



NORTH AMERICAN
NEURO-OPHTHALMOLOGY
SOCIETY

PROGRAM



2016

42ND ANNUAL MEETING

NANOS

February 27 - March 3, 2016

JW Starr Pass Marriott • Tucson, AZ



SCHEDULE-AT-A-GLANCE

42nd Annual NANOS Meeting

SATURDAY, FEBRUARY 27

2:00 pm - 8:00 pm	Registration/Help Desk	Arizona Foyer
8:00 am - 12:00 pm	NANOS Board Meeting	San Luis
3:00 pm - 5:00 pm	Botulinum Toxins: The Neuro-Ophthalmologists Guide Course [2 CME]	Tucson Ballroom
6:00 pm - 7:30 pm	Opening Reception (All are Welcome)	Ania Terrace

SUNDAY, FEBRUARY 28

6:00 am - 6:45 am	Yoga Class	San Ignacio
6:30 am - 5:30 pm	Registration/Help Desk	Arizona Foyer
6:30 am - 7:45 am	Breakfast	Arizona Ballroom
6:30 am - 2:30 am	Exhibits	Arizona Ballroom
7:45 am - 5:00 pm	FRANK B. WALSH SESSION [6 CME]	Tucson Ballroom
9:40 am - 10:10 am	Coffee Break	Arizona Ballroom
11:50 am - 12:30 pm	Lunch	Arizona Ballroom
12:30 pm - 2:00 pm	Poster Session I: Clinical Highlights in Neuro-Ophthalmology	Arizona Ballroom
5:15 pm - 5:45 pm	Frank B. Walsh Committee Meeting	San Xavier
5:15 pm - 5:45 pm	Fellowship Director's Meeting	San Pedro
5:30 pm - 6:30 pm	Members-in-Training Program and Reception	San Luis
5:45 pm - 6:15 pm	Fellowship Committee Meeting	San Pedro
Evening	Dinner on your own	

MONDAY, FEBRUARY 29

6:00 am - 6:45 am	Yoga Class	San Ignacio
6:30 am - 5:30 pm	Registration/Help Desk	Arizona Foyer
6:30 am - 7:30 am	Breakfast	Arizona Ballroom
6:30 am - 12:15 pm	Exhibits	Arizona Ballroom
7:00 am - 7:30 am	NOVEL Editorial Board/Curriculum Committee Meeting	San Pedro
7:30 am - 9:30 am	Journal Club [2 CME]	Tucson Ballroom
9:30 am - 10:00 am	Coffee Break	Arizona Ballroom
10:00 am - 12:00 pm	Hot Topics: Today and Tomorrowland [2 CME]	Tucson Ballroom
12:15 pm - 1:30 pm	Women in Neuro-Ophthalmology (WIN) Luncheon	Starr Circle Terrace
1:30 pm - 3:30 pm	Understanding OCT: Devices, Images, Artifacts, Real-time Scanning, and Interactive Cases [2 CME] ...	Tucson Ballroom
2:30 pm - 4:30 pm	Teaching Neuro-Ophthalmology in the Developing World [2 CME]	Arizona 8-10
3:00 pm - 5:00 pm	Forum for New and Future Neuro-Ophthalmologists	Starr Circle Terrace
5:00 pm - 7:00 pm	SCIENTIFIC PLATFORM PRESENTATIONS: SESSION I [2 CME]	Tucson Ballroom
8:45 pm - 10:30 pm	Night at the Movies: "Three Amigos"	Tucson Ballroom

TUESDAY, MARCH 1

6:00 am - 6:45 am	Yoga Class	San Ignacio
6:30 am - 5:30 pm	Registration/Help Desk	Arizona Foyer
6:30 am - 7:30 am	Breakfast	Arizona Ballroom
6:30 am - 12:15 pm	Exhibits	Arizona Ballroom
6:30 am - 7:30 am	JNO Editorial Board Meeting	San Pedro
7:30 am - 12:00 pm	SCIENTIFIC PLATFORM PRESENTATIONS: SESSION II [3.75 CME]	Tucson Ballroom
9:15 am - 9:30 am	Update: The Journal of Neuro-Ophthalmology	Tucson Ballroom
9:30 am - 10:00 am	Coffee Break	Arizona Ballroom
12:00 pm - 6:00 pm	Free Afternoon/Optional Excursions	
6:00 pm - 9:30 pm	Poster Session II: Scientific Advancements in Neuro-Ophthalmology	Arizona Ballroom

WEDNESDAY, MARCH 2

6:00 am - 6:45 am	Abstract Committee Meeting	San Pedro
6:30 am - 5:30 pm	Registration/Help Desk	Arizona Foyer
6:30 am - 7:30 am	Breakfast	Arizona Ballroom
7:00 am - 7:30 am	Annual NANOS Business Meeting (all encouraged to attend)	Tucson Ballroom
7:30 am - 11:10 am	Neuro-Imaging [3.25 CME]	Tucson Ballroom
9:30 am - 9:50 am	Coffee Break	Arizona Ballroom
11:10 am - 11:20 am	NOVEL Update	Tucson Ballroom
11:20 am - 12:00 pm	Jacobson Lecture [.75 CME]	Tucson Ballroom
12:00 pm - 12:10 pm	Announcement of a New NORDIC Study	Tucson Ballroom
12:15 pm - 1:30 pm	Research Committee Meeting Luncheon	Signature Grill
1:00 pm - 5:00 pm	Practical Introduction to Basic Statistics [4 CME]	Arizona 8-10
1:30 pm - 3:30 pm	3D Anatomy of the Orbit and Skull Base [2 CME]	Tucson Ballroom
2:00 pm - 4:30 pm	Consortium of Pediatric Neuro-Ophthalmologists Meeting (CPNO)	San Luis
4:00 pm - 5:00 pm	International Relations Committee Meeting	San Pedro
5:30 pm - 10:00 pm	Annual NANOS Reception and Banquet	Old Tucson

THURSDAY, MARCH 3

6:30 am - 12:00 pm	Registration/Help Desk	Arizona Foyer
6:30 am - 7:30 am	Breakfast	Arizona Ballroom
7:30 am - 9:30 pm	Ocular Motility [2 CME]	Tucson Ballroom
9:30 am - 10:00 am	Coffee Break	Arizona Ballroom
10:00 am - 12:00 pm	Sports-Related Concussion: The Eyes Have It! [2 CME]	Tucson Ballroom



2016 42ND ANNUAL MEETING NANOS

Welcome

The North American Neuro-Ophthalmology Society (NANOS) welcomes you to the 42nd Annual Meeting at the JW Starr Pass Marriott in Tucson, Arizona!

We look forward to an exciting meeting, made stronger by your presence. 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 and workshop opportunities.

New this year! In order to accommodate the continual growth of high-quality abstract submissions, NANOS is thrilled to announce that two poster sessions will take place during the Annual Meeting. Poster Session I: Clinical Highlights in Neuro-Ophthalmology will take place on Sunday, February 28 from 12:30-2:00 pm. Poster Session II: Scientific Advancements in Neuro-Ophthalmology will take place on Tuesday, March 1 from 6:00-9:30 pm. In addition, all accepted platform and poster presenters have the opportunity to upload an ePoster to maximize attendee viewing for the duration of the meeting. The ePosters can be viewed on the mobile app, attendee portal or via the onsite kiosks.

Please join us for the Opening Reception on Saturday, February 27, from 6:00 –7:30 pm, on the Ania Terrace. The reception will feature complimentary cocktails and hors d'oeuvres.

Breakfast for registrants only will be provided daily. Please see the program for details.

The CME meeting evaluation forms will be online only again this year. Further instructions can be found on page 3 of the program. Please bring your computer if you want to complete the evaluation during the sessions or view the online syllabus. Complimentary Internet will be provided.

Be sure to attend the Business Meeting on Wednesday, March 2, at 7:00 am in the Tucson Ballroom. We will be reviewing society business and voting on new members; your input is needed.

Bring your 'Country Wild West' attire and join us at Old Tucson for the Annual Banquet on Wednesday, March 2, from 5:30-10:00 pm. We will experience high-flying stunts, a gun fight, Old-Time photos, live music and dancing, a classic BBQ Dinner, and much more! *This event is complimentary for attendees, but guest/spouse tickets are \$100.*

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 and everyone else who has generously donated their time and efforts to put together this outstanding meeting.

I hope you enjoy the NANOS meeting and your stay at the JW Starr Pass Marriott!

Nancy J. Newman, MD
NANOS President

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.



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GENERAL INFORMATION

EXHIBITOR HOURS:

This year's Exhibit Hall is located in the **Arizona Ballroom**. The Exhibit Hall will be open during the days and times listed below. All breakfasts and breaks will be held in the Exhibit Hall. Be sure to take advantage and visit the exhibitors!

Sunday 6:30 am – 2:30 pm
Monday and Tuesday 6:30 am – 12:15 pm

Back Again This Year! 2016 NANOS Exhibitor Raffle

Don't forget to get your raffle card stamped as you visit with the exhibitors. Once your raffle card is complete, drop it off at the Registration Desk by 12:00 pm on Wednesday and you will be eligible for prize drawings.

NANOS REGISTRATION/HELP DESK HOURS:

Location: Arizona Foyer
Saturday: 2:00 pm – 8:00 pm
Monday–Wednesday: 6:30 am – 5:30 pm
Thursday: 6:30 am – 12:00 pm

NANOS MOBILE MEETING APP:

To access the NANOS Mobile App:

1. Visit your smartphone's app store and search for MA eProgram
2. Download and open the mobile app.
3. Scan the QR code below OR enter the following the login information:

Username: **nanos2016**

Password: **nanos2016**

Features:

- Full Program Schedule
- Faculty Listing
- Exhibitor and Support Guide
- Program Search function
- Abstracts
- Help Information (CME, presenter instructions, etc.)



NANOS MOBILE
MEETING APP

HOW TO CLAIM CME AND SELF-ASSESSMENT CREDITS

Claiming CME is as easy as 1-2-3:

1. Access the NANOS 2016 Annual Meeting Evaluation by scanning the QR code at the bottom OR by using the following link: <http://nanos2016.sur-sys.com/>
2. Complete the evaluation of sessions attended. The evaluation can be completed during the meeting or before Monday, March 14.
3. Upon completion, download and/or print the interactive PDF CME form from the "CME Verification and Hours" section after you enter your name, email and hours claimed. A copy of the CME verification will also be emailed three weeks after the meeting.

Total Annual Meeting Credits: 30.75 Credit(s)[™]

ABPN Self-Assessment CME

The American Board of Psychiatry and Neurology has reviewed the NANOS 42nd Annual Meeting and has approved this program as part of a comprehensive program, which is mandated by the ABMS as a necessary component of Maintenance of Certification. Complete information regarding the ABPN Self Assessment CME Maintenance of Certification requirements are available at www.abpn.com.

ABO Self-Assessment CME

This activity meets the Self-Assessment CME requirements defined by the American Board of Ophthalmology (ABO). Please be advised that the ABO is not an accrediting body for purposes of any CME program. ABO does not sponsor this or any outside activity, and ABO does not endorse any particular CME activity. Complete information regarding the ABO Self-Assessment CME Maintenance of Certification requirements are available at www.abop.org.



NANOS MEETING
EVALUATION
SURVEY



To Download a QR Code Reader:

Open your App Store and download a 'QR Code Reader'. Open the QR barcode app on your smartphone and choose "scan from camera" or "scan QR code" from the main menu.

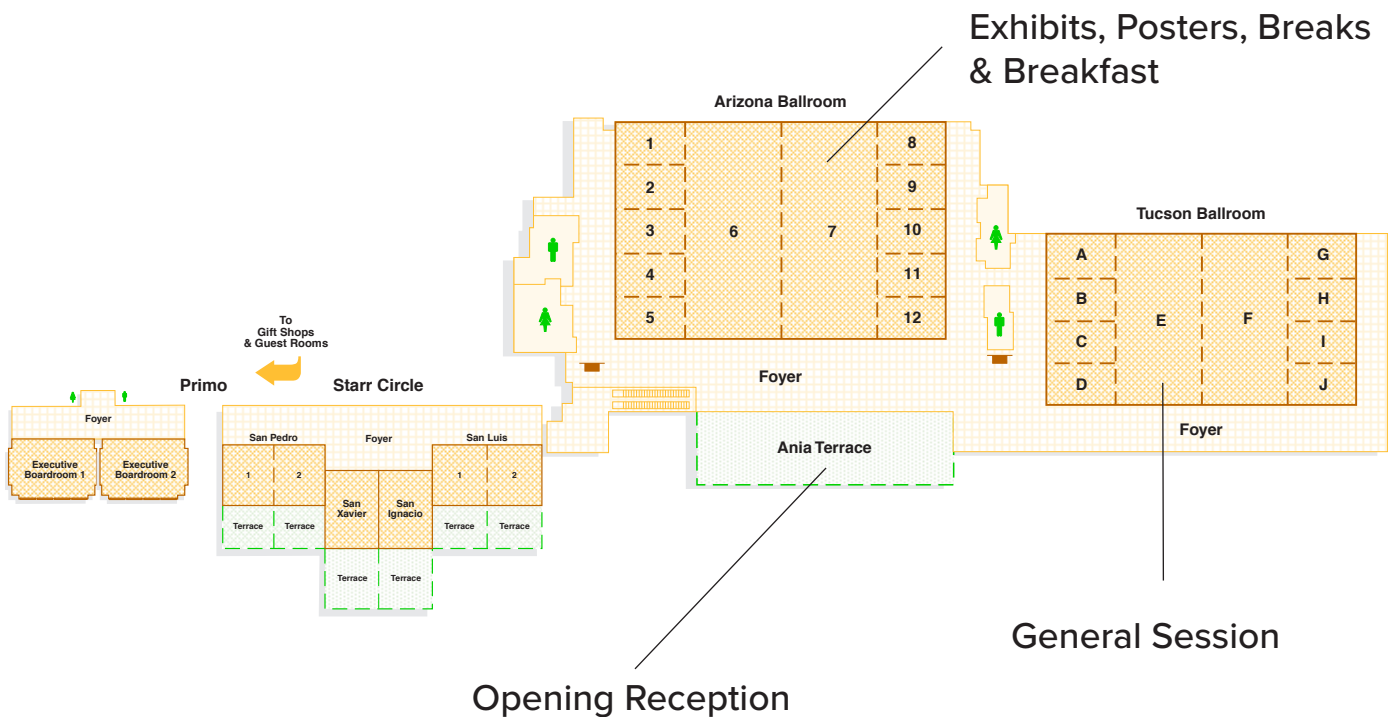
GENERAL INFORMATION



WIFI INSTRUCTIONS:

- 1) Activate your computer's Wireless Radio
- 2) View available Wireless Networks
- 3) Select the Wireless Network with the SSID "JWMarriott_CONF"
- 4) Click "Connect"
- 5) Open your Web Browser (Microsoft Internet Explorer, Chrome, Firefox or Safari)
- 6) Your Home Page will be redirected to Windstream's Login Page
- 7) On the screen will appear a box where you will enter the code: **NANOS2016** (not case sensitive)
- 8) After a few moments your page will refresh to say "Connected to the Internet"
- 9) Begin surfing the web to any website or activate VPN Software now

MEETING LAYOUT:



PROGRAM

Saturday, February 27

2:00 pm - 8:00 pm	Registration/Help Desk	Arizona Foyer
8:00 am - 12:00 pm	NANOS Board Meeting	San Luis
3:00 pm - 5:00 pm	Botulinum Toxins: The Neuro-Ophthalmologists Guide Course [2 CME]	Tucson Ballroom
	Co-Chairs: Khizer Khaderi, MD and Benjamin Frishberg, MD	

The use of botulinum toxins is a vital part of the Neuro-Ophthalmologist's toolkit. In this symposium, we will review neurotoxin pharmacology and compare and contrast the currently available agents, namely Xeomin (incobotulinum toxin), Botox (onabotulinum toxin), Myobloc (rimabotulinum toxin) and Dysport (abobotulinum toxin). We will discuss the relevant on label use of neurotoxins for treatment of blepharospasm, hemifacial spasm, and chronic migraine. There will be further discussion about off label uses that may be helpful for Neuro-Ophthalmologists. There will be demonstrations of proper dilution techniques, as well as injection techniques.

Upon completion of this course, participants should be able to: 1) Recognize the four available toxins and their current FDA approved uses; 2) Have a clear understanding about the safety and tolerability of the botulinum toxins; 3) Perform appropriate injections in the treatment of hemifacial spasm and blepharospasm; and 4) Have a better understanding of the use of botulinum toxin in the treatment of chronic migraine.

6:00 pm - 7:30 pm	Opening Reception (All are Welcome)	Ania Terrace
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Sunday, February 28

6:00 am - 6:45 am	Yoga Class	San Ignacio
6:30 am - 5:30 pm	Registration/Help Desk	Arizona Foyer
6:30 am - 7:45 am	Breakfast	Arizona Ballroom
6:30 am - 2:30 pm	Exhibits	Arizona Ballroom
7:45 am - 5:00 pm	FRANK B. WALSH SESSION [6 CME]	Tucson Ballroom
	Co-Chairs: Wayne T. Cornblath, MD and Jonathan Trobe, MD	
	Neuroradiologist: Ashok Srinivasan, MBBS, MD	
	Neuropathologist: Sandra Camelo-Piragua, MD	

This symposium is designed to present a wide variety of Neuro-Ophthalmic cases to an audience of physicians with varying neuroscience backgrounds who have a common intellectual interest in the broad range of conditions 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. Necropsy, surgical pathology, and neuroimaging will help illuminate clinical points. Cases will be discussed from clinical, anatomic, radiologic and pathologic aspects with emphasis on diagnosis, pathophysiology and management. Audience participation is encouraged.

Upon completion of this course, 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) Effectively use radiologic procedures in diagnosis; 4) Recognize both the value and limitations of neuropathology; and 5) Discuss newly described diseases and their connection to Neuro-Ophthalmology.

Sunday, February 28 (Continued)

8:00 am – 9:40 am	Frank B. Walsh Session I <i>Moderators: Shlomo A. Dotan, MD & Lindsey DeLott, MD</i> “Not Right in the Head”, Melinda Y. Chang, MD Leopard Can’t Change Its Spots, Terry S. Kang, MD Is It or Isn’t It?, Peter W. MacIntosh, MD Not a Meatball, Steven N. Newman, MD Diplopic Uveitis, Kinda Najem, MD
9:40 am - 10:10 am	Coffee Break.....Arizona Ballroom
10:10 am – 11:50 am	Frank B. Walsh Session II <i>Moderators: Marie D. Acierno, MD & Kristopher Kowal, MD</i> Looking for a Drop of Porcelain, Shannon J. Beres, MD Many Small Lesions, One Big Problem, Harsh V. Gupta, MD Heart of Darkness, Shira Simon, MD A Night at the Met, Clotilde Hainline, MD It is, is it not?, Ivana Vodopivec, MD
11:50 am - 12:30 pm	Lunch.....Arizona Ballroom
12:30 pm - 2:00 pm	Poster Session I: Clinical Highlights in Neuro-Ophthalmology Arizona Ballroom Authors will be standing by their posters during the following times: Odd-Numbered Posters: 12:30 pm - 1:15 pm Even-Numbered Posters: 1:15 pm - 2:00 pm
2:20 pm - 3:40 pm	Frank B. Walsh Session III <i>Moderators: Alberto Galvez-Ruiz, MD & Hilary Grabe, MD</i> In The Thick of It, Kannan Narayana, MD When a WEINO Goes Blind, Rustum Karanjia, MD, PhD The Good, The Bad, and The Ugly, Nathan H. Kung, MD Eyes and Bowels Bottled Up, Kristopher Kowal, MD
3:40 pm - 5:00 pm	Frank B. Walsh Session IV <i>Moderators: Edward A. Margolin, MD, FRCSC & Kara Warden, MD</i> Avengers Assemble!, Radha Ram, MD Growing Up Too Fast, Courtney E. Francis, MD Masquerade, Amanda D. Henderson, MD A Case of Progressive Orbital Cellulitis in an Immunocompetent Patient, Cinthi Pillai, MD
5:15 pm - 5:45 pm	Frank B. Walsh Committee Meeting.....San Xavier
5:15 pm - 5:45 pm	Fellowship Director’s Meeting..... San Pedro
5:30 pm - 6:30 pm	Members-in-Training Program and Reception.....San Luis (All Students, Residents and Fellows-in-Training are encouraged to attend)
5:45 pm - 6:15 pm	Fellowship Committee Meeting San Pedro
Evening	Dinner on your own

Monday, February 29

6:00 am - 6:45 am	Yoga Class.....	San Ignacio
6:30 am - 5:30 pm	Registration/Help Desk.....	Arizona Foyer
6:30 am - 7:30 am	Breakfast.....	Arizona Ballroom
6:30 am - 12:15 pm	Exhibits.....	Arizona Ballroom
7:00 am - 7:30 am	NOVEL Editorial Board/Curriculum Committee Meeting.....	San Pedro
7:30 am - 9:30 am	Journal Club [2 CME]	Tucson Ballroom

Moderators: Bradley J. Katz, MD, PhD and Luis J. Mejico, MD

This symposium will cover updates on medical conditions of interest to Neuro-Ophthalmologists including recent advances of our understanding of CSF circulation, review of Susac Syndrome with an emphasis beyond the characteristic clinical triad, review of pediatric brain tumors, and the current understandings on diagnosis and treatment of brain aneurysms.

Upon completion of this course, participants should be able to: 1) List potential sites of CSF outflow and absorption and describe the evidence for lymphatics in the brain; 2) Describe ophthalmologic complications secondary to treatment for brain tumors and how ophthalmologic imaging may improve neuro-ophthalmologic monitoring of children with brain tumors; 3) Review the most recent data on intracranial aneurysms and their prognosis, recognize the neuro-ophthalmic manifestations of intracranial aneurysms, and learn to more effectively counsel patients with unruptured aneurysms; and 4) Review the most recent data that expands our knowledge of the neuro-ophthalmic manifestations of Susac syndrome.

7:30 am - 7:50 am	Mythbusters: What We Thought We Knew About CSF Dynamics , <i>Deborah I. Friedman, MD, MPH</i>
7:50 am - 8:00 am	Q&A
8:00 am - 8:20 am	Neuro-Ophthalmologic Complications of Brain Tumors in Children , <i>Robert A. Avery, DO, MSCE</i>
8:20 am - 8:30 am	Q&A
8:30 am - 8:50 am	Susac Syndrome: Expanding the Triad , <i>Robert A. Egan, MD</i>
8:50 am - 9:00 am	Q&A
9:00 am - 9:20 am	Intracranial Aneurysms and Neuro-Ophthalmology , <i>Valérie Biousse, MD</i>
9:20 am - 9:30 am	Q&A
9:30 am - 10:00 am	Coffee Break Arizona Ballroom
10:00 am - 12:00 pm	Hot Topics: Today and Tomorrowland [2 CME] <i>Moderators: Patricia Johnston-McNussen, MD and Norah S. Lincoff, MD</i>

Moderators: Patricia Johnston-McNussen, MD and Norah S. Lincoff, MD

As science and medicine move forward at astonishing speed, all physicians struggle to keep up with new information. Neuro-Ophthalmologists need to know advances in basic science, technology, diagnostic criteria, clinical evaluation and treatment of the conditions and diseases of our subspecialty. The Hot Topics session will provide updated information in areas that face Neuro-Ophthalmologists now and in the future.

Upon completion of this course, participants should be able to: 1) Describe and use OCT in evaluation of the elevated optic disc; 2) Describe the techniques and application of gene therapy in neurodegenerative disease; 3) Determine the diagnosis and management of steroid-dependent optic neuropathies; and 4) Describe the new diagnostic criteria, lab evaluation, and treatment of Neuromyelitis Optica.

10:00 am - 10:20 am	The Elevated Optic Disc: When OCT Helps and When It Does Not. An Interactive Case Based Approach , Robert C. Sergott, MD
10:20 am - 10:30 am	Q&A
10:30 am - 10:50 am	Genetic Manipulation for Inherited Neurodegenerative Diseases - Myth or Reality? , Patrick Yu-Wai-Man, BMedSci, MBBS, PhD, FRCOphth
10:50 am - 11:00 am	Q&A
11:00 am - 11:20 am	Circle of Hell: Diagnosing and Managing Steroid-Dependent Optic Neuropathies (with Apologies to Dante Alighieri) , Leonard A. Levin, MD, PhD
11:20 am - 11:30 am	Q&A
11:30 am - 11:50 am	NMO: What You Need to Know , Sashank Prasad, MD
11:50 am - 12:00 pm	Q&A

Monday, February 29 (Continued)

12:15 pm - 1:30 pm Women in Neuro-Ophthalmology (WIN) Luncheon Starr Circle Terrace

Join your colleagues for a networking lunch event and participate in small group discussions on topics that are relevant to women in Neuro-Ophthalmology. An optional lunch selection will be available for purchase. All are welcome to attend even without the purchase of a lunch.

12:15 pm - 1:00 pm **Small Group Discussions/Networking and Lunch**
1:00 pm - 1:30 pm **Break-Out for Specific Discussion Topics**

1:30 pm - 3:30 pm Understanding OCT: Devices, Images, Artifacts, Real-time Scanning, and Interactive Cases [2 CME] Tucson Ballroom

Moderator: Robert C. Sergott, MD

Faculty: Ari J. Green, MD, MCR & Mark J. Morrow, MD

During the past five years, optical coherence tomographic scanning [OCT] of the optic nerve and retina has transitioned from a low-resolution technology of questionable value to an imaging modality that is simultaneously improving diagnostic accuracy and unlocking mysteries of the pathogenesis of both rare and common neuro-ophthalmological diseases including Leber's Hereditary Optic Neuropathy, retinal degenerations, multiple sclerosis, Alzheimer's and Parkinson's Diseases.

Clinical and research neuro-ophthalmologists now can visualize and measure the normal and pathological changes in the optic nerve and retina. However, to realize the full potential of spectral domain and MultiColor OCT, neuro-ophthalmologists must understand how the various devices image and measure the optic nerve and retina as well as the artifacts that must be recognized.

Upon completion of this course, participants should be able to: 1) Identify the similarities and differences among the OCT devices for both cross-sectional and longitudinal measurements; 2) Explain a method to interpret spectral domain scans of the optic nerve, retina and Multicolor OCT images based upon following thickness measurements and reflectivity characteristics to identify and quantitate the pathological changes; 3) Understand and interpret scans after a hands-on experience where they get to perform OCT scans with state of the art equipment; and 4) Identify Interactive case presentations of clinical scenarios in which OCT scans were critical for the proper diagnosis and management of complicated neuro-ophthalmic problems.

2:30 pm - 4:30 pm Teaching Neuro-Ophthalmology in the Developing World [2 CME] Arizona 8-10
Moderator: Bradley J. Katz, MD, PhD

Neuro-Ophthalmologists are occasionally invited to teach in the developing world. However, the diseases one encounters and the resources one has available in the developing world can be very different from those in the developed world. Despite these differences, neurologists and ophthalmologists in the developing world are eager to learn from neuro-ophthalmologists. The purpose of this optional symposium is to give Neuro-Ophthalmologists who are interested in teaching outside the developed world the opportunity to become more effective instructors for this relatively new audience.

Upon completion of this course, participants should be able to: 1) Identify the diseases in the developing world that present with neuro-ophthalmic signs and symptoms; 2) Predict the resources that physicians in the developing world have to diagnose and treat these diseases; and 3) Describe the neuro-ophthalmic topics that will be of most interest to neurologists and ophthalmologists outside the developed world.

2:30 pm - 2:50 pm **Strategies for the Rational Investigation of Patients in a Low Resource Environment,**
Mitchell Lawlor, FRANZCO, PhD
2:50 pm - 3:00 pm **Q&A**
3:00 pm - 3:20 pm **Neuro-Ophthalmology Education in China and Africa: The University of Oklahoma Experience,**
Bradley K. Farris, MD
3:20 pm - 3:30 pm **Q&A**

3:30 pm - 3:50 pm	Teaching International Neuro-ophthalmology: Curriculum Development and E-Learning, <i>Karl C. Golnik, MD, Med</i>
3:50 pm - 4:00 pm	Q&A
4:00 pm - 4:20 pm	The Eye-Brain Interface in Cerebral Malaria, <i>Douglas Postels, MD, MS</i>
4:20 pm - 4:30 pm	Q&A

3:00 pm - 5:00 pm **Forum for New and Future Neuro-Ophthalmologists** **Starr Circle Terrace**

All are welcome to attend. This gathering, however, is especially for students, residents, fellows and Neuro-Ophthalmologists in the early years of their career. There will be small group discussions that provide an opportunity to ask questions, or listen to the questions and advice of others. Attendees can rotate between tables during the session. The first hour of discussions will be led by members of the Young Neuro-Ophthalmology (YONO) Committee who are recently out of fellowship, and is geared towards trainees, residents, and fellows. The second hour will be led by senior Neuro-Ophthalmologists, and is geared towards those in their first years of practice. Attendees can come for one or both hour-long sessions.

3:00 pm - 3:05 pm	NANOS Membership Announcement, <i>Patricia Johnston-McNussen, MD</i>
3:05 pm - 4:00 pm	Session I: What Do You Want to Know About Becoming a Neuro-Ophthalmologist? Table 1: Balancing a Clinical and Academic Career, <i>Beau B. Bruce, MD, PhD</i> Table 2: Pearls to Keep a Healthy Work-Life Balance, <i>Michael S. Lee, MD</i> Table 3: Creating an Efficient Clinic without Compromising Care, <i>Andrew G. Lee, MD</i> Table 4: What Career Mistakes Have I seen Young Neuro-ophthalmologists Make, <i>Jorge C. Kattah, MD</i>
4:00 pm - 5:00 pm	Session II: What Do You Want to Know About Your First Yew Years of Practice? Table 1: Finding a Job/Negotiating Your Contract, <i>Heather E. Moss, MD, PhD</i> Table 2: Issues Particular to Neurology-Trainees, <i>Melissa W. Ko, MD</i> Table 3: Issues Particular to Ophthalmology-Trainees, <i>Seema V. Sundaram, MD, FRCS</i> Table 4: Starting and Building a Practice, <i>Collin McClelland, MD</i>

5:00 pm - 7:00 pm **SCIENTIFIC PLATFORM PRESENTATIONS: SESSION I [2 CME]** **Tucson Ballroom** *Moderators: Rudrani Banik, MD and Marc Dinkin, MD*

5:00 pm - 5:15 pm	Efficacy for Remyelination and Safety of Anti-LINGO-1 Monoclonal Antibody (BIB033) in Acute Optic Neuritis: Results from the RENEW Study, <i>Laura J. Balcer, MD, MSCE</i>
5:15 pm - 5:30 pm	The Idiopathic Intracranial Hypertension Treatment Trial: Outcomes from Months 6-12, <i>Michael Wall, MD</i>
5:30 pm - 5:45 pm	The Relationship of Vision and Quality of Life (QOL) in Patients with Pediatric Primary Brain Tumors (PBT), <i>Jason H. Peragallo, MD</i>
5:45 pm - 6:00 pm	Pupillary Light Reaction in Pre-Clinical Alzheimer's Disease vs. Normal Aging Controls, <i>Gregory P. Van Stavern, MD</i>
6:00 pm - 6:15 pm	A New Complementary Video Head Impulse Test Paradigm to Elicit Anti-Compensatory Saccades as an Indicator of Peripheral Vestibular Function, <i>Konrad P. Weber, MD</i>
6:15 pm - 6:30 pm	En Face and Raster SD-OCT Imaging of Retinal and Choroidal Folds in Papilledema, <i>Patrick A. Sibony, MD</i>
6:30 pm - 6:45 pm	Abnormal Integration of Audiovisual Spatial Information in Amblyopia, <i>Michael D. Richards, MD</i>
6:45 pm - 7:00 pm	Quantitative MRI Criteria for Optic Pathway Enlargement in Children with Neurofibromatosis Type 1, <i>Robert A. Avery, DO, MSCE</i>

8:45 pm - 10:30 pm **Night at the Movies: "Three Amigos"** **Tucson Ballroom**

Tuesday, March 1

6:00 am - 6:45 am	Yoga Class.....	San Ignacio
6:30 am - 5:30 pm	Registration/Help Desk.....	Arizona Foyer
6:30 am - 7:30 am	Breakfast.....	Arizona Ballroom
6:30 am - 12:15 pm	Exhibits.....	Arizona Ballroom
6:30 am - 7:30 am	JNO Editorial Board Meeting	San Pedro
7:30 am - 12:00 pm	SCIENTIFIC PLATFORM PRESENTATIONS: SESSION II [3.75 CME] Tucson Ballroom <i>Moderators: Madhu Agarwal, MD and Timothy McCulley, MD</i>	
7:30 am - 7:45 am	Handheld Ocular Fundus Photography in Acute Subarachnoid Hemorrhage (SAH): The FOTO-ICU Study, <i>Philip S. Garza, MD</i>	
7:45 am - 8:00 am	Neuroprotective Effects of ST266 in Experimental Optic Neuritis, <i>Kenneth S. Shindler, MD, PhD</i>	
8:00 am - 8:15 am	Change in Peripapillary Bruch's Membrane Shape Can Be Detected 1 Hour After Lowering of Intracranial Pressure by Lumbar Puncture, <i>Amulya Gampa, MD</i>	
8:15 am - 8:30 am	Demographic, Systemic and Ocular Features of Non-Arteritic Anterior Ischemic Optic Neuropathy in a Large US Claims Beneficiary Database, <i>Dean M. Cestari, MD</i>	
8:30 am - 8:45 am	The Effect of Pupillary Dilation on Strabismus Measurements in Adults, <i>Michael S. Lee, MD</i>	
8:45 am - 9:00 am	Wilbrand's Knee Revisited, <i>Jaydeep Kachhela, MD</i>	
9:00 am - 9:15 am	Cranio-Spinal CSF Redistribution Before and Following Lumbar Puncture in Patients with Idiopathic Intracranial Hypertension, <i>Byron L. Lam, MD</i>	
9:15 am - 9:30 am	Update: The Journal of Neuro-Ophthalmology Tucson Ballroom <i>Lanning Kline, MD, Editor-in-Chief & Jason Roberts, PhD, Managing Editor</i>	
9:30 am - 10:00 am	Coffee Break Arizona Ballroom <i>Moderators: Beau B. Bruce, MD, PhD and Heather E. Moss, MD, PhD</i>	
10:00 am - 10:15 am	Glucagon Like Peptide-1 (GLP-1) Reduces Cerebrospinal Fluid Secretion and Intracranial Pressure: A Novel Treatment for Idiopathic Intracranial Hypertension?, <i>Alexandra Sinclair, MD</i>	
10:15 am - 10:30 am	Recombinant AAV2 Containing the Wild-Type ND4 Gene (rAAV2/2-ND4) is an Experimental Gene Therapy for Vision Loss in LHON Due to the ND4 Mitochondrial Mutation: Phase I/IIa Safety Investigation Results and Upcoming Pivotal Phase III Efficacy Studies, <i>Catherine Vignal, MD</i>	
10:30 am - 10:45 am	Light Evoked Retinal Activation is Metabolically Coupled to Increases in Human Retinal, Choroidal and Optic Nerve Head Blood Flow Measured Simultaneously by Laser Speckle Flowgraphy, <i>Ruben Torres-Torres, MD</i>	
10:45 am - 11:00 am	A Novel Approach to Measuring Peripapillary Retinal Perfusion in Papilledema: A Pilot Study Using Optical Coherence Tomography Angiography, <i>David Fell, MD</i>	
11:00 am - 11:15 am	The Effect of Red Light Exposure on the Pre-Existing Melanopsin-Driven Post-Illumination Pupil Response, <i>Shaobo Lei, MD</i>	
11:15 am - 11:30 am	Experimental Anterior Ischemic Optic Neuropathy in Diabetic Mice Exhibited Severe Retinal Swelling and Subretinal Fluid Accumulation Acutely and More Severe Thinning Chronically, <i>Ming-Hui Sun, MD</i>	
11:30 am - 11:45 am	Change in the Deflection of the Neural Canal Opening Away from the Vitreous and Towards the Retrobulbar Space as an Indicator of Treatment Efficacy of Optic Nerve Sheath Fenestration and Non-surgical Treatment for Idiopathic Intracranial Hypertension (IIH), <i>Rachel Mercer, MD</i>	
11:45 am - 12:00 pm	The Localization and Patterns of Dyschromatopsia: A Study of Prosopagnosic Subjects, <i>Jason J.S. Barton, MD, PhD, FRCPC</i>	

12:00 pm - 6:00 pm	Free Afternoon/Optional Excursions
12:15 pm - 5:00 pm	Kartchner Caverns Depart from Starr Circle Terrace
12:30 pm - 4:30 pm	Desert Horseback Trail Ride Depart from Starr Circle Terrace
12:30 pm - 5:30 pm	Arizona Sonora Desert Museum Depart from Starr Circle Terrace
1:00 pm - 6:00 pm	NANOS Golf Tournament Starr Pass Golf Club

6:00 pm - 9:30 pm	Poster Session II: Scientific Advancements in Neuro-Ophthalmology.....Arizona Ballroom
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Dinner buffet is included. Guests are welcome. Event is complimentary for attendees but guests must purchase tickets. Tickets are available for purchase for \$50 per person.

Authors will be standing by their posters during the following hours:

Odd-Numbered Posters: 6:45 pm - 7:30 pm

Even-Numbered Posters: 7:30 pm - 8:15 pm

Wednesday, March 2

6:30 am - 5:30 pm	Registration/Help Desk Arizona Foyer
6:30 am - 7:30 am	Breakfast.....Arizona Ballroom
6:00 am - 6:45 am	Abstract Committee Meeting San Pedro
7:00 am - 7:30 am	Annual NANOS Business Meeting (all encouraged to attend) Tucson Ballroom
7:30 am - 11:10 am	Neuro-Imaging [3.25 CME]..... Tucson Ballroom
	<i>Moderators: Melissa W. Ko, MD and Jonathan Trobe, MD</i>

The symposium is organized around two topics: 1) Optimizing the use of neuroimaging techniques currently available for the main clinical problems faced by Neuro-Ophthalmologists, including transient monocular and binocular vision loss, suspected optic neuropathy, papilledema, cranial nerve palsy, homonymous hemianopia, and perceptual disorders; and 2) The forefront of neuroimaging—exciting techniques on the horizon. Each topic will be introduced by a lecture given by our invited speakers, who are vetted experts in their field and known as excellent teachers. After each lecture, the co-moderators will present cases to the two speakers, who will now act as panelists, and entertain contributions from the audience. The cases will be selected carefully by the invited speakers and co-moderators to highlight the important points.

Upon completion of this course, participants should be able to: 1) Utilize special techniques that optimize the use of current neuroimaging; 2) Recognize pitfalls associated with the use of current neuroimaging; and 3) Appraise new techniques that will shortly be introduced into neuroimaging.

7:30 am - 8:00 am	Maximizing Current Neuro-Imaging: Tricks and Traps, Christine M. Glastonbury, MBBS
8:00 am - 9:30 am	Case Presentations Related to Current Neuroimaging, Melissa W. Ko, MD & Jonathan Trobe, MD
9:30 am - 9:50 am	Coffee Break.....Arizona Ballroom
9:50 am - 10:20 am	To Infinity and Beyond: Exploring the Realm of Advanced Imaging, Ashok Srinivasan, MBBS, MD
10:20 am - 11:10 am	Case Presentation Related to Future Neuro-Imaging, Melissa W. Ko, MD & Jonathan Trobe, MD
11:10 am - 11:20 am	NOVEL Update Tucson Ballroom
11:20 am - 12:00 pm	Jacobson Lecture: Optic Nerve Gliomas: Where have we been, Where are we now, and Where are we going?..... Tucson Ballroom
	<i>Neil R. Miller, MD</i>
12:00 pm - 12:10 pm	Announcement of a New NORDIC Study Tucson Ballroom
	<i>Mark J. Kupersmith, MD</i>

Wednesday, March 2 (Continued)

12:15 pm - 1:30 pm **Research Committee Meeting Luncheon** **Signature Grill**

1:00 pm - 5:00 pm **Practical Introduction to Basic Statistics [4 CME]** **Arizona 8-10**
Moderator: Beau B. Bruce, MD, PhD

Ever wanted to run some of your own statistics, but do not know where to begin? Do you understand some statistical concepts but that blinking cursor on your computer is accompanied by a sense of dread? Do you rightfully distrust web-based calculators or Excel for statistical analysis but do not want to buy expensive software for an occasional analysis? This course is for you!

In this optional symposium, we will review the correct use of basic statistical tests while introducing the R statistical software package as means of practically performing those statistical tests. R is the most popular statistical programming language in the world and is capable of extremely advanced analyses in addition to the basic statistics we will cover in this symposium. Amazingly, it does not cost anything to download and install!

This course is directed toward practicing physicians in academic medicine and private practice, as well as trainees, with limited or no background in basic statistics and statistical software. Participants will be required to install the necessary software on their personal laptop in anticipation of the session with the support of the program faculty.

Upon completion of this course, participants should be able to: 1) Import Excel datasets into the R statistical software package; 2) Perform basic reshaping of datasets and transformation of variables to prepare for analyses; 3) Describe the differences between continuous, nominal, and ordinal variables; 4) List resources for independent study and extension of the basic concepts learned during the program; and 5) Determine which of the following statistical tests is appropriate for a given hypothesis and perform the test within the R statistical software package: *Comparing proportions*: Binomial (exact and normal approximation), Chi-square, Fischer's, and McNemar's; *Comparing means or location*: Student's t, Wilcoxon signed-ranks, and Mann-Whitney U.

1:00 pm - 2:00 pm

Introduction to the Realm of R, *Beau B. Bruce, MD, PhD*

2:00 pm - 2:30 pm

Importing and Examining Excel datasets with Hands-On Practice,

Beau B. Bruce, MD, PhD, Deborah Friedman, MD, MPH and Heather E. Moss, MD, PhD

2:30 pm - 2:45 pm

Break

2:45 pm - 4:30 pm

Case Studies of Variable Types and Statistical Tests with Hands-On Practice,

Beau B. Bruce, MD, PhD, Deborah Friedman, MD, MPH and Heather E. Moss, MD, PhD

4:30 pm - 5:00 pm

Resources for further progress, Q&A, *Beau B. Bruce, MD, PhD,*

Deborah I. Friedman, MD, MPH and Heather E. Moss, MD, PhD

1:30 pm - 3:30 pm

3D Anatomy of the Orbit and Skull Base [2 CME] **Tucson Ballroom**

Moderator: Tonya Stefko, MD

Faculty: Juan C. Fernandez-Miranda, MD

This symposium will take attendees on a tour of the anatomy of the skull base and orbit, using 3D projection and glasses. The review will include the bones, vasculature, nerves, and soft tissue structures contained in and around the orbit, sphenoid bone, clivus, and paranasal sinuses.

Upon completion of this course, participants should be able to: 1) Describe the relationship of the internal carotid artery to the structures of the anterior visual system and cranial nerves; 2) Describe the relationship of the cavernous sinus and superior orbital fissure (and their contents) to their surrounding structures; 3) List the indications for transcranial and ventral approaches for various orbital and parasellar pathology; and 4) Review the indications and complications of periorbital approaches to skull base pathology (eyebrow, lateral canthal, blepharoplasty, transcaruncular, etc.).

2:00 pm – 4:30 pm **Consortium of Pediatric Neuro-Ophthalmologists Meeting (CPNO)** **San Luis**
Facilitator: Grant Liu, MD

The Consortium of Pediatric Neuro-Ophthalmologists (CPNO) was created to promote and advance pediatric Neuro-Ophthalmology by performing multi-center studies, providing a forum for research and clinical topics, and creating a sense of community to those specializing in pediatric Neuro-Ophthalmology. The meeting is open to anyone interested in children with neuro-ophthalmic problems. During this session multi-center research studies will be discussed, and cases relevant to these projects will be presented.

4:00 pm - 5:00 pm	International Relations Committee Meeting San Pedro
5:30 pm - 10:00 pm	Annual NANOS Reception and Banquet Old Tucson <i>Buses depart from Starr Circle</i>

Thursday, March 3

6:30 am - 12:00 pm	Registration/Help Desk Arizona Foyer
6:30 am - 7:30 am	Breakfast Arizona Ballroom
7:30 am - 9:30 pm	Ocular Motility [2 CME] Tucson Ballroom <i>Moderators: Matthew J. Thurtell, MBBS, FRACP and Eric R. Eggenberger, DO, MSEpi</i>

This symposium will provide a practical update on central ocular motility disorders, including nystagmus and other ocular oscillations. The focus will be on ocular motility disorders that are relevant to neuro-ophthalmic practice.

Upon completion of this course, participants should be able to: 1) Recognize ocular motility disorders due to cerebral and basal ganglia disease; 2) Recognize ocular motility disorders due to cerebellar disease; 3) Recognize ocular motility disorders due to brainstem disease; and 4) Recognize nystagmus and other ocular oscillations.

7:30 am - 7:55 am	Ocular Motility Disorders Due to Cerebral and Basal Ganglia Disease, <i>Jason J. S. Barton, MD, PhD, FRCPC</i>
7:55 am - 8:25 am	Ocular Motility Disorders Due to Cerebellar Disease, <i>David S. Zee, MD</i>
8:25 am - 8:45 am	Ocular Motility Disorders Due to Brainstem Disease, <i>Eric R. Eggenberger, DO, MSEpi</i>
8:45 am - 9:05 am	Nystagmus and Other Ocular Oscillations, <i>David S. Zee, MD</i>
9:05 am - 9:30 am	Cases for Panel/Audience Discussion, <i>Matthew J. Thurtell, MBBS, FRACP</i>
9:30 am - 10:00 am	Coffee Break Arizona Ballroom
10:00 am - 12:00 pm	Sports-Related Concussion: The Eyes Have It! [2 CME] Tucson Ballroom <i>Moderators: Laura J. Balcer, MD, MSCE and Gabriella Szatmary, MD, PhD</i>

The symposium will provide the audience with insight into the latest research in the field of acute sports-related concussion. The speakers will describe the practical neuro-ophthalmological tests that can be applied at the sideline to allow for early diagnosis and prognosis. Newly-recognized neuro-ophthalmological findings, such as potential biomarkers, will be described and shown how they are incorporated into clinical trials.

Upon completion of this course, participants should be able to: 1) Identify key signs and/or symptoms that the patient exhibits that could lead to early detection of diagnosis; 2) Discuss the possible findings on examination and set up proper and timely diagnostic test(s) and treatment; 3) Demonstrate the correct way to examine a patient immediately following a closed head injury; 4) Debate the advantages and disadvantages of diagnosing closed head injuries at the sideline; 5) Organize a plan of how this information could be applied in a clinical setting; 6) Determine if this information would be more useful in a clinical setting after being applied at the sideline; 7) Visualize the patient's injury and symptoms that may be present at the sideline compared to the symptoms that may be present at a clinical setting; and 8) Reflect on the above information to determine if the findings on the sideline would be beneficial in diagnosing the patient prior to being seen in the clinical setting.

10:00 am - 10:25 am	The NCAA Experience: Why Do We Need Vision?, <i>Brian Hainline, MD</i>
10:25 am - 10:45 am	Capturing Eye Movements: Foundation for Neuro-Ophthalmic Assessment in Concussion, <i>Janet C. Rucker, MD</i>
10:45 am - 11:00 am	Sideline Testing for Sports-Related Concussion: What is the Evidence?, <i>Laura J. Balcer, MD, MSCE</i>
11:00 am - 11:10 am	Perspectives of a Neuro-Ophthalmologist on the Sideline, <i>David I. Kaufman, DO</i>
11:10 am - 11:30 am	Bringing Technology to the Sideline: New Data from the Pupil and OCT, <i>Randy Kardon, MD, PhD</i>
11:30 am - 11:45 am	Emerging Issues in Concussion, <i>Steven L. Galetta, MD</i>
11:45 am - 12:00 pm	Q&A

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Redlands, CA

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Philadelphia, PA

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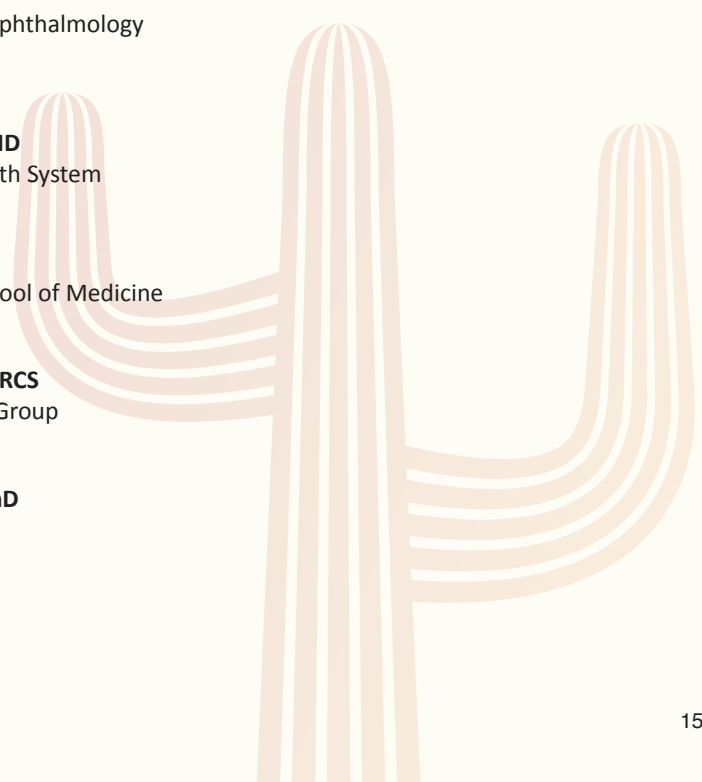
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School of Medicine
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SOCIAL FUNCTIONS

SATURDAY, FEBRUARY 27

OPENING RECEPTION

6:00 pm - 7:30 pm | Ania Terrace

Please join us for the Opening Reception on the Ania Terrace at the JW Starr Pass Marriott. All are welcome to attend the opening reception, which features complimentary cocktails and several food stations.

SUNDAY, FEBRUARY 28

MEMBERS-IN-TRAINING PROGRAM AND RECEPTION

5:30 pm - 6:30 pm | San Luis

New to Neuro-Ophthalmology? All students, residents and fellows-in-training are encouraged to attend!

MONDAY, FEBRUARY 29

WIN LUNCHEON

2:15 pm - 1:30 pm | Starr Circle Terrace

Join your colleagues for the Women in Neuro-Ophthalmology (WIN) Luncheon & Meeting. Lunch tickets are available for purchase. However, all are welcome to attend even without the purchase of a lunch.

TUESDAY, MARCH 1

AFTERNOON EXCURSIONS

The Kartchner Caverns, Arizona Sonora Desert Museum, and Desert Horseback Trail Ride excursions all include admission, transportation, and a boxed lunch. All excursions will depart from the Starr Circle Terrace.



Kartchner Caverns - \$95/person

12:15 pm - 5:00 pm

Kept secret since its discovery in 1974, Kartchner Caverns, 12 miles south of Benson, Arizona, was announced to the world in 1988. Still virtually pristine, this massive limestone cave has 13,000 feet of passages and two rooms as long as football fields. Finally opened as a state park November 12, 1999, this underground wilderness will remain protected while offering visitors a rare tour through multi-colored cave formations. The temperature inside the caverns averages 72°F year round, with the humidity at 99%.

Notes: Comfortable clothing, flat shoes, and a light jacket are recommended for this underground walking tour.



Arizona Sonora Desert Museum - \$75/person

12:30 pm - 5:30 pm

Recognized as a world-renowned zoo, natural history museum and botanical garden. Trip Advisor states that it is one of the Top 10 Museums in the World. This “living museum” houses over 1200 kinds of plants and 300 species of animals that live in enclosures designed to replicate their niche in the wild. The Desert Museum is Southern Arizona’s most popular visitor attraction. Nestled in Tucson Mountain Park the Desert Museum exhibits the living, outdoor world of nature found in the Sonoran Desert region.

Notes: It is suggested that guests wear comfortable shoes and bring hats, sunglasses, sunscreen and cameras.



TUESDAY, MARCH 1 AFTERNOON EXCURSIONS (CONTINUED)



Desert Horseback Trail Ride - \$125/person

12:30 pm - 4:30 pm

Feel the west come alive as you join knowledgeable wranglers on a 90 minute ride through the panoramic vistas of Arizona's most famous desert. As you venture along the desert trails, winding through towering Saguaro Cactus, mesquite groves and other desert plant life, your guide will tell of the abundant plant and animal life.

Notes: It is suggested that guests wear casual long pants and closed toe shoes and bring sunscreen and sunglasses.

NANOS Golf Tournament - \$135/person

1:00 pm - 6:00 pm

Spend an afternoon golfing in the NANOS tournament at the Starr Pass Marriott Golf Course, which is one of Arizona's premier desert courses. Price includes driving range balls and golf cart (Lunch is not included). Club rentals will be available at the hotel for \$69/set (plus tax) which includes 2 sleeves of golf balls.

NANOS Bike Group

Jason Barton and Michael Wall have organized a ride on road bikes on the Rillito River route. All interested parties can contact Jason Barton at jasonbarton@shaw.ca for more details and bike rental information.

WEDNESDAY, MARCH 2

ANNUAL NANOS BANQUET AND RECEPTION

Old Tucson | 5:30 pm - 10:00 pm

Join us for the NANOS Annual Banquet and Reception at Old Tucson, *Where the Spirit of the Old West Comes Alive*.

Re-live the Wild West in a real 1800s old west town and experience high-flying stunts, a gun fight, Old-Time Photos, live music and dancing, a classic BBQ Dinner, and much more! All attendees are encouraged to dress in their best 'Country Wild West' attire. Please be sure to wear comfortable shoes that are equipped for walking on gravel paths.

Buses will depart from the Starr Circle Terrace at the JW Starr Pass Marriott at 5:30 pm. Buses will bring guests back to the hotel as they fill throughout the evening. The last bus will depart Old Tucson at 10:00 pm.



GUEST MEETING AREA

Guests are invited to meet and enjoy the company of other guests in the Salud Lobby, which is located directly outside of the Starbucks. There are no set hours, however, the recommended meet time is Sunday-Thursday from 9:00 am – 11:00 am

SUPPORT RECOGNITION

Thank You!

NANOS would like to thank the following Supporters for their financial support of these activities.

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EXHIBITORS

EXHIBITOR HOURS:

This year's Exhibit Hall is located in the **Arizona Ballroom**. The Exhibit Hall will be open during the days and times listed below. All breakfasts and breaks will be held in the Exhibit Hall. Be sure to take advantage and visit the exhibitors!

Sunday 6:30 am – 2:30 pm
Monday and Tuesday 6:30 am – 12:15 pm

NANOS Exhibitor Descriptions

Park Nicollet Health Services—Booth 1

3800 Park Nicollet Blvd.
St. Louis Park, MN 55416
Phone: (952) 993-2804
Website: www.parknicollet.com

Park Nicollet Health Services is a nonprofit, integrated care system which includes Park Nicollet Methodist Hospital, Park Nicollet Clinic, Park Nicollet Foundation and Park Nicollet Institute. We are one of the largest multispecialty groups in the country with over 25 locations offering 45 medical specialties and subspecialties in Minneapolis, MN and surrounding suburbs.

Heidelberg Engineering—Booth 2

1808 Aston Avenue Suite 130
Carlsbad, CA 92008
Phone: (800) 931-2230
Email: salesUSA@HeidelbergEngineering.com
Website: www.HeidelbergEngineering.com

Heidelberg Engineering is a pioneer in diagnostic imaging. SPECTRALIS®

Multi-Modality Diagnostic Imaging with confocal scanning laser ophthalmoscopy, optical coherence tomography, angiography, and autofluorescence imaging capabilities, adds new dimensions to assessing axonal loss and tracking neurodegeneration in the retina. Our goal is to help researchers better understand how retinal structure and function may relate to systemic neurodegenerative diseases.

Eye Care and Cure—Booth 3

4646 South Overland Drive
Tucson, AZ 85714
Phone: (800) 486-6169
Email: ldillon@eyecareandcure.com
Website: www.eyecareandcure.com

From pharmaceuticals to medical supplies and instruments, Eye Care and Cure provides everything you need for your practice. This year at NANOS we will be showcasing products such as diagnostic lenses, retinoscopy racks, prisms, moisture chambers, trial frames and lenses, and EpiGlare® glare testers.

Haag-Streit USA—Booth 4

3535 Kings Mills Road
Mason, OH 45040
Phone: (513) 336-7255
Email: clizzard@haag-streit-usa.com
Website: www.haag-streit-usa.com

Haag-Streit USA is a leading provider of medical equipment for ophthalmologists, optometrists, and opticians. This experience institutes a solid groundwork for the development, design, and production of unparalleled medical instruments and equipment. We set the standard for precision mechanics and innovative technology with an emphasis on usability and functionality.

Wolters Kluwer—Booth 5

2001 Market Street
Philadelphia, PA 19103
Phone: (215) 521-8200
Email: customerservice@lww.com
Website: www.lww.com

Wolters Kluwer is a leading publisher of medical, health, and science publications, including Journal of Neuro-Ophthalmology. We offer an extensive selection of medical books, journals and electronic media for physicians, nurses, specialized clinicians and students. Please visit our booth to browse our comprehensive product line.

LHON Project at UMDF—Booth 6

8085 Saltsburg Road, Suite 201
Pittsburgh, PA 15237
Phone: (760) 518-3184
Email: LHONpounce@aol.com
Website: www.LHON.ORG

The LHON Project at UMDF is building a global LHON patient community. We offer an annual conference, monthly teleconferences, and individual support/education. We guide affected individuals and their families to neuro-ophthalmologists, genetic counselors and disability services. We engage the patient community to conduct fundraising in support of LHON research.

RETILAB/Roland Consult—Booth 7

1570 St. Paul Avenue
Gurnee, IL 60031
Phone: (815) 239-6420
Email: kevin.m@retilab.com
Website: www.retilab.com

RETILAB / Roland Consult delivers game changing objective retinal and neuronal insight via ERG, pERG, mfERG, VEP, pVEP, mfVEP, EOG and pupilligraphy protocols. RETILAB electrodiagnostics have the power and flexibility to meet modern neuro-ophthalmic, concussion and m/TBI clinical and research routines with sensitivity and specificity running > 95%.

M&S Technologies, Inc.—Booth 8

5715 West Howard Street
Niles, IL 60714
Phone: (847) 763-0500
Email: pmcguire@mstech-eyes.com
Website: www.mstech-eyes.com

M&S Technologies is a software development company dedicated to bringing the very best vision testing systems to eye care professionals worldwide. Our Smart System® is a high-tech, high-value alternative to chart projectors that is optimized with a wide variety of fully randomizable charts, contrast sensitivity and multimedia functions.

NeurOptics, Inc.—Booth 9

18101 Von Karman Ave. Suite 1940
Irvine, CA 92612
Phone: (949) 250-9792
Email: plane@neuroptics.com
Website: www.NeurOptics.com

NeurOptics specializing in all things “pupil,” makes devices that collect pupillary information to facilitate medical decision-making and enable clinical research. New this year, RAPiDo™ is a portable, all-in-one device which detects and quantifies RAPD. NeurOptics also offers the VIP™- 300 Pupilometer for Ophthalmology, as well as pupillometers for Research.

TEVA CNS—Booth 10

11100 Nail Avenue
Overland Park, KS 66211
Phone: (913) 777-2000
Website: www.tevapharm.com

Teva CNS is committed to the continued research and development of its product portfolio and to the development of medicines aimed at meeting the specific needs of the patient communities it serves. Teva's legacy in CNS is grounded in its commitment to ongoing collaboration with academia, medical institutions and patient advocacy groups to find innovative solutions for patients who live with chronic and debilitating diseases.”

Merz North America—Booth 11

4215 Tudor Lane
Greensboro, NC 27410
Phone: (336) 856-2003
Email: info@merz.com
Website: www.merzusa.com

Merz North America is a specialty healthcare company that develops and commercializes innovative treatment solutions in aesthetics, dermatology and neurology in the U.S. and Canada. Our ambition is to become a recognized leader in the treatment of movement disorders, and in aesthetics and dermatology.

Konan Medical—Booth 12

15 Marconi, Suite A
Irvine, CA 92618
Phone: (949) 521-7730
Email: imcmillan@konanmedical.com
Website: www.konanmedical.com

Konan Medical develops innovative technologies that help ophthalmic professionals see important signs that are routinely missed using conventional devices and methodologies: EvokeDx™ Next Gen VEP+ERG. ColorDx™ color vision diagnostics. RAPDx™ Pupillographer. Chart2020™ - the premier visual acuity & ocular performance platform. CellCheck™ SL - the gold standard in specular microscopy. CellChek™ D - the first multi-imaging system for donor corneal analysis.

iMatrix—Booth 13

10179 Huennekens Street
San Diego, CA 92121
Phone: (858) 888-7548
Website: www.imatrix.com

iMatrix provides web presence solutions for every budget and need. The online marketing services are designed to equip eye care professionals for success. Solutions include an advanced SEO solution, custom HD video and video marketing, paid advertising (PPC), social media management, and professional websites. More information is available at <http://optometry.imatrix.com>.

Chadwick Optical, Inc.—Booth 14

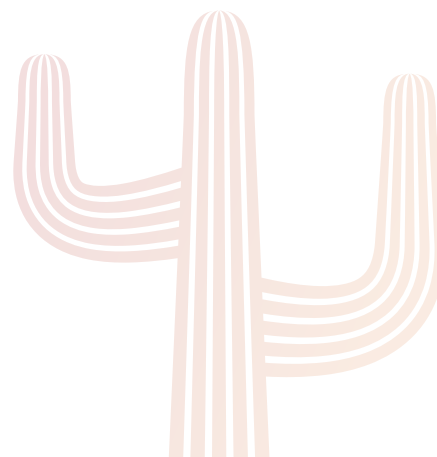
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Souderton, PA 18964
Phone: (267) 203-8665
Email: chadwickoptical@aol.com
Website: www.chadwickoptical.com

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Novartis Pharmaceuticals—Booth 15

1 Health Plaza
East Hanover, NJ 07936
Phone: (888) NOW-NOVA
Website: www.novartis.com

Novartis Pharmaceuticals is dedicated to discovering, developing, manufacturing and marketing prescription drugs that help meet our customers' medical needs and improve their quality of life



Good-Lite/Richmond Products—Booth 16**16**

1155 Jansen Farm Drive
Elgin, IL 60123
Phone: 847-841-1145
Website: www.good-lite.com

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The Fresnel Prism & Lens Co.—Booth 17**17**

10810 Nesbitt Ave South
Bloomington, MN 55437
Phone: (952) 496-0432
Email: info@fresnelprism.com
Website: www.fresnel-prism.com

The Fresnel Prism & Lens Co. offers invaluable and affordable products used by Neuro-Ophthalmologists in patient evaluation and treatment. New in 2016 - On-Line Ordering is now available!

ECLgroup—Booth 18**18**

1504 NW Vivion Road
Kansas City, MO 64118
Phone: (855) 685-3292
Website: www.2020ehr.com

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Voxeleron, LLC—Booth 19**19**

4695 Chabot Drive, Suite 200
Pleasanton, CA 94588
Phone: (925) 558-2755
Email: contact@voxeleron.com
Website: www.voxeleron.com

Voxeleron develops advanced analysis software for research in ophthalmic imaging. At NANOS we will be demonstrating Orion, advanced, platform-independent OCT analysis software. Orion supports fundamental research in neuro-ophthalmology by automatically segmenting macula OCT data into seven retinal layers, and providing easy to use viewing, editing, and batch processing functionality.

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NANOS

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44TH ANNUAL MEETING

NANOS

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Hawaii, The Big Island

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