathy: Clinical Implications & the Dream of Re-Perfusion
Charles C. Wykoff, MD, PhD

4:20 – 4:35 PM
Discussion

4:35 – 4:55 PM
Attacking Dry AMD in a Different Way
Tarek S. Hassan, MD

4:55 – 5:10 PM
Discussion

5:10 – 5:30 PM
How Similar are Biosimilars?
Susan B. Bressler, MD

5:30 – 5:45 PM
Discussion

5:45 – 6:15 PM
Break

6:15 – 6:55 PM
PANEL 2:
All Things Medical Retina
Moderator:
Timothy G. Murray, MD, MBA
Panelists:
Susan B. Bressler, MD
Tarek S. Hassan, MD
Charles C. Wykoff, MD, PhD
Steven Yeh, MD

6:55 – 7:00 PM
Introduction of Founders Lecture
Timothy G. Murray, MD, MBA

7:00 – 7:20 PM
12TH ANNUAL FOUNDERS LECTURE:
Management of Exudative Macular Degeneration Based on Anatomic Subtypes
Gregg T. Kokame, MD, MMM

7:20 – 7:30 PM
Discussion

8:00 – 10:00 PM
Faculty Dinner

Tuesday

MARCH 7

7:30 – 9:00 AM

Satellite Symposium with Breakfast (non-CME)^

7:30 – 8:00 AM
Breakfast

8:00 – 9:00 AM
Power of 2: Dual-Pathway Inhibition with VABYSMO for the Treatment of Diabetic Macular Edema
Jeremy D. Wolfe, MD, MS
(Sponsored by Genentech, Inc.)

9:00 – 10:00 AM
Case Discussion with Experts (non-CME)^
Moderator:
Timothy G. Murray, MD, MBA

11:00 AM – 2:00 PM
NASTAR Ski Race and Lunch

3:30 – 7:30 PM
Exhibits

4:00 – 4:20 PM
Gene Therapy for Neovascular and Atrophic AMD
Allen C. Ho, MD

4:20 – 4:35 PM
Discussion

4:35 – 4:55 PM
Update on DME Management: "Stepping" into New Territory
Susan B. Bressler, MD

4:55 – 5:10 PM
Discussion

5:10 – 5:30 PM
Is There a Role for Vitrectomy in Diabetic Macular Edema?
Zofia A. Nawrocka, MD, PhD

5:30 – 5:45 PM
Discussion

5:45 – 6:15 PM
Break

6:15 – 6:35 PM
Suprachoroidal Triamcinolone Acetonide in the Treatment of Noninfectious Uveitis: From Evidence to Clinical Practice
Steven Yeh, MD

6:35 – 6:50 PM
Discussion

6:50 – 6:55 PM
Introduction of Taylor Smith & Victor Curtin Lecture
Donald J. D'Amico, MD

6:55 – 7:20 PM

41ST ANNUAL TAYLOR SMITH & VICTOR CURTIN LECTURE:
Advances in Retinal Imaging
Giovanni Staurenghi, MD

7:20 – 7:30 PM
Discussion

8:00 – 10:00 PM
Closing Dinner

Wednesday

MARCH 8

7:30 – 9:00 AM

Satellite Symposium with Breakfast (non-CME)^

7:30 – 8:00 AM
Breakfast

8:00 – 9:00 AM
GA Educational Event
David Eichenbaum, MD and Aleksandra V. Rachitskaya, MD
(Sponsored by Apellis Pharmaceuticals, Inc.)

9:00 – 10:00 AM
Case Discussion with Experts (non-CME)^
Moderator:
Timothy G. Murray, MD, MBA

3:30 – 7:30 PM
Exhibits

4:00 – 4:20 PM
Finding the Pearls Amongst the Perils: Innovations in Uveitis Diagnostics and Management
Steven Yeh, MD

4:20 – 4:35 PM
Discussion

4:35 – 4:55 PM
"Carlevale" Sclera Fixated IOL: The Ultimate Solution
Stratos V. Gotzaridis, MD

4:55 – 5:10 PM
Discussion

5:10 – 5:30 PM
Managing Geographic Atrophy: Questions & Concerns
Charles C. Wykoff, MD, PhD

5:30 – 5:45 PM
Discussion

5:45 – 6:15 PM
Break

6:15 – 6:35 PM
Office-Based Retinal Surgery: Will There Be A Future?
Tarek S. Hassan, MD

6:35 – 6:50 PM
Discussion

6:50 – 7:30 PM

PANEL 3:
Innovations in Retina and Retinal Practice
Moderator:
Tarek S. Hassan, MD
Panelists:
Stratos V. Gotzaridis, MD
Timothy G. Murray, MD, MBA
Charles C. Wykoff, MD, PhD
Steven Yeh, MD

7:30 PM
Adjourn

^ Not part of the educational activity.

Sunday | MARCH 5

4:00 – 4:20 PM

Surgical Delivery Strategies of Gene and Cell Therapy

ALLEN C. HO, MD

Delivery strategies for potential gene and cell therapies continue to evolve with both outpatient clinic administration and surgical operating room based techniques. Progress with new surgical instrumentation, new surgical techniques and intraoperative imaging have improved the precision of subretinal and suprachoroidal delivery of gene and cell therapy. Improving gene and cell therapies requires not only refining viral vectors, transgenes and cell lines but also improving surgical delivery techniques and designing new instrumentation to achieve these goals. Subretinal delivery can be quantified with imaging techniques to determine dosing consistency; a retinotomy necessarily creates variable dosing. Suprachoroidal to subretinal delivery can be achieved without the need for vitrectomy or without the need for retinotomy which may improve dosing precision and safety by reducing efflux into the vitreous cavity. A suprachoroidal delivery syringe is FDA approved and new tools and techniques for suprachoroidal delivery evolve including illuminated catheters. Consistent dosing and sequestration of the investigational agents may be important for safety and efficacy of gene and cell therapies

4:35 – 4:55 PM

Is the Temporal Inverted ILM Flap Technique Really Suitable for Any Macular Hole Case?

ZOFIA A. NAWROCKA, MD, PhD

The Temporal Inverted ILM Flap Technique was previously confirmed in prospective randomized trial performed by our group to be non- inferior to the original Inverted ILM Flap technique in large, long- standing full thickness macular holes.

During surgery, after core vitrectomy and membrane blue staining a flap is created from the temporal side of the fovea and then inverted upside down in order to close the macular hole. The vitreous cavity is filled with air and patients are advised to keep prone positioning for 3 days.

The success rate of this surgery was estimated to be about 95% in large, long- standing macular holes. It was also published, that macular holes associated with high myopia with and without a retinal detachment, macular holes coexisting with diabetic retinopathy (non-proliferative and proliferative), age related macular degeneration (dry and neovascular) and other diseases might not only be closed, but also experience improvement of visual acuity. During the talk also repeated surgeries will be presented, those in which the Temporal Inverted ILM Flap Technique could be used, and those, which required modifications of this technique (autologous ILM transplantation, pedicle flap, amniotic membrane).

The Temporal Inverted ILM Flap Technique not only improved anatomical and functional outcome, but also eliminated type 2 closure (Flat open macular hole) from postoperative closure types. Eyes, which previously would close in this form, now develop the “flap closure”. In contrary to type 2 closure, they experience regeneration of foveal anatomy and improvement of visual acuity.

5:10 – 5:30 PM

Tips and Tricks for Management of Specific Retinal Detachment Presentations

GREGG T. KOKAME, MD, MMM

Specific presentations of retinal detachment (RD) may allow unique approaches which can minimize intervention or increase the success rate for repair. A patient with a superior macula threatening RD refused surgery. The patient was advised to minimize eye movement (MEM) which involved no reading, writing, computer, phone or tablet use. The RD resolved, but recurred after stopping MEM, and then resolved after MEM allowing laser treatment. MEM does reduce subretinal fluid allowing laser treatment to repair retinal detachment in 80% of cases in 39 eyes. (Kokame GT et al. Ophthalmology Retina 2021;5(9):939-941.) Repair of RD associated with severe inflammation, hypotony and choroidal detachment has a lower success rate and a poorer visual prognosis. Retinal detachment repair is challenging and involves drainage of choroidal detachment and working within a reduced vitreous cavity with persistent choroidal detachment. Injection of a preoperative gas bubble resolves hypotony and choroidal detachment without systemic steroids making the RD repair routine. (Yeung L, Kokame GT, Brod RD et al Pneumatic retinopexy for retinal detachment associated with severe choroidal detachment. Retina 2011; 31(1):87-92). In eyes with exudative RD and progressive hypotony after glaucoma procedures, hypotony often progresses despite medical therapy to phthisis. Injection of a gas bubble restores intraocular pressure resolves exudative RD, reverses short term and long term hypotony and prevents phthisis. (Kokame GT, Card K,

Yim MC. Treatment of hypotony with an intraocular gas bubble. Retin Case Brief Rep 2022; Online)

6:15 – 6:35 PM

Reduce the Surgical Time by Not Completely Draining the Subretinal Fluid in Retinal Detachment Cases

STRATOS V. GOTZARIDIS, MD

Pars Plana Vitrectomy has improved the management of the Retinal Detachment.

There are many ways to fix the retina during the operation. Use of Perfluorocarbons or a drain retinotomy flatten the retina at the end of the procedure or use the existing break to drain the subretinal fluid. Since the introduction of the small gauges the management of the RD has become more minimalistic and the target is not only to fix the retina, but to improve the visual function as well.

Not using the heavies or drain retinotomies to flatten the retina, and trying to drain through the existing break the SRF is THE minimalistic approach. In all the cases where SRF is drained through the existing break, subretinal fluid remains at the end of the procedure. Using a certen position of the patient just after the operation we aim to lead the SRF through the initial break into the vitreous cavity. Finally, the RPE pump will absorb the leftover of the SRF.

The advantages in the anatomic and functional results is presented in the paper.

6:50 – 7:30 PM

Panel 1: All Things Surgical Retina

MODERATOR:
DONALD J. D'AMICO, MD

PANELISTS:
STRATOS V. GOTZARIDIS, MD
ALLEN C. HO, MD
GREGG T. KOKAME, MD, MMM
ZOFIA A. NAWROCKA, MD, PhD

This panel will explore major surgical themes in vitreoretinal practice with an expert panel in a highly interactive format with the audience. Illustrative case material will be presented by slides and video and will feature important surgical entities such as macular hole, retinal detachment, epiretinal membrane, lamellar macular hole, proliferative vitreoretinopathy, diabetic traction detachment and others. The interactive discussion will include how to approach the decision for surgery, the pros and cons of various treatment options, expected outcomes and areas for future research, and the management surgical complications.

Monday | MARCH 6

4:00 – 4:20 PM

Retinal Non-Perfusion in Diabetic Retinopathy: Clinical Implications & the Dream of Re-Perfusion

CHARLES C. WYKOFF, MD, PhD

Retinal non perfusion (RNP) is a key pathologic feature of diabetic retinopathy (DR) and the presence of RNP is a biomarker for higher risk of disease progression. Overall, while RNP development may be able to be slowed with monthly anti-vascular endothelial growth factor (VEGF) pharmaceutical bolus dosing, multiple prospective datasets have reported that RNP continues to accumulate in a meaningful proportion of eyes despite regular anti-VEGF dosing. While intravitreal anti-VEGF dosing can dramatically decrease the extent of visible vascular abnormalities associated with DR such as intraretinal hemorrhages leading to improvement in DR severity scale levels, reperfusion of areas of RNP is typically not observed in these eyes. There remains an unmet need for new pharmacotherapies with new mechanisms of action to achieve consistent, clinically meaningful reperfusion of non-perfused retina in DR, and human trials of novel therapeutics are in progress.

4:35 – 4:55 PM

Attacking Dry AMD in a Different Way

TAREK S. HASSAN, MD

AMD progression is driven by both inflammation and complement activation. Recent attempts to treat geographic atrophy (GA) through complement inhibition have shown no or limited reduction of progression and increased conversion to choroidal neovascularization (CNV). Complement inhibition appears to attack only a minority of the pathobiology of dry AMD.

Evidence suggests that over-activation/polarization of macrophages and microglia is most important in the development of late stage AMD. Chronic macrophage and microglial phagocytosis and unchecked complement damage is seen histologically at expanding GA edges. To ideally treat chronic inflammation in AMD – 1) Polarize macrophages from activated M1 and M2 states to the resolution state and, secondarily, 2) Resolve complement activation.

Glycobiology describes nature's modulation of intrinsic inflammation through cellular glycan-receptor interactions. Sialic acids (SA), found on every cell, act as self-associated molecular patters that allow immune cells to discriminate "self" from "non-self" and modulate immune activity. Abnormal cells have altered glycan

structures that act as danger-associated molecular patterns and increase immune activity vs. non-self. These actions occur from SA binding to Siglecs (sialic acid-binding immunoglobulin-like lectins), receptors found on all immune cells, that act as mostly inhibitory universal immune switches, similar to checkpoints targeted in cancer treatment. Interestingly, SAs also bind CFH to additionally inhibit the complement cascade.

Siglecs are only expressed on activated inflamed immune cells and are wildly over-expressed in AMD retinas, making them attractive targets for inhibitory SAs. This talk presents research showing nanoparticle-guided SA delivery to inhibitory Siglecs as a potential new therapy to treat dry AMD.

5:10 – 5:30 PM

How Similar are Biosimilars?

SUSAN B. BRESSLER, MD

In 2009 the Biologics Price Competition and Innovation Act (BPCI) created an abbreviated approval pathway for biosimilar products as a way to provide the public with greater access to biologics. Biologic drugs are genetically engineered proteins derived from human genes expressed in living cell lines, each with their own unique manufacturing process, with acceptable in product variation.

Biosimilars differ from generic drugs. A generic drug is an identical copy of a small molecule drug using the same chemical formula and synthesis as the originator. A biosimilar may have minor differences in clinically inactive components, particularly since it is dependent on reverse engineering.

Originator biologics require intensive investment (time/money) in clinical studies (Phase 1, 2 and 3). At least 2 phase 3 clinical trials are required in each disease indication the developer seeks approval for. As biosimilar agents are required to be "highly similar" to existing innovator biologics the burden of proof lies in establishing comparable physiochemical properties, pharmacokinetics, pharmacodynamics, immunogenicity, safety, and efficacy to the originator product. The greatest investment is in design specification of the product and demonstrating analytical similarity with the originator. Validation of similarity through a clinical trial in a sensitive patient population using a sensitive endpoint, choosing among the disease indications for which the originator has regulatory approval is required. The single clinical trial confirms noninferior clinical outcomes with similar safety signals to the originator biologic.

Phase 3 studies of two FDA approved ranibizumab biosimilars in neovascular AMD (Byooviz™ [ranibizumab-nuna] and Cimerli ™[ranibizumab-eqrn]) and one proposed aflibercept biosimilar in DME (MYL-1701P) will be used to illustrate these concepts.

6:15 – 6:55 PM

Panel 2: All Things Medical Retina

MODERATOR:
TIMOTHY G. MURRAY, MD, MBA

PANELISTS:
SUSAN B. BRESSLER, MD
TAREK S. HASSAN, MD
CHARLES C. WYKOFF, MD, PhD
STEVEN YEH, MD

This case-based panel will use clinical examples to focus our evaluation of the patient, assist in imaging interpretation of complex macular pathology, and discuss advanced therapeutic strategies for personalized patient care. A focus on Atrophic AMD management will explore the evolving treatment paradigms for this previously untreatable condition. Active ARDS participation will target the discussions to recent novel surgical and medical treatments including indications for sustained release novel drugs and devices.

7:00 – 7:20 PM

12TH ANNUAL FOUNDERS LECTURE

Management of Exudative Macular Degeneration Based on Anatomic Subtypes

GREGG T. KOKAME, MD, MMM

Classification systems for choroidal neovascularization (CNV) should help with therapeutic decisions. When presented with cases with neovascular age-related macular degeneration (nAMD), I tell my staff "I can predict the future." Initial examinations include OCT, OCTA, fluorescein angiography and ICG angiography using the scanning laser ophthalmoscope. The anatomic classification of CNV was initially developed by Dr. Gass. Type III CNV includes an intraretinal neovascular component and is highly responsive to anti-VEGF therapy. This often allows a good response in to the first step in step therapy, bevaciuzumab. Treatment can be extended aggressively and can be stopped in some but not all cases. Type II CNV is above the RPE and under the retina and is often enveloped by a layer of retinal pigment epithelium. This subtype is also very responsive to anti-VEGF therapy with similar advantages as type III. Type I CNV beneath the RPE and above Bruch's membrane is the most common CNV and has the most variable therapeutic response. This subtype has the highest risk of anti-VEGF resistance and often requires stepped up anti-VEGF therapy to ranibizumab, aflibercept, and faricimab (bispecific drug). Polypoidal choroidal vasculopathy(PCV) is usually a type I CNV. Besides diagnosis with ICGA, a

high rate of diagnosis can be made with OCT (sharply peaked RPE elevations, ring-shaped lesions beneath the RPE, and en face OCT showing the polypoidal lesions and the BVN. PCV has an increased risk of "anti-VEGF" resistance to all currently available drugs. In PCV combination therapy with photodynamic therapy and anti-VEGF can be used as initial treatment and a rescue treatment. Closure of the polypoidal lesions does allow a difference in response to intravitreal medications.

Tuesday | MARCH 7

4:00 – 4:20 PM

Gene Therapy for Neovascular and Atrophic AMD

ALLEN C. HO, MD

We are currently 5 years into the Gene Therapy Era for retinal disease. The first in-human gene therapy was approved (USA) for retinal disease in 2017. Vortigene (Spark Therapeutics, Luxturna) is a gene replacement strategy for Leber Congenital Amaurosis biallelic RPE 65 mutation utilizing AAV2 viral vector and the RPE 65 transgene. It is delivered by a vitrectomy and subretinal delivery technique. There are now other approved non-ocular gene therapies for diseases such as multiple myeloma, hematologic diseases, CNS conditions like spinal muscular atrophy and more. Gene therapy trials for more common retinal conditions using an ocular biofactory approach are on-going (producing anti VEGF therapy and other programs producing complement pathway modulators) and using vitrectomy and subretinal delivery and other delivery strategies. The RGX-314 (RegenXBio) program is in clinical trials for wet AMD (US Pivotal trials in progress) and diabetic retinopathy and Gyroscope is also in clinical trials for AMD geographic atrophy. Gene therapy for these common retinal conditions have the potential to reduce significantly treatment burden with efficacy and safety for diseases amenable to anti-VEGF or complement modulation therapies.

4:35 – 4:55 PM

Update on DME Management: "Stepping" into New Territory

SUSAN B. BRESSLER, MD

The DRCR Retina Network has completed several randomized clinical trials (Protocols T, AC and V) that provide evidence that shapes our management of center involved DME. Protocol T supports the use of aflibercept, bevacizumab, or ranibizumab if VA at presentation is 20/32-20/40; whereas aflibercept is superior to both ranibizumab and bevacizumab over the course of 2 years when VA is 20/50-20/320. A greater proportion of eyes will have ≥15 letter improvement over 2 years when aflibercept is administered as compared to the other choices.

Protocol AC addresses step therapy. As many Protocol T eyes that were 20/50-20/320 at presentation did well with bevacizumab, can we start with bevacizumab and switch to aflibercept if individual eyes are responding in a suboptimal fashion without sacrificing the longer-term vision outcome. Applying specific "switch criteria" to move from bevacizumab at any time after 3 consecutive monthly injections of bevacizumab, 70% of eyes were switched, most within 1 year of presentation. Applying this protocol the vision results were non-inferior over 2 years compared to eyes that were managed solely with aflibercept from initial presentation. Eyes assigned to bevacizumab as initial therapy received a mean of 16 injections over 2 years, among which a mean of 7 injections were aflibercept. The aflibercept group had a mean of 15 aflibercept injections. A drug cost savings was recognized in the bevacizumab first group.

Protocol V focused on center involved DME with retention of good vision: 20/25 or better. Vision outcomes were excellent with about 85% retaining ≥20/25 at 2 years whether they were managed initially with aflibercept or received either laser or observation initially with rescue aflibercept if VA fell.

5:10 – 5:30 PM

Is There a Role for Vitrectomy in Diabetic Macular Edema?

ZOFIA A. NAWROCKA, MD, PhD

Diabetic macular edema is a leading cause of visual impairment in developed countries. Up to 40% of diabetic patients might experience it during their lifetime. The golden standard nowadays are anti-VEGF injections. Real world data present that results are worse when compared to clinical studies, mostly because of problems associated with the treatment regimen.

We compared results in patients treated with anti-VEGF in the better eye and with vitrectomy performed in the worse eye. The recovery of vision was identical in both eyes. Interestingly, superficial fovea avascular zone was smaller in vitrectomized eyes when compared to eyes treated with anti-VEGF injections. As it was earlier also reported that the foveal avascular zone decreases after anti-VEGF injections, we decided to study it in more detail.

We performed a swept source OCT Angiography study of 35 patients evaluated before and after surgery. We observed that besides improvement in visual acuity (mean 2 Snellen lines), reduction of central retinal thickness

also the superficial fovea avascular zone decreased after surgery. That observation might indicate that vitrectomy has a protective effect on diabetic retinopathy, similar to anti-VEGF injections. Prognostic factors for better final functional results are: better initial VA and lower CRT before vitrectomy, in addition to a lower dFAZ diameter and a higher dVD at the moment of edema resolution.

6:15 – 6:35 PM

Suprachoroidal Triamcinolone Acetonide in the Treatment of Noninfectious Uveitis: From Evidence to Clinical Practice

STEVEN YEH, MD

Suprachoroidal drug delivery represents an innovative technique in the management of posterior segment diseases including uveitis and retinal vascular conditions. This talk will synthesize the spectrum of translational evidence related to pharmacokinetics of medication delivered into the suprachoroidal space (SCS). Early phase and more recent phase 3 multicenter trial data describing the efficacy, safety, and durability of SCS triamcinolone acetonide for the treatment of noninfectious uveitis will be reviewed. Clinical pearls relevant to implementation of SCS drug delivery will be discussed, as well as real-world cases and future potential indications of SCS drug delivery.

6:55 – 7:20 PM

41ST ANNUAL
TAYLOR SMITH & VICTOR CURTIN LECTURE

Advances in Retinal Imaging

GIOVANNI STAURENGHI, MD

Once confined to color photography and angiography with fluorescein or indocyanine green, retinal imaging has exploded in recent years with new modalities such as OCT, OCT-angiography, widefield OCT, and many others. There are innovative devices from numerous companies for use in the office and the OR as well as ever-increasing sophistication in analytical software. This complexity has not only brought a wealth of previously unrecognized features of myriad retinal diseases but has also underscored the need for careful consideration of artifacts and other ambiguities to proceed with patient care decisions most accurately. This presentation will review the state-of-the-art retinal imaging technologies and place them in both a research and a practical clinical context.

Wednesday | MARCH 8

4:00 – 4:20 PM

Finding the Pearls Amongst the Perils: Innovations in Uveitis Diagnostics and Management

STEVEN YEH, MD

The gauntlet of uveitis diagnoses can often be fraught with perils related to both infectious and noninfectious uveitis syndromes. Whether a patient has acute, vision-threatening panuveitis or an autoimmune disease process, multiple diagnostic imaging tools and laboratory testing strategies are available to navigate this gauntlet. This case-based presentation will review key imaging techniques that can help to drive clinical-based diagnostics in uveitis, as well as the array of laboratory testing that can help to identify sight-threatening infectious pathologies. These include newer generation testing tools for ocular syphilis, molecular diagnostics for viral, bacterial, and fungal pathogens, and metagenomic deep sequencing for emerging pathogens. Lastly, surgical pearls for infectious pathogens and primary vitreoretinal lymphoma will be offered to avoid the perils associated with primary central nervous system lymphoma.

4:35 – 4:55 PM

"Carlevale" Sclera Fixated IOL: The Ultimate Solution

STRATOS V. GOTZARIDIS, MD

Almost at the beginning of the use of the IOLs there were papers (E. Malbran 1986) reporting techniques for scleral fixated IOLs with sutures in eyes with no capsular support. That was the standard procedure for the following almost 20 years where Gabor Scharioth and Co, reported the sutureless scleral fixated IOL technique 2007, and a year later the Amar Agrawal the sutureless with scleral glue technique. Lately Yamani's technique in with flanging of the haptics has become very popular.

All the above techniques are referring to IOLs which are positioned in the PC. We haven't mentioned the AC IOLs which are used almost or even a little earlier than the PC IOLs.

Finally, the iris claw lenses also are used for the same purpose.

All the above devices have side effects and complications. As far as the PC placed, IOLs none of them are labeled for this purpose.

A new labeled IOL made for capsular absence and is placed in the PC came up in 2015.

The device has a wide optical part (6,5mm), two flaps from each side that prevent tilting and two T-shape plugs that are placed intrascleraly provide stability. The pros and cons of the **Carlevale** IOL are highlighted in the presentation.

5:10 – 5:30 PM

Managing Geographic Atrophy: Questions & Concerns

CHARLES C. WYKOFF, MD, PhD

Geographic atrophy (GA) is an advanced form of age-related macular degeneration (AMD), associated with substantial impairment of visual function and quality of life. Recent data from multiple late phase clinical trials have indicated that inhibition of the complement cascade can slow the growth of GA lesions through 1 and 2 years. Data from pegcetacoplan and avacincaptad will be presented with an emphasis on lingering questions and concerns that physicians have related to the data and clinical utilization of these novel therapeutics.

6:15 – 6:35 PM

Office-Based Retinal Surgery: Will There Be A Future?

TAREK S. HASSAN, MD

Surgery has been successfully performed in office settings for decades, in multiple specialties, because of numerous advantages such as cost containment, ease of scheduling, patient and surgeon convenience, better continuity of care, improved patient privacy, etc.

A transition to office-based intraocular surgery resembles that made from hospital settings to ASCs in 1985 including having all the same concerns over safety, sterility, quality control, documentation, ethics, policies/procedures, etc. ASC-based cataract surgery became high quality and safe; now, office-based intraocular surgery looks to similarly successfully evolve.

Retina surgeons began to speak on the topic in the mid 1990's. Papers were published in the early 2000's and research continues today. Hurdles to widespread adoption have been significant including safety and sterility concerns, regulation and oversight, space, equipment, expense, efficacy, and reimbursement. Nearly all can now be overcome making office based retinal surgery currently possible and likely much more widespread in the future. Available solutions include laminar flow clean air systems to make clinic spaces surgically, full office surgical suite builders, rental/lease programs to affordably obtain surgical equipment, and formal accredited office surgery suite policies and guidelines.

The lack of Medicare and major payor reimbursement remains as the sole significant hurdle. Efforts to develop enhanced surgical fee structures are ongoing. Presently, numerous office-based cataract surgery facilities exist as well as a handful of retinal surgeons adopting similar office-based models.

Office-based retinal surgery is entirely possible now. Technology makes it so and optimizing patient care will direct its future, potentially resolving current reimbursement issues.

6:50 – 7:30 PM

Panel 3: Innovations in Retina and Retinal Practice

MODERATOR:
TAREK S. HASSAN, MD

PANELISTS:
STRATOS V. GOTZARIDIS, MD
TIMOTHY G. MURRAY, MD, MBA
CHARLES C. WYKOFF, MD, PhD
STEVEN YEH, MD

This panel will focus on recent and future innovation in both medical and surgical retina, as well as, on the many changes occurring with the current practice of medicine as it applies to retina specialists.

General topics of focus to guide discussion:

1. There is so much research in wet AMD (port-delivery, intravirtreal therapeutic agents with new mechanisms of action, and gene therapy) and dry AMD (complement inhibitors, future endeavors – coming with so much time, effort, money, and publicity – how much will all, some, or any of it truly translate to the clinic and actual patient care? What needs to happen for this to occur? Are we still crawling slowly or ultimately plateauing in our efforts to treat AMD despite all the activity?
2. Has there been any truly substantive innovation in the field of surgical retina in recent years? What is actually new that is likely to improve our management of surgical patients? Has surgical innovation plateaued, and if so, what new directions should be followed by industry to take us to the next level of vitreoretinal surgery?
3. The practice of retina has been turned upside down in recent years through consolidation – mostly through private equity acquisition of retinal practices. What positive and negative outcomes have we seen to date and how will the future of retinal care be shaped by this current direction? Does consolidation in the private sector threaten or benefit academic retina training and research? Or is there no impact?

The Aspen Retinal Detachment Society gratefully acknowledges the following companies for their support:

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