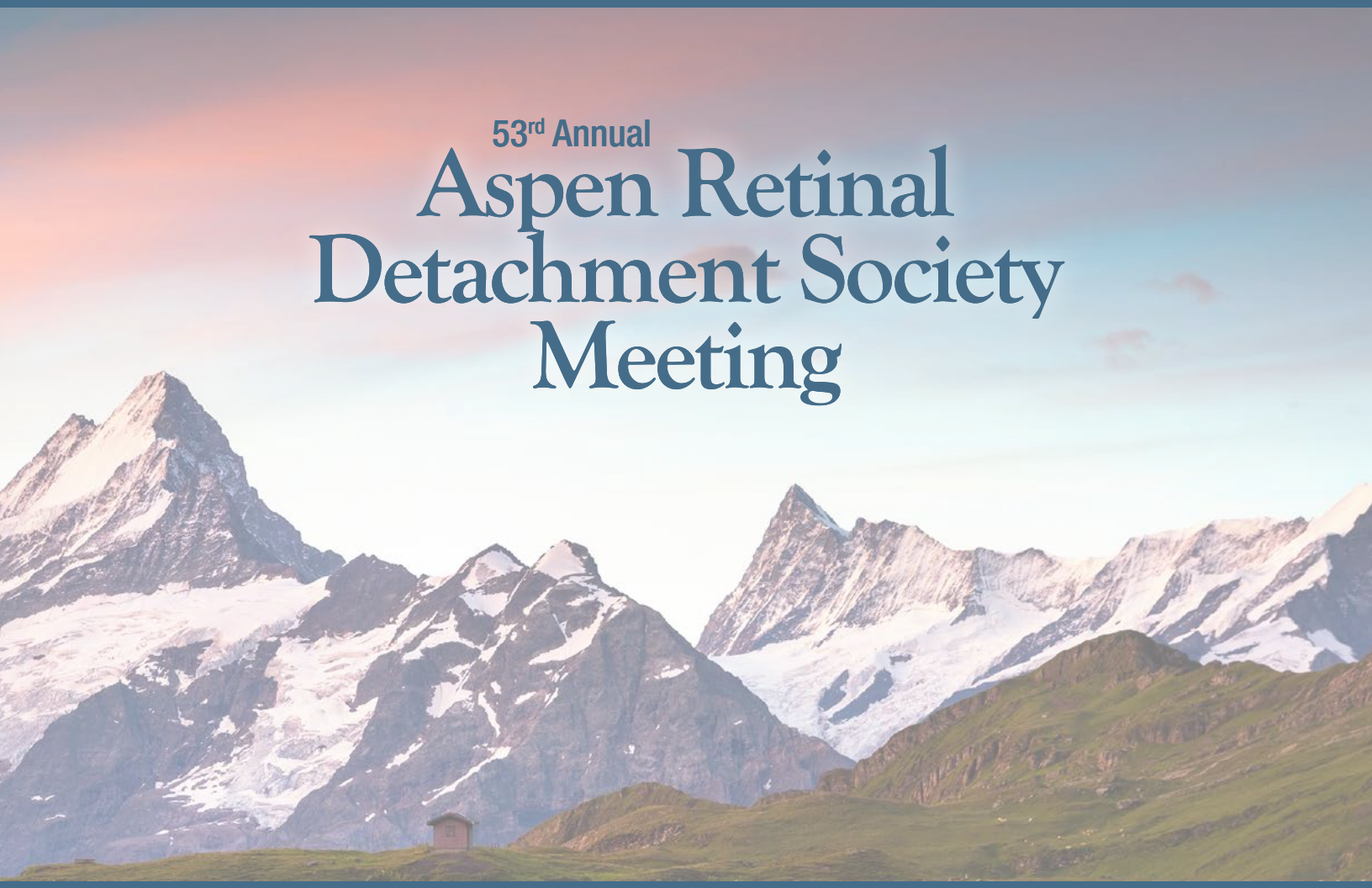
THE ASPEN RETINAL DETACHMENT SOCIETY

"Oh vitreous where is thy humor?"

ARDS2025

53rd Annual Aspen Retinal Detachment Society Meeting



MARCH 1-5, 2025 • SNOWMASS, COLORADO

ACCREDITATION

In support of improving patient care, this activity has been planned and implemented by Cine-Med and Medical Conference Planners International. Cine-Med 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.

JOINTLY ACCREDITED PROVIDER™ INTERPROFESSIONAL CONTINUING EDUCATION

PHYSICIANS

Cine-Med designates this live activity for a maximum of ***12 AMA PRA Category 1 Credit(s)™***. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

OTHER HEALTHCARE PROFESSIONALS

All other healthcare professionals will receive a Certificate of Participation. For information on the applicability and acceptance of Certificates of Participation for activities designated for ***AMA PRA Category 1 Credits™***, consult your professional licensing board.

ARDS2025

Dear Colleagues,

Welcome to the 53rd Annual Aspen Retinal Detachment Society (ARDS) Meeting. This unique gathering continues strongly into its second half-century and maintains its unique format of in-depth presentations followed by engaging (riotous?) discussions of vitreoretinal diseases and surgery.

Speakers at ARDS are remarkable leaders in the field of retina, and many of our most significant advances were first discussed at this meeting. Indeed, the discussions are certainly the most valuable, and unquestionably the most remembered, part of every meeting; the ability to exchange freely and in-depth immediately following each presentation is the hallmark of ARDS. These conversations (even arguments!) continue during panels, breaks, meals, and chairlift rides and provide a "temperature check" on how practicing vitreoretinal specialists perceive new ideas, procedures, and instrumentation. We will also continue including 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. Audina ("Nina") Beroccal (a nothing-less-than-ferocious pediatric retinal specialist who skillfully manages the most complicated patients in that field) as she presents her data on Pediatric Retina: The Past, The Present, and The Future. She will also share where we are now with OCT and OCTA in pediatric retina. The Taylor Smith/Victor Curtin Lecture by Dr. John T. Thompson (a refreshingly data-driven retina specialist who plays the long game) will offer insights in his presentation: The Natural History and Treatment of Lamellar Macular Holes.

Our faculty speakers truly represent the ARDS commitment to both advancement and education within our field. Multitalented surgeon and physician-scientist Dr. Lejla Vajzovic will present the latest intraoperative visualization and then provide an update on her approaches to refractory macular holes. Surgical powerhouse Dr. John W. Kitchens, masquerading as a good ol' country boy, will share his insights on efficiencies in vitreoretinal practice and amplify these recommendations with a most important one—how to avoid lawsuits.

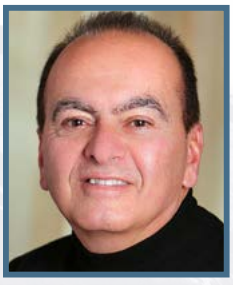
Dr. Mario Romano, a leading vitreoretinal surgeon in Italy who also performs pacesetting translational laboratory research (and who was trained in part (misled in whole?) by Don), will share his incredibly practical work on the various tamponades and substances employed during vitreous surgery and their interactions. He will then explore the ever-controversial theme of when to operate on macular pucker by presenting his sophisticated studies differentiating epiretinal membranes from epiretinal proliferation; this new distinction alone is sure to provoke lively discussion. Dr. Mrinali P. Gupta, a gifted retinal specialist and scholar who has become indispensable, among other efforts, to knowledge transmission to younger physicians, will present a comprehensive overview of viscostretch and viscobleb techniques for macular hole repair. She will also share her observations on the they-will-always-be-with-us conditions of epiretinal membrane and cystoid macular edema after retinal detachment repair. Dr. John B. Miller, our tallest faculty member who continues to rise (no longer in height) as an innovative leader in surgical retina and imaging, will challenge our thinking regarding the continued use of fluorescein angiography versus OCT-A. He will then put on his surgical hat and offer insights on 3D heads-up display visualization in the modern digital operating room.

Dr. Carl Regillo, a living retina legend, no doubt due to his frequent (virtually relentless) outstanding lectures at ARDS, will present late-breaking clinical trial results on the use of tyrosine kinase inhibitors for wet AMD. He will then share a current update on the port delivery system for AMD, diabetic retinopathy, and DME; this topic always generates a vigorous discussion, and we can't wait to learn Carl's current take on this unique treatment approach. Dr. Szilárd Kiss, internationally recognized as one of the 40-under-40 specialists in his youth, will offer his high expertise on the latest in ocular gene therapy for inherited retinal diseases. He will also share his imaging prowess with a presentation of the practical clinical application of ultra-widefield navigated peripheral OCT.

In addition to the vigorous discussion after each talk, there will also be several expert panels. Don will moderate a (buckle-bashing, no doubt) "Let's Talk Surgical Retina" panel, Tim will expertly moderate an "Let's Talk Medical Retina" panel—and we will conclude with a free-ranging, no-holds-barred "Let's Talk Retina" panel; this final session of the meeting will showcase the most active and controversial topics in our field, including a revisit of earlier themes in the meeting as well as those untouched by other presentations. 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 its 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 there!

Best regards,



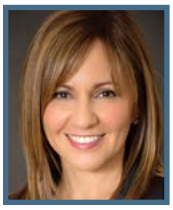
Donald J. D'Amico, MD
Program Director

R.V. Paul Chan, MD, MSc, MBA
Program Director

Timothy G. Murray, MD, MBA
Program Director

Karen Baranick
President, Medical Conference Planners Intl.

Guest Faculty



Audina M. Berrocal, MD
Bascom Palmer Eye Institute
Miami, FL
FOUNDERS LECTURE

Mrinali P. Gupta, MD
Retina Associates of
Orange County
Laguna Hills, CA

Szilárd Kiss, MD
Weill Cornell Medicine
Ophthalmology
New York, NY

John W. Kitchens, MD
Retina Associates
of Kentucky
Lexington, KY

John B. Miller, MD
Massachusetts Eye and Ear
Boston, MA

Carl D. Regillo, MD
Mid Atlantic Retina/
Wills Eye Hospital
Bryn Mawr, PA

Mario R. Romano, MD, PhD
Humanitas Castelli
Bergamo, Italy

John T. Thompson, MD
Retina Specialists
Towson, MD
TAYLOR SMITH &
VICTOR CURTIN LECTURE

Lejla Vajzovic, MD
Duke Eye Center
Durham, NC

Program Directors

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

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

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

Founders

William O. Edward, MD
1930-2012

Ottiwell W. Jones, III, MD
1932-2024

Meeting Planner

Karen Baranick
Medical Conference
Planners International
Los Angeles, CA

14th ANNUAL FOUNDERS LECTURE

MONDAY, MARCH 3, 2025 | 6:55 PM

Pediatric Retina: The Past, the Present and the Future

AUDINA M. BERROCAL, MD

Audina "Nina" M. Berrocal, MD, received her undergraduate education at Princeton University, followed by medical school at Tufts University School of Medicine. She remained at Tufts/New England Eye Center, where she completed her ophthalmology residency. Dr. Berrocal subsequently received vitreoretinal surgery and uveitis training at the Bascom Palmer Eye Institute, University of Miami Miller School of Medicine. She has since remained on the faculty at Bascom Palmer, where she currently holds the rank of Professor of Clinical Ophthalmology and the Johnstone Horvitz Endowed Chair. She also serves as Director of the Pediatric Retina Service at Bascom Palmer Eye Institute and Jackson Memorial Hospital, as well as Vitreoretinal Fellowship Director. Dr. Berrocal is internationally recognized for her approach to pediatric retinal diseases. As a pediatric retina specialist and Director of the Pediatric Retina and Retinopathy of Prematurity Service, she has extensive clinical, surgical, and research experience in the diagnosis and treatment of ROP. She has conducted extensive basic and clinical research studies in ROP and has co-authored over 300 peer-reviewed papers on the subject. In recognition of her work in ROP, she received the Bernadotte Foundation Award. Additionally, she maintains a robust adult vitreoretinal surgical practice. Dr. Berrocal is an active member of The Retina Society, The Macula Society, and Club Jules Gonin, and she holds leadership positions in many of these organizations, including the American Academy of Ophthalmology and the American Society of Retina Specialists, where she serves on the Executive Committee and Council Leadership. She is also one of the founding members of the Vit-Buckle Society.

She is the recipient of the ASRS Crystal Apple Award for her dedication to surgical teaching and the Bernice Z. Brown Lecture Award from the Women in Ophthalmology for her commitment to advancing women in the field. Additionally, she has delivered multiple invited professorship lectures, such as such as the Knobloch Visiting Professor Lecture, the Ching J. Chen, MD Lecture, and the J. Arch McNamara, MD Memorial Lecture, among others.

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
2024 K. Bailey Freund, MD
2025 Audina M. Berrocal, MD

43rd ANNUAL TAYLOR SMITH & VICTOR CURTIN LECTURE

TUESDAY, MARCH 4, 2025 | 6:55 PM

Natural History and Treatment of Lamellar Macular Holes and Pseudoholes

JOHN T. THOMPSON, MD

John T. Thompson, MD, is an Assistant Professor at the Wilmer Eye Institute of the Johns Hopkins University, an Associate Clinical Professor at the University of Maryland, and a Partner at Retina Specialists in Baltimore. He received his medical degree from Johns Hopkins University School of Medicine in 1980, followed by an ophthalmology residency and retina fellowship at the Wilmer Eye Institute. He was assistant chief of Service at Wilmer in 1986 before going to the Yale University Department of Ophthalmology and Visual Science, where he was the director of the Retina Section and Associate Professor. He returned to Baltimore in 1991 in private practice. Dr. Thompson has served a number of roles for The American Academy of Ophthalmology. He has been director of Retina Subspecialty Day in 2007, chair of the Annual Meeting Program Subcommittee for Retina, Vitreous, Uveitis, and Intraocular Inflammation from 2010–2013, and councilor representing Maryland from 2009– 2014. He received the American Academy of Ophthalmology Life Achievement Honor Award in 2009 and Secretariat Awards in 2014, 2019, and 2024. He received the Founders Award in 2017 and the Packo Award in 2024 from The American Society of Retina Specialists.

Dr. Thompson has been an examiner for the American Board of Ophthalmology since 2001 and became an advisor to the AMA Relative Value System Update Committee (RUC) representing ASRS in 2013. He was president of the Maryland Society of Eye Physicians and Surgeons from 2003–2004, president of the Baltimore City Medical Society in 2008, and president of the American Society of Retina Specialists from 2012–2014. He was President of The Johns Hopkins Medical and Surgical Association from 2017-2019 and is currently President of The Retina Hall of Fame. Dr. Thompson has been a co-author of more than 130 papers in peer-reviewed journals and book chapters with a focus on vitreoretinal surgery. He is a member of the Editorial Boards of Retina, Ophthalmology, Ophthalmology Retina and Associate Editor-in-Chief of The Journal of Vitreoretinal Diseases.

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	2024	David S. Boyer, MD
1992	Stephen J. Ryan, MD	2003	Evangelos S. Gragoudas, MD	2014	Julia A. Haller, MD	2025	John T. Thompson, 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.*

ARDS2025

PROGRAM AT A GLANCE

Saturday

MARCH 1, 2025

4:00 – 9:00 PM
Registration

6:00 – 9:00 PM
Welcome Dinner

Sunday

MARCH 2, 2025

3:30 – 4:00 PM
Break

3:30 – 7:30 PM
Exhibits

4:00 – 4:20 PM
Update on 3D Surgical Visualization Systems and Intraoperative OCT
Lejla Vajzovic, MD

4:20 – 4:35 PM
Discussion

4:35 – 4:55 PM
Efficiencies Both In and Outside of the OR
John W. Kitchens, MD

4:55 – 5:10 PM
Discussion

5:10 – 5:30 PM
Interaction Between Different Compounds During Vitreoretinal Surgery: Beyond the Biocompatibility
Mario R. Romano, MD, PhD

5:30 – 5:45 PM
Discussion

5:45 – 6:15 PM
Break

6:15 – 6:35 PM
Management of Complex Macular Holes and Outcomes from the Viscostretch Technique
Mrinali P. Gupta, MD

6:35 – 6:50 PM
Discussion

6:50 – 7:30 PM
PANEL 1:
Let's Talk Surgical Retina
Moderator:
Donald J. D'Amico, MD

Panelists:
Audina M. Berrocal, MD
Mrinali P. Gupta, MD
John W. Kitchens, MD
Mario R. Romano, MD, PhD
Lejla Vajzovic, MD

Monday

MARCH 3, 2025

3:30 – 4:00 PM
Break

3:30 – 7:30 PM
Exhibits

4:00 – 4:20 PM
Is it Almost Time to Replace FA with Swept Source OCTA in Diabetic Retinopathy?
John B. Miller, MD

4:20 – 4:35 PM
Discussion

4:35 – 4:55 PM
Tyrosine Kinase Inhibition for Neovascular AMD: Latest Clinical Trial Results
Carl D. Regillo, MD

4:55 – 5:10 PM
Discussion

5:10 – 5:30 PM
Advances in Ocular Gene Therapy for Inherited and Multifactorial Retinal Disorders
Szilárd Kiss, MD

5:30 – 5:45 PM
Discussion

5:45 – 6:15 PM
Break

6:15 – 6:55 PM
PANEL 2:
Let's Talk Medical Retina
Moderator:
Timothy G. Murray, MD, MBA

Panelists:
Szilárd Kiss, MD
John B. Miller, MD
Carl D. Regillo, MD
John T. Thompson, MD

6:55 – 7:00 PM
Introduction of Founders Lecture
R.V. Paul Chan, MD, MSc, MBA

7:00 – 7:20 PM
14TH ANNUAL FOUNDERS LECTURE
Pediatric Retina: The Past, the Present and the Future
Audina M. Berrocal, MD

7:20 – 7:30 PM
Discussion

8:00 – 10:00 PM
Faculty Dinner

Tuesday

MARCH 4, 2025

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

7:30 – 8:00 AM
Breakfast

8:00 – 9:00 AM
Beyond Anti-VEGF: Real-World Cases in nAMD, DME, and RVO
Joseph M. Coney, MD, FACS and 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 – 4:00 PM
Break

3:30 – 7:30 PM
Exhibits

4:00 – 4:20 PM
Update on Port Delivery System for AMD and DR/DME
Carl D. Regillo, MD

4:20 – 4:35 PM
Discussion

4:35 – 4:55 PM
Avoiding Lawsuits: Lessons from an Expert Witness
John W. Kitchens, MD

4:55 – 5:10 PM
Discussion

5:10 – 5:30 PM
Clinical Applications of Ultra-widefield Navigated Peripheral Optical Coherence Tomography
Szilárd Kiss, MD

5:30 – 5:45 PM
Discussion

5:45 – 6:15 PM
Break

6:15 – 6:35 PM
Epiretinal Membrane vs Epiretinal Proliferation: Timing and Biomarkers
Mario R. Romano, MD, PhD

6:35 – 6:50 PM
Discussion

6:50 – 6:55 PM
Introduction of Taylor Smith & Victor Curtin Lecture
Timothy G. Murray, MD, MBA

6:55 – 7:20 PM
43RD ANNUAL TAYLOR SMITH & VICTOR CURTIN LECTURE
Natural History and Treatment of Lamellar Macular Holes and Pseudoholes
John T. Thompson, MD

7:20 – 7:30 PM
Discussion

8:00 – 10:00 PM
Closing Dinner

Wednesday

MARCH 5, 2025

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

7:30 – 8:00 AM
Breakfast

8:00 – 9:00 AM
DME: Clinical Trial Outcomes and Case Studies from the Clinic
David Eichenbaum, MD
(Sponsored by Regeneron Pharmaceuticals, Inc.)

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

3:30 – 4:00 PM
Break

3:30 – 7:30 PM
Exhibits

4:00 – 4:20 PM
Refractory Macular Holes: My Surgical Approaches
Lejla Vajzovic, MD

4:20 – 4:35 PM
Discussion

4:35 – 4:55 PM
3D Heads Up Display for VR Surgery in a Modern Digital Operating Room
John B. Miller, MD

4:55 – 5:10 PM
Discussion

5:10 – 5:30 PM
Epiretinal Membrane and Cystoid Macular Edema After Retinal Detachment Repair
Mrinali P. Gupta, MD

5:30 – 5:45 PM
Discussion

5:45 – 6:15 PM
Break

6:15 – 6:35 PM
OCT and OCTA in Pediatric Retina: Where are We Now
Audina M. Berrocal, MD

6:35 – 6:50 PM
Discussion

6:50 – 7:30 PM
PANEL 3:
Let's Talk Retina
Moderator:
Donald J. D'Amico, MD
Panelists:
Audina M. Berrocal, MD
Mrinali P. Gupta, MD
John B. Miller, MD
Timothy G. Murray, MD, MBA
Lejla Vajzovic, MD

7:30 PM
Adjourn

^ Not part of the educational activity.

Sunday | MARCH 2

4:00 – 4:20 PM

Update on 3D Surgical Visualization Systems and Intraoperative OCT

LEJLA VAJZOVIC, MD

Surgical visualization has advanced significantly in recent decades. In 2010, Duke introduced the second-ever intraoperative microscope integrated optical coherence tomography (MIOCT), enabling depth-resolved imaging of the surgical field. Over time, this system evolved from a 20 Hz spectral-domain prototype in 2015 to a 100 kHz swept-source OCT and, by 2019, to a 400 kHz swept-source OCT with real-time volumetric imaging.

The high-speed 4D MIOCT combines live volumetric OCT (4D-OCT) with standard stereo-color microscopy, redefining surgical visualization. The 400 kHz system delivers improved temporal resolution, enabling real-time visualization of tool-tissue interactions. Volumetric OCT data can also be colorized, providing surgeons with intuitive depth-related feedback. These advancements overcome the limitations of conventional microscopy by delivering highly detailed, depth-resolved imaging of the subretinal space.

With MIOCT, we have calculated intraoperative delivered volumes through detailed segmentation of B-scans. To ensure accuracy, we developed an optical model capable of quantifying voxel dimensions across the posterior OCT segment. This model has been rigorously validated in *ex vivo* studies involving porcine and *in vivo* quantification in human eyes.

Our vision for the future includes providing surgeons with real-time intraoperative volumetric feedback to dynamically adjust injected volumes during procedures. Additionally, we aim to integrate MIOCT and microscopy views into a unified display, eliminating the spatial separation between channels. This fusion will enhance precision and usability, ultimately transforming the way surgeons visualize and interact with the surgical field.

4:35 – 4:55 PM

Efficiencies Both In and Outside of the OR

JOHN W. KITCHENS, MD

In this talk, I will explore strategies for optimizing efficiency and minimizing waste in both the clinical and surgical settings. Drawing from innovations within my own practice as well as insights from colleagues, I will highlight practical solutions that enhance workflow, improve patient care, and maximize resource utilization. Topics will include streamlining patient flow, reducing bottlenecks in clinic and OR scheduling, leveraging technology to improve documentation and communication, and implementing cost-effective surgical techniques without compromising outcomes. Designed for both medical retina specialists and retinal surgeons, this discussion will provide actionable takeaways to enhance productivity while maintaining high-quality patient care.

5:10 – 5:30 PM

Interaction Between Different Compounds During Vitreoretinal Surgery: Beyond the Biocompatibility

MARIO R. ROMANO, MD, PhD

Intraocular liquid compounds, such as perfluorocarbon liquids (PFCLs), semifluorinated alkanes (SFAs), silicone oils (SOs), and vital dyes, are crucial in vitreoretinal surgery. However, their use carries the risk of serious complications due to their chemical and physical properties, which can react with organic structures in the eye, potentially causing underestimated intraocular toxicity. The mechanisms and factors contributing to this toxicity in vivo remain unclear. Recent reports of retinal toxicity have raised concerns about the safety of these tamponade agents and the adequacy of current safety assessment methods.

This study examines clinical cases of toxicity following vitreoretinal surgery collected from multiple centers. We simulated the effects of interactions between various intraocular compounds and biological molecules present during surgery, which could contribute to toxicity. Our presentation aims to comprehensively analyze the chemical and physical properties, clinical applications, and complications associated with commonly used intraocular tamponades, with a focus on their biocompatibility.

Additionally, we evaluated the cumulative toxicity of medical devices, including BSS, vitreal staining, ILM staining, perfluoroctane, and silicone oil endotamponade, through ex-vivo experiments using porcine retina. Retinas showed optimal cell viability (96-100%) in control group. However, when surgical residues remained, cell viability significantly decreased (40%-29%). These results underscore the importance of properly removing surgical residues to avoid retinal toxicity. An appropriate surgical technique is essential to prevent harmful iatrogenic interactions and minimize retinal damage during vitreoretinal surgery.

6:15 – 6:35 PM

Management of Complex Macular Holes and Outcomes from the Viscostretch Technique

MRINALI P. GUPTA, MD

The management of MHs has evolved tremendously alongside advances in our understanding of MH pathogenesis, advances in imaging, and surgical innovation. The pathophysiology of senile macular hole (MH) primarily involves tractional mechanisms, including anteroposterior traction from the posterior hyaloidal membrane and tangential traction from the vitreous cortex, internal limiting membrane, and/or epiretinal membranes. Surgery for MH therefore centers upon pars plana vitrectomy with confirmation or induction of a posterior vitreous detachment (PVD) and peeling of epiretinal and internal limiting membrane (ILM), usually with gas tamponade and prone positioning. Recent studies also point to the combined hydration-traction theory of MH pathogenesis for potential utility of medical management with topical therapies for certain, small MHs. For most MHs, standard surgical techniques result in successful closure of MH in well over 90% of cases. However, closure rates are significantly lower in eyes with large, chronic, or recurrent macular holes, as well as in traumatic and myopic macular holes. A number of adjuvant techniques have been described to improve closure rates in complex MH, including ILM flaps, autologous lens capsular flap, amniotic membrane graft, autologous neurosensory retinal transplant, autologous platelet plug, macular hydrodissection, retinal relaxing incisions, etc, each of which facilitate MH closure through one or more of the following: relief of traction, barrier, scaffold for glial proliferation, neutrotrophic factors for glial proliferation, release of adhesions/increased retinal elasticity, and/or tissue replacement. More recently, a novel surgical technique ("viscostretch") was described by Dr. Donald J. D'Amico and colleagues in which along with standard vitrectomy and membrane peel, a soft tip is utilized to introduce cohesive viscoelastic through the MH to create a localized macular detachment. Fluid-air exchange is performed and then the viscelastic is removed, drawing the edges of the MH together and facilitating closure. We review the various techniques for MH and complex MH repair, as well as describe outcomes from a multicenter, multisurgeon retrospective study of the viscostretch technique for complex MH repair.

6:50 – 7:30 PM

Panel 1: Let's Talk Surgical Retina

MODERATOR:
DONALD J. D'AMICO, MD

PANELISTS:
AUDINA M. BERROCAL, MD
MRINALI P. GUPTA, MD
JOHN W. KITCHENS, MD
MARIO R. ROMANO, MD, PhD
LEJLA VAJZOVIC, MD

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 3

4:00 – 4:20 PM

Is it Almost Time to Replace FA with Swept Source OCTA in Diabetic Retinopathy?

JOHN B. MILLER, MD

Commercially available OCTA platforms have been widely available for a decade, but the technology is still little used in clinical practice. In the evaluation of diabetic retinopathy (DR), dilated fundoscopy and fundus photography remain gold standards worldwide. For more advanced stages of DR, fluorescein angiography is widely adopted for differentiating disease stage and key DR lesions. Yet, FA has a risk of severe allergic reaction and requires an invasive injection of dye and skilled nursing.

OCT-A is non-invasive, reproducible imaging technique that can provide beautiful depth-resolved imaging of the retinal vasculature. Swept Source OCTA offers greater resolution depth and wider fields of view. Extended Field SS OCTA has been shown to have excellent DR lesion detection rates and provide better characterization of neovascularization (NV) morphology and nonperfusion area (NPA). We have also shown the ability to predict ocular complications like vit heme, TRD, and NVG and systemic complications like diabetic nephropathy and cardiovascular disease. The latest advancements in SS OCTA technology can rival even the widest fields of view of the modern ultrawide field FA.

4:35 – 4:55 PM

Tyrosine Kinase Inhibition for Neovascular AMD: Latest Clinical Trial Results

CARL D. REGILLO, MD

Tyrosine kinase inhibitors (TKIs) are small molecule pan-VEGF receptor inhibitors that are incorporated into sustained-release delivery platforms (solid bioerodible polymers or suspensions) amenable to in-office routine administration (intravitreal or suprachoroidal, respectively). Unlike currently-approved anti-VEGF biologics injected intravitreally for neovascular age-related macular degeneration (nAMD) that bind and neutralize freely diffusible, extracellular VEGF-A, TKIs work intracellularly, inhibiting all VEGF receptors (1, 2, and 3) as well as other targets potentially involved in pathologic angiogenesis.

Three such approaches are currently in advanced clinical trials: EYP-1901(vorolanib intravitreal insert or Duravyu), OTX-TKI (axitinib intravitreal insert or Axpaxli), and CLS-AX (axitinib suspension for suprachoroidal injection). All three products have demonstrated favorable anti-VEGF-like effects in eyes with adequate disease control in the maintenance phase of nAMD therapy lasting 6 or more months in most patients along with good tolerability in phase 1/2 trials to date. EYP-1901 and OTX-ALX have advanced to phase 3 clinical trials in nAMD.

5:10 – 5:30 PM

Advances in Ocular Gene Therapy for Inherited and Multifactorial Retinal Disorders

SZILÁRD KISS, MD

Given the small size, enclosed space, and well-characterized disorders, ocular gene therapy represents a fertile ground for rapid innovation, with expanding therapeutic strategies, molecular targets, and growing indications. Since the 2017 approval of voretigene neparvovec for RPE65-associated Leber congenital amaurosis, there has been an explosion of interest and advancement in retina-directed gene therapies. Ocular gene therapy has traditionally focused on single gene inherited retinal diseases (IRDs); more recently, however, attention has shifted to include acquired, multifactorial retinal conditions, such as neovascular AMD, geographic atrophy, and diabetic retinopathy. Strategies for ocular gene therapy have similarly proliferated and now incorporate gene augmentation, gene inactivation, gene editing, and RNA modulation (used to address IRDs), as well as gene-independent gene augmentation (utilized not only as a broader tactic for IRDs but also in multifactorial disorders to produce therapeutic proteins which may obviate the need for repeated intravitreal injections). Additionally, with the development of novel capsids through techniques such as directed evolution and rationale design, viral vector constructs continue to be overcome. With these novel vectors, the targeting specific cells and overcoming the barrier of the internal limiting membrane have become possible. Finally, administration approaches have expanded beyond the surgical vitrectomy with subretinal delivery to embrace in-office intravitreal and suprachoroidal injections. The success in IRDs

combined with the promise of late-stage clinical studies in acquired retinal diseases, in-office gene therapy may become the standard-of-care for common retinal conditions, decreasing not only treatment burden but perhaps even improving clinical outcomes.

6:15 – 6:55 PM

Panel 2: Let's Talk Medical Retina

MODERATOR:
TIMOTHY G. MURRAY, MD, MBA

PANELISTS:
SZILÁRD KISS, MD
JOHN B. MILLER, MD
CARL D. REGILLO, MD
JOHN T. THOMPSON, 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 AMD and DME 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

14TH ANNUAL FOUNDERS LECTURE

Pediatric Retina: The Past, the Present and the Future

AUDINA M. BERROCAL, MD

The field of pediatric retina has undergone a remarkable transformation over the years, driven by significant advancements in diagnosis, treatment modalities, and our expanding understanding of the genetic underpinnings of retinal diseases. Conditions such as retinopathy of prematurity (ROP) and familial exudative vitreoretinopathy (FEVR), once poorly understood and difficult to manage, are now approached with a much deeper clinical and scientific perspective, allowing for earlier detection, more precise interventions, and improved patient outcomes. The integration of genetic testing and multimodal imaging has revolutionized the way we diagnose and treat these conditions, enabling more tailored and individualized treatment strategies. These advancements not only enhance our ability to preserve vision but also open the door to future innovations in gene therapy and artificial intelligence-driven diagnostics. In this Founders Lecture, I will share insights from my career, reflecting on the evolution of our understanding of these complex diseases, the progress we have made, and the exciting possibilities that lie ahead in the field of pediatric retina.

Tuesday | MARCH 4

4:00 – 4:20 PM

Update on Port Delivery System for AMD and DR/DME

CARL D. REGILLO, MD

The Port Delivery System (PDS) with ranibizumab was approved by the United States Food and Drug Administration (FDA) in October of 2021 for patients with previously treated neovascular age-related macular degeneration (nAMD). PDS allows for continuous delivery of ranibizumab and was shown in the phase 3 Archway study to result in non-inferior visual acuity outcomes to monthly ranibizumab injections with just 2 refill-exchanges per year over 1-2 years thereby reducing the burden associated with frequent injections.

The PDS is surgically implanted at the pars plana and allows for sustained delivery of a customized drug formulation of ranibizumab over 6 or more months in most patients. The ocular implant is refilled using a proprietary refill needle via an in-office refill-exchange procedure. In October 2022, the PDS ocular implant was recalled due to device septum dislodgement issues. Both the implant and the refill-exchange needle have since been modified and the system is once again available for use in both clinical trials and in the commercial setting as of July 2024.

PDS has also been shown to be effective in treating diabetic macular edema (DME) and diabetic retinopathy (DR) in more recently conducted, successful phase 3 trials. Updates in the surgical instructions for use (IFU) based on learnings in the phase 2 and 3 nAMD trials were fully implemented in the DR/DME studies and these more recent studies are showing trends with decreased PDS-related adverse events such as endophthalmitis and others.

4:35 – 4:55 PM

Avoiding Lawsuits: Lessons from an Expert Witness

JOHN W. KITCHENS, MD

Drawing from my experience as a medical malpractice expert witness, this talk will provide

retina specialists with key strategies to reduce legal risk and protect their practice. The discussion will focus on three critical pillars in malpractice prevention: patient outcomes, doctor-patient relationships, and documentation. I will highlight practical steps to optimize surgical decision-making, improve patient communication, and maintain thorough, defensible medical records. Additionally, I will offer insights into how physicians can navigate the legal process if a lawsuit does arise, including strategies to minimize liability and potential damages. This session is designed to help retinal specialists proactively safeguard their practice while maintaining high standards of patient care.

5:10 – 5:30 PM

Clinical Applications of Ultra-widefield Navigated Peripheral Optical Coherence Tomography

SZILÁRD KISS, MD

Optical coherence tomography (OCT), introduced in 1996, has become an indispensable component of routine retinal practice. Conventional OCT devices, however, are limited to imaging a relatively narrow field of the posterior fundus. Many important vitreoretinal abnormalities encountered in routine vitreoretinal care are in the retinal periphery, most identifiable only with skilled peripheral examination, or more recently, with the use of 2-dimensional ultra-widefield (UWF) imaging. Recently, there has been increased emphasis on the application of OCT to the retinal periphery with novel lenses, angling devices, or combinations of viewing systems. Although these approaches have increased peripheral views, they have not necessarily captured far peripheral images classified as UWF (defined as imaging beyond the posterior 50-degrees of the fundus). Recently, an imaging device that combines UWF-scanning laser ophthalmoscopy (SLO) with a navigable swept-source (SS) OCT has become commercially available (Optos Silverstone, Optos PLC). This device produces a high-resolution UWF SLO fundus image and then uses navigated SS-OCT line or volume scans of the far retinal periphery as mapped by UWF-SLO images. We sought to characterize the implementation of UWF SS-OCT in routine clinical practice. With this study and subsequent routine clinical use, we demonstrated the utility and feasibility of UWF SS-OCT. The images were easy to acquire, readily interpretable and often held bearing on medical decision-making. UWF SS-OCT has the potential to change retinal practice by redefining commonly encountered peripheral retinal abnormalities with definitive assessments, adding a new means of disease-monitoring that can minimize the subjectivity of indirect ophthalmoscopy.

6:15 – 6:35 PM

Epiretinal Membrane vs Epiretinal Proliferation: Timing and Biomarkers

MARIO R. ROMANO, MD, PhD

Macroglial activation contributes to two distinct forms of retinal changes: epiretinal membranes (ERM) and epiretinal proliferation (EP). Both are linked to degenerative retinal conditions but affect retinal structure and function in different ways. ERMs result from the proliferation of glial cells, leading to intraretinal changes influenced by the depth of intra-retinal gliosis. Post-surgical analysis shows that retinal displacement after ERM surgery is greater than preoperatively, with sagittal displacement having a stronger correlation with visual outcomes and metamorphopsia. Specifically, both pre- and postoperative sagittal displacement correlate with horizontal metamorphopsia ($P = 0.006$ and $P = 0.026$), while postoperative sagittal displacement also correlates with best-corrected visual acuity (BCVA). These findings suggest that postoperative retinal shifts reflect the equilibrium of newly deployed forces, rather than a return to the original anatomical state. Macroglial-induced changes thus serve as biomarkers for disease progression, prognosis, and optimal surgical timing.

In contrast, epiretinal proliferation involves the migration of Müller glial cells, forming a pigment-rich membranous structure around lesions such as lamellar macular holes (LMH) as part of the healing process. Unlike ERMs, epiretinal proliferation does not induce retinal traction or have contractile properties. Histological studies show that this tissue expresses high levels of glial fibrillary acidic protein (GFAP) and low levels of α-smooth muscle actin, highlighting its non-contractile nature. The presence of carotenoids in EP, as demonstrated by resonance Raman microscopy, further distinguishes it from ERMs. Understanding these distinct biomarkers is crucial for determining the appropriate clinical and surgical management of each condition based on their unique effects on retinal function and structure.

6:55 – 7:20 PM

43RD ANNUAL TAYLOR SMITH & VICTOR CURTIN LECTURE

Natural History and Treatment of Lamellar Macular Holes and Pseudoholes

JOHN T. THOMPSON, MD

I. The literature is somewhat confusing about the role of vitrectomy in these eyes. Part of the problem relates to varying classification schemes with conflicting definitions of lamellar macular holes and pseudoholes. A recent international group published a consensus definition of these entities to try to allow appropriate grouping of these eyes.

II. International OCT consensus classification of lamellar macular holes and pseudoholes – 3 subtypes defined (Hubschman JP, et al. Br J Ophthalmol 2020;104(12):1741-1747)

A. Lamellar macular hole

1. Mandatory criteria: irregular foveal contour, foveal cavity with undermined edges, one other sign evoking loss of foveal tissue
2. Minor criteria: epiretinal proliferation, foveal bump, ellipsoid line disruption

B. Macular pseudohole

1. Mandatory criteria: foveal center spring ERM, retinal thickening, verticalized or steepened foveal profile
2. Minor criteria: microcystoid spaces in the inner nuclear layer, near normal central foveal thickness

C. Epiretinal membrane foveoschisis

1. Major criteria: contractile ERM, foveoschisis at the Henle's fiber layer
2. Minor criteria: microcystoid spaces in the inner nuclear layer, retinal thickening, retinal wrinkling

III. Many lamellar macular holes are not associated with substantial decreased acuity and don't need to be treated. A subset do have progressive visual acuity loss and may benefit from vitrectomy – 79/168 eyes (47%) remained stable and did not require treatment, but 53% did require vitrectomy due to vision loss in a recent multi-center series by Chehaibou, et al. Ophthalmology Retina 2024;8:210-222

1. In the eyes not requiring surgery – mean visual acuity was 20/35 preop and 20/38 at a mean follow-up of 46 months (P=0.13)
2. In the eyes requiring surgery – mean visual acuity was 20/60 at baseline and improved to 20/40 6 months following surgery (P<.001)

IV. Another study by Mohammed, et al. J Vitreoretinal Dis 2024;8(2):125-130 evaluated surgical results in 51 eyes following vitrectomy using the new consensus classification.

1. Lamellar macular holes – visual acuity improved from 20/63 to 20/43 at 1 year (P=.003)
2. Macular pseudoholes – visual acuity improved from 20/64 to 20/40 at 1 year (P=.04)
3. Epiretinal membrane foveoschisis – visual acuity improved from 20/53 to 20/30 at 1 year (P=.03)

V. Vitrectomy for Lamellar macular holes, macular pseudoholes, and epiretinal membrane foveoschisis is appropriate in selected, symptomatic eyes, although visual acuity improvement is modest. OCT helps to determine which eyes are most likely to benefit from surgery.

Wednesday | MARCH 5

4:00 – 4:20 PM

Refractory Macular Holes: My Surgical Approaches

LEJLA VAJZOVIC, MD

Pars plana vitrectomy with internal limiting membrane (ILM) peeling remains one of the most effective surgical techniques for macular hole repair. While initial repair success rates are high, refractory macular holes may still develop, necessitating advanced techniques for closure.

The choice of approach often depends on the size and characteristics of the macular hole. For holes larger than 1000 microns, techniques such as ILM flap creation, platelet-rich plasma application, and subretinal balanced saline solution (BSS) detachment are promising options. In smaller holes under 1000 microns, strategies like amniotic membrane grafting, BSS detachment, or autologous retinal transplant have demonstrated success.

Refractory and large macular holes can be addressed through mechanisms like scaffold creation or expansion. Decision-making also considers factors beyond size, such as the presence of residual ILM and other ocular conditions. In cases with residual ILM and minimal myopia, inverted or autologous ILM flaps are effective. Alternatively, in the presence of residual ILM combined with extensive chorioretinal scarring, ischemia, or pediatric cases, subretinal blebs and amniotic membrane grafts are preferred.

For cases lacking residual ILM and without extensive scarring, ischemia, or atrophy, autologous retinal transplant remains a reliable solution. Each of these techniques offers tailored strategies to address specific challenges, ensuring a higher likelihood of success in even the most complex cases.

Continued advancements in surgical techniques are redefining the management of refractory macular holes, providing innovative options for patients with previously untreatable conditions.

4:35 – 4:55 PM

3D Heads Up Display for VR Surgery in a Modern Digital Operating Room

JOHN B. MILLER, MD

There have been several revolutionary advances within the vitreoretinal operating room over the past two decades, including small gauge vitrectomy, non-contact wide angle lens platforms, and digital visualization systems. While many of these OR advances have gained widespread adoption throughout the world, 3D Heads Up Displays have still not gained much traction. Since 2017, I have operated almost exclusively on a 3D Heads Up Display for a variety of vitreoretinal and lens conditions.

Herein, I will share key points to optimize your surgical and teaching experience on a 3D Heads Up Display. I will also highlight several key advantages of integrating this digital visualization to your operating room, including ergonomics, data fusion, color filters, local contrast adjustments, medical student education, surgical teaching with telestrater live in the OR, real time telementoring over 5G, and surgical case conferences in 3D.

5:10 – 5:30 PM

Epiretinal Membrane and Cystoid Macular Edema After Retinal Detachment Repair

MRINALI P. GUPTA, MD

Outcomes after primary rhegmatogenous retinal detachment repair via pneumatic retinopexy, scleral buckle, vitrectomy, or vitrectomy combined with scleral buckle have largely focused on single surgery anatomic success (i.e. macular re-attachment). While retinal reattachment is of foremost importance, visual acuity can be highly variable even after retinal reattachment. In addition to baseline characteristics such as retinal detachment duration, macular status impact visual outcomes, post-operative factors such as postoperative cataract, high vs low integrity retinal reattachment, and postoperative epiretinal membrane (ERM) and/or cystoid macular edema (CME) are also of central importance. We synthesize the data in the existing literature regarding rates of ERM and CME after RD repair. We also review the data on pre-operative patient or disease-related non-modifiable risk factors and modifiable risk factors related to surgery type and/or intraoperative surgical maneuvers. Several cases and management dilemmas related to post-operative ERM and CME are also

presented for discussion including: timing of acute post-ERM (proliferative vitreoretinopathy-like) surgery after RD repair, surgical approaches, considerations regarding risk of recurrent RRD, management of recalcitrant post-RD repair CME, etc.

6:15 – 6:35 PM

OCT and OCTA in Pediatric Retina: Where are We Now

AUDINA M. BERROCAL, MD

Optical coherence tomography (OCT) and optical coherence tomography angiography (OCTA) have revolutionized the field of pediatric retina, offering unprecedented insights into retinal structure and vascular integrity without the need for invasive procedures. In this talk, I will explore the expanding role of these imaging technologies in diagnosing and managing pediatric retinal diseases, including retinopathy of prematurity (ROP), familial exudative vitreoretinopathy (FEVR), Coats disease, Incontinentia pigmenti among others. OCT has allowed us to detect subtle structural abnormalities that were previously invisible, improving our ability to monitor disease progression and guide treatment decisions. Meanwhile, OCTA has provided a non-invasive method to assess retinal and choroidal vasculature, enhancing our understanding of microvascular changes in pediatric patients without the risks associated with dye-based angiography. As imaging capabilities continue to evolve, these technologies are becoming indispensable tools for both research and clinical care.

6:50 – 7:30 PM

Panel 3: Let's Talk Retina

MODERATOR:
DONALD J. D'AMICO, MD

PANELISTS:
AUDINA M. BERROCAL, MD
MRINALI P. GUPTA, MD
JOHN B. MILLER, MD
TIMOTHY G. MURRAY, MD, MBA
LEJLA VAJZOVIC, MD

The past two decades have seen remarkable growth in 1) effective drug therapy for a variety of retinal conditions, 2) innovative surgical approaches for many important anatomic derangements, and 3) increasingly sophisticated multimodal imaging techniques. Yet, despite these impressive advances, certain areas remain blocked at present and require additional efforts to surmount current obstacles: these include limited visual acuity despite retinal reattachment, ongoing intraocular inflammation that may be quite refractory to therapy, hypotony, issues with interpretation of OCT-A and other modalities, and many others. This panel will explore these and other cutting-edge questions across the entire retina subspecialty using illustrative case materials and images available from the latest technologies.

The Aspen Retinal Detachment Society would like to thank the following industry partners:

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ards@medconfs.com
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