



NORTH AMERICAN NEURO-OPHTHALMOLOGY SOCIETY

48TH ANNUAL MEETING



NANOS 2022

February 12-17 • JW Marriott Austin • Austin, TX



On Demand viewing available March 9 - May 31, 2022

SATURDAY, FEBRUARY 12

8:00 am – 12:00 pm	NANOS Board of Directors Meeting.....	Brazos
2:00 pm – 7:30 pm	Registration/Help Desk	Lone Star Foyer
4:00 pm – 5:00 pm	Neuro-Radiology Symposium [1.0]	Lone Star DEFGH
6:00 pm – 9:30 pm	Welcome Reception and Line Dancing Lesson (with support from Viridian Therapeutics, Inc.).....	Lone Star ABC

SUNDAY, FEBRUARY 13

6:30 am – 7:30 am	Breakfast	Griffin Hall
6:30 am – 5:30 pm	Registration/Help Desk	Lone Star Foyer
7:30 am – 9:30 am	Frank B. Walsh (I) [2.0]	Lone Star DEFGH
9:30 am – 10:00 am	Coffee Break	Griffin Hall
10:00 am – 11:45 am	Frank B. Walsh (II) [1.75]	Lone Star DEFGH
11:45 am – 12:30 pm	Lunch	Griffin Hall
12:00 pm – 1:00 pm	Fellowship Directors Committee Meeting	Brazos
12:30 pm – 2:30 pm	Meet the Poster Author: Descriptive Studies	Griffin Hall
2:30 pm – 3:00 pm	Business Meeting	Lone Star DEFGH
3:00 pm – 5:15 pm	Frank B. Walsh (III) [2.25]	Lone Star DEFGH
5:30 pm – 6:00 pm	Walsh Committee Meeting	Brazos
5:45 pm – 6:45 pm	Members-in-Training Reception	Lone Star ABC

MONDAY, FEBRUARY 14

6:00 am – 6:45 am	Yoga.....	301/302
6:30 am – 7:30 am	Breakfast with Exhibitors	Griffin Hall
6:30 am – 7:30 am	Breakfast with the Novices	Griffin Hall
6:30 am – 5:00 pm	Registration/Help Desk	Lone Star Foyer
6:30 am – 7:30 am	NOVEL/Editorial Board/Curriculum Committee Meeting	Brazos
7:30 am – 9:30 am	State of the Art in Neuro-Ophthalmic Disease [2.0]	Lone Star DEFGH
9:30 am – 10:00 am	Coffee with Exhibitors	Griffin Hall
10:00 am – 12:00 pm	Hot Topics! [2.0]	Lone Star DEFGH
12:00 pm – 12:10 pm	NOVEL Update	Lone Star DEFGH
12:10 pm – 1:30 pm	Lunch Break	
12:20 pm – 1:20 pm	Real-World Experience With a Treatment for Thyroid Eye Disease (TED)*	Lone Star ABC
	*This lunch symposium is organized by Horizon Therapeutics plc.	
1:30 pm – 3:15 pm	Fostering Leadership and Mentorship in Neuro-Ophthalmology: Evolving Concepts from Medical School to Retirement [1.75]	Lone Star DEFGH
3:30 pm – 4:45 pm	Challenging Cases for Surgical Neuro-Ophthalmologists [1.25]	Lone Star DEFGH
5:00 pm – 7:00 pm	Scientific Platform Session I [2.0]	Lone Star DEFGH

TUESDAY, FEBRUARY 15

6:00 am – 6:45 am	Yoga.....	301/302
6:30 am – 7:30 am	Breakfast with Exhibitors	Griffin Hall
6:30 am – 7:30 am	Breakfast with the Novices	Griffin Hall
6:30 am – 12:00 pm	Registration/Help Desk	Lone Star Foyer
6:30 am – 7:30 am	JNO Editorial Board Meeting.....	Brazos
7:30 am – 9:30 am	Scientific Platform Session II [2.0]	Lone Star DEFGH
9:30 am – 10:00 am	Coffee with Exhibitors (with support from GenSight Biologics).....	Griffin Hall
10:00 am – 12:00 pm	Scientific Platform Session III [2.0]	Lone Star DEFGH
12:00 pm – 12:10 pm	JNO Update	Lone Star DEFGH
12:10 pm – 6:00 pm	Afternoon free for activities.....	Lone Star ABC
12:25 pm – 1:25 pm	NMOSD: Differentiating New Advances in the Diagnostic and Treatment Armamentarium*	
	*This lunch symposium is organized by Vindico Medical Education with grant support from Genentech.	
	NANOS is not the CME provider for this symposium.	
3:30 pm – 5:35 pm	YONO Forum	Lone Star ABC
6:30 pm – 8:30 pm	Meet the Poster Author: Analytical Studies (with support from Viridian Therapeutics, Inc.)	Griffin Hall
8:30 pm – 9:30 pm	Abstract Committee Meeting.....	Brazos

WEDNESDAY, FEBRUARY 16

6:00 am – 6:45 am	Yoga.....	301/302
6:30 am – 7:30 am	Breakfast with Exhibitors	Griffin Hall
6:30 am – 7:30 am	Breakfast with the Novices	Griffin Hall
6:30 am – 12:30 pm	Registration/Help Desk	Lone Star Foyer
6:30 am – 7:30 am	CME Committee Meeting.....	Brazos
6:45 am – 7:15 am	DEI Committee Meeting.....	205
7:30 am – 9:30 am	Mitochondrial Disorders: More Than the Optic Nerve [2.0]	Lone Star DEFGH
9:30 am – 10:00 am	Coffee with Exhibitors	Griffin Hall
10:00 am – 11:30 am	Does My Patient Need Surgery/A Procedure? Indications, Outcomes, and More! [1.5]	Lone Star DEFGH
11:30 am – 12:00 pm	Jacobson Lecture – The Power of Connection [0.5]	Lone Star DEFGH
12:00 pm – 1:30 pm	Research Committee Meeting	Brazos
1:00 pm – 2:30 pm	WIN Forum – Our Time is Now	Lone Star ABC
2:30 pm – 4:30 pm	Vestibular and Ocular Motor Skills Transfer [2.0]	Lone Star DEFGH
4:45 pm – 5:45 pm	Consortium of Pediatric Neuro-Ophthalmologists (CPNO)	Brazos
6:30 pm	Banquet.....	Lone Star DEFGH

THURSDAY, FEBRUARY 17

6:30 am – 12:00 pm	Registration/Help Desk	Lone Star Foyer
6:30 am – 7:30 am	Breakfast	Griffin Hall
7:30 am – 9:30 am	Functional Disorders and the Neuro-Ophthalmologist [2.0]	Lone Star DEFGH
9:30 am – 10:00 am	Coffee Break	Lone Star Foyer
10:00 am – 12:00 pm	Complex Cases in Pediatric Neuro-Ophthalmology: Avoiding Mimickers, Missteps, and Misdiagnosis [2.0]	Lone Star DEFGH



MISSION :

NANOS is dedicated to achieving excellence in care of patients with neuro-ophthalmic diseases by the support and promotion of education, research, and the practice of neuro-ophthalmology.

Welcome

Hello! On behalf of the North American Neuro-Ophthalmology Society (NANOS), we are excited to welcome you to the 48th Annual Meeting. Health and well-being of our attendees is our top priority and we implemented new health and safety measures to ensure a safe, inclusive, and welcoming environment for all.

The NANOS Annual Meeting continues to be the premier meeting for cutting-edge innovation and advances in Neuro-Ophthalmology. This year's meeting will provide a forum for everyone to come together from across the globe to share expertise and advance the field of Neuro-Ophthalmology through case discussions, didactic sessions, workshops, and networking opportunities. We look forward to you being part of it!

The NANOS Scientific Program Committee has developed a spectacular program. This year's meeting covers many topics and features symposia on State of the Art in Neuro-Ophthalmic Disease, Hot Topics!, Mitochondrial Disorders: More than the Optic Nerve, Does My Patient Need Surgery/A Procedure? Indications, Outcomes, and More!, Functional Disorders and the Neuro-Ophthalmologist, and Complex Cases in Pediatric Neuro-Ophthalmology: Avoiding Mimickers, Missteps, and Misdiagnosis. Optional symposia include Fostering Leadership and Mentorship in Neuro-Ophthalmology: Evolving Concepts from Medical School to Retirement, Challenging Cases for Surgical Neuro-Ophthalmologists, and Vestibular and Ocular Motor Skills Transfer. To accommodate the continual growth of high-quality abstract submissions, NANOS will host two Meet the Poster Author Sessions that will include both Descriptive Studies and Analytical Studies in Neuro-Ophthalmology. By popular demand, our posters will be featured virtually to allow for more viewing time prior to the Meet the Poster Author sessions. Our platform sessions will feature innovative scientific presentations.

Please join us at the Welcome Reception on Saturday, February 12th at 6:00 pm. Heavy hors d'oeuvres and drinks are provided, followed by line dancing instruction.

Be sure to attend the Business Meeting on Sunday, February 13th at 2:30 pm in Lone Star DEFGH.

Breakfast for registrants only will be provided daily. Lunch will be provided on Sunday, February 13th. Everyone is invited to participate in the industry lunch symposium hosted by Horizon Therapeutics on Monday, February 14th and CME industry lunch symposium organized by Vindico Medical Education on Tuesday, February 15th.

We are excited to offer a professional headshot photo station this year. Instructions for signing up are on Page 3.

Finally, put on your best Western attire and join us for a fun night of celebration at the Annual Banquet on Wednesday, February 16th! Dinner and awards from 6:30 - 8:00 pm. Music and dancing begin at 8:00 pm. Group line dancing performances are encouraged! We will also have a photo booth with props so you can take home a memento from the evening. Guest tickets are available for purchase with online registration or onsite.

I want to personally thank the Scientific Program Committee, Walsh Committee and Organizers, Abstract Committee, Development Committee, CME Committee, NANOS Board of Directors, Meeting Faculty, NANOS Executive Office, and everyone else who has generously donated their time and efforts to put together this outstanding meeting.

I hope you enjoy the 2022 NANOS Annual Meeting!

Valerie Biousse, MD
NANOS President





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GENERAL INFORMATION

EXHIBITOR HOURS:

This year's Exhibit Hall is located in Griffin Hall. The Exhibit Hall will be open during the days and times listed below. Be sure to visit the exhibitors during breakfast and coffee breaks, as they help make this meeting possible!

Monday, February 14th	6:30 am – 10:00 am
Tuesday, February 15th	6:30 am – 10:00 am
Wednesday, February 16th	6:30 am – 10:00 am

NANOS REGISTRATION/HELP DESK HOURS:

Location:	Lone Star Foyer
Saturday:	2:00 pm – 7:30 pm
Sunday:	6:30 am – 5:30 pm
Monday:	6:30 am – 5:00 pm
Tuesday:	6:30 am – 12:00 pm
Wednesday:	6:30 am – 12:30 pm
Thursday:	6:30 am – 12:00 pm

NEW THIS YEAR!

PROFESSIONAL HEADSHOT PHOTO BOOTH

Need a new professional headshot? Stop by the professional headshot booth from Sunday through Tuesday located in room 304 to have one taken. Complimentary for all attendees and guests. Sign up here:



Sunday, February 13th	6:30 am – 4:30 pm
Monday, February 14th	6:30 am – 4:30 pm
Tuesday, February 15th	6:30 am – 4:30 pm

WIFI INSTRUCTIONS:

Network name: JWMarriott_Conference
Passcode: NANOS22



CME

The North American Neuro-Ophthalmology Society is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Claiming CME is easy:

1. Click on the Evaluations icon in the mobile app and complete the evaluation for each session you attended OR visit the Annual Meeting Website (login required) and click on the Evaluations tile to complete the evaluations for each session you attended.
2. Complete the Overall Meeting Evaluation.
3. If claiming MOC credits, you must complete the Pre-Test and Post-Test.
4. Click download CME Certificate to download your certificate by March 4th, 2022.

Total Annual Meeting Credits (in-person):

30 AMA PRA Category 1 Credits™

Total Annual Meeting Credits (on-demand):

28 AMA PRA Category 1 Credits™

ABPN Self-Assessment CME

The American Board of Psychiatry and Neurology has reviewed the NANOS Annual Meeting and has approved this activity as part of a comprehensive self-assessment activity, which is managed by the ABMS as a necessary component of continuing certification. More information can be found at www.abpn.com.

ABO Self-Assessment CME

Successful completion of this CME activity, which includes participation in the evaluation component, earns credit toward the Lifelong Learning Self-Assessment requirement for the American Board of Ophthalmology's Continuing Certification program. It is the CME activity provider's responsibility to submit learner completion information to ACCME for the purpose of granting credit. More information can be found at www.abop.org.



Guide to using the eventScribe® App for NANOS 48th Annual Meeting

1. Download the eventScribe® App

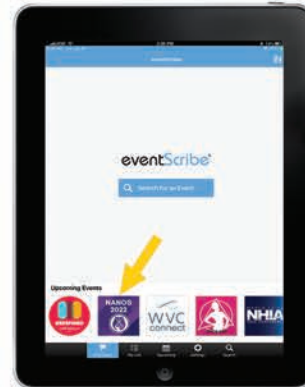
Scan this QR code for the App Store and Google Play. Download the eventScribe App to your device.



Scan the QR Code or go to the Apple App Store or Google Play and search for “eventscribe”

INSTALL and **OPEN** the eventscribe app, then look for your event icon or **SEARCH** for your event app by entering “**2022 NANOS 48th Annual Meeting**”

CLICK to launch your event’s app.



The eventScribe icon will appear on your device once it’s been downloaded from your app store. Click on the eventScribe icon to launch and then locate the “**2022 NANOS 48th Annual Meeting**” event app.

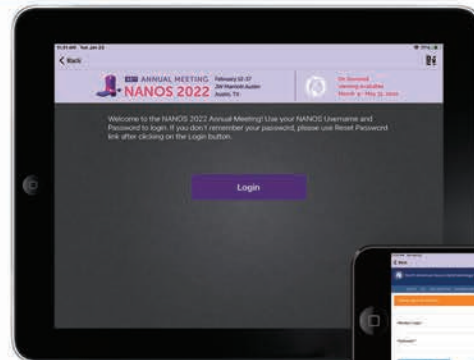
2. Login to NANOS 48th Annual Meeting App



Event Icon

To start using your event app, select the “**Login**” to proceed to the login page. You need to enter your username and password.

Forgot Password? Use the “**Reset Password**” link on the login page.



Forgot Password?
Use the “Reset Password” link on this page.



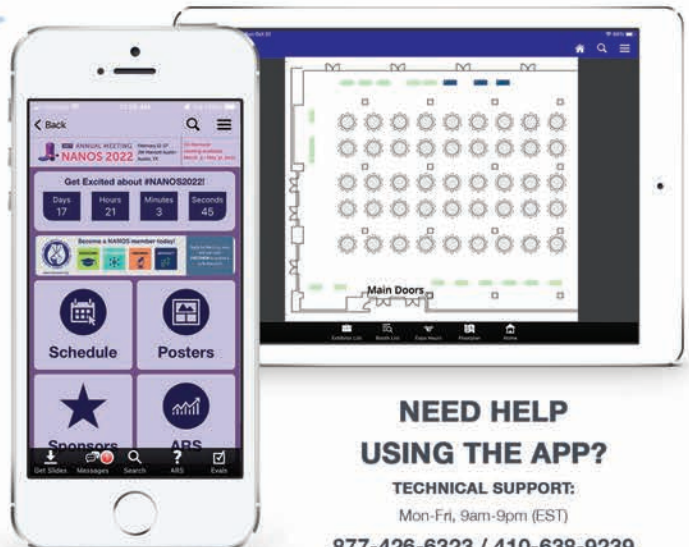
3. Use the app and engage with the event!

Locate the full conference schedule from the mobile app. Learn about our speakers, network and message other attendees (be sure to agree to “share” your information when you log in).

Our exhibitors have exciting booths set up and ready for you to visit in person. Use the app’s interactive floor plan to find your favorite exhibitors.

Look for instant notifications with the mobile app from event organizers for important updates and messages.

Enjoy the Conference!



**NEED HELP
USING THE APP?**

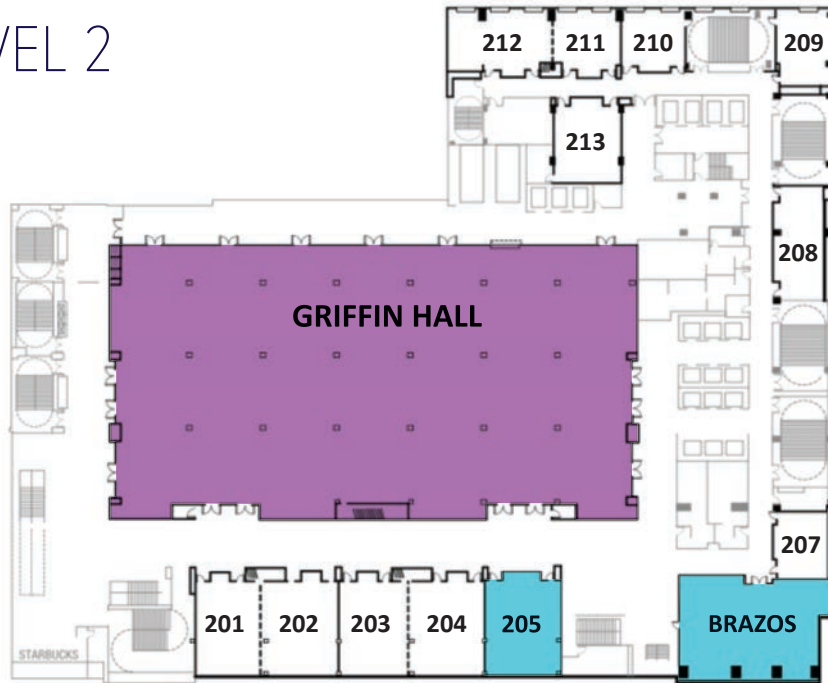
TECHNICAL SUPPORT:

Mon-Fri, 9am-9pm (EST)

877-426-6323 / 410-638-9239

*Download the app before the event starts to make sure you login properly.

LEVEL 2



LEVEL 3



- Receptions – Lone Star ABC**
- General Session – Lone Star DEFGH**
- Registration – Lone Star Foyer**
- Committee Meetings – Brazos and Room 205**
- Exhibits/Coffee Breaks/Meals/Meet the Poster Author – Griffin Hall**

PROGRAM



SATURDAY, FEBRUARY 12TH

8:00 am – 12:00 pm	NANOS Board of Directors Meeting	Brazos
2:00 pm – 7:30 pm	Registration/Help Desk	Lone Star Foyer
4:00 pm – 5:00 pm	Neuro-Radiology Symposium [1.0]	Lone Star DEFGH
	<i>Manraj K.S. Heran, MD, FRCPC</i>	

This neuroradiology session is designed to provide participants with education and information regarding (1) the imaging appearance and evaluation of orbital vascular anomalies and (2) discuss management strategies for a range of low- and high-flow malformations involving the orbit and cavernous sinus region.

Upon completion of this session, participants should be able to: (1) diagnose the common vascular anomalies affecting the orbit, as well as identify their key imaging features and (2) become familiar with the types of medications and image-guided interventional techniques used for treatment of these conditions.

6:00 pm – 9:30 pm	Welcome Reception and Line Dancing Lesson	Lone Star ABC
	(with support from Viridian Therapeutics, Inc.)	

All are welcome! Reconnect with your NANOS colleagues during the reception from 6:00 – 7:30 pm and then join us for a lesson in line dancing led by professionals. Heavy hors d'oeuvres provided at the reception.





SUNDAY, FEBRUARY 13TH

6:30 am – 7:30 am	Breakfast	Griffin Hall
6:30 am – 5:30 pm	Registration/Help Desk	Lone Star Foyer
7:30 am – 9:30 am	Frank B. Walsh (I) [2.0]	Lone Star DEFGH

Host: University of British Columbia

Chair: Jason Barton, MD, PhD, FRCPC

Committee Members: Jean Y. Chuo, MD, Kristopher Kowal, MD, Anastasia Neufeld, MD, FRCSC, DABO, Claire Sheldon, MD, PhD, Sara Ann Simpson, MD, FRCPC, and Salina Teja, MD, FRCSC

Expert Panel:

Neuroradiologist: Manraj K.S. Heran, MD, FRCPC

Neuropathologist: Veronica Hirsch-Reinshagen, MD, PhD, FRCPC

This session is designed to present complex neuro-ophthalmic cases that impact the human visual pathways and ocular motor systems. The format is a clinicopathologic conference. Clinical cases will be presented by neuro-ophthalmologists with comments by a neuroradiologist, neuropathologist and other selected experts. Neuroimaging, laboratory and surgical pathology data will help illustrate clinical point. Cases will be discussed from clinical, anatomic, radiologic and pathologic aspects with emphasis on diagnosis, pathophysiology and management.

Upon completion of this session, participants should be able to: (1) recognize the varied presentations of neuro-ophthalmic disease, (2) correlate the anatomic localization and histopathologic appearance with the clinical presentations, (3) use radiologic procedures in diagnosis effectively, (4) recognize both the value and limitations of neuropathology, and (5) discuss newly described diseases and their connection.

Moderators: Kristopher Kowal, MD, Anastasia Neufeld, MD, FRCSC, DABO, Dane Breker, MD, and Sophia Chung, MD

PROGRAM

7:30 am – 7:45 am	Welcome/Introduction	
7:45 am – 8:05 am	Hydrocephalus Appetizer, TED Entrée, Side of Bipolar Disease.	
	Would You Like a Meatball With That? <i>Eric Caskey, MD</i>	
8:05 am – 8:25 am	Not Another IgG4 Case! <i>Anne R. Kao, MD</i>	
8:25 am – 8:45 am	Some Heads Are Harder Than Others, <i>Steven A. Newman, MD</i>	
8:45 am – 9:05 am	Is the Treatment Working? Yes, the Patient Is Getting Worse! <i>Walid Bouthour, MD</i>	
9:05 am – 9:25 am	WD-40: A Multi-Use Product, <i>Georgia Kaidonis, MD, PhD</i>	
9:25 am – 9:30 am	Wrap Up	
9:30 am – 10:00 am	Coffee Break	Griffin Hall
10:00 am – 11:45 am	Frank B. Walsh (II) [1.75]	Lone Star DEFGH
	<i>Moderators: Claire Sheldon, MD, PhD, Salina Teja, MD, FRCSC, Lynn K. Gordon, MD, PhD and Sangeeta Khanna, MD</i>	
10:00 am – 10:20 am	Just a Flu? <i>Lily “Tali” Okrent Smolar, MD</i>	
10:20 am – 10:40 am	All in the Family, <i>Homer Chiang, MD</i>	
10:40 am – 11:00 am	Waiting for That ‘Bing’ Moment to Get the Diagnosis, <i>Jenny L. Hepschke, MBBS, BSc(Med), DM</i>	
11:00 am – 11:20 am	Thinking Outside of the Lines, <i>Carleigh N. Bruce, MD</i>	
11:20 am – 11:40 am	Double Crossed, <i>Jeffrey Gluckstein, MD</i>	
11:40 am – 11:45 am	Morning Wrap-Up	
11:45 am – 12:30 pm	Lunch	Griffin Hall
12:00 pm – 1:00 pm	Fellowship Directors Committee Meeting	Brazos
12:30 pm – 2:30 pm	Meet the Poster Author: Descriptive Studies	Griffin Hall
12:30 pm – 1:30 pm	Odd Numbered Posters	
1:30 pm – 2:30 pm	Even Numbered Posters	
2:30 pm – 3:00 pm	Business Meeting	Lone Star DEFGH
3:00 pm – 5:15 pm	Frank B. Walsh (III) [2.25]	Lone Star DEFGH
	<i>Jean Y. Chuo, MD, Sara Ann Simpson, MD, FRCPC, and Peter Quiros, MD</i>	
3:00 pm – 3:20 pm	The Inconspicuous Cysts, <i>Lily Zhang, MD</i>	
3:20 pm – 3:40 pm	The Nidus of the Neuropathy, <i>Heather M. McDonald, BSc, MD</i>	
3:40 pm – 4:00 pm	A Nod to the Nodule, <i>Natalie Brossard, MD, MSc</i>	
4:00 pm – 4:20 pm	Pseudo-Pseudotumor Cerebri? <i>Etienne Benard-Seguin, MD, BSc</i>	
4:20 pm – 4:40 pm	An Apple a Day... <i>Joseph W. Fong, MD</i>	
4:40 pm – 5:00 pm	The Grey Area of White Matter, <i>Parker Bohm, MD</i>	
5:00 pm – 5:15 pm	Closing Remarks	
5:30 pm – 6:00 pm	Walsh Committee Meeting	Brazos
5:45 pm – 6:45 pm	Members-in-Training Reception	Lone Star ABC

(This reception is for Students, Residents, Fellows-in-Training, NANOS Board of Directors members, Fellowship Directors, Student Clerkship, and Neurology and Ophthalmology Residency Directors.)

Back this year! All fellowship directors with availability and applicants or potential applicants looking for a fellowship are invited to participate in fellowship “speed dating.” If you have a vacancy during these fellowship periods, please stop by.

6:00 pm – 6:15 pm	2022 – 2023 Fellowship Period
6:15 pm – 6:35 pm	2023 – 2024 Fellowship Period
6:35 pm – 6:45 pm	2024 – 2025 Fellowship Period





MONDAY, FEBRUARY 14TH

6:00 am – 6:45 am	Yoga	301/302
6:30 am – 7:30 am	Breakfast with Exhibitors	Griffin Hall
6:30 am – 7:30 am	Breakfast with the Novices	Griffin Hall

Join us in the reserved YONO area at breakfast for table discussions led by senior members and/or YONOs to discuss topics relevant to aspiring or current YONOs.

6:30 am – 7:30 am	Choosing Neurology vs Ophthalmology and Building a Successful Application , <i>Melinda Y. Chang, MD and Stacy V. Smith, MD</i>
6:30 am – 7:30 am	Surgical Neuro-Ophthalmology , <i>Lauren Ditta, MD and Howard R. Krauss, MD, SM, BEEF</i>
6:30 am – 7:30 am	Clinical Neuro-Ophthalmology - Combining With Other Neuro Subspecialties , <i>Fiona Costello, MD and Kathleen Digre, MD</i>

6:30 am – 5:00 pm	Registration/Help Desk	Lone Star Foyer
6:30 am – 7:30 am	NOVEL/Editorial Board/Curriculum Committee Meeting	Brazos
7:30 am – 9:30 am	State of the Art in Neuro-Ophthalmic Disease [2.0]	Lone Star DEFGH
	<i>Moderators: M. Tariq Bhatti, MD and Nailyn Rasool, MD</i>	

In the past several years, significant progress has been made in the understanding of the pathogenesis, clinical manifestations, and management of a variety of neuro-ophthalmic diseases. The goal of this session is to provide a review on the current status and new developments of five important disease processes: neurotrophic keratopathy, cerebrospinal fluid dynamics, multiple sclerosis, glaucoma and orbital inflammatory disease. Neurotrophic keratopathy can be vision threatening and, in some patients, calcitrant to standard therapy. The indications and surgical technique of corneal neurotization will be discussed. The exact etiopathogenesis of idiopathic intracranial hypertension remains unclear. However, recent research has suggested that the central nervous system lymphatic and glymphatic systems may contribute to the development of elevated intracranial pressure. This complex issue will be presented with a focus on the current literature. The therapeutic armamentarium of multiple sclerosis continues to grow at an extraordinary and accelerated pace. New immunomodulating therapies will be reviewed, which provide physicians and patients alike with an unprecedented number of options. Glaucoma remains an enigma not only in terms of the cause but treatment. The diagnostic challenge of glaucomatous optic neuropathy mimicking other types of optic neuropathies will be discussed with an emphasis on clinical manifestations and a targeted evaluation. A wide variety of inflammatory conditions can affect the orbit. The diagnostic evaluation and treatment modalities of orbital inflammatory disease will be summarized.

PROGRAM

Upon completion of this symposium, learners should be able to: (1) define the indications for corneal neurotization, (2) explain the role of the lymphatic and glymphatic system in cerebrospinal fluid dynamics, (3) identify new and important advancements in multiple sclerosis therapeutics, (4) differentiate glaucomatous from non-glaucomatous optic neuropathies, and (5) recognize the variety of different etiologies resulting in orbital inflammation.

7:30 am – 7:35 am	Introduction
7:35 am – 7:55 am	Preserving and Re-innervating the Corneal Surface, <i>Kimberly Cockerham, MD</i>
7:55 am – 8:15 am	CNS Lymphatics and Glymphatics and the Eye, <i>Esriel H. Killer, MD</i>
8:15 am – 8:35 am	Advances in MS Therapy, <i>Bart K. Chwalisz, MD</i>
8:35 am – 8:55 am	Glaucoma and the Neuro-Ophthalmologist: A Case-Based Approach, <i>Helen Danesh-Meyer, MD, PhD</i>
8:55 am – 9:15 am	Inflammatory Orbital Disorders, <i>Nailyn Rasool, MD</i>
9:15 am – 9:30 am	Q&A

9:30 am – 10:00 am	Coffee with Exhibitors	Griffin Hall
10:00 am – 12:00 pm	Hot Topics! [2.0]	Lone Star DEFGH
	<i>Moderators: Chantal Boisvert, OD, MD and Alex Fraser, MD</i>	

This symposium is designed to provide the audience with a practical, evidence-based discussion on how to manage important and emerging clinical scenarios, which are of specific and contemporary interest to the neuro-ophthalmic community. “Hot topics” will be presented by established experts and thought leaders for the respective conditions.

Upon completion of this symposium, learners should be able to: (1) recognize when a neuro-ophthalmic problem is related to COVID-19, (2) summarize the treatment of MOG-related disorders, (3) state when a myasthenia gravis patient should be referred for thymectomy, and (4) recognize the utility of multimodal OCT in the diagnosis of optic disc drusen (ODD) and exclusion of mimics.

10:00 am – 10:20 am	Patient-Reported Outcome Measures in Neuro-Ophthalmic Clinical Research, <i>Lindsey De Lott, MD, MS</i>
10:20 am – 10:40 am	COVID-19: Where Are We? <i>Cristiano Oliveira, MD</i>
10:40 am – 11:00 am	Treatment of MOG-Related Disorders, <i>John J. Chen, MD, PhD</i>
11:00 am – 11:20 am	Myasthenia Gravis: Time for Thymectomy? <i>Judith Warner, MD</i>
11:20 am – 11:40 am	Mining for ODD Using Multimodal OCT, <i>Steffen Hamann, MD, PhD</i>
11:40 am – 12:00 pm	Q&A

12:00 pm – 12:10 pm	NOVEL Update, <i>Kathleen Digre, MD</i>	Lone Star DEFGH
12:10 pm – 1:30 pm	Lunch Break	
12:20 pm – 1:20 pm	Real-World Experience With a Treatment for Thyroid Eye Disease (TED)*, <i>Madhura A. Tamhankar, MD</i>	Lone Star ABC
	<i>*This lunch symposium is organized by Horizon Therapeutics plc.</i>	

Learn about key clinical data and explore case studies of chronic TED and compressive optic neuropathy (CON) patients. This presentation is intended for U.S.-based healthcare professionals.

1:30 pm – 3:15 pm	Fostering Leadership and Mentorship in Neuro-Ophthalmology: Evolving Concepts from Medical School to Retirement [1.75]	Lone Star DEFGH
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The importance of leadership through mentorship impacts every aspect of one’s neuro-ophthalmology career. This symposium will focus on fostering mentorship cultures and leadership opportunities by: introducing the concepts of mentorship from a 360-degree perspective; discussing approaches to recruitment of trainees into our discipline; highlighting diverse early career paths; exploring continued leadership roles outside the clinical sphere; and reflecting on later career contributions. Come for stories, discussion, and advice for all career stages. Attendance welcomed by all!

Upon completion of this symposium, learners should be able to: (1) identify the common perceived barriers to hosting medical students in a neuro-ophthalmology clinic, (2) describe ways to minimize barriers to hosting medical students in a neuro-ophthalmology clinic, (3) enumerate different neuro-ophthalmologist practice models, and (4) describe revenue-generating activities outside the clinic that can be gratifying for the neuro-ophthalmologist.

1:30 pm – 1:35 pm	Introduction, Kimberly Winges, MD
1:35 pm – 2:05 pm	How to Foster a Mentorship Culture <i>Moderators: Kimberly Winges, MD and Nailyn Rasool, MD</i> <i>Panelists: Sangeeta Khanna, MD, Susan Mollan, FRCOphth and Barbara Yates, MD</i>
2:05 pm – 2:30 pm	How to Encourage Future Generations of Neuro-Ophthalmology Leaders Through the Medical Student and Resident Pipeline <i>Moderators: Kevin Lai, MD and Collin McClelland, MD</i> <i>Panelists: Courtney E. Francis, MD, Nancy J. Newman, MD and Peter Quiros, MD</i>
2:30 pm – 3:10 pm	Seeking New Opportunities to Train and Lead Throughout One's Career <i>Moderators: Madhura Tamhankar, MD and Barbara Yates, MD</i> <i>Panelists: Gena Heidary, MD, PhD, Melissa W. Ko, MD, Nailyn Rasool, MD, and Valerie Purvin, MD</i>
3:10 pm – 3:15 pm	Closing, Kevin Lai, MD
3:30 pm – 4:45 pm	Challenging Cases for Surgical Neuro-Ophthalmologists [1.25] Lone Star DEFGH <i>Moderators: Ore-ofe Adesina, MD and Courtney E. Francis, MD</i> <i>Panelists: Lauren Ditta, MD, Valerie Elmalem, MD, Howard R. Krauss, MD, SM, BEEE, Vivek Patel, MD, Roger Turbin, MD, FACS and Nicholas Volpe, MD</i>

This symposium has been created to highlight the surgical aspects of our field and to educate neuro-ophthalmologists and trainees through the presentation and discussion of complex surgical neuro-ophthalmic case scenarios.

Upon completion of this symposium, learners should be able to: (1) recognize when surgical intervention can or should be applied to the management of neuro-ophthalmic patients, (2) compare and contrast surgical options for patients with neuro-ophthalmic diagnoses amenable to surgical intervention, and (3) identify gaps in understanding of surgical interventions for neuro-ophthalmic patients and utilize the skills gained to apply to patient care.

5:00 pm – 7:00 pm	Scientific Platform Session I [2.0] Lone Star DEFGH <i>Moderators: Beau Bruce, MD, PhD and Caroline Froment, MD, PhD</i>
5:00 pm – 5:15 pm	Modulation of the Neuro-Glia-Vascular Niche by Plasma From Patients With Nonarteritic Anterior Ischemic Optic Neuropathy, Yaping Joyce Liao, MD, PhD
5:15 pm – 5:30 pm	Portable Vacuum Goggles Significantly Increase Optic Nerve Blood Flow in Human Glaucoma and NAION Eyes, Randy Kardon, MD, PhD
5:30 pm – 5:45 pm	Do Retinal Microvascular Changes Improve TIA Risk Stratification Scores? ABCD2 vs. ABCDEye, Beau Bruce, MD, PhD
5:45 pm – 6:00 pm	Magnitude and Evolution of Optic Nerve Head and Peripapillary Hyperemic Response Depends on Flicker Duration, Moe Aung, MD, PhD
6:00 pm – 6:15 pm	Retinal Vessel Dynamics as a Surrogate Marker for Intracranial Pressure in Idiopathic Intracranial Hypertension, Elisabeth Wibroe, MD
6:15 pm – 6:30 pm	Deep Learning Can Accurately Distinguish Between True Papilledema and Optic Disc Drusen on Fundus Photographs, Kanchalika Sathianvichitr, MD
6:30 pm – 6:45 pm	A Prospective, Clinic-Based Evaluation of a Trained Deep-Learning System Reveals High Accuracy for Papilledema Detection, Raymond Najjar, PhD
6:45 pm – 7:00 pm	Proton Nuclear Magnetic Resonance Spectroscopy Metabolomic Analysis in Idiopathic Intracranial Hypertension Identifies Insights Into Pathogenesis, Andreas Yiangou, MRCP





TUESDAY, FEBRUARY 15TH

6:00 am – 6:45 am	Yoga	301/302
6:30 am – 7:30 am	Breakfast with Exhibitors	Griffin Hall
6:30 am – 7:30 am	Breakfast with the Novices	Griffin Hall

Join us in the reserved YONO area at breakfast for table discussions led by senior members and/or YONOs to discuss topics relevant to aspiring or current YONOs.

6:30 am – 7:30 am	Negotiating/Interviewing for Jobs , <i>Kimberly Gokoffski, MD, PhD and Vivek Patel, MD</i>	
6:30 am – 7:30 am	Academic/Private Practice/Hybrid Models of Neuro-Ophthalmic Practice , <i>Patricia Johnston McNussen, MD and Valerie Purvin, MD</i>	
6:30 am – 12:00 pm	Registration/Help Desk	Lone Star Foyer
6:30 am – 7:30 am	JNO Editorial Board Meeting	Brazos
7:30 am – 9:30 am	Scientific Platform Session II [2.0] <i>Moderators: Melinda Y. Chang, MD and Marc Dinkin, MD</i>	Lone Star DEFGH
7:30 am – 7:45 am	Impact of Glucose on Mitochondrial Function in a Brain Slice	
7:45 am – 8:00 am	Model of Headache Mechanisms , <i>Olivia Grech, MRes</i>	
8:00 am – 8:15 am	How Much Weight Loss is Required to Reduce Intracranial Pressure in Idiopathic Intracranial Hypertension? <i>Susan Mollan, MB ChB, FRCOphth</i>	
8:15 am – 8:30 am	A Randomized Controlled, Trial of the GLP-1 Receptor Agonist Exenatide in Idiopathic Intracranial Hypertension , <i>James Mitchell, MB, BS, MRCP</i>	
8:30 am – 8:45 am	Intra-Cranial Pressure in Idiopathic Intracranial Hypertension, Insights From Long-Term Telemetric Monitoring , <i>Alex Sinclair, MD, PhD</i>	
8:45 am – 9:00 am	A Randomized Prospective Trial Comparing Repository Corticotropin Injection and Intravenous Methylprednisolone in Acute Optic Neuritis , <i>Jeffrey Bennett, MD, PhD</i>	
9:00 am – 9:15 am	International Multicenter Retrospective Study on Maintenance Intravenous Immunoglobulin in Preventing Relapse in Adult MOG-Antibody-Associated Disease , <i>John J. Chen, MD, PhD</i>	
9:15 am – 9:30 am	Long-Term Efficacy of Satralizumab in Neuromyelitis Optica Spectrum Disorder: Results from SAKuraSky and SAKuraStar , <i>Ingo Kleiter, MD</i>	
9:30 am – 10:00 am	Referral Patterns to Neuro-Ophthalmology for Presumptive Idiopathic Intracranial Hypertension (IIH) Based on Isolated Neuroimaging Findings , <i>Andre Aung, MD</i>	
9:30 am – 10:00 am	Coffee with Exhibitors	Griffin Hall
	(with support from GenSight Biologics)	
10:00 am – 12:00 pm	Scientific Platform Session III [2.0] <i>Moderators: Robert Avery, DO, MSCE and Stacy Pineles, MD</i>	Lone Star DEFGH

10:00 am – 10:15 am	Sustainability of Teprotumumab Efficacy in Thyroid Eye Disease , <i>Prem S. Subramanian, MD, PhD</i>
10:15 am – 10:30 am	Prevalence of Choroidal Abnormalities and Lisch Nodules in Children Meeting Clinical/ Molecular Diagnosis of NF1 , <i>Mariana Flores Pimentel, MD, FICO</i>
10:30 am – 10:45 am	Peripapillary Hyperreflective Ovoid Mass-like Structures (PHOMS) in a Child Cohort , <i>Lasse Malmqvist, MD, PhD</i>
10:45 am – 11:00 am	Continuous Hypoxia Reduces Retinal Ganglion Cell Degeneration in a Mouse Model of Mitochondrial Optic Neuropathy , <i>Sidney Gospe, MD, PhD</i>
11:00 am – 11:15 am	Genotype-Phenotype Correlations in Autosomal Dominant Optic Atrophy , <i>Joshua Harvey, MA, BM, BCh, FRCOphth</i>
11:15 am – 11:30 am	REFLECT Trial: Efficacy and Safety of Bilateral Gene Therapy for Leber Hereditary Optic Neuropathy , <i>Nancy J. Newman, MD</i>
11:30 am – 11:45 am	Retrograde Transport to Retinal Ganglion Cells: An Alternative Strategy for Gene Delivery in Optic Neuropathies , <i>Jonathan Horton, MD, PhD</i>
11:45 am – 12:00 pm	Electric Fields Direct Full-Length Optic Nerve Regeneration and Partial Restoration of Visual Function , <i>Micalla Peng, BS</i>
12:00 pm – 12:10 pm	JNO Update , <i>Laura Balcer, MD, MSCE</i> Lone Star DEFGH
12:10 pm – 6:00 pm	Afternoon free for activities
12:25 pm – 1:25 pm	NMOSD: Differentiating New Advances in the Diagnostic and Treatment Armamentarium* Lone Star ABC <i>*This lunch symposium is organized by Vindico Medical Education with grant support from Genentech. NANOS is not the CME provider for this symposium.</i>

Upon completion of this symposium, learners should be able to: (1) summarize evidence-based criteria that aides in early detection and staging of neuromyelitis optica spectrum disorder (NMOSD), (2) differentiate the mechanisms of action of currently available NMOSD therapeutics to better understand how they can be utilized in individual patients, and (3) assess current evidence pertaining to the safety and efficacy of monoclonal antibodies used in the treatment of NMOSD, including their ability to control acute attacks and prevent future relapses.

12:25 pm – 12:30 pm	Introduction and Pre-Test , <i>Andrew G. Lee, MD</i>
12:30 pm – 12:40 pm	NMOSD: A Diagnostic Dilemma , <i>Heather E. Moss, MD, PhD</i>
12:40 pm – 1:00 pm	Differentiating Therapeutic Options for NMOSD: Applying Evidence to Practice , <i>John J. Chen, MD, PhD</i>
1:00 pm – 1:10 pm	Panel Discussion with Case Presentation – Treatment of NMOSD
1:10 pm – 1:25 pm	Post-Test and Q&A , <i>Andrew G. Lee, MD</i>
3:30 pm – 5:35 pm	YONO Forum Lone Star ABC
3:30 pm – 3:35 pm	Introduction , <i>Kevin Lai, MD</i>
3:35 pm – 3:50 pm	Improving Your Professional Efficiency , <i>Andrew G. Lee, MD</i>
3:50 pm – 4:05 pm	Roundtable Discussion: Improving Your Professional Efficiency
4:05 pm – 4:20 pm	Building Professional Support Networks , <i>Prem S. Subramanian, MD, PhD and Valerie Biousse, MD</i>
4:20 pm – 4:35 pm	Roundtable Discussion: Building Professional Support Networks
4:35 pm – 4:50 pm	Maintaining Work/Life Balance , <i>Alfredo Sadun, MD</i>
4:50 pm – 5:05 pm	Roundtable Discussion: Maintaining Work/Life Balance
5:05 pm – 5:20 pm	Molding a Job You Love , <i>Nancy J. Newman, MD</i>
5:20 pm – 5:35 pm	Roundtable Discussion: Molding a Job You Love
5:35 pm	Conclusion
6:30 pm – 8:30 pm	Meet the Poster Author: Analytical StudiesGriffin Hall (with support from Viridian Therapeutics, Inc.)

Heavy hors d'oeuvres buffet included. Guest must purchase tickets for \$150 per person online or onsite.

6:30 pm – 7:30 pm	Odd Numbered Posters
7:30 pm – 8:30 pm	Even Numbered Posters
8:30 pm – 9:30 pm	Abstract Committee Meeting Brazos



WEDNESDAY, FEBRUARY 16TH

6:00 am – 6:45 am	Yoga	301/302
6:30 am – 7:30 am	Breakfast with Exhibitors	Griffin Hall
6:30 am – 7:30 am	Breakfast with the Novices	Griffin Hall

Join us in the reserved YONO area at breakfast for table discussions led by senior members and/or YONOs to discuss topics relevant to aspiring or current YONOs.

6:30 am – 7:30 am **Things I Wish I Knew Early in My Practice, Andrew Melson, MD**

6:30 am – 12:30 pm	Registration/Help Desk	Lone Star Foyer
6:30 am – 7:30 am	CME Committee Meeting	Brazos
6:45 am – 7:15 am	DEI Committee Meeting	205
7:30 am – 9:30 am	Mitochondrial Disorders: More Than the Optic Nerve [2.0]	Lone Star DEFGH
<i>Moderators: Kimberly Gokoffski, MD, PhD and Patrick Yu-Wai-Man, MD, PhD</i>		

Defects in mitochondrial metabolism result in a heterogeneous group of genetic disorders characterized by marked variability in clinical presentation. Uncovering the underlying causative mutations is challenging, complicated by the fact that two sets of genomes, the nuclear and mitochondrial genomes, can contribute to disease pathogenesis. This session will provide a clinically oriented overview of the latest advances made in uncovering the genetic basis of mitochondrial disorders, their variable phenotypes, including both ocular and extraocular manifestations, and the emerging treatment options that are being evaluated.

Upon completion of this symposium, learners should be able to: (1) describe the common genetic defects underlying mitochondrial disease, (2) recognize the ocular and extraocular manifestations of mitochondrial disease, and (3) discuss current and emerging treatments for mitochondrial disease.

7:30 am – 7:50 am	Mitochondrial Optic Neuropathies – Expanding Genotypes and Phenotypes, <i>Rustum Karanjia, MD, PhD</i>
7:50 am – 8:00 am	Q&A
8:00 am – 8:20 am	Mitochondrial Genetics – From Genes to Disease Mechanisms, Valerio Carelli, MD, PhD
8:20 am – 8:30 am	Q&A
8:30 am – 8:50 am	Myopathies and Cerebral Dysfunction, Michio Hirano, MD
8:50 am – 9:00 am	Q&A
9:00 am – 9:20 am	Current Treatment Strategies and Future Prospects for Mitochondrial Disease, <i>Nancy J. Newman, MD and Michio Hirano, MD</i>
9:20 am – 9:30 am	Q&A

9:30 am – 10:00 am	Coffee with Exhibitors	Griffin Hall
10:00 am – 11:30 am	Does My Patient Need Surgery/A Procedure? Indications, Outcomes, and More! [1.5]	Lone Star DEFGH
<i>Moderators: Madhu Agarwal, MD and Valerie Elmaleh, MD</i>		

Everchanging interventions provide the opportunity to understand best options for patients in our current practice. This symposium is dedicated to exploring surgical treatment options for a variety of neuro-ophthalmic conditions including idiopathic intracranial hypertension, strabismus and orbital lesions. As interventions become more varied and complex, the neuro-ophthalmologist must review novel and current surgical strategies for these patients.

Upon completion of this symposium, learners should be able to: (1) demonstrate the utility of optic nerve sheath fenestration and shunting in idiopathic intracranial hypertension, (2) differentiate between various surgical approaches to the orbit, (3) assess various surgical strategies for strabismus in a case-based approach, and (4) analyze endovascular techniques in idiopathic intracranial hypertension.

10:00 am – 10:18 am	Nuts and Bolts of Shunts: What to Tell My Patient About Them , <i>Tonya Stefkó, MD</i>
10:18 am – 10:36 am	Orbital Surgery: Approaches and Outcomes , <i>Howard R. Krauss, MD, SM, BEEB</i>
10:36 am – 10:54 am	Endovascular Treatments of Neuro-Ophthalmic Disorders , <i>Marc Dinkin, MD</i>
10:54 am – 11:12 am	Advanced Strabismus for the Non-Surgeon , <i>Madhura Tamhankar, MD</i>
11:12 am – 11:30 am	Q&A

11:30 am – 12:00 pm **Jacobson Lecture – The Power of Connection [0.5]**, *Fiona Costello, MD* Lone Star DEFGH

The 2022 Dr. Daniel Jacobson Lecture presented by Dr. Fiona Costello will highlight how the visual system provides a model of central nervous system (CNS) inflammatory disorders, through which mechanisms of brain injury and repair may be better understood.

Upon completion of this symposium, learners should be able to: (1) discuss current challenges in distinguishing optic neuritis subtypes, (2) review the role of the visual system in capturing mechanisms of CNS injury, (3) highlight future directions in developing visual biomarkers in multiple sclerosis and related disorders, and (4) describe the power of connection, from the inception of an idea to a worldwide network.

12:00 pm – 1:30 pm **Research Committee Meeting** Brazos
1:00 pm – 2:30 pm **WIN Forum – Our Time is Now** Lone Star ABC

We welcome all attendees to our WIN forum where we will focus on our WIN member accomplishments and highlight Dr. Sangeeta Khanna's (2020 awardee) and Dr. Jane Bailey's (2021 awardee) Leadership Development Grant experience, now named the Dr. Ivy Dreizin Leadership Development Grant. We look forward to reconnecting with our friends and colleagues in a social networking activity and hosting games with prizes.

2:30 pm – 4:30 pm **Vestibular and Ocular Motor Skills Transfer [2.0]** Lone Star DEFGH
Moderator: Dan Gold, DO
Facilitators: Shannon Beres, MD, Anthony Brune, DO, Marc Dinkin, MD, Eric Eggenberger, DO, MSEpi, Caroline Froment, MD, PhD, Kemar Green, DO, Scott N. Grossman, MD, Nicholas E. F. Hać, MD, David E. Hale, MD, Jorge Kattah, MD, Mark Morrow, MD, Sashank Prasad, MD, and Veeral Shah, MD, PhD

This symposium will provide a practical ocular motor/vestibular hands-on experience. With the help of roughly 18 NANOS members with expertise in the field, there will be 6 stations for the following: VOR testing, Positional Testing of Posterior Semicircular Canals, Positional Testing of Horizontal Semicircular Canals, Provocative Testing (nystagmus elicitation), Gaze Testing (ocular alignment, saccades, smooth ocular pursuit, and smooth eye-head tracking), and Nystagmus Interpretation.

Upon completion of this symposium, learners should be able to: (1) perform the HINTS exam (head impulse [VOR], nystagmus [naming and interpretation], test of skew [alignment]), (2) perform other ocular motor (saccades, pursuit, eye-head tracking) and provocative testing (head-shaking) to aid in localization, (3) apply the diagnostic Dix-Hallpike and supine roll positional maneuvers with proper technique, and (4) implement the most appropriate therapeutic maneuver.

4:45 pm – 5:45 pm **Consortium of Pediatric Neuro-Ophthalmologists (CPNO)** Brazos
All are welcome to attend!
Facilitators: Shannon Beres, MD and Gena Heidary, MD, PhD

6:30 pm – 12:00 am **Banquet** Lone Star DEFGH

Put on your best Western attire and join us for a fun night of celebration! Dinner and awards from 6:30 - 8:00 pm. Music and dancing to begin at 8:00 pm. Group line dancing performances are encouraged! We will also have a photo booth with props so you can take home a memento from the evening. Guest tickets are available for purchase at \$150 with online registration or onsite.



THURSDAY, FEBRUARY 17TH

6:30 am – 12:00 pm	Registration/Help Desk Lone Star Foyer
6:30 am – 7:30 am	Breakfast Griffin Hall
7:30 am – 9:30 am	Functional Disorders and the Neuro-Ophthalmologist [2.0] Lone Star DEFGH
	<i>Moderators: Norah Lincoff, MD and Meagan D. Seay, DO</i>

This symposium will clarify the definition of functional neurologic disorder (FND) and explore how it may present to a neuro-ophthalmologist. FND, previously known as “conversion disorder”, can include a constellation of symptoms, including sensory symptoms, fatigue states, change in mental status, movement disorders, as well as seizure. It is a separate entity from malingering, in which patients knowingly feign symptomatic illness. Treatment of FND usually necessitates a multidisciplinary team approach of physicians in neurology, psychiatry, and physical therapists. We will review the condition, treatment recommendations, and the differential diagnosis of this complicated disorder.

Upon completion of this symposium, learners should be able to: (1) understand the etiology of FND and how it differs from malingering, (2) establish a broad differential diagnosis and ensure accuracy in making a diagnosis of FND, and (3) increase awareness of treatments for FND.

7:30 am – 8:00 am	Classification of Functional Disorders and Role of Modern Neuroimaging , <i>Jeffrey P. Staab, MD, MS</i>
8:00 am – 8:22 am	Functional Visual Loss: Diagnosis, Pearls, and Pitfalls , <i>Gregory Van Stavern, MD</i>
8:22 am – 8:45 am	Delusions, Hallucinations, and Functional Neurologic Disorders: What are the “Connections”? <i>Victoria S. Pelak, MD</i>
8:45 am – 9:15 am	Treatments and Outcomes , <i>Jeffrey P. Staab, MD, MS</i>
9:15 am – 9:30 am	Q&A

9:30 am – 10:00 am	Coffee Break Lone Star Foyer
10:00 am – 12:00 pm	Complex Cases in Pediatric Neuro-Ophthalmology: Avoiding Mimickers, Missteps, and Misdiagnosis [2.0] Lone Star DEFGH
	<i>Moderators: Shannon Beres, MD and Gena Heidary, MD, PhD</i>

This symposium will examine pitfalls in management and diagnosis to be avoided in pediatric neuro-ophthalmology through a case-based format. Eight clinical cases will be presented with a focus on arriving at the correct diagnosis and evidence based best practices with respect to treatment and management of pediatric neuro-ophthalmic disease.

Upon completion of this symposium, learners should be able to (1) recognize common errors in diagnosis in pediatric neuro-ophthalmic disease and (2) apply most up to date evidence towards best practices in treatment and management of pediatric neuro-ophthalmic disease.

10:00 am – 10:15 am	A Boy with Decreased Vision , <i>Paul H. Phillips, MD</i>
10:15 am – 10:30 am	The Child With Blurred Vision , <i>Allison Liu, MD, PhD</i>
10:30 am – 10:45 am	Visual Loss, Behavioral Changes, and Overlooking , <i>Michael Brodsky, MD</i>
10:45 am – 11:00 am	Papilledema, Papillitis, or Papillopathy? - Optic Disc Findings in a Child With Alstrom Syndrome , <i>Melinda Y. Chang, MD</i>
11:00 am – 11:15 am	A Berr to Manage , <i>Eric D. Gaier, MD, PhD</i>
11:15 am – 11:30 am	Doc, I Really Can't See! <i>Mays El Dairi, MD</i>
11:30 am – 11:45 am	True or Fake? We Can All Make a Mistake... <i>Steven F. Stasheff, MD, PhD</i>
11:45 am – 12:00 pm	Double Vision, Double Again , <i>Virender Sachdeva, MS, DNB</i>

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**Ore-ofe Adesina, MD**

Robert Cizik Eye Clinic and Ruiz Department of Ophthalmology & Visual Science at McGovern Medical School at UT Health
Houston, TX

Madhu Agarwal, MD

Madhu R Agarwal MD
Newport Beach, CA

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Philadelphia, PA

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Mayo Clinic
Rochester, MN

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Duke University
Durham, NC

Dane Breker, MD

Director of Undergraduate Medical Education in Neurology, University of North Dakota; Associate Clinical Professor of Neurology, UND; Director of Neuro-Ophthalmology, Sanford Health
Fargo, ND

Michael Brodsky, MD

Mayo Clinic
Rochester, MN

Beau Bruce, MD

Emory University
Atlanta, GA

Anthony Brune, DO

Memorial Healthcare Institute for Neuroscience
Owosso, MI

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Bologna, Italy

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Vancouver, Canada

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Neuroimmunology, Massachusetts General Hospital; Neuro-ophthalmology, Massachusetts Eye & Ear Infirmary; Harvard Medical School
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San Diego, CA

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University of Auckland
New Zealand

Lindsey De Lott, MD, MS

University of Michigan
Ann Arbor, MI

Marc Dinkin, MD

Weill Cornell Medical College, Departments of Ophthalmology and Neurology
New York, NY

Lauren Ditta, MD

University of Tennessee Health Science Center, Le Bonheur Children's Hospital
Memphis, TN

Eric Eggenberger, DO, MSEpi

Mayo Clinic
Jacksonville, FL

Mays El-Dairi, MD

Duke Eye Center
Durham, NC

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New York Eye and Ear Infirmary of Mount Sinai
New York, NY

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Seattle, WA

Alex Fraser, MD

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London, Ontario, Canada

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Hospices Civils de Lyon, University Lyon I
Lyon, France

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Boston Children's Hospital, Harvard Medical School
Boston, MA

Kimberly Gokoffski, MD, PhD

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Los Angeles, CA

Dan Gold, DO

The Johns Hopkins University School of Medicine
Baltimore, MD

Lynn K. Gordon, MD, PhD

Stein Eye Institute, David Geffen School of
Medicine at UCLA
Los Angeles, CA

Kemar Green, DO

Johns Hopkins University School of Medicine
Baltimore, MD

Scott N. Grossman, MD

NYU Grossman School of Medicine
New York, NY

Nicholas E. F. Hać, MD

Johns Hopkins University
Baltimore, MD

David E. Hale, MD

Johns Hopkins Hospital
Baltimore, MD

Steffen Hamann, MD, PhD

Department of Ophthalmology, Rigshospitalet,
University of Copenhagen, Denmark
Copenhagen, Denmark

Gena Heidary, MD, PhD

Boston Children's Hospital
Boston, MA

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Vancouver, BC, Canada

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Columbia University Irving Medical Center
New York, NY

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Vancouver, BC, Canada

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Ottawa Eye Institute, University of Ottawa;
Doheny Eye Centers UCLA, Department of
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Medicine at UCLA
Ottawa, Canada
Los Angeles, CA

Jorge Kattah, MD

University of Illinois College of Medicine, Peoria
Peoria, IL

Sangeeta Khanna, MD

University of Michigan
Ann Arbor, MI

Esriel H. Killer, MD

Center of Biomedicine, University Basel
Switzerland
Basel, Switzerland

Melissa W. Ko, MD

Indiana University School of Medicine
Indianapolis, IN

Kristopher Kowal, MD

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Surrey, BC, Canada

Howard R. Krauss, MD, SM, BEEB

Pacific Neuroscience Institute
Santa Monica, CA

Kevin Lai, MD

Midwest Eye Institute, Circle City Neuro-
Ophthalmology
Carmel, IN

Norah Lincoff, MD

Department of Neurology, Jacobs School of
Medicine, SUNY at Buffalo
Buffalo, NY

Allison Liu, MD, PhD

UC Davis Eye Center
Sacramento, CA

Collin McClelland, MD

University of Minnesota
Minneapolis, MN

Susan Mollan, FRCOphth

University Hospitals Birmingham NHS
Foundation Trust
Birmingham, England

Mark Morrow, MD

Montage Medical Group
Monterey, CA

Anastasia Neufeld, MD, FRCSC, DABO

University of British Columbia
Vancouver, BC, Canada

Nancy J. Newman, MD

Emory University School of Medicine
Atlanta, GA

Cristiano Oliveira, MD

New York Presbyterian Weill Cornell Medical
College
New York, NY

Vivek Patel, MD

University of California, Irvine; Gavin Herbert
Eye Institute
Irvine, CA

Victoria S. Pelak, MD

University of Colorado School of Medicine
Aurora, CO

Paul H. Phillips, MD

University of Arkansas for Medical Sciences
Little Rock, AR

Stacy Pineles, MD

University of California, Los Angeles
Los Angeles, CA

Sashank Prasad, MD

Brigham and Women's Hospital, Harvard
Medical School
Boston, MA

Valerie Purvin, MD

Indiana University Medical Center
Indianapolis, IN

Peter Quiros, MD

University of California, Los Angeles
Los Angeles, CA

Nailyn Rasool, MD

University of California, San Francisco
San Francisco, CA

Virender Sachdeva, MS, DNB

L V Prasad Eye Institute, GMRV Campus
Visakhapatnam, Andhra Pradesh, India

Meagan D. Seay, DO

University of Utah Moran Eye Center
Salt Lake City, UT

Veeral Shah, MD, PhD

Cincinnati Children's Hospital Medical Center
Cincinnati, OH

Claire Sheldon, MD, PhD

University of British Columbia
Vancouver, BC, Canada

Sara Ann Simpson, MD, FRCPC

University of British Columbia
Vancouver, BC, Canada

Jeffrey P. Staab, MD, MS

Mayo Clinic
Rochester, MN

Steven F. Stasheff, MD, PhD

Children's National Hospital; George
Washington School of Medicine & Health
Sciences
Washington, DC

Tonya Stefko, MD

University of Pittsburgh Medical Center
Pittsburgh, PA

Prem S. Subramanian, MD, PhD

University of Colorado School of Medicine
Aurora, CO

Madhura Tamhankar, MD

Scheie Eye Institute, University of Pennsylvania
Philadelphia, PA

Salina Teja, MD, FRCSC

University of British Columbia
Vancouver, BC, Canada

Roger Turbin, MD, FACS

Rutgers NJMS
Newark, NJ

Gregory Van Stavern, MD

Washington University St. Louis
St. Louis, MO

Nicholas Volpe, MD

Department of Ophthalmology, Northwestern
Medicine
Chicago, IL

Judith Warner, MD

John A Moran Eye Center, University of Utah
Salt Lake City, UT

Kimberly Winges, MD

VA Portland Health Care System, Casey Eye
Institute/Oregon Health & Science University
Portland, OR

Barbara Yates, MD

MLK Jr. Outpatient Center
Los Angeles, CA

Patrick Yu-Wai-Man, MD, PhD

University of Cambridge
Cambridge, United Kingdom

SOCIAL FUNCTIONS

RECEPTIONS AND ENTERTAINMENT



SATURDAY, FEBRUARY 12th

WELCOME RECEPTION

(with support from Viridian Therapeutics, Inc.)

Reconnect with your NANOS colleagues at the Welcome Reception on Saturday, February 12th from 6:00 - 9:30 pm. All attendees and guests are welcome at the reception from 6:00 - 7:30 pm followed by a line dancing lesson led by professionals from 7:30 - 9:30 pm. Heavy hors d'oeuvres provided at the reception.



SUNDAY, FEBRUARY 13th

MEMBERS IN TRAINING RECEPTION

All Students, Residents, and Fellows-in-Training are invited to this reception on Sunday, February 13th from 5:45 - 6:45 pm. This reception is a great opportunity to network and connect with NANOS leadership and Fellowship Directors as well as learn about neuro-ophthalmology fellowships.

This reception is for Students, Residents, Fellows-in-Training, NANOS Board of Directors members, Fellowship Directors, Student Clerkship, and Neurology and Ophthalmology Residency Directors



TUESDAY, FEBRUARY 15th

MEET THE POSTER AUTHOR: ANALYTICAL STUDIES RECEPTION

(with support from Viridian Therapeutics, Inc.)

Tuesday, February 15th from 6:30 - 8:30 pm. This is your chance to ask questions and learn more about the Analytical Studies posters. Heavy hors d'oeuvres buffet included. Guest tickets are available for purchase for \$150 with online registration or onsite.



WEDNESDAY, FEBRUARY 16th

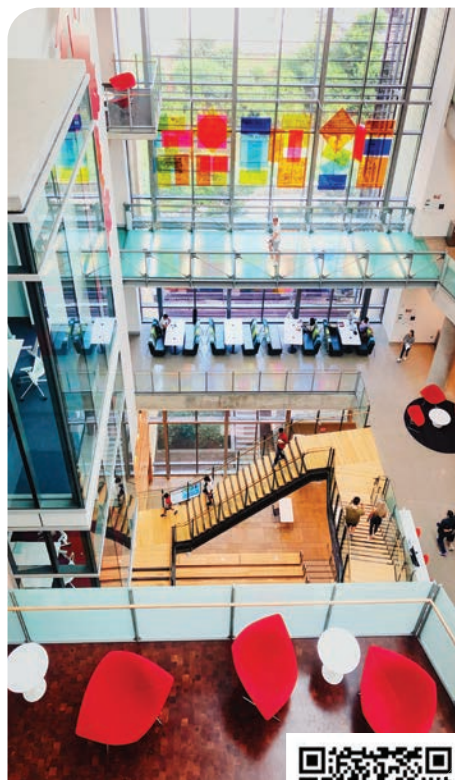
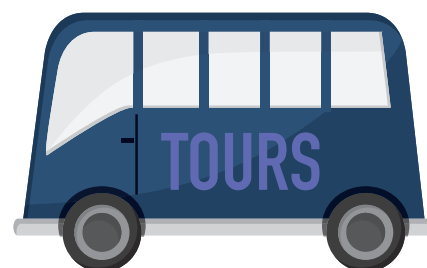
ANNUAL BANQUET

Put on your best Western attire and join us Wednesday, February 16th at 6:30 pm for a fun night of celebration! Dinner and awards from 6:30 - 8:00 pm. Music and dancing begin at 8:00 pm and group line dancing performances are encouraged! We will also have a photo booth with props so you can take home a memento from the evening. Guest tickets are available for purchase for \$150 with online registration or onsite.

TOURS

TUESDAY, FEBRUARY 15th

A limited number of tours are available for NANOS attendees on Tuesday afternoon, February 15th. Scan the QR codes below to learn more and book the tour. The below tours will depart from the lobby of the JW Marriot Austin. Meet in the hotel lobby 15 minutes prior to tour start time. Tours are organized and managed by AO Tours Austin. Phone: 512-659-9478



**AUSTIN ARTS AND
ARCHITECTURE**
1:30 – 4:00 pm



**AUSTIN AND HILL COUNTRY
WITH STOPS**
2:00 – 4:30 pm



**AUSTIN HILL COUNTRY NONSTOP
90-MINUTE TOUR**
2:30 – 4:00 pm



EXHIBITORS

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1

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2

Electrophysiology done right! We can localize disorder and characterize dysfunction using retinal ERG, optic nerve VEP, psychophysical testing, and objective visual acuity (sweep VEP). Our complete visual electrophysiology suite of tests is suitable for both children and adults.

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3

Our mission is to discover new ways to improve and extend people's lives. As a leading global medicines company, we use innovative science and digital technologies to create transformative treatments in areas of great medical need. In our quest to find new medicines, we consistently rank among the world's top companies investing in research and development. ©2021 Novartis 3/21 T-NSF-1402234

GenSight Biologics

www.gensight-biologics.com
clinics@gensight-biologics.com
+33 1 76 21 72 20



4

GenSight Biologics is a biopharma company with headquarters in Paris, France, focused on developing and commercializing gene therapy-based treatments for retinal neurodegenerative diseases and central nervous system disorders. Its lead product, LUMEVOQ (GS010; lenadogene nolpharvovec), has been submitted for approval in the European Union as a treatment for Leber Hereditary Optic Neuropathy (LHON) caused by a mutated ND4 mitochondrial gene.

Horizon

Therapeutics

<https://www.horizontherapeutics.com/>
customerservice@horizontherapeutics.com
1-866-479-6742



5

Horizon is focused on researching, developing and commercializing medicines that address critical needs for people impacted by rare and rheumatic diseases. Our pipeline is purposeful: we apply scientific expertise and courage to bring clinically meaningful therapies to patients. We believe science and compassion must work together to transform lives.

Catalyst

Pharmaceuticals, Inc

www.catalystpharma.com
info@catalystpharma.com
1-305-420-3200



6

Catalyst Pharmaceuticals is a commercial-stage, patient-centric biopharmaceutical company focused on in-licensing, developing and commercializing novel high-quality medicines for patients living with rare diseases. With exceptional patient focus, Catalyst is committed to developing a robust pipeline of cutting-edge, first- or best-in-class medicines for other rare diseases.

Horizon

Therapeutics

<https://www.horizontherapeutics.com/>
customerservice@horizontherapeutics.com
1-866-479-6742



7

Horizon is focused on researching, developing and commercializing medicines that address critical needs for people impacted by rare and rheumatic diseases. Our pipeline is purposeful: we apply scientific expertise and courage to bring clinically meaningful therapies to patients. We believe science and compassion must work together to transform lives.

Alexion, AstraZeneca

Rare Disease

alexion.com
475-230-2596



8

Alexion, AstraZeneca Rare Disease, is the group within AstraZeneca focused on rare diseases, created following the 2021 acquisition of Alexion Pharmaceuticals, Inc. As a leader in rare diseases for nearly 30 years, Alexion is focused on serving patients and families affected by rare diseases and devastating conditions. Headquartered in Boston, Massachusetts, Alexion has offices around the globe and serves patients in more than 50 countries.

Optomed USA

www.optomed.com/us
info.us@optomed.com
844-474-4481



9

Optomed is a medical technology company and a leading provider of handheld fundus cameras for Neuro-Ophthalmology and ED applications. Optomed combines handheld fundus cameras with software and artificial intelligence with the aim to optimize the diagnostic process of visual disorders.

Benign Essential Blepharospasm Research Foundation

www.blepharospasm.org
bebrf@blepharospasm.org
409-832-0788



10

Benign Essential Blepharospasm Research Foundation funds and promotes medical research for the cause and cure of blepharospasm and related disorders of the facial musculature; provides support, education and referrals to persons with these disorders; disseminates information and serves as an authoritative resource to the medical community and the general public.

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11

Nextech's Ophthalmology-specific EHR, IntelleChartPRO, improves patient care, simplifies compliance and comes fully integrated with an intuitive, user-friendly Practice Management solution. Experience the freedom of adaptable templates and intuitive workflows that streamline operations, improve performance and take the grunt work out of compliance. Visit www.nextech.com to learn more.

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12

PTC Therapeutics is Measured By Moments - Bringing moments to patients with rare and serious diseases through innovative small molecule and gene therapies.

Founded in 1998, PTC is a global commercial, diversified biopharmaceutical company. Our team is deeply committed to a unifying purpose: Extending life's moments for rare disease patients and their loved ones.

M&S Technologies

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13

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14

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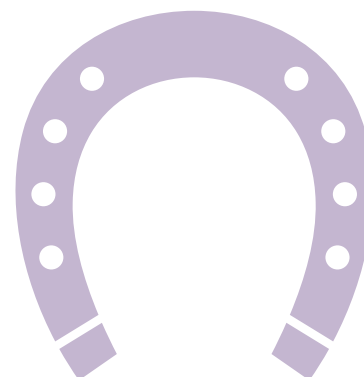
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15

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EDUCATION:

NANOS is the premier source of the Neuro-Ophthalmology education in North America.

- Discounted registration for the Annual Meeting offering up to 30 CME credits
- Access to past Annual Meeting materials
- Access to Neuro-Ophthalmology Curriculum on NOVEL



NETWORKING AND PROFESSIONAL DEVELOPMENT:

NANOS connects medical professionals who practice Neuro-Ophthalmology in their day-to-day clinical practice and provide opportunities for involvement on committees and the Board of Directors.

- Networking opportunities with fellow professionals
- Listing in the member directory
- Posting rights to the scientific discussion listservs, NANOSnet and YONOnet
- Leadership and volunteer opportunities on NANOS committees and the Board
- Voting rights
- Complimentary job postings and career planning tools



RESEARCH:

NANOS provides annual subscription to the Journal of Neuro-Ophthalmology (JNO) and access to Neuro-Ophthalmology Virtual Education Library (NOVEL).

- Subscription to JNO
- Abstract submission and presentation opportunities
- Research Assistance Program
- Research Grant programs



ADVOCACY:

NANOS represents the interests of Neuro-Ophthalmologists in the AMA House of Delegates, collaborates with AAO and AAN, and tackles issues that impact the subspecialty.

- Representation in the AMA House of Delegates, with access to the AMA policy-making bodies to present a unified position on issues pertaining to Neuro-Ophthalmology
- Involvement in the process of creating guidelines for the performance of different Neuro-Ophthalmology procedures in the workup of patients with neuro-ophthalmic disorders
- Advocacy and counsel on Neuro-Ophthalmology issues
- Practice management tips and tools for Neuro-Ophthalmologists.

What do you treasure most in your NANOS membership?

Before joining NANOS, I thought of medicine as something which was an individual endeavor. Since being part of this organization, I recognize we work together to build our specialty and honor the traditions of those who have set the foundation. – *John Pula*

The opportunity to interact with a community that has a practice just like you and hence understands the complexity of care and that sometimes diagnosis is not straightforward. – *A new member of NANOS*

NANOS membership has provided me with unparalleled networking and career-advancement opportunities while providing resources that also benefit my clinical practice. I truly look forward to the annual meeting each year – it's like a career family reunion! – *Devin Mackay*

NANOS connects neuro-ophthalmologists not only in North America but all over the world, and informs the members about the new developments by the JNO and Annual Meeting. It also helps to solve difficult and interesting cases by discussing them through the NANOSNET. I am proud of being a member of NANOS. – *An International member of NANOS.*

I always find the annual meetings excellent. So nice to get CME hours that are relevant to what I do every day. – *Marybeth Grazko*

Visit www.nanosweb.org to become a member and get involved with NANOS today!



MAKING VISION RESTORATION A REALITY

GenSight Biologics seeks to transform the lives of patients with severe degenerative diseases of the eye and central nervous system with novel gene therapy-based treatments.



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NANOS JOURNAL



Journal of
Neuro-Ophthalmology

The Official Journal of the North American Neuro-Ophthalmology Society

[HTTPS://JOURNALS.LWW.COM/JNEURO-OPHTHALMOLOGY](https://journals.lww.com/jneuro-ophthalmology)

"You have to keep going.
Don't ever give up."

GEOFF
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DIFFERENCE IN THE LIVES OF PEOPLE
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▶ **DEDICATED
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to **help patients**
move forward.

▶ **PARTNERING
WITH THE MS
COMMUNITY**

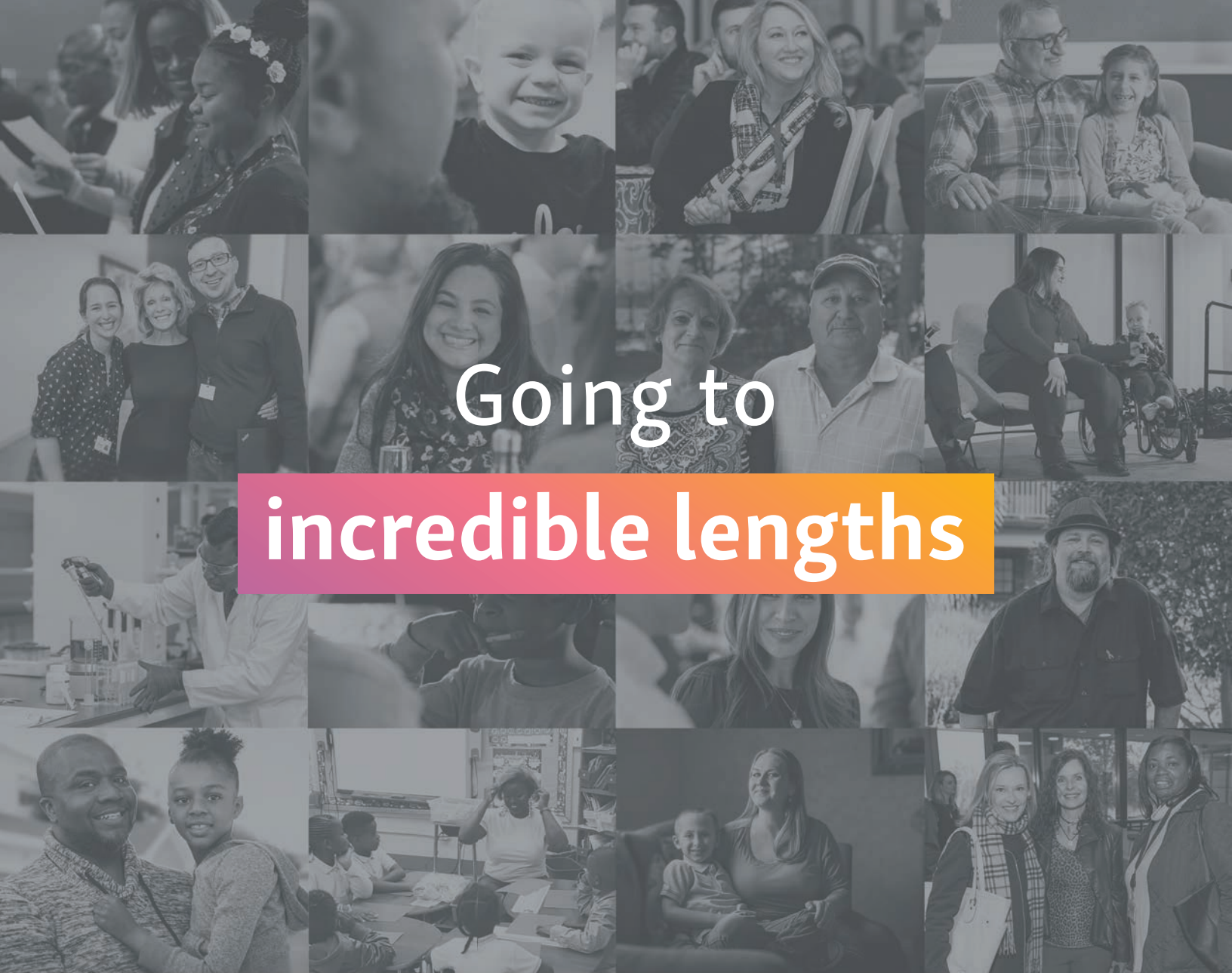
Closely worked with
nearly **40** charitable
organizations in the
MS therapeutic area
in **2021.**

▶ **ALWAYS LOOKING FORWARD**

Focusing on the future of care for
those living with relapsing MS.



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Horizon is proud to support NANOS 2022

Horizon is focused on researching, developing and commercializing medicines that address critical needs for people impacted by rare, autoimmune and severe inflammatory diseases. Our pipeline is purposeful: we apply scientific expertise and courage to bring clinically meaningful therapies to patients. At Horizon, we believe science and compassion must work together to transform lives.



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Viridian Therapeutics

is engineering
medicines to
advance
patient care

And it starts with new
treatments for Thyroid
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Follow our journey.
Scan to learn more about what's
coming up in our pipeline.

View our posters at NANOS: #332, 333, 334

SAVE THE DATES

FUTURE NANOS MEETINGS:

2023

49TH ANNUAL MEETING

NANOS

OMNI ORLANDO RESORT AT
CHAMPIONSGATE, ORLANDO, FL

MARCH 11-16,
2023

2024

50TH ANNUAL MEETING

NANOS

SHERATON WAIKIKI,
HONOLULU, HI

MARCH 2-7,
2024

2025

51ST ANNUAL MEETING

NANOS

JW MARRIOTT TUCSON STARR PASS,
TUCSON, AZ

MARCH 15-20,
2025

For More Information:

www.nanosweb.org

