



New England Ophthalmological Society

769th meeting

**IMPROVING OUTCOMES
IN GLAUCOMA TREATMENT
CHOICES, CHOICES!**

With Ruthanne and Richard Simmons Glaucoma Lecture

Susan Liang, MD
MODERATOR

Geoffrey Emerick, MD
PROGRAM COMMITTEE COORDINATOR

EMERGING AND RE-EMERGING INFECTIONS

Lucia Sobrin, MD
MODERATOR

Jay Duker, MD
PROGRAM COMMITTEE COORDINATOR

APRIL 20, 2018

Back Bay Event Center
180 BERKELEY STREET | BOSTON, MA 02110

the 769th meeting of



New England Ophthalmological Society

A Public Foundation for Education in Ophthalmology

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April 20, 2018

BACK BAY EVENT CENTER
180 Berkeley Street
Boston, MA 02110

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With RUTHANNE AND RICHARD SIMMONS GLAUCOMA LECTURE

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NEOS DISTINGUISHED ACHIEVEMENT AWARD 2018

Deborah Pavan-Langston, MD, FACS

Accreditation:

Accreditation: The New England Ophthalmological Society designates this live activity for a maximum of 7 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The New England Ophthalmological Society is accredited by the Massachusetts Medical Society to provide continuing medical education for physicians.

PRESIDENT'S MESSAGE



Today we honor one of our own, Deborah Pavan-Langston, MD, FACS, with the New England Ophthalmological Society's highest award, the Distinguished Achievement Award (DAA). The DAA is given every so often to a member of NEOS who has distinguished themselves not only to the profession of ophthalmology but has demonstrated significant contributions to NEOS. The Executive Board of NEOS is delighted to present this Award to Dr. Pavan-Langston today for her many past accomplishments.

While our Society, being a not for profit entity, is limited in advocacy activities, it does represent our members in somewhat unique and special ways. Our Ophthalmic Services Committee is the only such entity in the country that meets on an ongoing basis with CMS and its representatives to develop Local Carrier Determination Policies. Our Health and Education Committee continually is in communication with schools and Public Health officials throughout New England about matters of safety and vision. Our CME programs are unique in providing high quality education at a very affordable cost. There is opportunity to meet with vendors outside of our busy offices. On top of all this, our meetings provide a venue of socialization and collegiality on a regular basis that is not found in the rest of our land. Your Executive Board is engaged in developing other avenues to serve all of our members.

Thank you for attending today's meeting and I trust you will continue to see the benefit of being a New England Ophthalmological Society member. Have a great day and safe travels.

A handwritten signature in black ink, appearing to read "J. Dagjanis". The signature is fluid and cursive.

John J. Dagjanis, MD
President

GUEST OF HONOR and RUTHANNE AND RICHARD SIMMONS GLAUCOMA LECTURER



THOMAS W. SAMUELSON, MD

Thomas W. Samuelson, MD specializes in glaucoma and anterior segment surgery. He completed medical school at the University of Minnesota, residency at the University of South Florida, and fellowship training at Wills Eye Hospital in Philadelphia. Following fellowship, Dr. Samuelson immediately joined the practice of Richard L. Lindstrom in Minneapolis,

which later became Minnesota Eye Consultants where Dr. Samuelson is a founding partner. He also is Adjunct Professor at the University of Minnesota and is co-director of the glaucoma service at Hennepin County Medical Center in Minneapolis. Dr. Samuelson is past President of the International Society of Spaeth/Wills Glaucoma Fellows Society. He has also served on the Executive Boards of the American Glaucoma Society and ASCRS and is the ASCRS Vice President. Dr. Samuelson has received the Junior and Senior Achievement Awards from the AAO as well as the 2015 AAO Secretariat Award for contributions to the annual meeting. Dr. Samuelson has been an active participant in ORBIS with recent trips to Indonesia and Mongolia. He has been actively involved in research concerning canal-based MIGS surgery as well as other novel surgical procedures, especially coincident with cataract surgery. He is the glaucoma section editor of *Ocular Surgery News*; a section editor for the *Journal of Cataract and Refractive Surgery*; and serves on the editorial board of numerous publications.

RUTHANNE AND RICHARD SIMMONS GLAUCOMA LECTURER



In 2008, the Ruthanne and Richard Simmons Glaucoma Fund of the NEOS was established. The purpose of this fund is to promote quality glaucoma teaching, to help provide support for NEOS and to honor Ruthanne Simmons, MD (1959-2002), a glaucoma specialist, enthusiastic glaucoma teacher and NEOS member. These purposes will be permanently implemented through a bi-annual glaucoma lecture at NEOS given by an internationally recognized glaucoma expert. When possible, the fund may support other glaucoma related programs at NEOS.

Previous Simmons Lecturers:

2016 - Wallace Alward, MD

2014 - Peter Netland, MD

2012 - Donald Budenz, MD, MPH

2010 - Garry Condon, MD

2008 - Joel Shuman, MD

GUEST OF HONOR



AUDINA BERROCAL, MD

Audina “Nina” Berrocal, MD received her undergraduate education at Princeton University followed by medical school at Tufts University School of Medicine. She stayed 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 holds currently the rank of Professor. She also serves as Director of the Pediatric Retina service at Bascom Palmer Eye Institute and Jackson Memorial Hospital and Vitreoretinal fellowship director.

Dr. Berrocal is internationally recognized for her approach to pediatric retinal diseases. Additionally, she maintains a robust adult vitreoretinal surgical practice. Dr. Berrocal is an active member of The Retina Society, The Macula Society, Club Jules Gonin and holds leadership positions in many of these groups including the American Academy of Ophthalmology and the American Society of Retina Specialists and is one of the founding members of the Vit-Buckle Society. On good days, she enjoys spending time with family and friends in Miami. On good nights, Dr. Berrocal explores new places around the world.

2018 DISTINGUISHED ACHIEVEMENT AWARD RECIPIENT



DEBORAH PAVAN-LANGSTON, MD, FACS

PROFESSOR EMERITA OF OPHTHALMOLOGY, HARVARD MEDICAL SCHOOL AND MASSACHUSETTS EYE AND EAR INFIRMARY

Dr. Deborah Pavan-Langston was the first woman accepted to Harvard Medical School's Ophthalmology residency at Massachusetts Eye & Ear Infirmary, and the first female fellow in Dr. Claes Dohlman's corneal fellowship program at the same institution. In addition to this award she was also the first woman to receive the Castroviejo Medal, and the only person, man or woman, to win all three international awards, the Castroviejo Medal, the Thygeson Lectureship, and the Dohlman Award.

A graduate of Harvard College and Cornell and Columbia Medical Schools she is a member of both Phi Beta Kappa and Alpha Omega Alpha. Trained in Virology by two Nobel laureates, Drs. John Enders and JD Watson, Debbie was among the first to study the efficacy and toxicity profiles of antivirals in animal models, later translating these findings successfully to humans. Her expertise is sought quite prominently in national and international health policy for the treatment of ophthalmic herpetic disease, including issues of viral latency, diagnosis, public health, and clinical treatment.

Recently retired, Professor Langston was the former Chair of the FDA Ophthalmic Drug Advisory Committee and served on numerous NIH committees as well as the President's Commission on Bio-terrorism Preparedness at the CDC. She has published more than 250 papers and six books. Her single-authored text, The Manual of Ocular Diagnosis and Therapy, has been published in six editions and in seven languages. She continues to publish results of long-term, on-going studies with former Fellows and serves as a Trustee of the Massachusetts Eye & Ear Infirmary - all between baby sitting jobs for her grandchildren.

MORNING SESSION

IMPROVING OUTCOMES IN GLAUCOMA TREATMENT – CHOICES, CHOICES

Moderator: Susan Liang, MD

Program Committee Coordinator: Geoffrey Emerick, MD

Professional Practice Gaps:

Using feedback from NEOS members and discussion by the Program Committee, we have identified the broad topic of how to choose evolving old and new choices in glaucoma treatment to improve outcome as professional practice gaps in our members. The practice gaps include specifically, how to choose from different glaucoma eye drops, new glaucoma drug delivery systems, glaucoma medication adherence techniques, new surgical modalities such as MIGS, micropulse cyclophotocoagulation laser therapy, femto laser assisted cataract surgery in glaucoma patients, and old and new choices in wound healing modulators in glaucoma surgery.

NEOS Program Objectives:

The content and format of this educational activity has been specifically designed to fill the practice gaps in the audience's current and potential scope of profession activities by:

1. Increasing the attendees' competence in understanding the various old and new choices in medical, laser and surgical treatment of glaucoma.
2. Improving attendees' performance in choosing and incorporating new modalities of glaucoma treatment into their daily practice.
3. Improving attendees' outcomes in utilizing the most appropriate treatment option in terms of safety and efficacy.

7:00 am	Registration/Exhibits	
7:30-8:15	NEOS GRAND ROUNDS – Freedom Room – Lower Level	
7:30	Best of the NEOS Hal Freeman Video Library – MAIN HALL	
8:30	Introduction.....	Susan Liang, MD
8:35	How do We Choose a Glaucoma Medication?.....	Kimberly Miller, MD
8:47	How do We Improve Glaucoma Medication Adherence?	Manishi Desai, MD
8:59	New Choices: A Review of New Glaucoma Drug Modalities in the Pipeline	Husam Ansari, MD
9:11	Micropulse Cyclophotocoagulation: Better or Worse?	M. Lisa McHam, MD
9:23	Introduction of Guest of Honor and Simmons Lecturer	Susan Liang, MD

MORNING SESSION (continued)

- 9:28 Ruthanne and Richard Simmons Glaucoma Lecture:
Risk Mitigation in Glaucoma Surgery Thomas Samuelson, MD
- 9:53 *Business Meeting*
Distinguished Achievement Award Presentation,
Deborah Pavan-Langston, MD, FACS John Dagianis, MD
Joan Miller, MD
- 10:03 *Refreshment break / Exhibits*
- 10:33 Femto Laser-Assisted Cataract Surgery
in Patients with Glaucoma Geoffrey Emerick, MD
- 10:45 Old and New Choices of Wound Healing Modulators
in Glaucoma Surgery..... Christopher Teng, MD
- 10:57 Management of Coincident Cataract and Glaucoma
in the MIGS Era Thomas Samuelson, MD
- 11:20 Panel Discussion Susan Liang, MD, *Moderator*
Husam Ansari, MD Kimberly Miller, MD
Manishi Desai, MD Thomas Samuelson, MD
Geoffrey Emerick, MD Christopher Teng, MD
Lisa McHam, MD
- 11:45 **LUNCHEON SEMINARS:**
- I. Choosing the Right MIGS for the Right Patient**
Thomas Samuelson, MD
Freedom Room
- II. Update on Pediatric Retina Imaging and Surgery**
Audina Berrocal, MD
Patriot Room

**Be Sure to Scan in for Luncheon Seminars and
Afternoon Session to Receive Credit**

AFTERNOON SESSION

EMERGING AND RE-EMERGING INFECTIONS

Moderator: Lucia Sobrin, MD

Program Committee Coordinator: Jay Duker, MD

Professional Practice Gaps: Feedback from NEOS members and Program committee review identified:

1. Understanding the role of PCR in diagnosis of infectious diseases in the eye clinic.
2. Understanding optimal algorithms for diagnosis and treatment of common ocular diseases including corneal ulcers and herpetic eye disease at non-tertiary referral centers.
3. Understanding the best current management for endogenous endophthalmitis and syphilitic uveitis.

NEOS Program Objectives:

1. To identify the role of newer technologies, including PCR, for diagnosis of ocular infections.
2. To describe current approaches to diagnosis and treatment of corneal ulcers and herpetic eye disease.
3. To identify the optimal treatment regimens for endogenous endophthalmitis and syphilitic uveitis.

1:00 pm	Introduction.....	Lucia Sobrin, MD
1:05	Herpetic Keratitis and Uveitis in 2018	C. Stephen Foster, MD
1:20	Answers to Some Questions Ophthalmologists Ask an Infectious Disease Specialist	Marlene Durand, MD
1:30	Update on Approaches to Corneal Ulcers	Jessica Chow, MD
1:40	State of the Art Infectious Disease Diagnostics for Eye Infections	Paulo Bispo, MD
1:50	What we have Learned about Ebola Virus from the Eye.....	David Hinkle, MD
2:00	Introduction of Guest of Honor	Lucia Sobrin, MD
2:05	Zika Virus and The Eye.....	Audina Berrocal, MD
2:30	<i>Refreshment Break/Exhibits</i>	
3:00	Making a Comeback – Syphilis on the Rise.....	Lana Rifkin, MD
3:10	Infectious Diseases in Pediatric Retina.....	Audina Berrocal, MD

AFTERNOON SESSION (continued)

3:25	The Opioid Crisis and Resurgence of Endogenous Endophthalmitis	Nikhil Batra, MD
3:35	Panel Discussion	Lucia Sobrin, MD, <i>Moderator</i>
		Nikhil Batra, MD Marlene Durand, MD
		Audina Berrocal, MD C. Stephen Foster, MD
		Paulo Bispo, PhD David Hinkle, MD
		Jessica Chow, MD Lana Rifkin, MD
4:00	Adjourn	

HOW DO WE CHOOSE A GLAUCOMA MEDICATION?

*Kimberly Miller, MD
Brown University*

PROVIDENCE, RI

Objective: To review the indications, side effects, and pharmacology of common glaucoma medications.

Pharmacologic therapy is a mainstay of glaucoma treatment. Prostaglandin analogs have excellent ocular hypotensive properties, have very rare instances of systemic side effects, and offer once daily dosing schedules that could increase compliance. However, they can have cosmetic side effects that may be undesirable in cases of monocular therapy. Beta-blockers are effective and safe, but cardiopulmonary side effects can be a concern for some patient populations. Carbonic anhydrase inhibitors also lower intraocular pressure, but must be dosed twice daily, and have an unfavorable pH which can limit compliance in sensitive patients. Alpha adrenergic agents are also effective, but produce a high rate of allergy. Combination agents (Cosopt, Combigan, Simbrinza) can increase compliance and decrease the preservative load on the eye.

References: van der Valk R, Webers CA, Schouten JS, et al. Intraocular pressure-lowering effects of all commonly used glaucoma drugs: a meta-analysis of randomized clinical trials. *Ophthalmology*. 2005;112:1177-85.

HOW DO WE IMPROVE GLAUCOMA MEDICATION ADHERENCE?

Manishi Desai, MD

Boston Medical Center and Boston University School of Medicine

BOSTON, MA

Objective: The objective of this presentation is to demonstrate to the audience the methods to improve glaucoma medication adherence?

Glaucoma is a degenerative and progressive optic neuropathy that results in irreversible vision loss. Currently, the mainstay of treatment is medication with laser treatment and surgery available when medication treatment is not sufficient or viable option. Unfortunately studies have shown that adherence to glaucoma medication can be highly variable—ranging from as low as 30% to as high as 75%. Poor adherence can lead to glaucoma progression and poor outcomes. Recent estimates reveal that glaucoma affects approximately 5% of the population over 65 years of age and 10% of the population over 75 years of age. The elderly population is expected to double in the coming decades and along with the aging population so will the number of people with glaucoma. The problem of non-adherence is only going to be compounded by the higher prevalence of glaucoma in the coming years and will place an ever increasing burden on ophthalmic care not only in terms of cost but also access. Hence, the problem continues to need solutions and challenges physicians daily. There are a number of steps that physicians can consider to improve compliance with medication including better communication, family support, education, technology, patient support groups, and cost cutting measures. One method or a combination of methods may ultimately help a particular patient. This talk will review methods that physicians can consider and use to engage their patients to help individuals improve medication compliance.

References: World Health Organization (WHO) [Dec 22, 2013]; Prevention of Blindness and Visual Impairment. [WHO web site]. Causes of blindness and visual impairment.

Klein R, Klein BE. The prevalence of age-related eye diseases and visual impairment in aging: current estimates. *Invest Ophthalmol Vis Sci.* 2013;54(14):ORSF5–ORSF13.

US Census Bureau [February 15, 2015]; National population projections.

The Advanced Glaucoma Intervention Study (AGIS) 7. The relationship between control of intraocular pressure and visual field deterioration. The AGIS Investigators. *Am J Ophthalmol.* 2000;130(4):429–440.

Leske MC, Heijl A, Hussein M, et al. Factors for glaucoma progression and the effect of treatment: the early manifest glaucoma trial. *Arch Ophthalmol.* 2003;121(1):48–56.

Tsai JC. Medication adherence in glaucoma: approaches for optimizing patient compliance. *Curr Opin Ophthalmol.* 2006 Apr; 17(2):190-5.

NEW CHOICES: A REVIEW OF NEW GLAUCOMA DRUG MODALITIES IN THE PIPELINE

Husam Ansari, MD
Ophthalmic Consultants of Boston

BOSTON, MA

Objective: To provide a review of new drug delivery systems for glaucoma medications that are currently in development.

Non-adherence to medical treatment for glaucoma is notoriously prevalent and is linked to progression of the disease. Among the barriers to adherence are difficulty with eye drop administration, side effects, forgetfulness, perceived life stress, and cost. Numerous novel drug delivery systems for glaucoma are currently being developed and seek to remove several of these barriers by taking the task of medication administration out of the hands of patients. A comprehensive overview of the past, present, and future of sustained drug delivery for glaucoma and its perceived benefits will be presented.

References: Schwartz GF, Quigley HA. Adherence and persistence with glaucoma therapy. *Surv Ophthalmol.* 2008 Nov; 53 Suppl1():S57-68.

Sleath B, Blalock S, Covert D, Stone JL, et al. The relationship between glaucoma medication adherence, eye drop technique, and visual field defect severity. *Ophthalmology.* 2011;118:2398–2402.

Newman-Casey PA, Robin AL, Blachley T, et al. Most Common Barriers to Glaucoma Medication Adherence: A Cross-Sectional Survey. *Ophthalmology.* 2015;122(7):1308-1316.

MICROPULSE CYCLOPHOTOCOAGULATION: BETTER OR WORSE?

*M. Lisa McHam, MD
Eye Health Services, Inc.*

BOSTON, MA

Objective: The audience will learn about the role of cyclophotocoagulation in glaucoma management and potential advantages of the new micropulse modality.

Traditional Diode laser transcleral cyclophotocoagulation (TSCPC) is a commonly used procedure for lowering IOP in patients with difficult to treat glaucoma. It works by damaging the ciliary body, which decreases aqueous production. Typical patients have had previous glaucoma surgeries and have limited visual potential. Although effective, the extensive tissue destruction can lead to complications such as prolonged inflammation, hypotony, and vision loss. The development of Micropulse Diode CPC is an attempt to harness the IOP lowering benefits of the traditional procedure while reducing risks and potentially broadening the clinical applications. I will review the current experience with Micropulse CPC, including results, patient selection, and evolving techniques.

References: Emanuel ME, Grover DS, Fellman RL, et al. Micropulse cyclophotocoagulation: initial results in refractory glaucoma. *J Glaucoma*. 2017;26:726-729.

Aquino MCD, Barton K, Tan AMWT, et al. Micropulse versus continuous wave transcleral diode cyclophotocoagulation in refractory glaucoma: a randomized exploratory study. *Clin Experiment Ophthalmol*. 2015;43:40-46.

RUTHANNE AND RICHARD SIMMONS GLAUCOMA LECTURE

RISK MITIGATION IN GLAUCOMA SURGERY

Thomas Samuelson, MD

Minnesota Eye Center

DEEPHAVEN, MN

Objective: To better delineate the delicate balance between disease risk and surgical risk in glaucoma management

Is it better to mitigate disease risk or surgical risk? It cuts both ways. Treating the disease aggressively, with highly efficacious surgical management will mitigate disease risk as a low IOP is often achieved. Yet, in doing so, the patient is subjected to significant surgical risk. Conversely, a much safer, less efficacious procedure lessens surgical risk, but may not adequately lower IOP, thus subjecting the patient to increase disease risk.

The traditional offerings for surgical management of glaucoma such as trabeculectomy and tube shunts have considerable risk, at times far exceeding disease risk. The era of performing trabeculectomy for those at lower risk for true function impairment from glaucoma are waning. The contemporary glaucoma surgeon offers a portfolio of procedures, each with a unique risk benefit profile that may be matched to the disease risk faced by individual patients. Level of IOP control, target IOP, likelihood of progression, life expectancy, coagulation status, compliance and tolerance of medications, status of the native lens, availability for postoperative care, status of the fellow eye, and prior surgical history are all variables that should be considered when selecting a procedure for each unique patient. This discussion will address decision making in glaucoma surgery.

“Surely intelligence wasn’t enough; moral clarity was needed as well. Somehow, I had to believe, I would gain not only knowledge but wisdom too”

Paul Kalanithi, MD -When Breath Becomes Air (1)

Reference: Kalanithi, P. When Breath Becomes Air. Random House Publishing, Penguin Random House, LLC, New York. 2016.

FEMTOSECOND LASER-ASSISTED CATARACT SURGERY IN PATIENTS WITH GLAUCOMA

Geoffrey Emerick, MD

FARMINGTON, CT

Objective: To discuss the use of the femtosecond laser in eyes with coexisting cataract and glaucoma.

The femtosecond laser can be used to perform several steps of cataract surgery. This technology presents unique challenges and opportunities in patients with coexisting glaucoma and related conditions. Advantages include precise and atraumatic capsulotomies in eyes with intumescent cataracts, shallow anterior chambers, or zonular weakness with or without lens subluxation. Laser nuclear fragmentation reduces effective phacoemulsification time and endothelial cell loss, a potential benefit in eyes with dense cataracts or endothelial compromise. Glaucoma procedures including MIGS, trabeculectomy or tube shunts can be combined with laser-assisted cataract surgery with only minor changes in technique. Potential challenges include applanating the ocular surface with the laser interface in eyes with severe periorbital fat atrophy. High limbal blebs or patch grafts can also interfere with the docking procedure. The laser capsulotomy size can be changed in eyes with poor dilation but mechanical pupil dilation requires additional modifications. IOP rise is transient, but caution is advised in patients with advanced field loss.

References: Popovic M, Campos-Möller X, Schlenker MB, Ahmed IIK. Efficacy and safety of femtosecond laser-assisted cataract surgery compared with manual cataract surgery. A meta-analysis of 14,567 eyes. *Ophthalmology* 2016;123:2113-26.

Grewal DS, Schultz T, Basti S, Dick HB. Femtosecond laser-assisted cataract surgery - current status and future directions. *Surv Ophthalmol* 2016;61:103-131.

Chee S-P, Wong MHY, Jap A. Management of severely subluxated cataracts using femtosecond laser-assisted cataract surgery. *Am J Ophthalmol* 2017;173:7-15.

OLD AND NEW CHOICES OF WOUND HEALING MODULATORS IN GLAUCOMA SURGERY

Christopher Teng, MD
Yale School of Medicine

NEW HAVEN, CT

Objective: : I will describe Old and New Choices of Wound Healing Modulators in Glaucoma Surgery, such as 5FU, mitomycin C, and new agents, such as anti-VEGF, Ologen and Amniotic membrane.

1. Wound healing brief review: Coagulative, inflammatory, proliferative, remodeling Wound healing modulation
2. Brief review of MMC and 5FU
3. Newer agents
 1. Collagen matrix Ologen
 2. anti VEGF injections
 3. Amniotic membrane
4. Novel agents
 1. Anti-Placental growth factor
 2. Infliximab
 3. Trastuzumab
 4. Connexin
 5. Suramin
 6. Tranilast
 7. Transforming Growth Factor Beta

MANAGEMENT OF COINCIDENT CATARACT AND GLAUCOMA IN THE MIGS ERA

Thomas Samuelson, MD
Minnesota Eye Center

DEEPHAVEN, MN

Objective: To review the surgical options currently available to treat the two most common comorbidities faced by contemporary cataract surgeons.

The management of coincident cataract and glaucoma ranges from phacoemulsification alone to phacoemulsification combined with a wide-ranging variety of glaucoma procedures including canal surgery, supraciliary surgery, and transcleral surgery. Each option presents a unique risk benefit profile. This discussion will review some of the decision making processes involved to individualize the surgical management of glaucoma.

References: Samuelson TW, Katz LJ, Wells JM, Duh YJ, Giamporcaro JE; US iStent Study Group. Randomized Evaluation of the Trabecular Micro-Bypass Stent with Phacoemulsification in Patients with Glaucoma and Cataract. *Ophthalmology* 2011 Mar;118 (3):459-467.

Pfeiffer N, Garcia-Feijoo J, Martinez-de-la-Casa JM, Larrosa JM, Fea A, Lemij H, Gandolfi S, Schwenn O, Lorenz K, Samuelson TW: A Randomized Trial of a Schlemm's Canal Microstent with Phacoemulsification for Reducing Intraocular Pressure in Open-Angle Glaucoma. *Ophthalmology*. 2015 Jul; 122(7):1283-93.

Vold S, Ahmed IK, Craven ER, et al. Two-year COMPASS trial Results: Supraciliary microstenting with phacoemulsification in patient with open-angle glaucoma and cataracts. *Ophthalmology* 2016;123:2103-12.

HERPETIC KERATITIS AND UVEITIS IN 2018

C. Stephen Foster, MD

Massachusetts Eye Research and Surgery Institution

WALTHAM, MA

Objective: To describe the clinical features of herpes simplex and of herpes zoster virus keratitis and uveitis, path to diagnosis and therapy of each.

Keratitis secondary to herpes simplex or to herpes zoster virus is, generally, not difficult to diagnose because of the clinical features of each, whereas uveitis secondary to either of these members of the herpes family can be very difficult to diagnose, with delayed diagnosis very common. Additionally, HSV in particular may cause other forms of ocular inflammation, including recurrent conjunctivitis, episcleritis, or scleritis, which can elude diagnosis because of the lack of identifying clinical features and because of the rarity of such manifestations of HSV infection. Suggestions for a path to diagnosis for each of these matters, along with treatment recommendations will be presented

References: Wensing B, Mochizuki M, De Boer JH. Clinical Characteristics of Herpes Simplex Virus Associated Anterior Uveitis. *Ocul Immunol Inflamm*. 2018 Jan 18:1-5 2.

Kumar A, Singh MP, Bansal R, Gupta A, Ram J. Development and evaluation of multiplex real-time PCR for diagnosis of HSV-1, VZV, CMV, and *Toxoplasma gondii* in patients with infectious uveitis. *Microbiol Infect Dis*. 2017 Nov;89(3):191-196 3.

Tugal-Tutkun I, Cimino L, Akova YA. Review for Disease of the Year: Varicella Zoster Virus-Induced Anterior Uveitis. *Ocul Immunol Inflamm*. 2017 Oct 12:1-7.

ANSWERS TO SOME QUESTIONS THAT OPHTHALMOLOGISTS ASK AN INFECTIOUS DISEASE SPECIALIST

Marlene Durand, MD
Infectious Disease Associates

BOSTON, MA

In this talk, an infectious disease physician's approach to answering the following questions will be discussed:

1. Patient with uveitis and a positive PPD -- could this be ocular TB?
2. Patient with uveitis and history of tick exposure -- could this be ocular Lyme disease?
3. Patient with acute retinal necrosis worsening on intravenous acyclovir -- what else can be done to save vision?
4. Preventing ocular manifestations of herpes zoster – the new vaccine.

UPDATE ON APPROACHES TO CORNEAL ULCERS

Jessica Chow, MD

Yale University

NEW HAVEN, CT

Objective: 1. Describe work-up and initial management of microbial keratitis. 2. State the evidence for corticosteroid use in bacterial keratitis. 3. Understand newer therapies for microbial keratitis including crosslinking and photodynamic therapy.

Infectious keratitis is a sight-threatening condition with potentially significant morbidity and economic impact in the United States. A CDC report from 2010 stated that episodes of keratitis and contact lens disorders cost an estimated \$175 million in direct health care expenditures and occupied over 250,000 hours of clinician time annually. The gold standard for diagnosis is culture of the causative organism, but imaging techniques and PCR sequencing may be useful. Topical antimicrobial therapy should be tailored to the microbial etiology (bacterial, fungal, amoebal, or viral), but managing the host inflammatory response is crucial to prevent poor outcomes such as corneal melting, scarring, and perforation. Newer therapies such as corneal collagen crosslinking and photodynamic therapy are promising.

Objective: Austin A, Lietman T, Rose-Nussbaumer J. Update on the Management of Infectious Keratitis. *J. Ophthalmology*. 2017 Nov;124(11):1678-1689.

Garg P, Roy A, Roy S. Update on fungal keratitis. *Curr Opin Ophthalmol*. 2016 Jul;27(4):333-9.

Ni N, Srinivasan M, McLeod SD, Acharya NR, Lietman TM, Rose-Nussbaumer J. Use of adjunctive topical corticosteroids in bacterial keratitis. *Curr Opin Ophthalmol*. 2016 Jul;27(4):353-7.

STATE OF THE ART INFECTIOUS DISEASE DIAGNOSTICS FOR EYE INFECTIONS

Paulo Bispo, PhD
Massachusetts Eye and Ear Infirmary

BOSTON, MAI

Objective: Explore the advantages of new technologies for diagnosis of eye infections

Despite of the recent progresses in the area of molecular diagnosis, laboratory identification of organisms causing eye infections is widely performed by old-fashioned and time-consuming techniques, such as microscopy and culture. Because of the diminutive size of eye specimens, and the fact that many ocular pathogens cannot be readily cultured, after several days of effort, a report is often returned as negative, despite clear clinical evidence of an infection. Patients are thus started on broad-spectrum therapies with one or two antimicrobial agents, and de-escalation to a targeted therapy based on the laboratory results may take days or weeks. In the interim, the infection continues its destructive path, much of it preventable if the pathogen was quickly known. New technologies have the potential to quickly diagnose the microbe causing an infection, as well as its antibiotic resistance, providing the physician with critical information in hours, rather than days. In addition, because of the enhanced sensitivity of these methods, a positive test is reported to a greater number of patients. This presentation will explore the advantages of the newest cutting-edge technologies (e.g. digital counting of barcoded DNA and next generation sequencing) for detection and identification of nucleic acids to develop rapid, sensitive and comprehensive diagnostic tests for eye infections.

WHAT WE HAVE LEARNED ABOUT EBOLA VIRUS FROM THE EYE

David Hinkle, MD

WORCESTER, MA

- Objective:** 1. Review the epidemiology and pathogenesis of Ebola virus disease.
2. Provide an update on the ocular complications of Ebola and related filoviruses.
3. Discuss the current state of Ebola virus prevention and treatment

PURPOSE: To discuss the findings in Ebola Virus Disease with ocular involvement.

METHODS: Interventional case report and literature review.

RESULTS: Ebola virus disease associated uveitis occurs in the convalescent phase of the systemic illness in a significant proportion of survivors. Cataracts and posterior segment involvement are common complications.

CONCLUSION: Ebola virus disease associated uveitis represents an emerging cause of uveitis which may be acute or recurrent. Uveitis may be severe and vision threatening can ensue.

References: Gear JS, Cassel Ga, Gear AJ et al. Outbreak of Marburg virus disease in Johannesburg. *Br Med J.* 1975;4:489-93.

Kibadi K, Mupapa K, Kuvula K et al. Late ophthalmologic manifestations in survivors of the 1995 Ebola virus epidemic in Kikwit, Democratic Republic of the Congo. *Massamba M, Ndaberey D, Muyembe-Tamfum JJ, Bwaka MA, De Roo A, Colebunders R.* *J Infect Dis.* 1999;179:S13-4.

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ZIKA VIRUS AND THE EYE

Audina Berrocal, MD
Bascom Palmer Eye Institute

MIAMI, FL

Objective: To do a review of the Zika virus and how it has affected the New World.

We will do a historical review of the Zika virus and understand how it came to the New World. Furthermore, we will have an update of the Zika virus and the syndrome in the United States and Latin America in 2018.

MAKING A COMEBACK: SYPHILIS ON THE RISE

Lana Rifkin, MD
Ophthalmic Consultants of Boston

BOSTON, MA

Objective: To discuss the resurgence of an ‘ancient’ disease, potential reasons for the rise in syphilis, and the impact on our practice.

Syphilis, an ancient disease, first noted in the 1400’s, has unfortunately been making a comeback all across the world, with reports of increased activity in every nation. Rates in 2015 were the highest on record, with the CDC reporting nearly an 18% rise in documented cases of syphilis. Reasons for this alarming statistic vary from unprotected sexual activity, particularly in men having sex with men to new HIV-preventing medications which decrease the stigma associated with condom-free sex, to online dating apps.

Traditionally, practitioners have tested for syphilis with non-specific treponemal tests such as RPR and VDRL. However, these tests may give a false sense of security as they may not turn positive in acute disease. Specific treponemal tests such as Treponema pallidum antibody or fluorescent treponemal antibody absorbed (FTA-Abs) should be checked to avoid missing this important diagnosis.

The ocular presentation of syphilis can vary from scleritis to panuveitis and thus it is prudent to include testing for syphilis for those uveitis patients who warrant a systemic uveitis evaluation, regardless of age, gender, or reported risk factors.

References: <https://www.cdc.gov/std/syphilis/default.htm>

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INFECTIOUS DISEASES IN PEDIATRIC RETINA

Audina Berrocal, MD
Bascom Palmer Eye Institute

MIAMI, FL

Objective: To look at the most common infectious diseases in pediatric retina and their management.

We will look at common pediatric infectious retinal diseases such as acute retinal necrosis, toxoplasmosis, and Bartonella and their management. Also we will look at the presentation of viral retinitis specifically in neonates. We will present cases demonstrating typical findings in these diseases.

THE OPIOID CRISIS AND RESURGENCE OF ENDOGENEOUS ENDOPHTHALMITIS

Nikhil Batra, MD
Dartmouth Hitchcock Medical Center
LEBANON, NH

Objective: To review the presentation, pathophysiology, diagnosis, and management of endogenous endophthalmitis in the setting of our regional and national opioid crisis with increased rates of IV drug use.

PURPOSE: From 2000 to 2014, the United States experienced a tripling in number of opioid overdose deaths. As of 2015, New Hampshire has one of the highest age-adjusted rates of death due to drug overdose at 34.3 per 100,000 persons. We investigated clinical characteristics of injection drug use (IDU) versus non-IDU endogenous endophthalmitis (EE) at Dartmouth-Hitchcock Medical Center (DHMC) during the opioid epidemic.

METHODS: A retrospective chart review identified EE cases from January 2012 to December 2016 at DHMC via International Classification of Diseases (ICD-9, ICD-10) codes 360.0*, 360.1*, H44.0*, and H44.1*. Patient demographics, IDU history, microbial data, and clinical courses were recorded and analyzed.

RESULTS: Fifteen patients with EE were identified, of which 9/15 (56.3%) had a history of IDU. Reduced vision was the most common presenting symptom in all IDU (9/9) and most non-IDU (5/6) patients. Compared with non-IDU patients, IDU patients were younger (31 vs 63 years, $P < 0.001$) and had fewer co-morbidities. There was a trend for IDU patients to delay seeking care compared with non-IDU patients (24.7 vs 2.0 days). IDU patients demonstrated significantly more improvement in visual acuity after intervention than non-IDU patients. Non-IDU cases were more likely to present during hospitalization or shortly after discharge and less likely to undergo surgical intervention because of more frequent resolution of vitritis.

CONCLUSIONS: Patients with IDU-related EE were younger, ambulatory, and presented later than non-IDU related EE patients. Importantly, IDU-related EE patients were more likely to experience improved vision with treatment than non-IDU related EE patients. IDU patients represent a younger and healthier subset of the EE population and may regain vision upon prompt recognition and treatment.

References: Tirpack AR, Duker JS, Bauman CR. An Outbreak of Endogenous Fungal Endophthalmitis Among Intravenous Drug Abusers in New England. *JAMA Ophthalmol*. 2017 Jun 1;135(6):534-540.

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BYLAWS AMENDMENT

At a recent meeting of the NEOS Executive Board, the following amendment to the Bylaws was reviewed, discussed and approved:

SECTION 5. MEMBER-IN-TRAINING. *An active resident or fellow enrolled in an ophthalmology training program in the New England states is eligible for Member-in-Training status. Members-in-Training may attend meetings and shall have full access to the NEOS website and Freeman Video Library but shall not vote or hold office. Dues for Members-in-Training shall not be required.*

This amendment will be voted on by the membership at the April 20, 2018, meeting.

Sincerely,

John Dagianis, MD

President, New England Ophthalmological Society

CANDIDATES FOR MEMBERSHIP

The following candidates have submitted application for membership and letters of support have been received by sponsors:

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REMINDER that new member candidates should apply ONLINE

FUTURE NEOS MEETINGS

Date	Topic	Moderator
2018		
June 1	Complications	Samir Melki, MD
	Subspecialty Day: Neuro-ophthalmology Uveitis	Thomas Hedges, MD Nicholas Butler, MD
September 28 (HYNES)	Cataract (with Pender Lecture)	Susannah Rowe, MD
	Ethics and Risk Management	Christopher Soares, MD
November 30	Neuro-ophthalmology and Plastics	Michael Yoon, MD
	Posterior Segment Case Presentations	Jay Duker, MD/ Joan Miller, MD
2019		
March 1	Cornea	Adam Sise, MD
	Subspecialty Day: Pediatrics Refractive Imaging	Adam Sise, MD Iason Mantagos, MD Kathryn Hatch, MD Nadia Waheed, MD
April 12	Anterior Segment Case Presentations	Michael Price, MD
	Glaucoma (with Chandler-Grant Lecture)	Noelle Pruzan, MD
May 31	Uveitis	Lana Rifkin, MD
	Macular Degeneration	Andre Witkin

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Hecht Awards for Best Resident, Fellow, and Trainee Posters

JUNE 1, 2018

Residents, fellows, and trainees from all the New England ophthalmologic teaching programs are invited and encouraged to submit abstracts for a scientific poster presentation contest to be conducted at the June 1, 2018, NEOS meeting. Posters will be judged on originality and scientific merit. Awards will be made for the first prize \$500.00, second prize \$300.00, third prize \$200.00 and three honorable mentions of \$50.00 each. Funding for the awards is derived from a gift to the NEOS Education Endowment Fund honoring the late Sanford Hecht, MD. Poster presentations exhibited at ARVO in 2018 and at the AAO meeting in of 2017 may be submitted. We encourage all trainees to participate in this event.

To submit posters, go to neos-eyes.org – future meetings/June 1/abstract submission form. **Deadline for abstract to appear in printed program May 1.** Others may be accepted as space allows.

For questions, please contact Judy Cerone Keenan at 617/227-6484 or neosjudy@aol.com

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ANNUAL MEETINGS FOR OPHTHALMIC MEDICAL PERSONNEL, NURSES AND TECHNICIANS, AND OPHTHALMIC PRACTICE ADMINISTRATORS WILL BE HELD AT THE FRIDAY, SEPTEMBER 28, 2018 MEETING HYNES CONVENTION CENTER.

MORE INFORMATION AND REGISTRATION WILL BE AVAILABLE SOON AT OUR WEB SITE, WWW.NEOS-EYES.ORG



www.neos-eyes.org