

NEUROSURGERY ORIGINS



CNS | 2024 ANNUAL MEETING

HOUSTON, TEXAS • SEPTEMBER 28-OCTOBER 2, 2024

PRELIMINARY PROGRAM

**ADVANCE REGISTRATION DEADLINE:
AUGUST 28, 2024**

Take advantage of discounted registration rates and save big when you register and secure housing before the advance registration deadline!

REGISTER TODAY AT [CNS.ORG/2024](https://cns.org/2024)



JOIN US

in Houston, TX at the 2024 CNS Annual Meeting, Neurosurgery Origins, where emerging technologies provide new perspectives on established truths. Together, we'll reflect on the historical journey and current state of neurosurgery, using a fresh lens to synthesize insights and chart a course for an enlightened future. Your participation is an investment in the dynamic narrative of neurosurgery's trajectory, as we explore promising horizons ahead. Bring a guest or your family with you to enjoy:

- Fascinating and informative museums including Space Center Houston — the official visitor's experience at NASA's Johnson Space Center
- Diverse communities and world-class cuisine at over 10,000 restaurants in the "newest capital of great food!"
- Galveston Boardwalk located only 20 minutes from the convention center
- Amazing green spaces and parks including the famous Discovery Green Park just steps away from the convention center and headquarters hotel

NEW FOR 2024!

Weekend Symposia:

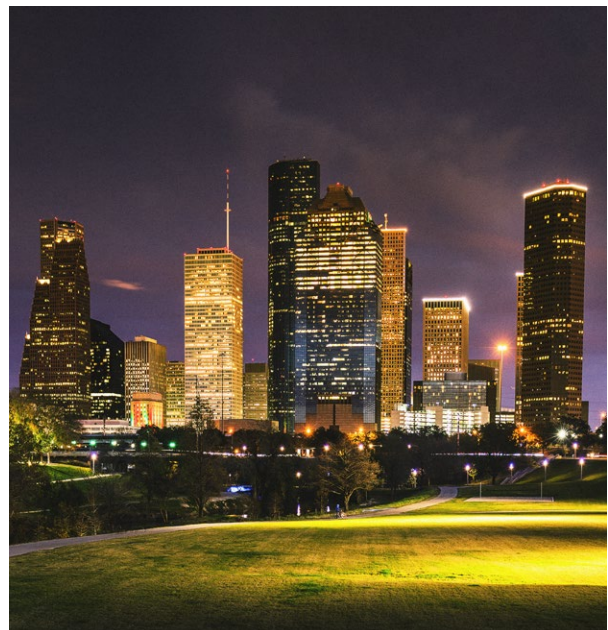
- Special Symposium 02: Spinal Deformity Primer for All Neurosurgeons: A CNS Collaboration with Scoliosis Research Society
- Special Symposium 03: CNS Data Science and AI for Neurosurgeons: A Hands On Experience
- SYM08: Treating Complex Cervical Spine Disease in the Growing Spine
- SYM09: Essentials for a Rewarding Neurosurgical Career
- SYM12: Navigating Neurosurgery Beyond Academia: Strategies for Success in Practice

Lunch Seminars:

- M01: Unraveling the Mysteries of DAVF
- M03: Career, Kids, Loss, and Chaos: Managing Neurosurgery and Life
- T14: Aneurysms: Tools and Tricks of the Trade
- W21: Treating SDH in 2024: A Multimodal Approach

Dinner Seminar:

- Dinner Seminar 1: Disruptive Technology in Spine Surgery



LETTER FROM THE PRESIDENT

Dear Colleagues,

I am very excited to meet you all in Houston, TX, September 28-October 2, for the 2024 CNS Annual Meeting: Neurosurgery Origins! Emerging technologies have opened up novel vantage points, offering us a redefined understanding of established truths. This gathering aims to foster a collective reflection, encouraging participants to explore the evolution of neurosurgery with a fresh lens. By synthesizing insights from the past and present, we aspire to chart a course that propels us toward an enlightened future in neurosurgical endeavors.

Famous for space exploration, world-class museums, diverse communities, and incredible cuisine, Houston, Texas boasts an unmatched cultural experience. Be sure to bring a guest or your family to enjoy all this city has to offer!

While at the CNS Annual Meeting, take opportunities to connect with our Featured Speakers and Honored Guests. Keep reading to learn about our speaker lineup, along with many other exciting highlights that await you. I can't wait to see you in September!

Sincerely,

Alexander A. Khalessi



Thank you to the faculty from our 2024 International Partner Societies



Brazilian Society
of Neurosurgery



The Japanese
Congress of
Neurological
Surgeons



Neurological
Society of India

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PROGRAM AT-A-GLANCE

SATURDAY, SEPTEMBER 28

8:00 am-3:15 pm	CNS Wellness Retreat
8:00 am-4:15 pm	Symposia (SYM01-SYM10) Special Symposium 01: Steven L. Giannotta, MD: A Career of Surgical Excellence, Education and Leadership Special Symposium 02: Spinal Deformity Primer for All Neurosurgeons: A CNS Collaboration with Scoliosis Research Society
5:00-6:30 pm	CNS International, Resident, and Foundation Reception <i>Marriott Marquis Houston—Altitude Pool Deck</i>
6:30-8:30 pm	Dinner Seminar 1: Disruptive Technology in Spine Surgery

SUNDAY, SEPTEMBER 29

8:00 am-4:15 pm	Symposia (SYM11-SYM20) Special Symposium 03: CNS Data Science and AI for Neurosurgeons: A Hands On Experience Special Symposium 04: Meeting of The Americas Special Symposium 05: 360 Degrees Around the Greatest Surgical Challenges in the Cerebellopontine Angle, Petrous Apex and Petroclival Fissure - A High Yield CNS/NASBS Symposium Special Symposium 06: Transforming Neurosurgery through Technology: The Innovation Symposium Association of Neurosurgical Physician Associates (ANSPA) Fall 2024 CME Meeting <i>Presented in Collaboration with CNS</i>
9:00-10:30 am	CNS Wellness Retreat
1:00-3:00 pm	Resident SANS Challenge Preliminary Rounds*
4:30-6:30 pm	General Scientific Session I <i>Marriott Marquis Houston</i>
6:30-8:00 pm	Opening Reception <i>Marriott Marquis Houston</i>

MONDAY, SEPTEMBER 30

7:00-8:30 am	Guidelines Sessions Sunrise Science and Late Breaking Abstract Sessions
8:15 am-4:00 pm	Exhibit Hall open*
8:40-9:40 am	General Scientific Session II
9:40-10:40 am	Beverage Break in the Exhibit Hall*
10:00-10:30 am	Live Surgery in the Exhibit Hall*
10:40 am-12:10 pm	General Scientific Session II, continued
12:20-1:50 pm	Luncheon Seminars Industry Sponsored Lunch Symposia*
1:50-2:50 pm	Beverage Break in the Exhibit Hall*
2:00-2:30 pm	Live Surgery in the Exhibit Hall*
2:50-4:20 pm	Section Sessions and Oral Presentations
4:30-6:00 pm	Case-based Discussion Sessions
6:00-7:30 pm	Medical Student Town Hall*
7:30-9:30 pm	Dinner Seminar 2: Complex Skull Base Approaches

TUESDAY, OCTOBER 1

7:00-8:30 am	Guidelines Sessions Sunrise Science and Late Breaking Abstract Sessions
8:15 am-3:00 pm	Exhibit Hall open*
8:40-9:40 am	General Scientific Session III
9:40-10:40 am	Beverage Break in the Exhibit Hall*
10:00-10:30 am	Live Surgery in the Exhibit Hall*
10:40 am-12:10 pm	General Scientific Session III, continued
12:20-1:50 pm	Luncheon Seminars Industry Sponsored Lunch Symposia*
1:50-2:50 pm	Resident SANS Challenge Championship Round* Neurosurgery Publications: "Getting Published" Beverage Break in the Exhibit Hall*
2:00-2:45 pm	Annual Business Meeting*
2:00-2:30 pm	Live Surgery in the Exhibit Hall*
2:50-4:20 pm	Section Sessions and Oral Presentations
4:30-6:00 pm	Case-based Discussion Sessions
5:00-6:30 pm	Interactive Poster Presentation Session with Wine and Cheese Reception

WEDNESDAY, OCTOBER 2

7:00-8:30 am	Guidelines Sessions Sunrise Science and Late Breaking Abstract Sessions
8:15 am-1:30 pm	Exhibit Hall open*
8:40-9:40 am	General Scientific Session IV
9:40-10:40 am	Beverage Break in the Exhibit Hall*
10:00-10:30 am	Live Surgery in the Exhibit Hall*
10:40 am-12:10 pm	General Scientific Session IV, continued
12:20-1:50 pm	Luncheon Seminars
1:50-3:50 pm	Neurosurgical Medical Student Session: Prepared by medical students, for medical students

* Not eligible for CME Credit

All events held at the George R. Brown Convention Center unless otherwise noted.

REGISTER
TODAY!

Scan QR to register



MEMBERS SAVE ON
REGISTRATION

JOIN WHEN YOU REGISTER TODAY!

SUBSPECIALTY SESSION HIGHLIGHTS

SUBSPECIALTY SESSION HIGHLIGHTS KEY

AP ADVANCED PRACTICE PROVIDER

CV CEREBROVASCULAR

IN INNOVATION

GE GENERAL

MS MEDICAL STUDENTS

PA PAIN

PE PEDIATRIC

PN PERIPHERAL NERVES

RE RESIDENT

SE SOCIOECONOMIC

SF STEREOTACTIC AND FUNCTIONAL

SP SPINE

TR NEUROTRAUMA

TU TUMOR

WI WINS

AP ADVANCE PRACTICE PROVIDER

SUNDAY

- Association of Neurosurgical Physician Associates (ANSPA) Fall 2024 CME Meeting Presented in Collaboration with the CNS

MONDAY

- Guideline Session I: Cervical Degenerative Spine
- Guideline Session II: Progressive Glioblastoma

TUESDAY

- Guideline Session III: Brain Aneurysm
- Guideline Session IV: Functioning Pituitary Adenoma
- Interactive Poster Presentation Sessions

WEDNESDAY

- Guideline Session V: Chiari Malformation

CV CEREBROVASCULAR

SATURDAY

- Special Symposium 01: Steven Giannotta, MD: A Career of Surgical Excellence, Education and Leadership
- SYM01: 2024 CNS Cerebrovascular Neurosurgery for Trainees
- SYM10: 3D Surgical Neuroanatomy

SUNDAY

- SYM13B: Update on Ischemic Cerebrovascular Disease
- SYM13A: Update on Hemorrhagic Cerebrovascular Disease

MONDAY

- M01: Unraveling the Mysteries of DAVF
- M09: Honored Guest Lunch, Steven L. Giannotta: Crushing Your Residency and Early Years of Practice
- Section on Cerebrovascular Surgery 1: Beyond Clips and Coils
- Implementing Minimally Invasive ICH Evacuation into Your Practice

TUESDAY

- Guideline Session III: Brain Aneurysm
- T14: Aneurysms: Tools and Tricks of the Trade
- Section on Cerebrovascular Surgery 2: Emerging Science and Challenging Cases
- Cavernous Malformations: What does the Modern Data Show?
- Interactive Poster Presentation Sessions

WEDNESDAY

- W21: Treating SDH in 2024: A Multimodal Approach

GE GENERAL

SATURDAY

- SYM01: 2024 CNS Cerebrovascular Neurosurgery for Trainees
- SYM02: Digital Fluency: Neurosurgery
- SYM03: Neurosurgeon Scientist Symposium

SUNDAY

- Special Symposium 03: CNS Data Science and AI for Neurosurgeons: A Hands On Experience
- Special Symposium 04: Meeting of the Americas
- Special Symposium 06: Transforming Neurosurgery Through Technology: The Innovation Symposium
- SYM11A: Swimming with the Sharks
- SYM11B: Leading the Pack
- SYM12: Navigating Neurosurgery Beyond Academia: Strategies for Success in Practice
- SYM15A: Understanding and Improving the Quality in Neurosurgery
- SYM15B: The Importance of Wellness and The Reality of Burnout in Neurosurgery

SUBSPECIALTY SESSION HIGHLIGHTS

MONDAY

- M09: Honored Guest Lunch, Steven L. Giannotta: Crushing Your Residency and Early Years of Practice
- Dinner Seminar 02: Complex Skull Base Approaches

TUESDAY

- T17: Honored Guest Lunch, Henry Brem: Developing New Approaches to Brain Tumor Therapy
- Interactive Poster Presentation Sessions

IN INNOVATION

SATURDAY

- SYM02: Digital Fluency: Neurosurgery
- SYM03: Neurosurgeon Scientist CNS Symposium

SUNDAY

- Special Symposium 03: CNS Data Science and AI for Neurosurgeons: A Hands On Experience
- Special Symposium 06: Transforming Neurosurgery Through Technology: The Innovation Symposium

TUESDAY

- T17: Honored Guest Lunch: Developing New Approaches to Brain Tumor Therapy

WEDNESDAY

- General Scientific Session IV

MS MEDICAL STUDENTS

SATURDAY

- SYM01: 2024 CNS Cerebrovascular Neurosurgery for Trainees
- Special Symposium 01: Steven Giannotta, MD: A Career of Surgical Excellence, Education and Leadership

SUNDAY

- SYM11A: Swimming with the Sharks: Thriving in the Neurosurgery Match and Residency
- SYM11B: Leading the Pack
- SYM18B: Harnessing the Power of Media to Cultivate a Parallel Career and Augment Your Practice

MONDAY

- Medical Student Town Hall

TUESDAY

- Neurosurgery Publications: "Getting Published"
- Interactive Poster Presentation Sessions

PA PAIN

SATURDAY

- SYM04B: Interdisciplinary Approach to Lumbar Spine Pain
- SYM05: Microvascular Decompression, Lesioning, and Neuromodulation Approaches to Facial Pain

MONDAY

- M04: Organized Neurosurgery's Approach to the Opioid Epidemic
- Section on Pain 1: The Future of Neuromodulation
- Lesioning for Pain

TUESDAY

- Interactive Poster Presentation Sessions

PE PEDIATRIC

SATURDAY

- SYM06: Pediatric Neurosurgery/Stereotactic and Functional Bundle
- SYM06A: Epilepsy Surgery Symposium: Integrating Practical Approaches for All Ages

MONDAY

- Clinical Practice Guidelines - How are they made? What do they show? Why should I Care?
- Chiari Malformation – The Answer

TUESDAY

- Section on Pediatric Neurosurgery 1: The Soul of Pediatric Neurosurgery: Striving for Meaning and Purpose with Mentoring, Team Building, Wellness, and Hospitality
- Cavernous Malformation – Treatment Indications and Strategies
- Interactive Poster Presentation Sessions

WEDNESDAY

- Guideline Session V: Chiari Malformation

REGISTER
TODAY!

Scan QR to register



SUBSPECIALTY SESSION HIGHLIGHTS

PN PERIPHERAL NERVES

SATURDAY

- SYM07: Peripheral Nerve Surgery: Evaluation and Common Surgical Exposure

MONDAY

- M05: Peripheral Nerve Entrapment Versus Radiculopathy
- Section on Peripheral Nerves 1: Pearls in Peripheral Nerve Surgery: Video Session
- Brachial Plexus Stretch Injury: Reconstructive Strategies

TUESDAY

- T11: Management of Traumatic Peripheral Nerve Injuries
- Interactive Poster Presentation Sessions

RE RESIDENT

SATURDAY

- SYM01: 2024 CNS Cerebrovascular Neurosurgery for Trainees
- Special Symposium 01: Steven Giannotta, MD: A Career of Surgical Excellence, Education and Leadership
- SYM09: 2024 Essentials for a Rewarding Neurosurgical Career

SUNDAY

- SYM11A: Swimming with the Sharks: Thriving in the Neurosurgery Match and Residency
- SYM11B: Leading the Pack

MONDAY

- M09: Honored Guest Lunch: Steven L. Giannotta

TUESDAY

- T17: Honored Guest Lunch: Henry Brem
- Neurosurgery Publications: "Getting Published"
- Interactive Poster Presentation Sessions

SE SOCIOECONOMIC

SUNDAY

- SYM15A: Understanding and Improving Quality in Neurosurgery
- SYM15B: The Importance of Wellness and The Reality of Burnout in Neurosurgery

MONDAY

- T16: Optimizing Neurosurgical Excellence: Strategies for Peak Performance
- T10: The Socioeconomics of an Ambulatory Center
- Council of State Neurosurgical Societies Session 1: Clinical Leadership in Neurosurgery
- Mistakes in Spine Coding - How to Stay Out of Trouble

TUESDAY

- M03: Career, Kids, Loss and Chaos: Managing Neurosurgery and Life
- Council of State Neurosurgical Societies Session 2: Neurosurgical Advocacy and Value
- Medical Malpractice Expert Testimony Do's and Don'ts
- Interactive Poster Presentation Sessions

WEDNESDAY

- W19: Unwrapping Hospital Financials - How Neurosurgeons Can Be Affected

SF STEREOTACTIC AND FUNCTIONAL

SATURDAY

- SYM06A: Epilepsy Surgery Symposium: Integrating Practical Approaches for All Ages
- SYM06B: Movement Disorder Surgery: Novel Approaches and Measuring the Impact of Chronic Readings

MONDAY

- Section on Stereotactic and Functional Neurosurgery 1: Advanced High-Density Electrode Recordings of the Human Brain
- Focused Ultrasound; Challenging Cases

TUESDAY

- T12: Tumor-Related Epilepsies
- Section on Stereotactic and Functional 2: Cerebral Modulation for Pain
- Ethical Dilemmas in Neuromodulation
- Interactive Poster Presentation Sessions

SP SPINE

SATURDAY

- Special Symposium 02: Spinal Deformity Primer for All Neurosurgeons: A CNS Collaboration with Scoliosis Research Society
- Dinner Seminar 01: Disruptive Technology in Spine Surgery

SUNDAY

- SYM14A: Lateral Approaches to the Spine
- SYM14B: Advanced Minimally Invasive Spine Surgery: Operative Nuances, Indications, and Complication Avoidance
- SYM16A: Comprehensive Management of Spinal Trauma

SUBSPECIALTY SESSION HIGHLIGHTS

MONDAY

- Guidelines Session I: Cervical Degenerative Spine
- M02: Cervical Spondylotic Myelopathy: Anterior vs. Posterior
- Section on Disorders of the Spine and Peripheral Nerves 1: Update on Minimally Invasive and Endoscopic Surgery
- Central Cord Injury

TUESDAY

- T15: Surgical Management of Primary Spinal Tumors
- Section on Disorders of the Spine and Peripheral Nerves 2: Disparities in Spine Care and Education
- Spine Case-Based Debates
- Interactive Poster Presentation Sessions

WEDNESDAY

- W18: My Worst Spinal Complication: Lessons Learned

TR NEUROTRAUMA

SATURDAY

- SYM04A: Cutting Edge Treatments in Neurotrauma

SUNDAY

- SYM16A: Comprehensive Management of Spinal Trauma
- SYM16B: Neurotrauma in Combat, Disaster, and Other Austere Environments

MONDAY

- M07: Neurosurgeons Role in Sport Medicine
- Section on Neurotrauma and Critical Care 1: Neuromodulation in Neurotrauma
- Crossfire Debates in Neurotrauma

TUESDAY

- T11: Management of Traumatic Peripheral Nerve Injuries
- Section on Neurotrauma and Critical Care 2: Penetrating Head Injury Symposium
- Neurotrauma as a Team Sport: Case-Based Discussion in Complex Neurotrauma Patients
- Interactive Poster Presentation Sessions

WEDNESDAY

- W21: Treating SDH in 2024: A Multimodal Approach

TU TUMOR

SATURDAY

- SYM10: 3D Surgical Neuroanatomy

SUNDAY

- SYM17A: Brain Tumor Update - Management of Malignant Brain Tumors
- SYM17B: Brain Tumor Update - Management of Benign Brain Tumors
- Special Symposium 05: Greatest Surgical Challenges in the Cerebellopontine Angle, Petrous Apex and Petroclival Fissure - CNS/NASBS Symposium

MONDAY

- Guidelines Sessions II: Progressive Glioblastoma
- M06: New Concepts in Intra-Operative Guidance
- Section on Tumors 1: Evolution of Surgical Management of Brain Cancers in the Age of Targeted Molecular Therapies
- Multimodal Therapy for Brain Metastasis
- Dinner Seminar 02: Complex Skull Base Approaches

TUESDAY

- Guideline Session IV: Functioning Pituitary Adenoma
- T15: Surgical Management of Primary Spinal Tumors
- Section on Tumors 2: Focused Ultrasound and Intraoperative Photodynamic Therapy During Brain Tumor Resection
- Complex Skull Base Approaches
- Interactive Poster Presentation Sessions

WEDNESDAY

- W20: Now What? Management of Intracranial Complications

WI WINS

SUNDAY

- SYM18A: Maximizing Your Neurosurgical Employment Opportunities
- SYM18B: Harnessing the Power of Media to Cultivate a Parallel Career and Augment Your Practice

MONDAY

- M03: Career, Kids, Loss and Chaos: Managing Neurosurgery and Life

TUESDAY

- T16: Optimizing Neurosurgical Excellence: Strategies for Peak Performance
- Interactive Poster Presentation Sessions

CAN'T-MISS EVENTS

NEW CNS WELLNESS RETREAT

September 27-29 | Post Oak Hotel at Uptown Houston

Join us for our inaugural CNS Wellness Retreat at the Post Oak Hotel at Uptown Houston. Prior to jumping into all of the scientific sessions and hustle and bustle at the convention center – submerge yourself in the tranquility that awaits you at the luxurious Post Oak Hotel. This immersive 1.5 day retreat will feature yoga, meditation, and sessions designed to reduce stress, neck, lower back and foot pain, improve work-life balance, and address common areas for improvement such as healthy eating hacks in the OR and managing administration.

Attendees will learn valuable tools to immediately incorporate into their daily lives. The program begins with a reception on Friday evening, early morning sessions on Saturday, free time to enjoy the spa Saturday afternoon and will conclude by 11:00 am on Sunday allowing attendees the opportunity to attend an afternoon Symposium and get checked in at an official CNS hotel to begin their annual meeting experience. Space is extremely limited for this intimate offering - early registration is recommended.



CNS 5K

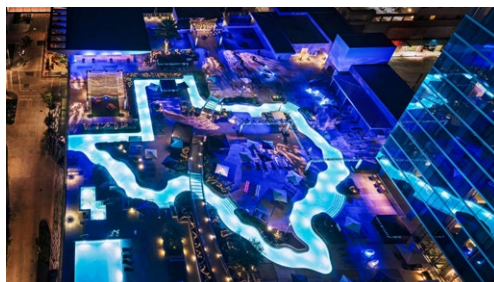
Join us again this year for the CNS 5K! Organized group runs will be held on Monday, September 30 at 6:30 am and on Tuesday, October 1 at 5:00 pm, departing from the lobby at the Marriott Marquis Houston. Advance registration is required and includes a CNS 5K t-shirt. You may also run a 5K autonomously while you are in Houston and track your time in the Strava app.



CNS INTERNATIONAL, RESIDENT, AND FOUNDATION RECEPTION

Saturday, September 28 | 5:00-6:30 pm | Altitude Pool Deck at the Marriott Marquis Houston

International meeting attendees, residents, and CNS Foundation awardees and donors, we welcome you to join us on the Altitude Pool Deck around the Texas-shaped lazy river to come together with colleagues from around the world at this reception! Enjoy hors d'oeuvres and cocktails while visiting with some of the top professionals in the field of neurosurgery. All registered CNS Foundation donors and awardees, Residents, International attendees, and their registered guests are invited to attend.



OPENING RECEPTION

Sunday, September 29 | 6:30-8:00 pm | Marriott Marquis Houston

Start the 2024 CNS Annual Meeting off connecting with old friends and creating new bonds with colleagues at the Opening Reception! Enjoy live music, drinks, and delectable cuisine conveniently located at the Marriott Marquis Houston.



ART OF NEUROSURGERY

Monday, Tuesday, Wednesday, September 30, October 1, 2 | Open exhibit hours
CNS Xperience Lounge
George R. Brown Convention Center

Don't miss the Art of Neurosurgery gallery created by your neurosurgical colleagues! Take a few minutes out of your busy day to stroll through the art gallery. Presentations will be made by medical illustrators Josh Emerson and Peter Lawrence along with real-time medical illustration demonstrations.



Artist: Dr. Kathryn Ko

CNS RESIDENT SANS CHALLENGE CHAMPIONSHIP ROUND

Tuesday, October 1 | 1:50-2:50 pm

See the top three resident programs from around the country compete for undisputable SANS bragging rights, trophies, and cash prizes!

Catch the Preliminary round on Sunday, September 29 from 1:00-3:00 pm.

2023 SANS Challenge Winners

- **1st Place:** University of California San Diego (UCSD)
- **2nd Place:** Walter Reed National Military Medical Center
- **3rd Place:** Massachusetts General Hospital



MEDICAL STUDENT TOWN HALL

Monday, September 30 | 6:00-7:30 pm

We invite all Medical Students to attend the Medical Student Town Hall! Take advantage of this opportunity to learn about navigating the match and developing a successful career in neurosurgery from a panel of Neurosurgery Residency Program Directors who will answer questions and discuss hot topics.



INTERACTIVE POSTER PRESENTATION SESSION WITH WINE AND CHEESE

Monday, September 30 | 4:30-6:00 pm
Tuesday, October 1 | 6:00-7:30 pm

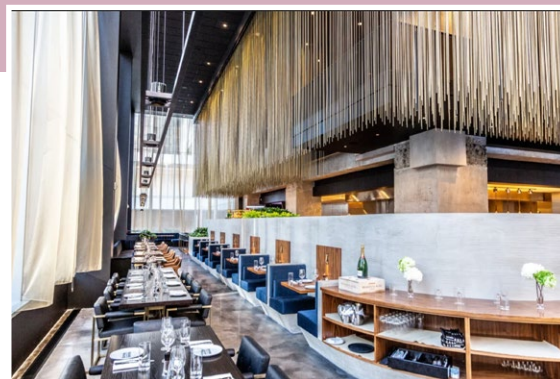
The interactive poster session aims to invigorate scientific presentation and discussion, complemented by wine and cheese. Selected presenters will showcase their research, highlighting key advances in each subspecialty area.



SP DINNER SEMINAR 1

Saturday, September 28, 2024 | 6:30-8:30 pm | \$225
(includes three-course dinner and beverages)

- Guard and Grace, a modern steakhouse
- Advance Registration Required
- Complimentary shuttle service will depart the Marriott Marquis Houston at 6:15 pm



DISRUPTIVE TECHNOLOGY IN SPINE SURGERY

Moderators: *Richard Fessler, Mark Shaffrey*

Faculty: *Muhammad Abd-El-Barr, Domagoj Coric, Christoph Hofstetter, John Pollina, John Shin, Timur Urakov*

Seminar Description: Technological advancements in spine surgery continue developing at an astounding rate. This dinner seminar will foster discussion on some of the latest trends in the management of patients with spinal disorders. Topics to be covered include robotics, endoscopy, and artificial intelligence.

TU DINNER SEMINAR 2

Monday, September 30, 2024 | 7:30-9:30 pm | \$225
(includes three-course dinner and beverages)

- Ill by Wolfgang Puck
- Advance Registration Required
- Complimentary shuttle service will depart the Marriott Marquis Houston at 7:15 pm



COMPLEX SKULL BASE APPROACHES

Moderators: *Christopher Graffeo, Robert Heller*

Faculty: *Vijay Agarwal, Karam Asmaro, Franco DeMonte, Daniel Prevedello, Shaan Raza, Olabisi Sanusi, Laligam Sekhar, Mario Zuccarello*

Seminar Description: A reference session for the management of intracranial lesions necessitating a combined approach. Discussed in detail will be appropriate approach selection, technique, nuance, and complication avoidance. Combined approaches will not be limited solely to open approaches, but will include both endoscopic and keyhole techniques, as well as vascular approaches.



LEARN MORE!

The Board of the CNS Foundation thanks supporters around the world who make our awards and programs possible. Please help us thank the following:

Medtronic

stryker



- The Congress of Neurological Surgeons
- Joint Cerebrovascular Section
- Joint Section on Disorders of the Spine and Peripheral Nerves
- Joint Pediatric Section
- American Society for Stereotactic and Functional Neurosurgery
- Joint Women in Neurosurgery Section
- Joint Neurotrauma and Critical Care Section
- Joint Tumor Section
- The CNS community of neurosurgeons and individuals who generously donate and volunteer every year to the CNS Foundation.

The CNS Foundation is proud to offer the following awards in support of our four initiative pillars:

Diversity, Equity, and Inclusion

- Pathway to Neurosurgery for Houston, TX
- Impact, Pilot and Scholar Awards in Diversity, Equity, and Inclusion
- Future Women Leaders in Neurosurgery Scholarship

International Neurosurgery

- International Visitorship at UPMC Neurosurgery Pittsburgh
- International Visitorship at Penn State
- Tumor Observership at University of Miami
- Brain Tumor Observership at Icahn School of Medicine at Mount Sinai
- Spine Observership at Duke University
- MGH Harvard Observership in Global Neurosurgery
- Stanford International Visitorship
- Three new endovascular observerships in 2025

Clinical Scientist Career Development

- Joint Cerebrovascular Section/CNSF Young Investigator's Award
- NINDS/CNS Getch K12 Scholar Award

EXHIBIT HALL

The CNS Exhibit Hall is the best place to discover cutting-edge technology to enhance your practice. Learn from industry experts and gain hands-on experience with the latest devices – all brought to you by our industry partners. For a complete list of exhibitors, see page 53 or visit cns.org/2024!

EXHIBIT HALL HOURS

Monday:	8:15 am–4:00 pm
Tuesday:	8:15 am–3:00 pm
Wednesday:	8:15 am–1:30 pm

EXHIBIT HALL BEVERAGE BREAKS

Monday-Wednesday:	9:40–10:40 am
Monday & Tuesday:	1:50–2:50 pm

Admittance to the Exhibit Hall is by CNS name badge only. Children under the age 18 are not allowed in the Exhibit Hall.

CROSSROADS OF INNOVATION

Choose from a variety of subspecialty tracks where you will be guided along a path of engaging in-booth demonstrations in the Exhibit Hall during your morning and afternoon breaks.

Sponsored by: GammaTile, Aesculap, and Phasor Health



NEUROSURGICAL DISCOVERIES SKILLS CHALLENGE

Experience a new type of engagement with technology during the Exhibit Hall hours. Each skills challenge completed in a participating exhibit booth will have a point value dependent on how well you perform the skill. A leaderboard will be tracking attendee participation and point levels in real-time throughout the meeting. The CNS will provide prizes to the top scoring attendees.

Sponsored by: Aesculap, BK Medical and Phasor Health

XPERIENCE LOUNGE

LIVE SURGERY PRESENTATIONS

Surgeons from top institutions will operate live via telemedicine and you will have the opportunity to observe and ask questions of the operating surgeon during each beverage break.

DEVICE INNOVATION SHOWCASE

These 10-minute sessions will feature an expert showcasing the latest technology from our Industry leaders. Learn more during your afternoon break on Tuesday.

Sponsored by: GammaTile and Imperative Care

HONORED GUEST MEET AND GREETES

Interact with our esteemed Honored Guests!

- Steven L. Giannotta on Monday morning during the beverage break
- Henry Brem on Tuesday morning during the beverage break

POP UP WELLNESS CLASSES!

Join your peers for brief fitness classes led by Pilin Anice in the Xperience Lounge during the Morning and Afternoon Beverage Breaks on Monday and Tuesday! Classes are complimentary. No experience necessary.



CONNECT WITH INDUSTRY OUTSIDE OF THE EXHIBIT HALL!

SPONSORED LUNCH SYMPOSIA WITH INDUSTRY LEADERS

Choose one of our 6 complimentary Non-CME Lunch-and-Learn Sessions covering important clinical topics during your lunch break on Monday and Tuesday from 12:20-1:50 pm in the convention center.

Sponsored by: Medtronic, Globus Medical, Penumbra, RapidAI, and Merck & Co.



HANDS-ON CADAVERIC EXPERIENCE

These surgical cadaveric suites located in the convention center give you the opportunity to enhance your experience with the latest and greatest neurosurgical technology.

Sponsored by: Olympus America



BREAKOUT & LUNCH SESSIONS DURING THE FULL-DAY SYMPOSIA

These 30-minute non-CME breakout sessions or 45-minute non-CME lunch sessions will be held during the full day symposia on Saturday and Sunday. Take advantage of this opportunity to gain hands-on experience and see demonstrations of the most advanced equipment and techniques.

Sponsored by: Globus Medical, GammaTile, and AstraZeneca



GENERAL SCIENTIFIC SESSION HIGHLIGHTS

GENERAL SCIENTIFIC SESSION I - Past

Sunday, September 29 | 4:30-6:30 pm

Presiding Officer: Daniel J. Hoh

Moderators: Nicole Bentley, Khoi D. Than



Welcome to the 2024 CNS Annual Meeting

Alexander A. Khalessi

CNS Resident Award Presentation



Catriona Jamieson

Astrobiology: Where Stem Cells Meet Space - Therapeutics and the International Space Station

Alysson Muotri, Michael Roberts



NINDS/CNS K12 Scholar Award Presentation

Iahn Cajigas Gonzales



Honored Guest Presentation: So You Want to be the Chair?

Steven L. Giannotta

Neurosurgery Top Paper of the Year Presentation



Educator of the Year Award Presentation to Robert Spinner

Presented by Alexander A. Khalessi

Neurosurgery Futures Lecture Series

John Thompson History of Medicine Lecture

GENERAL SCIENTIFIC SESSION II – Present

Monday, September 30 | 8:40 am-12:10 pm

Presiding Officer: Martina Stippler

Moderators: Joseph Osorio, Theresa Williamson



Distinguished Service Award Presentation to Michael Steinmetz

Presented by Elad I. Levy



Founder's Laurel Award Presentation to L. Dade Lunsford

Presented by Elad I. Levy



Japanese Congress of Neurological Surgeons Presidential Address

Ryuta Saito



2024 Presidential Address

Alexander A. Khalessi



Walter E. Dandy Orator

Magic Johnson

GENERAL SCIENTIFIC SESSION III – Future

Tuesday, October 1 | 8:40 am-12:10 pm

Presiding Officer: *Ashok Asthagiri*

Moderators: *Jason Ellis, Laura Snyder*

Brain Tumor Guha Award



Neurosurgery Publications Update

Douglas Kondziolka

The Implications of AI for Neurosurgery

Christopher Longhurst, Michael J. Schlosser



Honored Guest Presentation: Research as an Imperative for Clinical Excellence

Henry Brem

Industry Awards Acknowledgement



A Conversation with The Dorothy Nash Speaker

Jacinda Ardern

GENERAL SCIENTIFIC SESSION IV – Synthesis

Wednesday, October 2 | 8:40 am-12:10 pm

Presiding Officer: *Nader Pouratian*

Moderators: *Sharona Ben-Haim, Eric Oermann*

Innovator of the Year Presentations

Attendee voting for Innovator of the Year following the presentations.

Announcement of Innovator of the Year



Neurological Society of India Presidential Address

Daljit Singh

Society of Brazilian Neurosurgery Presidential Address



CNS Foundation Award Presentations

Martina Stippler

Neurosurgery Futures Lecture Series

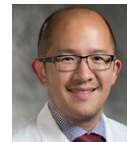
Announcement of SANS Challenge Winners, Top Posters, and Residency Program Abstract Competition Winners

CNS Michael L.J. Apuzzo Lecturer on Creativity and Innovation



Join Us in 2025!

Edjah K. Nduom



Khoi D. Than

2024 HONORED GUESTS



Henry Brem

Harvey Cushing Professor of Neurosurgery at The Johns Hopkins University

LOOK FOR DR. BREM AT THE FOLLOWING SESSIONS:

Tuesday, October 1

General Scientific Session—Honored Guest Presentation: Research as an Imperative for Clinical Excellence

Tuesday, October 1

■ 12:20-1:50 pm

Honored Guest Luncheon Seminar: Developing New Approaches to Brain Tumor Therapy

Advance registration required

Dr. Henry Brem has developed new tools and techniques that have changed the field of neurosurgery. Dr. Brem carried out the pivotal clinical study that introduced navigational imaging into the neurosurgical suite. His work led to the FDA's approval of the first image guidance computer system for intraoperative localization of tumors. Furthermore, he has changed the surgical armamentarium against brain tumors by inventing and developing Gliadel® wafers to intraoperatively deliver chemotherapy to brain tumors. His work has shown that surgeons can accurately deliver potent therapies directly at the tumor site.

Dr. Brem is the Harvey Cushing Professor of Neurosurgery at The Johns Hopkins University, Director of the Department of Neurosurgery, and Neurosurgeon-in-Chief. He also is a professor of Oncology, Ophthalmology, and Biomedical Engineering.

Dr. Brem received his undergraduate degree from New York University, his medical degree from Harvard, and trained in neurosurgery at Columbia. At Hopkins, he built one of the largest brain tumor research and treatment centers in the world. He reinstated the Hunterian Neurosurgery Laboratory (originally founded by Cushing) and has trained numerous researchers who have revolutionized the fields of intraoperative imaging, angiogenesis, immunotherapy, and controlled release polymers for drug delivery to the brain.

Dr. Brem has changed the surgical treatment of brain tumors by introducing new approaches for targeted therapy. He developed new classes of polymers and microchips for drug delivery that are custom synthesized for the agent being developed. The polyanhydrides, which were the first new treatments for brain tumors that the FDA had approved in 23 years, have been shown in his laboratory to be biocompatible and potent. He then designed and led the clinical trials demonstrating safety and efficacy.

Dr. Brem has used his laboratory experience to design and lead many novel multi-institutional clinical trials to prove the safety and efficacy of this approach in patients with brain tumors. He has published over 350 research papers, 57 book chapters, 11 patents, and an H index of 93 with over 35,000 citations.

Brem and his team have established one of the best fellowship and residency programs in the US. His mission, which extends through his team, is to train the next generation to be cutting-edge neurosurgeons who will become academic leaders in their field. Brem's leadership and his team were recognized by U.S. News & World Report in 2010, when it ranked Johns Hopkins as the #1 neurosurgery program in the nation, a distinction it held for four consecutive years, and again in 2019 and in 2020. In 2018-2019 the Neurosurgery Residency Program was ranked in the top two Neurological Surgery Residency Programs in the US by Doximity.

To sustain his vision of combining scientific progress with improved clinical outcomes, the culture of philanthropy is important to Dr. Brem. He has raised \$85 million to establish a Neurosurgery Pain Research Institute at Johns Hopkins. During his overall chairmanship, the Department of Neurosurgery has raised over \$220 million, including fifteen endowed professorships to further support and expand the department's spirit of innovation and excellence.

Over the past 40 years, Henry Brem has introduced new therapeutic approaches to Neurosurgery. His devotion to patient care, clinical excellence and translational science has brought together a unique group of neurosurgeons and investigators that have changed the field of neurosurgery.



Steven L. Giannotta

The Martin H. Weiss Chair in Neurological Surgery | Professor and Chair, Department of Neurological Surgery, Keck School of Medicine of USC

LOOK FOR DR. GIANNOTTA AT THE FOLLOWING SESSIONS:

Sunday, September 29

General Scientific Session—

Honored Guest Presentation: So You Want to be the Chair?

Monday, September 30

■ 12:20-1:50 pm

Honored Guest Luncheon Seminar: Crushing Your Residency and Early Years of Practice

Advance registration required

Dr. Steven Giannotta, Professor and Chair of Neurological Surgery, joined the Department of Neurosurgery at USC in 1980 and became Department Chair in 2004. He earned his medical degree from the University of Michigan, where he also did his neurosurgical residency. He is involved in many local, national and international committees and organizations. His involvement on the national level began with the Congress of Neurological Surgeons serving on multiple committees. He was the CNS Annual Meeting Chair in 1985, Editor of the CNS Newsletter from 1983-1986, Secretary from 1986-1989 and Vice President from 1992-1993. He continued to serve in the CNS with roles as the Future Sites Chair from 1990-1994, Chair of the International Committee from 1992-1994 and Nominating Committee from 1996-1999. Dr. Giannotta received the CNS Distinguished Service Award in 1995, was the Drake Lecturer in 2005 and received the Founders Laurel Award in 2017.

Dr. Giannotta went on to hold many other leadership roles in organized Neurosurgery. He was on the Board of Directors of the Joint Section of Cerebrovascular Surgery of the American Association of Neurological Surgeons and the Congress of Neurological Surgeons from 1987-2000 and was Chair from 1996 until 1998. He remained on the Senior Advisory Board since that time and received the JSCVS Distinguished Service Award in 2004. He also served on many Committees of the American Association of Neurological Surgeons including the Scientific Program Committee from 1996-1999, Annual Meeting Chair in 2000, Board of Directors from 2001-2004, and Professional Conduct Committee from 2005-2011. He was President of the American Academy of Neurological Surgeons from 2009-2010 and was Vice President of the Society of Neurological Surgeons from 2010-2011.

In addition to national societies, Dr. Giannotta was actively involved in the education, certification and accreditation processes for Neurosurgery. He was a Director of the American Board of Neurological Surgery from 1996-2001. After completing a term as Secretary from 1999-2000, he was Chair of the ABNS from 2000-2001. From 2002-2008 he completed a six-year term on the Residency Review Committee for Neurosurgery (ACGME), the last two as Chair of the Committee.

From 2008-2018 he served as the Secretary of the Committee on Advanced Subspecialty Training for the Society of Neurological Surgeons accrediting Neurosurgery fellowship training programs. He was the Program Director at the LAC+USC Medical Center/University of Southern California Neurosurgery Residency Program from 2004-2023 and is currently continuing in the role of an Associate Program Director to continue to support the residents and programs.

He has special clinical interests and expertise in two broad areas of neurological surgery. Dr. Giannotta has gained recognition for his work in cerebrovascular disease of the brain and spinal cord. He has surgically treated over 3000 intracranial aneurysms. Dr. Giannotta also has an interest and special expertise in surgical approaches to the cranial base. He has surgically removed more than 1000 acoustic neuromas and along with several colleagues in otolaryngology has developed a team approach to complex cranial base lesions including acoustic neuromas, meningiomas of the cranial base, complex aneurysms that require cranial base approaches and other benign conditions affecting the base of the brain and skull. Since 1992 he has developed one of the largest practices for the surgical treatment of trigeminal neuralgia.

FEATURED SPEAKERS



Earvin "Magic" Johnson

Walter E. Dandy Orator

Monday, September 30

General Scientific Session II

Earvin "Magic" Johnson is the Chairman and Chief Executive Officer of Magic Johnson Enterprises, an investment conglomerate that provides high-quality products and services that focus primarily on ethnically diverse and underserved urban communities. Having left the basketball court for the boardroom, Johnson parlayed the skills and tenacity he acquired on the court into a winning formula for his successful business ventures.

For the last three decades Johnson has consistently turned heads with his unprecedented partnerships. In his early years as an entrepreneur, he forged an alliance with Sony Pictures to develop Magic Johnson Theatres. In 1998, he teamed with Starbucks to become the only franchisee in the history of the company, acquiring and eventually selling 125 stores in a lucrative move which further solidified his position in the business world. Both ventures served as catalysts for redevelopment in urban communities, and are widely recognized as the corporate blueprint for engagement and success with urban consumers across America.

Still a commanding presence in the sports world, he recently made history in 2023 when he became co-owner of the Washington Commanders, a National Football League franchise that was purchased for \$6.05 billion dollars. The Commanders acquisition marks the highest purchase price for any U.S. professional sports team to date. He also co-owns the Los Angeles Dodgers of Major League Baseball, Los Angeles Sparks of the WNBA, Major League Soccer's Los Angeles Football Club, and eSports franchise Team Liquid.

Johnson continues to expand his influence through a number of other companies. He currently has controlling interests in EquiTrust, a multi-billion dollar financial services company, and SodexoMAGIC, a food service and facilities management company.

The Lansing native is constantly evolving and remaining relevant in a dynamic digital age by broadening his scope into infrastructure and technology. In 2015, Magic Johnson Enterprises and Loop Capital formed an alliance to create MJE-Loop Capital Partners. The firm raised a fund committed to investing millions of dollars on infrastructure improvement in the United States. Current projects include the John F. Kennedy Airport New Terminal One, LaGuardia Airport Terminal B, and Los Angeles World Airports Cargo Modernization Program. He is also one of the leading investors in a number of technology companies that include Skydio, a drone manufacturing company that became the first U.S. drone manufacturer to exceed \$1 billion in value.

The accomplishments and global impact of Earvin "Magic" Johnson are on display in *They Call Me Magic*, the only first-person account of Johnson's life from childhood to business. The AppleTV+ project was the top selling documentary series per episode when released in 2022.

With his unique positioning as a businessman spanning multiple industries and generations, he aims to help companies expand and foster a positive impact domestically and globally.



The Right Honourable Dame Jacinda Ardern

Dr. Dorothy Nash Speaker

Tuesday, October 1

General Scientific Session III

The Right Honourable Dame Jacinda Ardern became the Prime Minister of New Zealand at just 37 years of age. During her time in office, she faced the challenges of a live-streamed domestic terror attack against New Zealand's Muslim community, a volcanic eruption, and the COVID-19 pandemic. Ms. Ardern's focus on people, kindness, and what she has called "pragmatic idealism" saw New Zealand achieve some of the lowest losses of life experienced by any developed nation through the pandemic, the ban of military-style semi-automatic weapons in her country, and the creation of the Christchurch Call to eliminate violent extremism online, which Ms. Ardern continues to hold the role of Special Envoy.

Ms. Ardern is a champion of women's empowerment. While in office, New Zealand reached 50 percent representation of women in parliament and on government-appointed boards. She decriminalized abortion, improved pay equity laws, and extended paid parental leave to 6 months - all while being only the second woman in the world to have a baby while leading her country.

Ms. Ardern is a passionate advocate of climate action and is a board member of The Earthshot Prize, focusing on solutions to climate change and environmental issues. She is also an Arnhold Distinguished Fellow, Conservation International where she is advocating for climate action and better treatment of the environment.

Ms. Ardern is the 2023 Angelopoulos Global Public Leaders Fellow at the Harvard Kennedy School and the Hauser Leader in the School's Center for Public Leadership, a program where leaders from public, private, and nonprofit sectors engage with students and faculty on building skills in principled leadership.

She is also the Knight Tech Governance Leadership Fellow at Harvard Law School's Berkman Klein Center for Internet and Society, where she is focused on ways to improve content standards and platform accountability for extremist content online.

Ms. Ardern holds an Honorary Doctorate from Harvard University.

DEVELOPING NATION RATE

To make the best science in neurosurgery more accessible to doctors and scientists around the world, the CNS is pleased to offer a discounted registration rate of \$150 to nonmember attendees from the following countries:

Afghanistan	Central African Republic	Eswatini	Jordan	Malawi	Nigeria	Islands	Tunisia
Algeria	Chad	Ethiopia	Kenya	Mali	Pakistan	Somalia	Uganda
Angola	Comoros	Gambia	Kiribati	Mauritania	Palestine	South Sudan	Ukraine
Bangladesh	Congo	Ghana	Korea	Micronesia	Papua New Guinea	Sri Lanka	Uzbekistan
Benin	Dem. Rep. Congo	Guinea	Dem. People's Rep.	Fed. Sts.	Philippines	Sudan	Vanuatu
Bhutan	Congo	Guinea-Bissau	Kyrgyz Republic	Mongolia	Rwanda	Swaziland	Vietnam
Bolivia	Rep. Côte d'Ivoire	Haiti	Lao PDR	Morocco	Samoa	Syrian Arab Republic	Yemen
Burkina Faso	Djibouti	Honduras	Lebanon	Mozambique	São Tomé and Príncipe	Tajikistan	Zambia
Burundi	Egypt	India	Lesotho	Nepal	Sierra Leone	Tanzania	Zimbabwe
Cabo Verde	Eritrea	Iran	Liberia	Nicaragua	Solomon	Timor-Leste	
Cambodia		Islamic Rep	Madagascar	Niger		Togo	

ANNUAL MEETING LEADERSHIP



2024 PRESIDENT: Alex A. Khalessi

Alexander A. Khalessi is Professor and Chair of the Department of Neurological Surgery at UC San Diego. In addition to adjunct appointments in Radiology and Neurosciences, he holds the inaugural Don and Karen Cohn Chancellor's Endowed Chair in Neurosurgery, one of the highest academic honors conferred upon a faculty member in the University of California system. Dr. Khalessi has published more than 150 peer-reviewed papers and monographs and more than 230 abstracts and presentations. He remains deeply grateful to serve our specialty as President of the Congress of Neurological Surgeons. He resides in Rancho Santa Fe with his wife, Sara, and their two boys, Wilder and Pierce, where they enjoy all the fun of living in America's Finest City.



PRESIDENT ELECT: Daniel J. Hoh

Daniel J. Hoh is the Spine Division Chief, Director of the Comprehensive Spine Center, and Assistant Dean of Revenue Cycle Management at the University of Florida. Dr. Hoh is a professor of neurosurgery and holds the Dunsbaugh Dalton endowed professorship. His practice specializes in complex and minimally invasive spine surgery. He has served the CNS as development committee chair, SANS chair, international committee co-chair, and most recently as CNS treasurer and chair of the finance committee.



2024 ANNUAL MEETING CHAIR: Garni Barkhoudarian

Garni Barkhoudarian is the Associate Professor of Neuroscience and Neurosurgery at the Pacific Neuroscience Institute and Chief of Neurosurgery at Providence Saint John's Health Center. Dr. Barkhoudarian's research interests include evaluating outcomes of pituitary and brain tumor surgery, brain tumor epigenetics and biomarkers, and unique cadaveric models of skull-base approaches. He has served in numerous capacities on the Executive Committee of the CNS including Vice-Chair of the Education Division and the Scientific Program Chair of the 2023 CNS Annual Meeting.



2024 SCIENTIFIC PROGRAM CHAIR: Edjah K. Nduom

Edjah K. Nduom is an Associate Professor and the Daniel Louis Barrow Endowed Chair in Neurosurgery at Emory University School of Medicine. Dr. Nduom joined the Executive Committee of the Congress of Neurological Surgeons in 2021, and he now has the honor of serving as Scientific Program Chair. A neurosurgeon-scientist, Dr. Nduom's clinical specialty is the resection of tumors located in eloquent regions of the brain, brainstem, and spinal cord, and his laboratory studies novel immune therapeutics for brain tumors with the support of numerous foundations and the National Institutes of Health.



2024 VICE SCIENTIFIC PROGRAM CHAIR: Khoi D. Than

Khoi D. Than is Professor of Neurosurgery and Orthopaedic Surgery at Duke University. Dr. Than is a spine surgeon with specific clinical and research interests in minimally invasive spine surgery, including its application to adult spinal deformity. Since joining the CNS Executive Committee in 2020, his roles have included serving as Chair of Case of the Month, Chair of Nexus, Chair of Online Education, Co-Managing Editor of SANS, Co-Chair of Development, and now Vice Chair of the Scientific Program.



Congress of
Neurological
Surgeons

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COLLABORATOR



ASSOCIATE



SUBSPECIALTY SESSION HIGHLIGHTS KEY

- | | | | |
|--------------------------------------|-----------------------------|---------------------------------------|-----------------------|
| AP ADVANCED PRACTICE PROVIDER | MS MEDICAL STUDENTS | RE RESIDENT | SP SPINE |
| CV CEREBROVASCULAR | PA PAIN | SE SOCIOECONOMIC | TR NEUROTRAUMA |
| GE GENERAL | PE PEDIATRIC | SF STEREOTACTIC AND FUNCTIONAL | TU TUMOR |
| IN INNOVATION | PN PERIPHERAL NERVES | | WI WINS |



Be sure to secure your seat for one or more of these ticketed sessions when you register!



Special Symposia

CV 8:00 am-12:00 pm

Special Symposium 01: Steven L. Giannotta, MD: A Career of Surgical Excellence, Education and Leadership

Course Directors: William Mack, Gabriel Zada

Faculty: Felipe Albuquerque, Arun Amar, Daniel Barrow, Larry Chin, Eisha Christian, William Couldwell, JD Day, Arthur Day, Ralph Dacey, Daniel Hoh, L. Nelson Hopkins, Roberto Heros, Michael Lawton, Charles Liu, Alexander Khalessi, Jacques Morcos, Shivani Ringwala, Jonathan Russin, Saman Sizzdakhani, Robert Spetzler, Michael Wang, Martin Weiss

Course Description: This half day course will highlight the contributions of Dr. Steven L. Giannotta to the specialty of Neurosurgery, including cerebrovascular surgery, skull base tumor surgery, and neurosurgical leadership and education.

SP 8:00 am-4:15 pm

Special Symposium 02: Spinal Deformity Primer for All Neurosurgeons: A CNS Collaboration with Scoliosis Research Society



Course Directors: Jeffrey Mullin, Joseph Osorio, Alexander Tuchman

Faculty: Christopher Ames, Neel Anand, Laurel Blakemore, Alan Daniels, Munish Gupta, Eric Klineberg, Lawrence Lenke, Marcus Mazur, Richard Menger, Camilo Molina, Praveen Mummaneni, Peter Passias, Daniel K. Riew, Christopher Shaffrey, Lee Tan

Course Description: Through collaboration with the Scoliosis Research Society, we will review current practice in spinal deformity surgery. The course will consist of didactic lectures by leaders in the field as well as case based, small group discussions. Attendees who register for both the CNS/SRS Symposium and the CNS Annual Meeting, will receive a discount of \$100 off the CNS Annual Meeting and a \$50 discount off of the CNS/SRS Symposium, totaling a discount of \$150.

Symposia

PRICING: Full Day Discounted Bundles (includes lunch): Physician \$600; Nurse/NP/PA \$300; Resident/Medical Student \$175
Half Day: Physician \$450; Nurse/NP/PA \$200; Resident/Medical Student \$125

CV 8:00 am-4:15 pm

SYM01: Cerebrovascular Bundle

Composed of two sessions: SSYM01 & SYM01. Select this option to take both at a discounted rate.

CV 12:45-4:15 pm

SYM01: 2024 CNS Cerebrovascular Neurosurgery for Trainees



Course Directors: Mandy Binning, Christopher Kellner, Justin Mascitelli, Luis Savastano

Faculty: Mark Bain, Michael C. Cawley, Aurora Cruz, Sheila Eshraghi, Justin Fraser, Nickalus Khan, Ning Lin, Fredric Meyer, Stephan Munich, Aditya Pandey, Stacey Wolfe

Course Description: This course will introduce the breadth of

cerebrovascular neurosurgery and introduce mentorship and research relationships.

IN GE 8:00 am-4:15 pm

SYM02: Digital Fluency: Neurosurgery

Course Directors: Omar Arnaout, Samuel Browd, Daniel Donoho
Faculty: Eric Oermann

Course Description: Join the CNS and experts from across the professional landscape as we explore the growing need for digital fluency in neurosurgery. We have gathered thought leaders from academia and our industrial partners to bring you the latest developments in artificial intelligence. This symposium aims to be a launching pad for your future with AI, so you can learn how to integrate these tools into your practice.



CNS

SANS
Lifelong Learning

Look for this image for a SANS exam that accompanies this course and can be purchased on the Annual Meeting registration site.

IN GE 12:45-4:15 pm**SYM03: Neurosurgeon Scientist CNS Symposium****Course Directors:** *Constantinos Hadjipanayis, Linda Liau, Gregory Zipfel***Faculty:** *Manish Aghi, Nduka Amankulor, Sepideh Amin-Hanjani, Robert Carter, Clark Chen, Antonio Chiocca, Emad Eskandar, Robert Gross, Brian Hoh, Albert Kim, David Limbrick, Russell Lonser, William Mack, Marcus Mazur, Sameer Sheth, Zachary Smith***Course Description:** The Neurosurgeon-Scientist CNS Symposium will be an opportunity for residents, fellows, and young neurosurgery faculty to interact with established neurosurgeon-scientists from different sub-specialties. Attendees will include the SNS Neurosurgeon-Scientist Training Program, NIH K12, NIH R25, Academy Emerging Investigator Program (EIP), Emerging Investigator Program Spine (EIPS), and Van Wagenen award recipients. Attendees will learn about different career paths to becoming a neurosurgeon-scientist. The role of mentorship and departmental support will be discussed for the development of neurosurgeon-scientists. Also, mentored career development award opportunities available to neurosurgery faculty and trainees will be discussed. NIH representatives will attend the symposium as well.**TR SP PA 8:00 am-4:15 pm****TR SYM04: Neurotrauma, Spine, and Pain Bundle****Composed of two sessions:** SYM04A & SYM04B. Select this option to take both at a discounted rate.**TR 8:00 am-12:00 pm****SYM04A: Cutting Edge Treatments in Neurotrauma****Course Directors:** *Patricia Raksin, Ryan Kitagawa***Faculty:** *Randy Bell, Jack Jallo, Brian Kwon, Geoff Manley, Laura Ngwenya, Ann Parr, Shelly Timmons, John Williams***Course Description:** Half day symposium intended to highlight advancements in surgical techniques for traumatic brain injury and spinal cord injury. Management of patients with neurotrauma has become increasingly complex with more attention paid to highly focused therapy targeting neurophysiologic principles.**SP PA 12:45-4:15 pm****SYM04B: Interdisciplinary Approach to Lumbar Spine Pain****Course Directors:** *Rushna Ali, Julie Pilitsis***Faculty:** *Puya Alikhani, Deborah Benzel, Tene Cage, Joseph Cheng, Heather Pinckard-Dover, Lara Massie, Erika Petersen, Joshua Rosenow, Ganesh Shankar, Geoffrey Stricsek, Jamie Wilson, Chengyuan Wu***Course Description:** This symposium will highlight the importance of a collaborative and interdisciplinary approach to managing pain originating from lumbar spine disease.**PA 12:45-4:15 pm****SYM05: Microvascular Decompression, Lesioning, and Neuromodulation Approaches to Facial Pain****Course Directors:** *Hamid Borghei-Razavi, Andrew Grande***Faculty:** *Rushna Ali, Omar Arnaout, David Darrow, Christopher Honey, Zaman Mirzadeh, Raymond Sekula, John Tew, Ashwin Viswanathan, Risheng Xu***Course Description:** This symposium will provide a comprehensive overview of management of facial pain by experts in the field.**PE SF 8:00 am-4:15 pm****SYM06: Stereotactic and Functional Pediatric Neurosurgery Bundle****Composed of two sessions:** SYM06A & SYM06B. Select this option to take both at a discounted rate.**SF 8:00 am-12:00 pm****SYM06A: Epilepsy Surgery Symposium: Integrating Practical Approaches for All Ages****Course Directors:** *Kurtis Auguste, Jason Hauptman, John Rolston***Faculty:** *Taylor Abel, Allyson Alexander, Sarah Bick, Nicole Bentley, Kelly Collins, Daniel Curry, Andrew Ko, Kai Miller, Carrie Muh, Scellig Stone, Chengyuan Wu***Course Description:** Explore the intricate landscape of epilepsy surgery in this half-day symposium, delving into both pediatric and adult indications. Uncover the latest advancements in surgical techniques, patient selection criteria, and postoperative care as leading experts share their insights on navigating the complexities of epilepsy management. From case studies to interactive discussions, this symposium aims to provide a comprehensive overview for healthcare professionals seeking to enhance their understanding of epilepsy surgery across diverse patient populations.**SF 12:45-4:15 pm****SYM06B: Movement Disorder Surgery: Novel Approaches and Measuring the Impact of Chronic Readings****Course Directors:** *Nathan Rowland, Doris Wang***Faculty:** *Aviva Abosch, Josue AVECILLAS-Chasin, Nicholas Au Yong, Ausaf Bari, Srinivas Chivukula, Kelly Foote, Bornali Kundu, Takashi Morishita, Francisco Ponce, Sameer Sheth, Philip Starr, Harrison Walker, Jimmy Yang***Course Description:** Recent advancements in neural recording technology have revolutionized the treatment of movement disorders such as Parkinson's disease and essential tremor through deep brain stimulation (DBS). These innovations enable chronic and precise monitoring of neural activity in patients' brains, leading to a deeper understanding of the underlying mechanisms and individualized treatment optimization. As a result, DBS therapies have become more targeted and effective, offering promising outcomes and improved quality of life for patients with these challenging conditions.

PN 8:00 am-12:00 pm

SYM07: Peripheral Nerve Surgery: Evaluation and Common Surgical Exposure



Course Directors: Line Jacques, Eric Zager

Faculty: Allan Belzberg, Justin Brown, Aaron Filler, Andrew Jack, Shaun O'Leary, Elias Rizk, Gabriel Tender

Course Description: Didactic lectures and case discussion; provide with fundamental in peripheral nerve evaluation and common surgical exposures.

PE 12:45-4:15 pm

SYM08: Treating Complex Cervical Spine Disease in The Growing Spine

Course Director: Richard Anderson

Faculty: David Bauer, Jeffrey Campbell, Mari Groves, Rajiv Iyer, Jamal McClendon, Amer Samdani, Tomoko Tanaka

Course Description: Treatment of complex cervical spine disease in young children presents unique challenges, both for when surgery is indicated as well as surgical techniques in small anatomy. This course aims to provide the most current thought and practical experience with the most complex cervical spine disorders in children.

MS 8:00 am-4:15 pm

SYM09: 2024 Essentials for a Rewarding Neurosurgical Career

Course Directors: Ashok Asthagiri, Mark Hadley

Faculty: To Follow

Course Description: This all day course is intended for the chief resident, post-graduate fellow or recent residency graduate embarking on their neurosurgical career. The course will address business, organization and navigation strategies for early and enduring individual success. The format promotes interaction with faculty and peers through focused lectures in which discussion are encouraged, small group sessions and panels. The concepts and strategies that are provided will be applicable to those starting in community practice, academic practice, military practice and those in other government neurosurgical positions.

TU CV 12:45-4:15 pm

SYM10: 3D Surgical Neuroanatomy

Course Directors: Maria Peris-Celda, Joao Paulo Almeida

Faculty: Linda Bi, Paul A. Gardner, Claire Karekezi, Juan Fernando-Miranda, Pablo A. Rubino, Jeffrey M. Sorenson, Necmettin Tanriover, Ugur Ture, A. Samy Youssef

Course Description: Relevant surgical neuroanatomy and operative cases by master surgeons using 3-D stereoscopic projection with a focus on skull-base and subcortical anatomy.

5:00-6:30 pm

CNS International, Resident, and Foundation Reception

■ *Altitude Pool Deck at Marriott Marquis Houston*

International meeting attendees, Residents, and CNS Foundation awardees and donors – we welcome you to join your colleagues from around the world at this reception! Enjoy hors d'oeuvres and cocktails while chatting with some of the top professionals in the field of neurological surgery. All Residents and international registered attendees and their registered guests are invited to attend.



6:30-8:30 pm

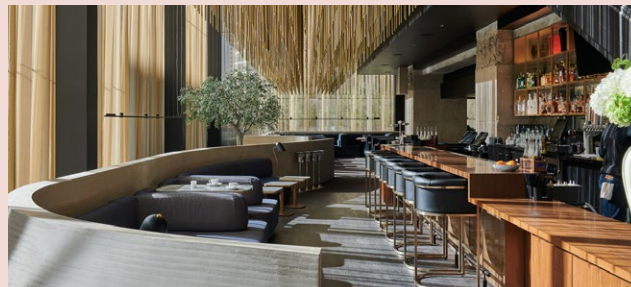
SP DINNER SEMINAR 1: Disruptive Technology in Spine Surgery

- *Guard and Grace, a modern steakhouse*
- *\$225 (includes three-course dinner and beverages)*
- *Complimentary shuttle service will depart the Marriott Marquis Houston at 6:15 pm.*
- *Advance Registration Required*

Moderators: Richard G. Fessler, Mark Shaffrey

Faculty: Muhammad Abd-El-Barr, Domagoj Coric, Christoph Hofstetter, John Pollina, John Shin, Timur Urakov

Seminar Description: Technological advancements in spine surgery continue developing at an astounding rate. This dinner seminar will foster discussion on some of the latest trends in the management of patients with spinal disorders. Topics to be covered include robotics, endoscopy, and artificial intelligence.



Special Symposia

IN GE 8:00 am-12:00 pm

Special Symposium 03: CNS Data Science and AI for Neurosurgeons: A Hands On Experience

Course Directors: Eric Oermann, Matthew Pease

Faculty: Andrew Abumoussa, Rui Feng, Sabrina Heman-Ackah, Todd Hollon, Natasha Ironside, Lily Kim, Faith Robertson, Lauren Stone

Course Description: A hands-on course on using AI tools in neurosurgical practice and daily life.

GE 8:00 am-4:15 pm

Special Symposium 04: Meeting of the Americas

Course Directors: Peter Nakaji, Leonardo Rangel-Castilla, Jose Valerio

Faculty: Armando Alpizar, Arturo Ayala, Matias Baldoncini, Ricardo Bermudez, Marco Barajas Romero, Carl Bruce, Feres Chaddad Neto, Jean de Oliveira, Yoshua Esquenazi, L. Fernando Gonzalez, Fernando Hakim, Vanessa Holando, Douglas Kondziolka, Gerardo Xavier Lang, Eduardo Lovo, Pedro Lylyk, Miguel Melgar, Francisco Mery, Jorge Mura, Brian Nahed, Barbara Nettle-Rueda, Gustavo Pradilla, Leonardo Rangel-Castilla, Edwin Rayos, Hector Soriano-Baron, Maria Toledo, Jaime G. Torres-Corzo, Fernando Vale

Course Description: The Meeting of the Americas will bring together a broad representation of neurosurgical speakers from Latin America, Brazil, and the US to showcase the richness of advances from this region so they are more readily available to the US. The meeting is organized by subspecialties, to highlight progress in each.

TU 8:00 am-4:15 pm

Special Symposium 05: 360 Degrees Around the Greatest Surgical Challenges in the Cerebellopontine Angle, Petrous Apex and Petroclival Fissure, A High Yield CNS/NASBS Symposium



Course Directors: Siviero Agazzi, Maria Peris-Celda

Symposia

PRICING: Full Day Discounted Bundles (includes lunch): Physician \$600; Nurse/NP/PA \$300; Resident/Medical Student \$175

Half Day: Physician \$450; Nurse/NP/PA \$200; Resident/Medical Student \$125

MS 8:00 am-4:15 pm

SYM11: Medical Education Bundle

Composed of two sessions: SYM11A & SYM11B. Select this option to take both at a discounted rate.

MS 8:00 am-12:00 pm

SYM11A: Swimming with the Sharks

Course Directors: Nitin Agarwal, D. Kojo Hamilton

Faculty: Sepideh Amin-Hanjani, Richard W. Byrne, Lola Chambliss, Paul J. Camarata, Joseph S. Cheng, E. Sander Connolly, Dornbos, Robert Friedlander, Ramesh Grandhi, Kimberly Hamilton, Michael Ivan, Douglas Kondziolka, David Limbrick, Jodi Leonardo, Elad Levy, James Markert, Michael McDowell, Jeffrey Mullin, Gregory Murad, Akash Patel, Ganesh Rao, Francisco Ponce, Renee Reynolds, Charles Sansur, Nathan Selden, Ashwini Sharan, Laura Snyder, Martina Stippler, Ajith Thomas, Jamie

Faculty: Garni Barkhoudarian, William Couldwell, Amir Dehdashti, Jacob Dey, Juan Carlos Fernandez Miranda, Sebastien Froelich, Paul Gardner, Paul Gidley, Walter Jean, Claudia Kirsch, Douglas Kondziolka, Michael Link, James Liu, Erin McKean, Madison Michael, Jacques Morcos, Carlos Pinheiro Neto, Jack Phan, Daniel Prevedello, Shaan Raza, Marc Schwartz, Jason Sheehan, Jamie Van Gompel, Richard Wiet, A. Samy Youssef, Georgios Zenonos

Course Description: This course offers comprehensive instruction on identifying crucial surgical anatomy features for selecting optimal approaches to challenging lesions in the Cerebellopontine Angle, Petrous Apex, and Petroclival Fissure. Participants will acquire advanced techniques, valuable tips, and pearls for effectively treating these lesions through open or endoscopic endonasal approaches. Additionally, emphasis is placed on mastering key surgical aspects to mitigate complications and enhance postoperative care for patients undergoing procedures in these critical areas.

Attendees who register for both the CNS/NASBS Symposium and the CNS Annual Meeting, will receive a discount of \$100 off the CNS Annual Meeting and a \$50 discount off of the CNS/NASBS Symposium, totaling a discount of \$150.

IN GE 8:00 am-4:15 pm

Special Symposium 06: Transforming Neurosurgery Through Technology: The Innovation Symposium

No CME offered for this Symposium

Course Directors: Mohamad Bydon, Anand Veeravagu

Course Description: This course provides a unique service to our members by providing access to premier innovators in the neurosurgical space, representing Neurosurgeon-entrepreneurs, engineers, industrial partners, and investment professionals without the usual limitations of ticketed CME sessions. In this non-CME setting, we will be able to allow direct discussion of unique approaches to innovation that can lead to return on investment for our members and industry partners.

Toms, Krystal Tomei, Daniel Tonetti, Nathan Zwagerman

Course Description: "Nobody wants to swim with sharks" as noted in How to Swim with Sharks: A Primer. As Voltaire Cousteau writes though, some, "by virtue of their occupation, find they must swim." This course highlights lessons learned through the experience of faculty and residents. The goal is to help build resiliency by learning from those who have walked the same path before. This course is intended for residents, medical students, and foreign medical graduates. Faculty includes chairpersons, program directors, program coordinators, and recent graduates. Topics range from overcoming mistakes in training to creating a pathway for a successful career. Small group sessions will enable two breakout sessions whereby medical students can prepare for interviews and residents can prepare for their job search with a cover letter and career proposal review. Sessions feature dedicated time with thought leaders in the field.

MS 12:45-4:15 pm

SYM11B: Leading the Pack

Course Directors: *Ellen Air, Sharona Ben-Haim, Brian Nahed, Anand Veeravagu*

Faculty: *Joseph Neimat, Alejandro Spiotta*

Course Description: Designed for the future neurosurgeon leader in conjunction with the CNS Leadership Institute. Leadership skills are necessary throughout all aspects of Neurosurgery including practice development, department management, navigating hospital administration, and organized neurosurgery. Topics will include leadership core competencies, as well as setting goals and establishing mentorship. The course will include didactic lectures as well as break-out sessions and small group exercises. Senior residents, fellows, and those in the first two years of practice will gain the most from this symposium.

GE 12:45-4:15 PM

SYM12: Navigating Neurosurgery Beyond Academia: Strategies for Success in Practice

Course Director: *Jason Ellis*

Faculty: *Arvind Ahuja, Hoon Choi, Rupa Juthani, JC Leveque, John Morrison, Jay McCracken, Alex Mason, Peter Nakaji, Mohsen Nouri, David Penn, Gary Rajah Jr., Pedro Ramirez, Morgan Stuart, William Stetler, Parham Yashar, Daniel Zumofen, Omar Zalatimo*

Course Description: The scope and influence of neurosurgical practice in the community setting are expansive. Furthermore, community practices of all varieties remain the predominant practice setting in our field. This course explores the practical aspects of being a neurosurgical practitioner, leader, investigator, and innovator outside the traditional halls of academia.

CV 8:00 am-4:15 pm

SYM13: Cerebrovascular Bundle

Composed of two sessions: SYM13A & SYM13B. Select this option to take both at a discounted rate.

CV 8:00 am-12:00 pm

SYM13A: Update on Ischemic Cerebrovascular Disease

Course Directors: *Peter Kan, Stacey Wolfe*

Faculty: *Ramsey Ashour, Mandy Binning, Justin Fraser, Grahame Gould, Jonathan Grossberg, Peter Kan, Michael Levitt, Justin Mascitelli, Charles Matouk, Christopher Ogilvy, Min Park, Omar Tanweer*

Course Description: The course begins with a review on recent literature regarding patient selection (patient with large core and distal occlusions) and outcomes for endovascular treatment of acute ischemic stroke followed by emerging topics such as novel techniques and devices for revascularization. Part of the session will be dedicated to medical and surgical management of extracranial and intracranial atherosclerotic disease. Other relevant and cutting-edge topics such as management of venous strokes, neuroprotective strategies, and stroke rehabilitation will be discussed.

SYM13: Non-CME Lunch Session sponsored by AstraZeneca

CV 12:45-4:15pm

SYM13B: Update on Hemorrhagic Cerebrovascular Disease

Course Directors: *Peter Kan, Stacey Wolfe*

Faculty: *Gavin Britz, Andrew Carlson, Ricardo Hanel, Tao Hong, Jacques Morcos, Joshua Osburn, Aman Patel, Babu Welch, Stavropoula Tjoumakaris*

Course Description: This portion of the course will cover optimal treatment of intracranial aneurysms including surgery, traditional endovascular techniques, and emerging new technologies. The course will also provide a comprehensive discussion on multimodal treatment options for intracranial arteriovenous malformations. The course will conclude with emerging evidence-based treatment for intracerebral hemorrhage and non-acute chronic subdural hematoma.

SP 8:00 am-4:15 pm

SYM14: Spine Bundle

Composed of two sessions: SYM14A & SYM14B. Select this option to take both at a discounted rate.

SP 8:00 am-12:00 pm

SYM14A: Lateral Approaches to the Spine

Course Directors: *Adam Kanter, Juan Uribe*

Faculty: *Andrew Chan, Jakub Godzik, Paul Park, Martin Pham, Luiz Pimenta, Laura Snyder, William Taylor, Khoi Than, Corey Walker, David Xu*

Course Description: The lateral approach to the spine is a powerful tool for the modern spine surgeon for a variety of spinal conditions, including degenerative disc disease, deformity, spondylolisthesis, and tumors. This course is ideal for surgeons and APPs regardless of the extent of experience who seek to update their knowledge and skill. Leading experts in the field will give a comprehensive overview of the latest advances in the indications, technique and management of complications of lateral approach to the spine.

SP 12:00-4:15 pm

SYM14B: Advanced Minimally Invasive Spine Surgery: Operative Nuances, Indications, and Complication Avoidance

Course Directors: *Kai-Ming Fu, Praveen Mummaneni*

Faculty: *Aaron Clark, Kurt Eichholz, Kevin Foley, Matthew Gary, Langston Holly, Ibrahim Hussain, Catherine Miller-Simington, Saman Shabani, Jay Turner*

Course Description: Intended for surgeons with an interest and some experience in minimally invasive spine surgery. Experts in the field will discuss operative nuances, complication avoidance, and patient selection in the context of a case-based course.

SYM14: Non-CME Lunch Session sponsored by Globus Medical

SE 8:00 am-4:15 pm

SYM15: CSNS Bundle

Composed of two sessions: SYM15A & SYM15B. Select this option to take both at a discounted rate.

SE 8:00 am-12:00 pm

SYM15A: Understanding and Improving Quality in Neurosurgery

Course Directors: *Jeremy Amps, Scott Simon*

Faculty: *Zarina Ali, Christian Bowers, Jacob Greenberg, Abilash Haridas, Richard Menger, Faith Robertson, Clemens Schirmer, Richard Schmidt, April Taylor, Jang Yoon*

Course Description: Quality is used to measure and compare hospitals, service lines, and individual surgeons in safety, effectiveness, and efficiency. This symposium will clarify what metrics are tracked and how. Furthermore, learners will be given real-world examples of creating programs that improve patient care.

SE 12:00-4:15 pm

SYM15B: The Importance of Wellness and The Reality of Burnout in Neurosurgery

Course Directors: *Luis Tumialan, Theresa Williamson*

Faculty: *Frank Attenello, Christopher Fox, Allan Hamilton, Gregory Murad, Debraj Mukherjee, Mark Oppenlander, Alfredo Quinones-Hinojosa, Clemens Schirmer, Martina Stippler, Jennifer Sweet, Martin Weinand*

Course Description: Burnout is prevalent throughout medicine and neurosurgery is no exception. Residents and practicing neurosurgeons are all susceptible to burnout. This is heightened in the era of increased documentation requirements, less pay for more work, and increased technological demands.

SP TR 8:00 am-4:15 pm

SYM16: Spine and Neurotrauma Bundle

Composed of two sessions: SYM16A & SYM16B. Select this option to take both at a discounted rate.

SP 8:00 am-12:00 pm

SYM16A: Comprehensive Management of Spinal Trauma



Course Directors: *David Okonkwo, Charles Sansur*

Faculty: *Paul Arnold, Ken Crandall, Sanjay Dhall, Asdrubal Falavigna, Diana Jho, Miki Katzir, Kee Kim, Dimiriy Petrov, Rajiv Saigal, Thomas Wilson*

Course Description: Comprehensive spine trauma management, including operative and non-operative treatment options, with an emphasis on evidence-based practice guidelines.

TR 12:00- 4:15 pm

SYM16B: Neurotrauma in Combat, Disaster, and Other Austere Environments

Course Director: *Randall Chesnut*

Faculty: *Ernest Barthelemy, Bradley Dengler, Ignatius Esene, Ulrick Sidney Kanmounye, Corey Mossop, Jogi Pattisapu, Gail Rosseau, Luke Tomycz*

Course Description: Half day symposium focusing on the practice of neurosurgery in challenging environments including ones that are geographically isolated, resource limited, have a challenging patient population or in areas of civil or military unrest.

TU 8:00 am-4:15 pm

SYM17: Tumor Bundle

Composed of two sessions: SYM17A & SYM17B. Select this option to take both at a discounted rate

TU 8:00 am-12:00 pm

SYM17A: Brain Tumor Update - Management of Malignant Brain Tumors

Course Directors: *Costas Hadjipanayis, Pascal Zinn*

Faculty: *Kalil Abdullah, Wajd Al-Holou, Nduka Amankulor, Bryan Choi, Mahua Dey, Linton Evans, Yoshua Esquenazi, Arnold Etame, Shawn Hervey-Jumper, Ricardo Komotar, Daniel Orringer, Pier Paolo Peruzzi, Dimitris Placatonakis, Maryam Rahman, Ganesh Rao, Adam Robin, Marie Roguski, Ashish Shah, Jonathan Sherman, Michael Vogelbaum, Dominique Wiggins, Mateo Ziu*

Course Description: Provides an update on malignant brain tumor management, including guidelines reviews and a focus on adjuvant surgical technologies with case-based discussions by expert faculty.

TU 12:45-4:15 pm

SYM17B: Brain Tumor Update - Management of Benign Brain Tumors

Course Directors: *Linda Bi, Tomas Garson-Muvdi*

Faculty: *Andre Beer-Furlan, Carolina Benjamin, Jonathan Breshears, Sunit Das, Michael Ivan, John Lee, Farshad Nassiri, Ajay Nirajan, Akash Patel, Pablo Recinos, Matthew Tate, Gelareh Zadeh, Georgios Zenonos*

Course Description: Discusses surgical and radio surgical techniques for a variety of nonmalignant intrinsic and skull base central nervous system tumors.

SYM17: Non-CME Lunch Session sponsored by GammaTile

MS WI 8:00 am-4:15 pm

SYM18: Medical Education/Women in Neurosurgery Bundle

Composed of two sessions: SYM18A & SYM18B. Select this option to take both at a discounted rate.

MS WI 8:00 am-12:00 pm

SYM18A: Maximizing Your Neurosurgical Employment Opportunities

Course Directors: Erica Bisson, Kristin Weaver

Faculty: Anthony Asher, John A. Braca, Andrew R. Conger, Anand Germanwala, Gerald Grant, Timothy H. Lucas, Joseph S. Neimat, Judith Rosman, Justin A. Singer, Alan Scarrow, Anand Veeravagu, Matthew Vuckovich

Course Description: Intended for senior neurosurgery residents and graduating fellows who are in the process of interviewing for employment. The faculty will discuss topics relevant to job applicants from the perspective of chairpersons, program directors, and recruiters. Job applicants will also have an opportunity to have their CVs reviewed and obtain interview tips from experts in this area.

MS WI 12:45-4:15 pm

SYM18B: Harnessing the Power of Media to Cultivate a Parallel Career and Augment Your Practice

Course Directors: Kimberly Hoang, Rupa Juthani

Faculty: Ali Baaj, Frances Conley, Sheri Dewan, Katrina Firlik, Betsy Grunch, Sanjay Gupta, Brian Hoh, Kristopher Kimmel, David Langer, Issac Yang

Course Description: This high-yield course will highlight neurosurgeons who have launched parallel careers using various forms of new (social, podcasts, internet ads, streaming, webinars)

and traditional media (news, print, broadcast) to capture new audiences, bolster their practices, and transform their careers. Attendees will learn about the hurdles involved with various forms of media, how to create a strategy with clear targets, and the power of these parallel career opportunities during all points of your career. This course applies to students, neurosurgery trainees, and all faculty interested in expanding the breadth of opportunities that exist as a neurosurgeon, with an emphasis on alternate and parallel career paths.

AP 8:00 am-4:15 pm

SYM19: Association of Neurosurgical Physician Associates (ANSPA) Fall 2024 CMS Meeting Presented in Collaboration with the CNS

Course Director: Jonas Konan

Faculty: Bernard Bendok, Kenneth Crandall, Amanda DiPiazza, Sabih Effendi, Sam Javedan, Robert Keating, Kristopher Hooten

Course Description: This course is specifically designed by the Association of Neurosurgical Physician Associates for Physician Associates and Nurse Practitioners that are practicing in, or interested in, neurosurgery to provide education on the latest updates in didactic and hands-on training.

AP 12:45-4:15PM

SYM20: ARANS/Neurosurgery Program Administrators Track

Course Directors: Pam Lane, Rita Raio

Course Description: Change is inevitable in graduate medical education to adapt to our trainees and program's needs. Creative approaches are required for program administrators to organize and complete essential tasks in managing a residency program. This session will offer participants a comprehensive platform to exchange insights, learn best practices, and collectively elevate the standard of neurosurgery residency program administration.

General Scientific Session I

4:30-6:30 pm

See page 14 for session details.

Opening Reception

6:30-8:00 pm

Kick off your CNS Annual Meeting experience with the Opening Reception! Enjoy live music, drinks, and delicious food. The Opening Reception is great for reconnecting with old friends and creating new and lasting connections with your peers!



GUIDELINES SESSIONS

7:00-8:30 am

Guideline Session I: Cervical Degenerative Spine

Moderators: Sanjay Dhall, Daniel J. Hoh

Faculty: Erica Bisson, Zoher Ghogawala, James Harrop, John O'Toole, Alpesh Patel, Wilson Ray

Session Description: The CNS Guidelines are evidence-based summaries of the scientific literature written by topic experts to provide neurosurgeons with the information they need to provide the best care to patients suffering from common neurosurgical conditions. In the Guidelines Sessions, authors discuss the key conclusions of recent Guidelines projects to promote the dissemination of this broadly applicable information around the field. In this session, Guidelines authors discuss their conclusions regarding the treatment and management of patients with cervical degenerative spine conditions.

7:00-8:30 am

Guideline Session II: Progressive Glioblastoma

Moderators: Jeff Olson

Faculty: Chad Glenn, Abigail Goodman, Hayes Patrick, Evan Winogard, Mateo Ziu

Session Description: The CNS Guidelines are evidence-based summaries of the scientific literature written by topic experts to provide neurosurgeons with the information they need to provide the best care to patients suffering from common neurosurgical conditions. In the Guidelines Sessions, authors discuss the key conclusions of recent Guidelines projects to promote the dissemination of this broadly applicable information around the field. In this session, Guidelines authors discuss their conclusions regarding the treatment and management of patients with Glioblastoma.

SUNRISE SCIENCE SESSIONS

7:00-8:30 am

The Sunrise Science Abstract sessions will be comprised of the top oral abstract presentations submitted in each of the subspecialties presenting the latest scientific research.

Sunrise Science and Late Breaking Abstract Session – Data Science

Moderators: Ilfie Ohiorhenuan, Matthew Pease, Jang Yoon

Sunrise Science and Late Breaking Abstract Session – Tumor

Moderators: Akshitkumar Mistry, Urvashi Upadhyay

Sunrise Science and Late Breaking Abstract Session – Cerebrovascular

Moderators: Amey Savardekar, Phil Taussky

Sunrise Science and Late Breaking Abstract Session – Pediatric

Moderators: Cameron Sadegh

Sunrise Science and Late Breaking Abstract Session – Neurotrauma and Critical Care

Moderators: Gregory Hawryluk, Craig Rabb

Sunrise Science and Late Breaking Abstract Session – Spine

Moderators: Christopher Ahuja, Richard Price

Sunrise Science and Late Breaking Abstracts Session – Tumor, Pediatrics, Stereotactic and Functional, Trauma, Healthcare Disparities and Data Science

Moderators: Srinivas Chivukula, Christina Jackson

General Scientific Session II

8:40 am-12:10 pm

See page 14 for session details.

LUNCHEON SEMINARS

12:20-1:50 pm

All Luncheon Seminars include a plated lunch served in the seminar room. Luncheon Seminar fee is \$150 each (\$100 for residents, fellows, medical students, and advance practice providers)

CV M01: Unraveling the Mysteries of DAVF

Moderator: Gregory Zipfel

Faculty: William Ashley, Sepideh Amin-Hanjani, Brian Howard, Michael Levitt, Eric Peterson, Steve Tatter, Stacey Wolfe, Ethan Winkler

Seminar Description: DAVF entail pathophysiologic and anatomic complexity, with questions on who and when to treat. This seminar provides evidence basis to help answer some of these questions and expert opinions and technique in case-based discussion. Bring your own cases to present and discuss!

SP M02: Cervical Spondylotic Myelopathy

Moderator: Erica Bisson, Nader Dahdaleh

Faculty: Asdrubal Falavigna, Zoher Ghogawala, Betsy Grunch, Mark Hadley, Iain Kalfas

Seminar Description: Explores current concepts regarding various surgical approaches for cervical spine disorders. Using a case-based format, faculty will discuss indications, techniques, and outcomes.

WI M03: Career, Kids, Loss, and Chaos: Managing Neurosurgery and Life

Moderator: Ian Parney, Violet Recinos

Faculty: Pedro Aguillar, Stephanie Adamczak, Kimberly Kicielinski, Karin Muraszko, Kent New, Susan Panullo, Laura Snyder, Shelley Timmons

Seminar Description: This symposium focuses on equipping neurosurgeons with effective strategies to manage the intricate balance between a demanding career in neurosurgery and the responsibilities of parenthood. From optimizing time management techniques to maintaining mental and emotional well-being amidst chaos, this session offers insights and practical approaches for achieving success in both professional and personal spheres. Other topics that will be covered include developing peace during life-altering events such as loss of loved one, major moves, changes in career, loss of jobs, divorce. Join us to explore how to navigate the challenges, find harmony, and excel in neurosurgery while fostering a fulfilling family life.

PA M04: Organized Neurosurgery's Approach to the Opioid Epidemic

Moderator: Maya Babu

Faculty: Brian Kopell, Lindsay Ross, Jason Schwalb, Cara Sedney, Jennifer Sweet

Seminar Description: This seminar will address the role and influence of organized neurosurgery in battling the opioid epidemic.

PN M05: Peripheral Nerve Entrapment Versus Radiculopathy

Moderator: Stephen Burks, Holly Gilmer

Faculty: Nicholas Boulis, Aaron Filler, Jason Huang, Russell Payne, Jonathan Stone, Gabriel Tender

Seminar Description: Mistaking peripheral and spinal pathology can lead to unnecessary surgery and patient suffering. Case base discussion.

TU M06: New Concepts in Intra-Operative Guidance and Visualization

Moderator: Babacar Cisse, Alexandra Golby

Faculty: Orin Bloch, Francesco DiMeco, Richard Everson, Tiffany Hodges, Brian Nahed, Peter Nakaji, Walter Stummer, Jai Thakur, Pablo Valdes Quevedo

Seminar Description: In this luncheon seminar, practicing neurosurgeons will learn how to apply existing technology to improve extent of resection including fluorescence, ultrasound, exoscope, virtual reality, MRI, and more.

TR M07: Neurosurgeons Role in Sports Medicine

Moderator: David Okonkwo

Faculty: Maya Babu, David Gimbel, Joseph Maroon, Tara Nail, Scott Zuckerman

Seminar Description: A neurosurgeon's role is no longer restricted to the operating room. More and more our expertise is being called upon to help manage the full breathe of neurotrauma patients from concussions and stingers on the field to management decisions allowing return to play.

SF M08: Surgery for Generalized Epilepsy Surgery

Moderators: Dario Englot, Robert Gross

Faculty: Taylor Abel, Mark Richardson, Derek Southwell

Seminar Description: Generalized epilepsy is prevalent and disabling, but surgery can be life-changing and life-saving in this population. New techniques in neuromodulation and innovation in disconnection has created new opportunities for further helping this group.

CV M09: Honored Guest Lunch: Crushing Your Residency and Early Years of Practice

Complimentary to all Residents; advance registration is required.

Speaker: Steven L. Giannotta

Description: This Luncheon Discussion Group will begin with some preliminary remarks by Dr. Giannotta focusing on his keys to success in both training and subsequent practice. An open discussion will quickly ensue responding to questions and suggestions from the attendees. His remarks in this portion of the forum will be heavily gleaned from his 30-year association with national leaders in our specialty of medicine.

1:50-2:50 pm

Afternoon Beverage Break

Visit the Exhibit Hall

SECTION SESSIONS

2:50-4:20 pm

CV Section on Cerebrovascular Surgery 1: Beyond Clips and Coils

Moderators: Ameet Chitale, Alfred See

Session Description: Developing findings regarding the development, growth and rupture of intracranial aneurysms with the luminary Drake lecture. Visit clinical implications and next steps with us.

Aspirin for Aneurysm Treatment: The New Frontier?

David Hasan

Updates in Aneurysm Growth and Rupture: Inflammation and Beyond

Robert Starke

Aspirin for Aneurysm Treatment: Next Steps – Panel Discussion

Brian Hoh, David Hasan, Judy Huang, Robert Starke

Drake Lecture

Oral Abstract Presentations

SE Council of State Neurosurgical Societies 1: Neurosurgical Advocacy and Value

Moderators: Cara Sedney, Justin Singer

Session Description: Hear perspectives on utilizing social media to promote practice and career development.

Advocacy Panel: Voices of Neurosurgeons in Washington, The State House, and on Social Media

Sheri Dewan, Brian Gantwerker, Analiz Rodriguez, Krystal Tomei

Panel: Asking Your Worth

Todd Barnes, Jeremy Phelps, Omar Zalatimo

Oral Abstract Presentations

SP Section on Disorders of the Spine and Peripheral Nerves 1: Update on Minimally Invasive and Endoscopic Spine Surgery

Moderators: Tiffany Perry, Cheerag Upadhyaya

Session Description: This session will feature lectures on endoscopic spine surgery that will allow participants to understand indications and techniques. There will also be discussion on minimally invasive applications to spinal deformity, and evidence presented regarding the ideal graft material to use during surgery.

Endoscopy – Real Applications and Limitations

Meng Huang

Learning Curve and Role for Endoscopy in Degenerative Spine Surgery

Christoph Hofstetter

MIS Endoscopic Fusion

Michael Wang

MIS Deformity – When Less is More

Paul Park

Best Evidence for Implant Technology

Eric Potts

Oral Abstract Presentations

TR Section on Neurotrauma and Critical Care 1: Neuromodulation in Neurotrauma

Moderators: Ann Parr, Sarah Woodrow

Session Description: Over the last decade we have seen an increase in the breadth of indications for using neuromodulation. This session will highlight recent advances in neurotrauma using neuromodulation as a potential treatment strategy in these patients.

Brain Modulation in TBI

Spinal Cord Stimulation in SCI Patients

David Darrow

Peripheral Nerve Stimulation in NT Patients

Line Jacques

Oral Abstract Presentations

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ALL OF OUR
SCIENTIFIC
PROGRAM
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PA Section on Pain 1: The Future of Neuromodulation

Moderators: Assaf Berger, Maria Guglielmo

Session Description: The future of neuromodulation is organized to provide participants with an exciting perspective of where neuromodulation is going. This will include discussions around novel use of spinal cord stimulation for back pain, use for occipital neuralgia and the benefit for diabetic neuropathy.

SCS and DRG for Non-Surgical Low Back Pain

Richard Romano

Neuromodulation for Painful Diabetic Neuropathy

Erika Petersen

Closed Loop Spinal Cord Stimulation

Nagy Mekhail

Occipital Nerve Stimulation: Guidelines for an Off-Label Therapy

Jennifer Sweet

Oral Abstract Presentations

PE Section on Pediatric Neurosurgery 1: Clinical Practice Guidelines – How are They Made? What do They Show? Why Should I Care?

Moderators: David Bauer

Session Description: Review the process of developing clinical guidelines as well as how to integrate them into everyday practice. Overview of recent clinical guidelines that are relevant to the practice of pediatric neurosurgeons.

Introduction and Overview of The Process to Create Guidelines

David Bauer

Interpretation and Use of Guidelines in My Practice

Daniel Donoho

Chiari and Hydrocephalus Guidelines

Carolyn Quincy

Plagiocephaly and Myelomeningocele Guidelines

Ann Marie Flannery

TBI, Tethered Cord, Brain Death, Epilepsy Guidelines

Eric Jackson

Oral Abstract Presentations

PN Section on Peripheral Nerves 1: Pearls in Peripheral Nerve Surgery: Video Session

Moderators: Zarina Ali, Robert Spinner

Session Description: Come learn from the masters, as we review tips and tricks for treatment of common peripheral nerve disorders. This video session will include content from masters in peripheral nerve surgery, covering broadly applicable procedures like carpal tunnel release with and without endoscopy, cubital tunnel release and decompression of the lateral femoral cutaneous nerves.

Surgical Approach to The Carpal Tunnel; Endoscopy vs. Open, How I Do It

Mark Mahan

Surgical Approach to The Cubital Tunnel: Endoscopy vs. Open, How I Do It

Eric Zager

Surgical Approach to The Lateral Femoral Cutaneous Nerve: How I Do It

Amgad Hanna

Oral Abstract Presentations

SF Section on Stereotactic and Functional Neurosurgery 1: Advanced High-Density Electrode Recordings of The Human Brain

Moderators: Sarah Bick, David Brandman

Session Description: Renowned experts will unravel the intricacies of cutting-edge electrode recording methodologies, providing a comprehensive exploration into the forefront of neurophysiological research. Attendees will gain profound insights into the potential implications for refined surgical interventions, fostering a deeper understanding of the complexities inherent in studying the human brain at the neural level.

History of Electrode Arrays and Applications

Dennis Spencer

NeuroPixels

Ziv Williams

Thin Film Arrays

Sharona Ben-Haim

Oral Abstract Presentations

TU Section on Tumor 1: Evolution of Surgical Management of Brain Cancers in the Age of Targeted Molecular Therapies

Moderators: Chetan Bettgowda, Chibawanye Ene

Session Description: This session will discuss key targeted medical therapies that play an adjunctive role in the surgical management of these tumors.

The Role of IDH Inhibitors in Management of Diffuse Low and High Gliomas

Daniel Cahil

Evolution of Targeted Therapy for Skull Base Tumors: Evolving Roles of the Neurosurgical Oncologist

Analiz Rodriguez

Surgical Management of Spinal Metastasis – When to Consider Targeted Molecular Therapies

W. Christopher Newman

Oral Abstract Presentations

AFTERNOON SESSIONS

4:30-6:00 pm

CV Implementing Minimally Invasive ICH Evacuation into Your Practice

Moderators: *Adrienne Moraff, Gustavo Pradilla*

Session Description: This session will provide the Who, How, and When of minimally invasive ICH evacuation through the evidence of new trials and the experience of experts in our field.

Who? Indications and Outcomes

Speaker to Follow

How and What? Techniques, Pearls, and Which System Should You Use

Jason Davies

When? Optimal Timing - Is Time Really Brain in Hemorrhagic Stroke?

Christopher Kellner

Panel Discussion

SE Mistakes in Spine Coding - How to Stay Out of Trouble

Moderators: *Juanmarco Gutierrez, Khoi Than*

Session Description: Panelists will use case-based examples to reveal pitfalls and highlight successful strategies to maximize authorization and payment for spinal surgery.

Anterior Spine

Khoi Than

Posterior Spine

Juanmarco Gutierrez

Instrumentation and Gifts

Karin Swartz

Trauma Fractures

Clemens Schirmer

Intraspinal/Intralaminar/Intrafacet

Joseph Cheng

Exploration/Removal/Revision

Cheerag Upadhyaya

Spinal Deformity

Gregory Przybylski

Complications

Corpectomy

Mark Oppenlander

SP Central Cord Injury

Moderators: *Erica Bisson, John O'Toole*

Session Description: Central cord syndrome is a common entity that has been closely studied for decades. The understanding of its pathophysiology and optimal management continues to evolve. This session will go over the most up-to-date data on this topic.

Updated Understanding of Central Cord Pathophysiology

Michael Fehlings

Surgical Strategies - When to Use Which Approach?

R. John Hurlbert

Timing of Surgery

Sanjay Dhall

Use of Adjuncts

Mark Hadley

The Impact of Age and Frailty

Anthony DiGiorgio

Outcomes After Surgery

Eve Tsai

TR Crossfire Debates in Neurotrauma

Moderators: *Odette Harris, Christian Ricks*

Session Description: Despite published guidelines, there are a variety of areas within neurotrauma that remain controversial. In this session leaders in neurotrauma will debate some of the current "hot topics" to drive discussion and consensus in the field.

Neurosurgery Involvement/Transfer for Mild TBI with Minimal Hemorrhage

Zachary Hickman, Eve Tsai

When is the Right Time to Withdraw Care in Severe TBI

Anthony DiGiorgio, David Okonkwo

Bifrontal vs. Unilateral Craniectomy in Refractory Elevated ICP

Marcus Mazur, Laura Ngwenya

Pushing the Envelope in Spinal Cord Injury: MAPS vs. Spinal Cord Perfusion

Nitin Agarwal, Paul Arnold

PA Lesioning for Pain

Moderators: *Shervin Rahimpour, Jennifer Sweet*

Session Description: The interactive breakout session has been designed to expose participants to novel treatments for pain. This will include MRgFUS, LITT for cingulotomy and midline myelotomy for visceral pain.

Value of Neuromonitoring for Lesioning Procedures for Pain, What, When, How

Ellen Air

MRgFUS

Ashwin Viswanathan

LITT for Cingulotomy and Capsulotomy

Joseph Neimat

Punctate Midline Myelotomy for Visceral Pain

Shervin Rahimpour

PE Chiari Malformation – The Answer

Moderator: *Eric Jackson*

Session Description: Surgical treatment of Chiari malformations continues to be a source of much controversy. Various experts advocate for no duroplasty, no bone removal, occipital cervical fusion, or even posterior fossa cranial expansion. This session will explore various treatment strategies including case-based discussion highlighting different opinions about best options.

Evidence Based Treatment Strategies for Chiari

David Limbrick

Cervical Fusion for Chiari

Jeffrey Greenfield

Posterior Vault Distraction for Chiari

Guirish Solanki

PN Brachial Plexus Stretch Injury: Reconstructive Strategies

Moderators: *Amgad Hanna, Ross Puffer*

Session Description: In this session, we will explore the reconstructive strategies for dealing with brachial plexus stretch injuries and their outcomes. Participants can look forward to lectures covering everything from the ideal timing for brachial plexus surgical intervention and when to consider a nerve transfer.

Timing for Surgical Intervention

Robert Spinner

Intaplexial Exploration vs. Nerve Transfer? How I Do It?

Justin Brown

Nerve Transfer and Cortical Plasticity: What Does Not Work?

Martin Malessi

SF Focused Ultrasound: Challenging Cases

Moderators: *Nir Lipsman, Jasmine Thum*

Session Description: Focused ultrasound has quickly become an accepted tool in the neurosurgeon's armamentarium. However, many cases and patients remain challenging. This session will

review several common but challenging scenarios faced by practicing experts in focused ultrasound.

Treating Low SDRs

Shiro Horisawa

Treating Parkinson's

Treating New Indications

Vibhor Krishna

Focused Ultrasound for Addiction

Ahmed Raslan

TU Multimodal Therapy for Brain Metastasis

Moderators: *Kalil Abdullah, Veronica Chiang*

Session Description: This course will offer a comprehensive review of novel and emerging therapies for patients with brain metastasis using illustrative case illustrations.

Targeted Molecular Therapies for Brain Metastasis

Rohan Ramakrishna

Surgical Management of Brain Metastasis

Sherise Ferguson

Combined Radio Surgical and Operative Approaches to Brain Metastasis Management

Christopher Cifarelli

6:00-7:30 pm

Medical Student Town Hall

We invite all medical students to attend the Medical Student Town Hall! You will have the opportunity to interact with leadership from residency programs and network with other medical students and residents.

7:30-9:30 pm

TU Dinner Seminar 2: Complex Skull Base Approaches

■ *III by Wolfgang Puck*

■ *\$225 (includes three-course dinner and beverages)*

■ *Complimentary shuttle service will depart the Marriott Marquis Houston at 7:15 pm.*

■ *Advance Registration Required*

Moderators: *Christopher Graffeo, Robert Heller*

Faculty: *Vijay Agarwal, Karam Asmaro, Franco DeMonte, Daniel Prevedello, Shaan Raza, Olabisi Sanusi, Laligam Sekhar, Mario Zuccarello*

Seminar Description: A reference session for the management of intracranial lesions necessitating a combined approach. Discussed in detail will be appropriate approach selection, technique, nuance, and complication avoidance. Combined approaches will not be limited solely to open approaches, but will include both endoscopic and keyhole techniques, as well as vascular approaches.

GUIDELINES SESSIONS

7:00-8:30 am

Guidelines Session III: Brain Aneurysm

Moderator: *Ketan Bulsara*

Session Description: The CNS Guidelines are evidence-based summaries of the scientific literature written by topic experts to provide neurosurgeons with the information they need to provide the best care to patients suffering from common neurosurgical conditions. In the Guidelines Sessions, authors discuss the key conclusions of recent Guidelines projects to promote the dissemination of this broadly applicable information around the field. In this session, Guidelines authors discuss their conclusions regarding the treatment and management of patients with brain aneurysms.

7:00-8:30 am

Guidelines Session IV: Functioning Pituitary Adenoma

Moderator: *Isabelle Germano*

Faculty: *Manish Aghi, David Ormond, Faith Robertson*

Session Description: The CNS Guidelines are evidence-based summaries of the scientific literature written by topic experts to provide neurosurgeons with the information they need to provide the best care to patients suffering from common neurosurgical conditions. In the Guidelines Sessions, authors discuss the key conclusions of recent Guidelines projects to promote the dissemination of this broadly applicable information around the field. In this session, Guidelines authors discuss their conclusions regarding the treatment and management of patients with functioning pituitary adenomas.

SUNRISE SCIENCE SESSIONS

7:00-8:30 am

The Sunrise Science Abstract sessions will be comprised of the top oral abstract presentations submitted in each of the subspecialties presenting the latest scientific research.

Sunrise Science and Late Breaking Abstract Session – Spine 2

Moderators: *Allan Martin, Sohail Syed*

Sunrise Science and Late Breaking Abstract Session – CSNS

Moderators: *Tarun Arora, Celene Mulholland*

Sunrise Science and Late Breaking Abstract Session – Tumor 2

Moderators: *Brian Gill, Ben Rapoport*

Sunrise Science and Late Breaking Abstract Session – Healthcare Disparities

Moderators: *David Paul, Theresa Williamson*

Sunrise Science and Late Breaking Abstract Session - Cerebrovascular 2

Moderators: *Jeremiah Johnson, Rosalind Lai*

Sunrise Science and Late Breaking Abstract Session – Pain

Moderators: *Assaf Berger, Brian Dalm*

Sunrise Science and Late Breaking Abstract Session – Stereotactic and Functional

Moderators: *Iahn Cajigas, Jenn Cheng*

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7:00-8:30 am

LGBTQIA+ and WINS Breakfast Seminar

■ Complimentary; advance registration is required.

Moderator: David Darrow, Justin Neira

Faculty: Cory Adamson, Gerald Grant, Madlyn Mendlen, Susan Pannullo, Rebecca Stachniak, Raul Vasquez, Nina Yoh

Course Description: This seminar will include a discussion about the challenges of being in the LGBTQIA+ community and a practicing neurosurgeon. How to overcome these challenges and improve delivery of care to patients for the training of the next generation will be addressed.

ASBN Breakfast Seminar

■ Complimentary; advance registration is required.

Moderator: William Ashley, Sonia Eden, Nnenna Mbabuike

Faculty: Cargill Alleyene, Ernest Barthelemy, Monte Masters, William McDade

Course Description: Join the American Society of Black Neurosurgeons (ASBN) at the CNS Annual Meeting for a dynamic session focused on advancing diversity and equity in neurosurgery. As advocates for the advancement of underrepresented minorities in neurosurgery, ASBN recognizes the urgent need for concerted efforts to increase the representation of historically marginalized groups, particularly Black Americans, in our profession. Underrepresentation not only limits diversity within our specialty but also perpetuates disparities in healthcare access and outcomes for minority communities. Embracing diversity fosters innovation, creativity, and excellence in addressing the complex challenges of neurosurgical practice. By coming together to address these critical issues, we can create a more inclusive and equitable future for our profession and the patients we serve. Speakers will discuss mentorship, breaking barriers, and fostering equal opportunities.

General Scientific Session III

8:40 am-12:10 pm

See page 15 for session details.



LUNCHEON SEMINARS

12:20-1:50 pm

All Luncheon Seminars include a plated lunch served in the seminar room. Luncheon Seminar fee is \$150 each (\$100 for residents, fellows, medical students, and advance practice providers)

SE T10: The Socioeconomics of an Ambulatory Surgery Center

Moderator: Christopher Holland

Faculty: Abilash Haridas, J. Alex Thomas

Seminar Description: Physical Medicine and Rehabilitation and Anesthesiologists are increasingly involved in managing patients with chronic pain. Ideally, a comprehensive pain management strategy involving various members of the team is optimal for good patient care. This session will describe strategies for pain management that the typical neurosurgeon does not do, followed by neurosurgical options for pain management. Finally the session will address how to ideally set up a socio-economically successful comprehensive pain management program.

TR PN T11: Management of Traumatic Peripheral Nerve Injuries

Moderator: Laura Ngweyna

Faculty: Nicholas Boulis, Megan Jack, Mark Mahan, Ross Puffer, Thomas Wilson

Seminar Description: Traumatic peripheral Nerve Injuries are not uncommon in complex polytraumas. Using a case-based format presenters will guide participants through some basic and more advanced management strategies of these injuries.

SF T12: Tumor-Related Epilepsies

Moderator: Arjun Khanna, Mark Richardson

Faculty: Shabbar Danish, Shawn Hervey-Jumper, Isabelle Germano, Sujit Prabhu

Seminar Description: Seizures are often the first, and sometimes the most debilitating presentation associated with tumors. This session will merge fundamental tenets in both epilepsy and tumor surgery, as well as how to incorporate new technology to enhance best practices.

TU T13: Sellar and Suprasellar Tumors: A High-Yield CNS Collaboration with the NASBS

Moderator: Nelson Oyesiku, Phillip Theodosopoulos

Faculty: Hanna Algattas, Garni Barkhoudarian, Paul Gardner, Todd Hollon, Christina Jackson, Erin McKean, James Liu, Viviane Tabar, Jamie Van Gompel

Seminar Description: Offers a comprehensive series of lectures related to the most challenging and relevant aspects of the diagnosis, surgical and non-surgical management, and outcomes of sellar and suprasellar tumors. The lectures are organized in a TED-talk style format to provide a different learning experience and highlight the practical and clinically relevant concepts.



CV T14: Aneurysms: Tools and Tricks of the Trade

Moderator: Nohra Chalouhi, Sheila Eshraghi

Faculty: Nicholas Bambakidis, Rohan Chitale, Amir Dehdashti, Kimberly Kicielinski, Michael Lang, Michael Lawton, Erez Nossek, Erol Veznedaroglu, Henry Woo

Seminar Description: Case-based session on how to optimize treatment for aneurysm treatment, from everyday aneurysms to complex. Incorporate multimodality strategies, get-out-of-trouble pearls, and both new and old technologies to improve patient outcomes.

SP T15: Surgical Management of Primary Spinal Tumors

Moderators: C. Rory Goodwin, John Shin

Faculty: Ahmed Allam, Michelle Clarke, Michael Galgano, Ziya Gokaslan, James K. Lui, Laurence Rhines, Daniel Sciubba

Seminar Description: Review the latest treatment options for primary spinal column tumors from cervical to sacral. Advances in surgical techniques, pre-operative planning, and intra-operative application of enabling technologies for tumor resection will be highlighted. Current multi-modal management strategies for giant cell tumor, chordoma, and chondrosarcoma will be discussed with an emphasis on complication avoidance and management.

WI T16: Optimizing Neurosurgical Excellence: Strategies for Peak Performance

Moderator: Kristen Jones, Ricardo Komotar

Faculty: John Boockvar, Joseph Maroon, Maryam Rahman, Steve Roper, Renee Reynolds, Martina Stippler

Seminar Description: Learning the multiple strategies available to practicing neurosurgeons and residents on how to increase efficiency at work, improve cognitive function, motor skills, communication and enhance relationships for greatest efficacy. Didactic and small group sessions to learn scientifically sound methodologies. Topics to include enhancing knowledge retention, increasing memory, improving skills in the OR, sleep, nutrition, physician activity, meditation and more.

IN GE T17: Honored Guest Lunch: Developing New Approaches to Brain Tumor Therapy

Complimentary to all residents; advance registration is required.

Speaker: Henry Brem

Seminar Description: We have witnessed enormous advances in our diagnosis and treatment of patients with brain tumors. The neurosurgeon has a unique and privileged opportunity to understand the limitations of current therapies and to develop new and better approaches. We will discuss the opportunities and challenges in accomplishing these advances as well as the imperative to continuously innovate and improve.

1:50-2:50 pm

Afternoon Beverage Break

Visit the Exhibit Hall

1:50-2:50 pm

Neurosurgery Publications: "Getting Published"

Moderator: Douglas Kondziolka

Faculty: Langston Holly, Russell Lonser, Howard Riina

Seminar Description: This session seeks to give an overview of some of the issues that residents and early career scholars may encounter in getting published. By addressing common experiences, pearls, and pitfalls in the writing and peer review process the audience will be able to calibrate their future submissions and potentially increase their chance of success

1:50-2:50 pm

CNS Resident SANS Challenge Championship Round

Host: A. Samy Youssef

Facilitators: Rachel Blue, Angela Downes, Omaditya Khanna



2:00-2:30 pm

Annual Business Meeting

Plan to attend the Annual Business Meeting to hear an update on CNS business from the past year. CNS members will have the opportunity to vote on any proposed bylaws amendments.

SECTION SESSIONS

2:50-4:20 pm

CV Section on Cerebrovascular Surgery 2: Emerging Science and Challenging Cases

Moderators: Fadi Al Saiegh, Allison Strickland

Seminar Description: Featuring the Keynote Hopkins lecture, this session will focus on the challenge of intracranial atherosclerosis and novel methods of treatment, citing evidence and clinical implications. Additionally, it will showcase 8 of the most impactful CV oral presentations of the year.

Hopkins Lecture

Intracranial Atherosclerotic Disease: Where are We Now?

Panel Discussion

Updates From CAPTIVA

Brian Hoh

Progress in Intracranial Stenting: First Up or Last Ditch?

Stavropoula Tjoumakaris

Oral Abstract Presentations

SE Council of State Neurosurgical Societies 2: Clinical Leadership in Neurosurgery

Moderators: Mark Linskey, Sarah Woodrow

Faculty: Ellen Air, Richard Ellenbogen, Bharat Guthikonda, Tiffany Hodges, Jack Knightly, Alessandro Olivi, Nelson Oyesiku, Nathan Selden, Richard Wohms

Seminar Description: Hear how neurosurgeons view the challenges of recruiting, faculty development, fundraising, program development, multi-disciplinary service lines, marketing, and other challenges of leading neurosurgery departments, neuroscience sections, and hospitals.

Competing for Resources Within a Medical Center

Recruiting New Graduates

Retaining Faculty

Investing in Research

Recruiting Diverse Faculty

How to Effectively Deploy APPs

Oral Abstract Presentations

SP Section on Disorders of the Spine and Peripheral Nerves 2: Disparities in Spine Care and Education

Moderators: John Chi, Kristen Jones

Seminar Description: This session will include discussion on disparities in spine care both domestically and internationally. Lectures will also include topics of spine education, and the use of registries to improve patient care.

Advancing Equitable Spine Care Worldwide

Salam Sharif

Socioeconomic Disparities in Spine Surgery Care and Outcomes

Corrina Zygourakis

Mentoring and Training Spine Surgeons - Past, Present, and Future

Charles Branch

Spinal Registry Data - Where We Are and Where Are We Headed

Mohamad Bydon

Oral Abstract Presentations

TR Section on Neurotrauma and Critical Care 2: Penetrating Head Injury

Moderators: Greg Hawryluk, Jeffrey Tomlin

Seminar Description: With 2024 came new penetrating head trauma guidelines. This session is designed to review those guidelines and learn from other environments.

Review of New Guidelines

Randy Bell

Penetrating Head Injuries: Military Perspective

Brad Dengler

Penetrating Head Injuries: The Brazilian Perspective

Wellingson Paiva

Oral Abstract Presentations

PE Section on Pediatric Neurosurgery 2: The Soul of Pediatric Neurosurgery: Striving for Meaning and Purpose with Mentoring, Team Building, Wellness, and Hospitality

Moderators: Susan Durham, Howard Weiner

Seminar Description: This session will explore some deeper, less often discussed aspects of a career in pediatric neurosurgery: how do we be our "best selves" for our patients, colleagues, family members, and for ourselves. Speakers will describe the power of grit, story, wellness, and hospitality in our field.

Mentoring

Susan Durham

Team Building

Jay Wellons

Wellness

Anthony Avelino

Hospitality

Howard Weiner

Oral Abstract Presentations

SF PA Section on Stereotactic and Functional Neurosurgery 2: Cerebral Modulation for Pain

Moderators: Ausaf Bari, Ahmed Raslan

Seminar Description: Neuromodulation of pain networks remains an emerging field. Development in our understanding of the complex matrix involved in cerebral nociception holds promise to further our clinical potential.

Cerebral Neurophysiology of Pain

David Darrow

Targeting the Pain Network

Prasad Shirvalkar

Deep Brain Stimulation for Pain

Ausaf Bari

Oral Abstract Presentations

TU Section on Tumor 2: Focus Ultrasound and Intraoperative Photodynamic Therapy During Brain Tumor Resection

Moderators: Vijay Agarwal, Jason Sheehan

Session Description: Offer a comprehensive review of technologies delivered in the intraoperative setting to optimize tumor visualization and the delivery of cancer directed therapies.

Photodynamic Therapy for Malignant Glioma

Nicolas Reyns

Focus Ultrasound for Gliomas

Adam Sonabend

Use of Focused Ultrasound for Treatment of Brain Metastases

Nir Lipsman

Oral Abstract Presentations

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Afternoon Sessions

4:30-6:00 pm

CV PE **Cavernous Malformations: What the Modern Data Show? A Joint Session of Sections on Pediatric Neurosurgery and Cerebrovascular Neurosurgery**

Moderator: *E. Sander Connolly, Edward Smith*

Session Description: Cavernous malformations are common in adult and pediatric patients, many found incidentally. There is controversy regarding when to treat and the best treatment modality in certain circumstances, but emerging evidence which may clarify treatment decisions. This session will discuss current thinking about when and how to treat cavernous malformations including challenging case discussion.

Updates in Natural History

Kelly Flemming

Minimally Invasive Surgical Techniques

Sean Polster

Role of Radiosurgery: What's the Evidence and How To

Douglas Kondziolka

Treatment of Cavernomas for Epilepsy: Emerging Evidence

Giuseppe Lanzino

Pediatric and Adult Panel Discussion

E. Sander Connolly, Edward Smith

SE **Medical Malpractice Expert Testimony Do's and Don'ts**

Moderator: *Brian Gantwerker, Jason Stacy*

Session Description: The panel will use real-world examples to explain the anatomy of lawsuit and the different points at which expert testimony is sought. They will also discuss testimony scope, billing, and ethics.

Anatomy of a Lawsuit

Jeremy Phelps

Standard of Care: What Is It and Who Decides?

Deb Benzil

The Reality of Being Deposed

Gerland Rodts

Do's and Don'ts of Expert Testimony

Alessandro Olivi

How Do You and Your Practice Survive a Lawsuit?

Ann Parr

Cases I Look For

What I Wish All My Clients Knew Before They Met Me

SP **Spine Case-Based Debates**

Moderator: *Joseph Osorio, Theresa Williamson*

Session Description: Significant variation exists in the management of patients with lumbar spine pathology. These case-based debates will help learners to identify best practices.

1-2 Level Radiculopathy in the Setting of Sagittal/ Coronal Deformity

Jim Harrop, Tyler Koski, Luis Tumialan

Awake Spine Surgery: Fad or For Real?

Ali Baaj, Michael Wang

Moderate Lumbar Degenerative Scoliosis

Robert Heary, Christopher Shaffrey

Management of the Pelvis in a Long Deformity Construct

Praveen Mummaneni, David Polly

TR **Neurotrauma as a Team Sport: Case-Based Discussion in Complex Neurotrauma Patients**

Moderator: *Ramesh Grandhi, Zachary Hickman*

Faculty: *Zarina Ali, Paramita Das, John Kanter, Ryan Kitagawa, Mark Mahan, Nathan Zwagerman*

Session Description: The modern care of neurotrauma patients involves a multidisciplinary team, even within neurosurgery. Using case-based discussions leading faculty will offer their perspectives on managing these complicated patients from their initial presentation to their discharge and beyond.

Case 1: Patient with SCI and Concomitant Vascular Injury

Case 2: Patient with Anterior Skull Base Injury and Refractory ICP Issues

Case 3: Severe Polutrauma with Open Belly, SCI ++

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SF Ethical Dilemmas in Neuromodulation

Moderator: *Clement Hamani, Timothy Lucas*

Session Description: This case-based session will delve into the intricate ethical dilemmas arising from the use of invasive brain implants for treating neuropsychiatric syndromes like Parkinson’s disease and depression as well as healthy subjects seeking augmentative therapies. These technologies, while promising for enhancing patients’ quality of life, raise critical questions regarding consent, privacy, and potential unintended consequences. By addressing these ethical concerns, the symposium aims to guide the direction of future technological trends in neuromodulation, ensuring that advancements in the field align with the highest standards of patient care and ethical principles.

Ethical Considerations in Invasive Cranial Studies for Chronic Metabolic Disorders

Casey Halpern

Design Philosophy of the Neuralink System: Engineering Principles and Challenges

Fouzam Alam

New Ethical Frameworks for AI-enabled Neural Implants

Kai Miller



TU Complex Skull Base Approaches

Moderator: *Karam Asmaro, Stephanie Cheok, Michael Karsy*

Session Description: Focusing on the management of intracranial lesions necessitating a combined approach, focusing on approach selection, technique, nuance, and complication avoidance. Combined approaches will not be limited solely to open approaches, but will include both endoscopic and keyhole techniques, as well as vascular approaches.

When to Consider Minimally Invasive Surgical Approaches to Tumors in the Skull Base

Brad E. Zacharia

Endoscopic vs Open Surgical Approaches to Sellar Region Tumors

Ezekiel Goldschmidt

Combined Surgical Approaches for Skull Base Tumors

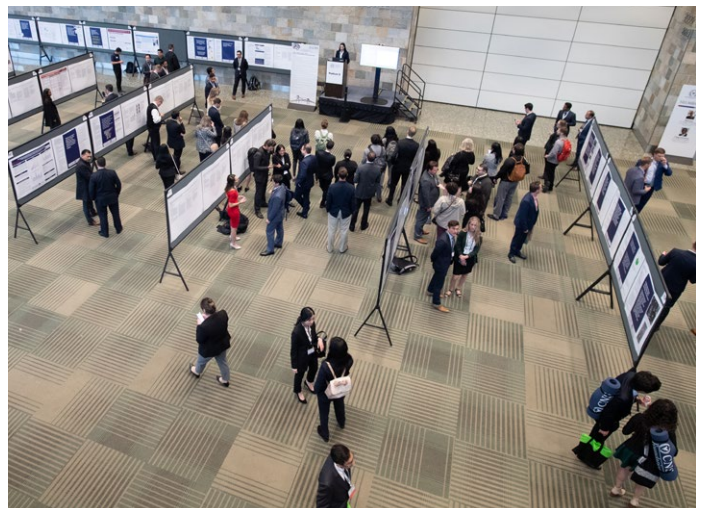
Michael Ivan



5:00-6:30 pm

Interactive Poster Presentation Session with Wine and Cheese Reception

The interactive poster session aims to invigorate scientific presentation and discussion, complemented by wine and cheese. Selected posters will present “poster talks” in the poster hall, highlighting key advances in each field.



Guidelines Sessions

7:00-8:30 am

Guideline Session V: Chiari Malformation

Moderators: David Bauer

Faculty: Cormac Maher, Toba Niazi, Rabia Qaiser, Carolyn Quinsey, Shobhan Vachhrajani

Session Description: The CNS Guidelines are evidence-based summaries of the scientific literature written by topic experts to provide neurosurgeons with the information they need to provide the best care to patients suffering from common neurosurgical conditions. In the Guidelines Sessions, authors discuss the key conclusions of recent Guidelines projects to promote the dissemination of this broadly applicable information around the field. In this session, Guidelines authors discuss their conclusions regarding the treatment and management of patients with Chiari malformations.

SUNRISE SCIENCE SESSIONS

7:00-8:30 am

The Sunrise Science Abstract sessions will be comprised of the top oral abstract presentations submitted in each of the subspecialties presenting the latest scientific research.

Sunrise Science and Late Breaking Abstract Session – Cerebrovascular 3

Moderators: Muhammad Salman Ali, Matthew Koch

Sunrise Science and Late Breaking Abstract Session – Spine 3

Moderators: Najib El Tecl, Jason Frerich

Sunrise Science and Late Breaking Abstract Session – Tumor 3

Moderators: Kunal Patel, Pranay Soni

Sunrise Science and Late Breaking Abstract Session – Spine, Peripheral Nerve, and Cerebrovascular

Moderators: Joel Beckett, Andrew Vivas

Sunrise Science and Late Breaking Abstract Session – Medical Education Training

Moderators: Nitin Agarwal, Chris Neal

Sunrise Science and Late Breaking Abstract Session – Neurotrauma and Critical Care 2

Moderators: Tara Nail, Dmitriy Petrov

Sunrise Science Session – Developing a Modern Skull Base and Neuro-Oncology Surgery Center

Moderators: Wenya Linda Bi, Hamid Borghei-Razavi, Michael Karsy, Ahmed Mohyeldin

Sunrise Science and Late Breaking Abstract Session – Peripheral Nerve

Moderators: Daniel Lubelski, Yaaman Saadeh

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General Scientific Session IV

8:40 am-12:10 pm

See page 15 for session details.

LUNCHEON SEMINARS

12:20-1:50 pm

All Luncheon Seminars include a plated lunch served in the seminar room. Luncheon Seminar fee is \$150 each (\$100 for residents, fellows, medical students, and advance practice providers)

SP W18: My Worst Spinal Complication: Lessons Learned

Moderators: Michael Steinmetz, Christopher Wolfla

Faculty: Michelle Clarke, Andrew Grossbach, Daniel Hoh, Gerald Rodts, Daniel Resnick

Seminar Description: Sometimes the best lessons are learned the hard way. This symposium will see expert spine surgeons discuss some of their most challenging complications to provide insights into advanced clinical care of patients with spinal disorders.

SE W19: Unwrapping Hospital Financials - How Neurosurgeons Can Be Affected

Moderators: Joseph Cheng, Abilash Haridas

Faculty: Anthony Asher, Matthew Ewend, Steven Kalkanis

Seminar Description: Hospital-employed or health system supported neurosurgeons are being affected by facility finances, and increasingly expected to have a positive impact on these for their program. This session will provide expertise from health system leaders on how to keep neurosurgery at the forefront and highlight the importance of neurosurgery to a health systems' financial footprint.

TU W20: Now What? Management of Intracranial Complications

Moderators: Michael Link, Gabriel Zada

Faculty: Desmond Brown, Frederick F. Lang, Stephen Magill, David Jay McCracken, Daniel Prevedello

Seminar Description: Complications of Intracranial tumor surgery, including cases by skull-base and intra-axial tumor experts focusing on surgical technique and technological maladies.

CV W21: Treating SDH IN 2024: A Multimodal Approach

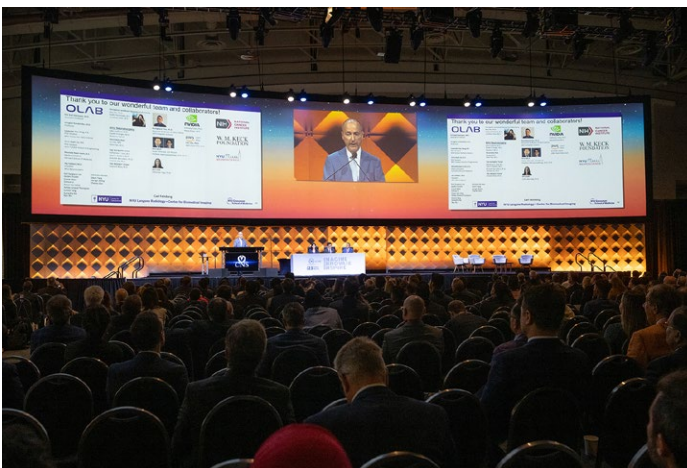
Moderator: David Gimbel, Peter Kan, Berje Shammassian

Faculty: Adam Arthur, Jason Davies, Christopher Kellner, Jared Knopman, Nina Moore, Joshua Osbun, Ansaar Rai

Seminar Description: Novel insights and treatment options for SDH: Understanding the pathophysiology, when and how to treat seizures, RCT evidence for treatment options from a multidisciplinary approach.

1:50-3:50 pm

**Neurosurgical Medical Student Session:
Prepared by medical students, for medical students**



2024 CONGRESS OF NEUROLOGICAL SURGEONS ANNUAL MEETING OBJECTIVES

The CNS enhances health and improves lives through innovative neurosurgical education, advancement of clinical practice & scientific exchange. The CNS Continuing Medical Education (CME) program provides participants various learning formats to keep current in their field, improve skills, and enhance professional performance to provide the best possible care for their patients.

The CNS CME program is designed, planned, and implemented to evaluate a comprehensive collection of activities within the subspecialty of neurosurgery. The CNS plans to yield results that contribute to lifelong learning and demonstrate change and improvement in competence.

At the conclusion of the 2024 CNS Annual Meeting, participants will be able to:

1. Alter their current practice patterns in accordance with the latest data.
2. Compare techniques based on findings discussed during case presentations.
3. Apply and/or perform new techniques based on best practices and current procedures.
4. Practice evidence-based, informed neurosurgical medicine.
5. Interpret newly found outcomes as a result of the abstract scientific presentations.
6. Demonstrate change in competence.

EDUCATIONAL FORMAT DESCRIPTIONS

The CNS offers sessions in formats to enhance your educational experience. Each session is open to all who have paid the general medical registration fee with the exception of optional Symposia, Luncheon Seminars, and Dinner Seminars, which are available for an additional fee.

SYMPOSIA

Didactic and hands-on courses with expert neurosurgical educators demonstrating clinical techniques and applications via technology, models and simulation. Hands-on Symposia provide an opportunity to improve surgical skills by applying and demonstrating learned techniques. Symposia also provide an opportunity to review case-based complex issues and discuss potential solutions.

- Symposia are offered Saturday, September 28, and Sunday, September 29.

GENERAL SCIENTIFIC SESSIONS, SECTION SESSIONS, GUIDELINE SESSIONS, LUNCHEON SEMINARS, CASE-BASED SESSIONS, AND DINNER SEMINARS

Expert lecturers present research, scientific evidence, and associated outcomes and demonstrate clinical techniques and applications. The basics of translational development, clinical trials, guideline review, and updated changes and evaluation of clinical experience, followed by examples of successful application, are presented in various sessions. Basic skills and information that can be applied in daily practice and professional life are also presented.

- General Scientific Sessions, Section Sessions, Guidelines Sessions, Case-Based Sessions, and Poster Presentation Sessions are offered Sunday, September 28 through Wednesday, October 2.
- Luncheon Seminars are offered Monday, September 30 through Wednesday, October 1.
- Dinner Seminars are offered on Saturday, September 28, and Monday, September 30.

CASE-BASED SESSIONS

During the Case-based Discussion Sessions, the faculty presents cases to be examined, discussed, and debated by both the audience and the panel. Registered attendees will have the opportunity to submit their own cases prior to the meeting to be presented at these sessions. Don't miss these interactive sessions designed to encourage participation from everyone.

- Case-Based Sessions will take place on Monday, September 30, and Tuesday, October 1.

LIVE SURGERY VIA TELEMEDICINE

- Live Surgery via telemedicine technology in the Exhibit Hall will take place Monday, September 30 through Wednesday, October 2.
- **CME is not offered for these sessions.**

ORIGINAL SCIENCE PROGRAM

Scientific abstract presentations offer original science, groundbreaking research, and the best clinical and basic neurosurgical science in the CNS Original Science Program, and allows for audience questions and moderated discussions.

- Oral Presentations by subspecialty will be presented on Monday, September 30, Tuesday, October 1, and Wednesday, October 2
- Late-breaking Abstracts will be presented on Monday, September 30 through Wednesday, October 2.

ACCREDITATION



The Congress of Neurological Surgeons is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The Congress of Neurological Surgeons (CNS) has been reviewed by the Accreditation Council for Continuing Medical Education (ACCME®) and awarded Accreditation with Commendation for six years as a provider of continuing medical education (CME) for physicians. Accreditation in the ACCME System seeks to assure the medical community and the public that the CNS delivers education relevant to clinicians' needs, is evidence-based, evaluated for its effectiveness, and independent of commercial influence.

CME CREDIT

The CNS designates this live activity for a maximum of 46.00 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

* A maximum of 23.50 AMA PRA Category 1 Credits™ may be earned for general sessions only.

ADDITIONAL CME CREDITS CAN BE EARNED BY ATTENDING THE FOLLOWING:

SYMPOSIA (SATURDAY/SUNDAY)

Half Day Sessions

Attendees will receive a maximum of 3.75 AMA PRA Category 1 Credits™ for each eligible half-day morning symposia (A) and a maximum of 3.25 AMA PRA Category 1 Credits™ for each half-day afternoon symposia (B).

Full Day Sessions

Attendees will receive a maximum of 7.00 AMA PRA Category 1 Credits™ for each full day symposia.

LUNCHEON SEMINARS

Attendees will receive a maximum of 4.50 AMA PRA Category 1 Credits™ for all eligible luncheon seminars.

DINNER SEMINARS

Attendees will receive a maximum of 2.00 AMA PRA Category 1 Credits™ for all eligible dinner seminars.

PREPARING POSTER PRESENTATION(S)

Physicians are eligible to claim up to 5 AMA PRA Category 1 Credits™ per poster directly from the AMA. Applicant must be listed as the first author included in the published abstracts for a conference or activity that is certified for AMA PRA Category 1 Credits™.

To claim the credit, physicians must submit to the AMA the completed Direct Credit Application or Resident Credit Application, along with the required documentation and appropriate processing fee. Please visit the AMA website for details at www.ama-assn.org.

Physicians may claim AMA PRA Category 2 Credits™ for viewing scientific posters. Physicians should self-claim credit on their AMA PRA certificate application form. Please visit the AMA website for details at www.ama-assn.org.

CME CREDIT AND CERTIFICATE OF ATTENDANCE

CME credits can be claimed through the online system at www.cns.org. The CNS CME tracking system allows you to claim CME credit or Certificate of Attendance hours for the meeting. All attendees should only claim credit or hours of attendance commensurate with the extent of their participation in the activity.

Upon completion, your CME certificate will be immediately available to print from the convenience of your home or office.

DISCLOSURES

The Accreditation Council for Continuing Medical Education (ACCME) Standards for Integrity and Independence in Accredited Continuing Education requires that anyone in a position to control the content of the educational activity disclose all financial relationships with any ACCME-defined Ineligible Company*. Failure or refusal to disclose or the inability to satisfactorily resolve the identified conflict may result in the withdrawal of the invitation to participate in any of the CNS educational activities.

The ACCME defines an "Ineligible Company" as those whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

FDA STATEMENT

Some drugs or medical devices demonstrated at the Annual Meeting have not been cleared by the FDA or have been cleared by the FDA for specific purposes only. The FDA has stated that it is the physician's responsibility to determine the FDA clearance status of each drug or medical device they wish to use in clinical practice. The CNS policy provides that "off-label" uses of a drug or medical device may be described at the Annual Meeting so long as the "off-label" use of the drug or medical device is also specifically disclosed.

Any drug or medical device is "off label" if the described use is not set forth on the product's approved label. It is also each speaker's responsibility to include the FDA clearance status of any device or drug requiring FDA approval discussed or described in their presentation or to describe the lack of FDA clearance for any "off-label" uses discussed. Speakers from the audience are also required, therefore, to indicate any relevant personal/professional relationships as they discuss a given topic.

GENERAL INFORMATION

AMERICANS WITH DISABILITIES ACT

Wheelchairs, scooters, information booths, designated parking, TDD telephones, and other services are available for visitors with disabilities. For wheelchair or electric scooter rental, please contact Scoot-Around at 888-441-7575 or www.scootaround.com.

It is suggested that you make your reservation in advance of your arrival. Please let us know if, under the ADA, you require special accommodations or services in order to attend the CNS Annual Meeting. We want to ensure that no individual with a disability is excluded because of the absence of auxiliary aids and services. Your requirements should be sent directly to the Annual Meeting Registration and Housing Center at: cns@mcievents.com. Please provide any requests at least 30 days prior to the Annual Meeting to allow adequate time to accommodate your request.

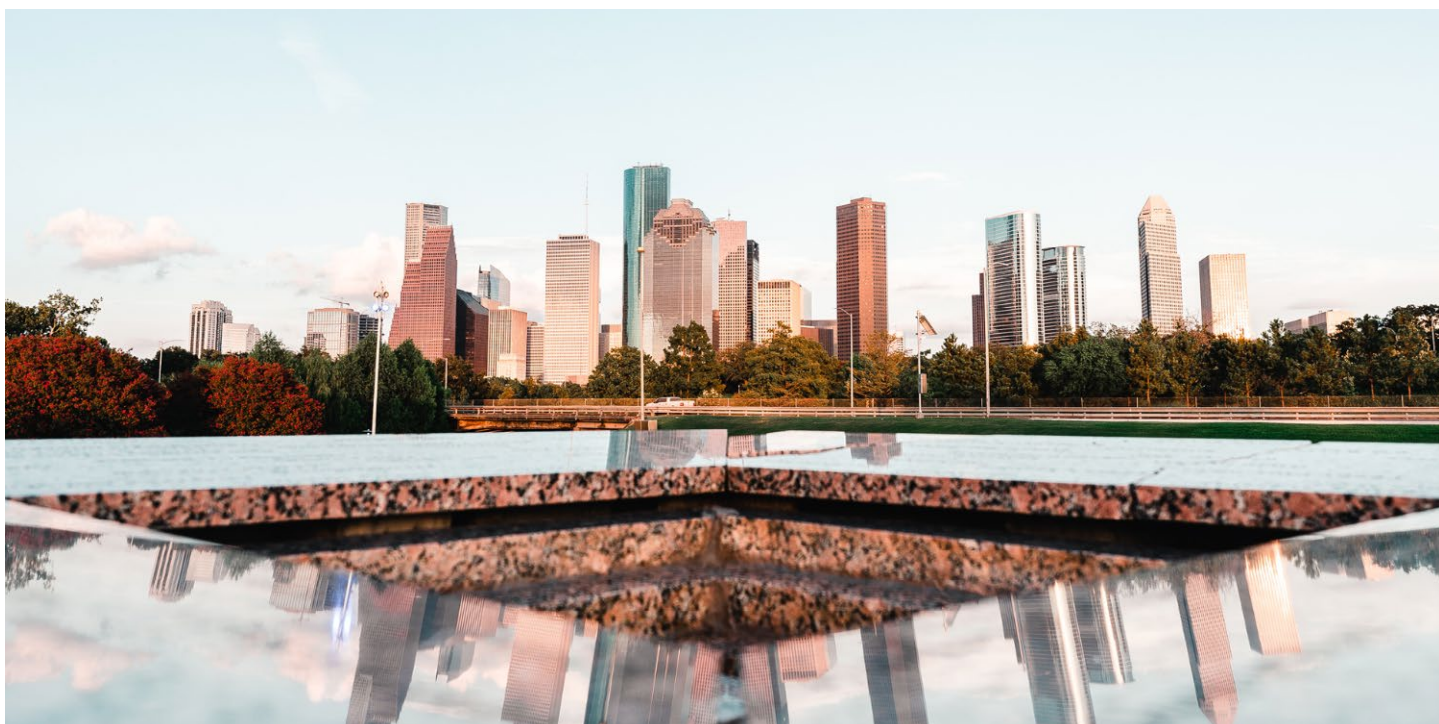
COURSE AGENDAS AND FACULTY

Agendas and faculty are subject to change. As we strive to improve the quality of your educational experience, the CNS may substitute faculty with comparable expertise when necessary.

DISCLAIMER

The material presented at the 2024 CNS Annual Meeting has been made available by the Congress of Neurological Surgeons for educational purposes only. The material is not intended to represent the only, nor necessarily the best method, procedure, or technique appropriate for the medical situations discussed, but rather is intended to present an approach, view, statement, or opinion of the faculty which may be helpful to others who face similar situations. The material is not meant to replace independent judgement by a physician for any given issue.

Neither the content (whether written or oral) of any course, seminar, or other presentation in the program, nor the use of a specific product in conjunction therewith, nor the exhibition of any materials by any parties coincident with the program, should be construed as indicating endorsement or approval by the CNS, or by its committees or affiliates of the views presented; methods, procedures and/or techniques described or discussed; the products used; or the materials exhibited. The CNS disclaims any and all liability for injury or other damages resulting to any individual attending the Annual Meeting, and for all claims which may arise out of the use of the material, methods, procedures, and/or techniques demonstrated therein by such individuals, whether these claims shall be asserted by physicians or any other person. No reproductions of any kind, including audiotapes and videotape, may be made of the presentations at the 2024 CNS Annual Meeting. The CNS reserves all of its rights to such material, and commercial reproduction is specifically prohibited.



ITEMS INCLUDED IN REGISTRATION FEE:

- General Scientific Sessions, Sunday through Wednesday
- Scientific Program including Section Sessions, Sunrise Science/ Late-breaking Abstract Sessions, Guidelines Sessions, and Case-based Discussion Sessions, and Interactive Poster Presentation Sessions
- CNS Xperience Lounge
- Product Demonstrations
- Live Surgeries via Telemedicine
- Exhibit Hall, Monday through Wednesday
- Opening Reception on Sunday, September 29, 2024

REGISTRATION METHODS

ONLINE

cns.org/2024

PHONE

972-349-5539

7:00 am-5:00 pm CST

CREDIT CARD PAYMENTS

- U.S. dollars and drawn on a U.S. bank
- Visa
- Mastercard
- American Express

CHECK PAYMENTS

- Please note that checks cannot be processed over the phone or online. Please contact the CNS at 847-240-2500 if you are interested in paying for your CNS Annual Meeting Registration via check.
- Full payment must accompany your registration.
- U.S. dollars and drawn on a U.S. bank
- Any checks received from an overseas bank will be returned.
- Any checks returned for insufficient funds are subject to additional charges.

IMPORTANT DATES TO REMEMBER

AUGUST 28 Advance Registration Discount Deadline

SEPTEMBER 6 Housing Deadline

Last day to make any hotel changes or cancellations through the Official CNS Housing provider, MCI

Email: cns@mcievents.com

Phone: 972-349-5539

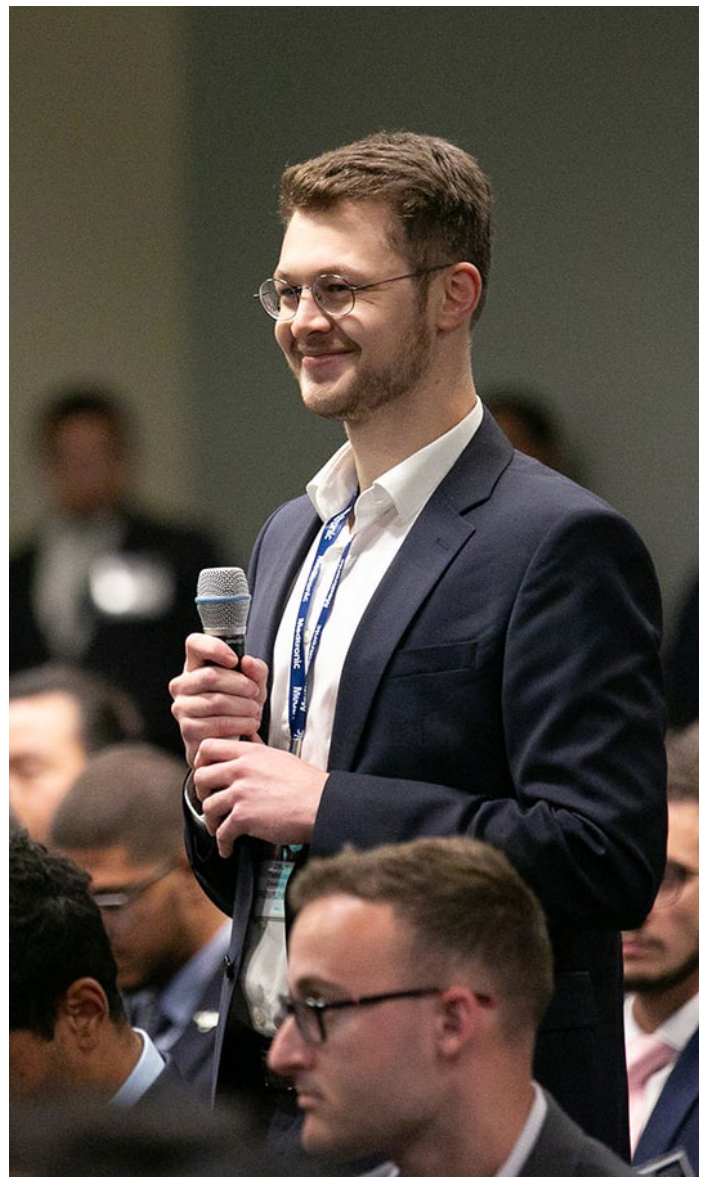
SEPTEMBER 4 Last day to cancel registration in order to receive a full refund, less a \$100 processing fee.

SEPTEMBER 7 Any hotel changes or cancellations must be made directly with the hotel after September 7. Individual hotel cancellation policies can be found on your original housing confirmation.

REGISTRATION CHANGE/CANCELLATION INFORMATION

Full registration refunds, less a \$100 processing fee, will be granted if written requests for cancellation are received by 5:00 pm CT on September 4, 2024. Course and Seminar tickets will be refunded in full until September 4. No refunds of any kind will be given after this date, regardless of cause with the exception of Force Majeure. Refunds will not be given for no-shows. In the event the CNS Annual Meeting is cancelled due to a Force Majeure event, such as natural disasters (fire, storms, floods); governmental or societal actions (war, invasion, civil unrest, labor strikes); or infrastructure failures (transportation, energy), registration fees will be refunded in full.

Cancellation requests accepted via email at cns@mcievents.com.



REGISTRATION INFORMATION

REGISTRATION RATES

REGISTRATION TYPE	Through August 28, 2024	After August 28, 2024
CNS MEMBER REGISTRANT		
Active (Domestic)	\$1,149	\$1,449
Active International	\$1,149	\$1,449
Associate (Non neurosurgeons with distinction in a neurosurgical-related discipline)	\$890	\$1,090
Active Duty Military	\$0	\$0
Armed Forces (Guard/Reserve/Retiree)	\$475	\$675
Resident/Fellow (Domestic)	\$399	\$599
International Resident/Fellow	\$299	\$499
Emeritus	\$750	\$1,050
Medical Student (Enrolled in an accredited medical school in US or Canada)	\$0	\$200
Affiliate (Allied healthcare professionals involved in neurosurgical-related patient care, teaching, or research)	\$450	\$650
NON-MEMBER MEDICAL REGISTRANT		
Neurosurgeon <i>Become a CNS member and save on Annual Meeting registration and enjoy all of the CNS member benefits!</i>	\$2,390	\$2,390
Physician (non-neurosurgeon)	\$1,550	\$1,750
Non-physician (Clinical Researcher/Scientist) **	\$1,450	\$1,750
Neurosurgeon (Faculty)	\$1,300	\$1,600
Resident	\$549	\$749
Fellow	\$550	\$800
Medical Student	\$250	\$450
PA/Physician Extender/Nurse/Nurse Practitioner	\$600	\$850
Corporate Representative †	\$3,600	\$3,600
Non-Member Graduate Student/Post-doctoral Scholar	\$350	\$450
ANSPA Member ††	\$550	\$650
Developing Nation Rate (See page 19 for a complete list of nations)	\$150	\$150
Program Coordinator	\$0	\$0
Spouse/Guest/Child 13 & Over	\$200	\$300
Spouse/Guest/Child 13 & Over (Resident/Fellow)	\$200	\$200

** Non-member/Non-physician category is limited to scientists, engineers, etc., involved in neurosurgical research and/or product development not affiliated with an exhibiting company.

† Corporate representatives attend for education only. They must not conduct sales activities in the meeting space, nor influence content in any way. Solicitation of medical attendees is strictly prohibited.

†† Includes one year of CNS Affiliate membership.

NOT A CNS MEMBER?

THERE'S NO BETTER TIME TO JOIN!

CNS Members have complimentary access to our world-class Neurosurgery Publications journals, discounts on valuable self-assessment tools, access to educational online resources, and so much more! Not a member? Submit a membership application for the CNS today! Once accepted, you can take advantage of the discounted member registration rate. See our full list of member benefits and apply at cns.org/membership.



Congress of
Neurological
Surgeons





AIRLINE DISCOUNTS

The CNS is pleased to offer discounts with the following airlines. Discounts are available for flight dates as noted below by airline to and from Houston, TX area airports.

United Airlines –
www.united.com

Valid dates:
September 17–October 8,
2024

Enter code
ZP78872198

Delta Airlines –
www.delta.com

Valid dates:
September 15–October 10,
2024

Enter code
NY2EW

AIRPORT

The CNS Annual Meeting hotels and the George R. Brown Convention Center are located approximately 10 miles from William P. Hobby Airport (HOU), or 20 miles from George Bush Intercontinental Airport (IAH). For taxicab service from the airport, follow the signage outside of the baggage claim area to the taxi area. Uber and Lyft are both available in the Houston area.

FOLLOW THE LINK IN YOUR REGISTRATION CONFIRMATION TO MAKE YOUR RESERVATION TODAY! RESERVE YOUR ROOM BY SEPTEMBER 4.

HOTEL RESERVATIONS

- Please contact MCI, the official CNS Annual Meeting Registration and Housing Center, to reserve your guest rooms.
- Hotels will not accept reservations from CNS meeting attendees directly.
- Be sure to complete the entire housing section on the online reservation form.
- Hotel reservations are only available to registered CNS attendees. Rooms are subject to availability.

DEPOSIT

Our official CNS Annual Meeting Housing provider will not be taking a deposit at the time that your reservation is made. When booking your hotel, a credit card is required to secure your reservation and will be sent to the hotel along with your reservation on September 6, 2024. The hotel will charge a deposit on or after the cut-off date, September 6, 2024. The hotel will retain your deposit in the event of a cancellation within 72 hours of arrival or no-show. You will also be required to provide a credit card upon check-in.

HOTEL CHANGE/CANCELLATION POLICY

Each hotel has its own cancellation policy listed below. An early departure penalty of a one-night room and tax will be charged after the first night stay for early departure. Any cancellations not made within the hotel's cancellation policy will result in forfeiture of your one-night room and tax deposit. The deadline for new reservations is September 6, 2024. Beginning September 7, 2024, changes and cancellations must be made with your assigned hotel.

Marriott Marquis Houston, Hilton Americas, Four Seasons Hotel Houston, Hampton Inn and Embassy Suites Houston-Downtown Cancellation Policy:

Cancellations made within 72 hours prior to arrival will result in forfeiture of your one-night room and tax deposit.

BEGINNING SEPTEMBER 7, 2024

All changes and cancellations must be made with your assigned hotel.

COMPLIMENTARY HOUSING FOR CNS RESIDENT MEMBERS AND INTERNATIONAL RESIDENT MEMBERS

Complimentary housing at the CNS Annual Meeting is available to a limited number of CNS Resident members and International Resident members on a first-come, first-served basis. To be considered for this program, members must register for the CNS Annual Meeting. During the registration process, please be sure to answer "YES" to the question regarding Resident Housing. Registering for the 2024 CNS Annual Meeting is the only way to apply for Resident Housing. You must be registered by June 30, 2024 to be considered. A CNS Staff member will reach out with further instructions.

HEADQUARTERS HOTEL:

MARRIOTT MARQUIS HOUSTON

1777 Walker Street, Houston, Texas, 77010

Distance to Conv. Center:

Connected via Sky Bridge located on 2nd floor

Single/Double Rate per night: \$315

(Excludes state/local tax and fees)

Room service: Yes

Pool: Yes

Fitness Center: Complimentary

Spa: Yes

WiFi: Complimentary basic internet access in guestrooms

Soar to new heights at Marriott Marquis Houston. The sleek new centerpiece of the Houston skyline, this hotel is the premium choice in downtown. Capturing the bold spirit of Texas, this new hotel boasts 1,000 rooms and over 100,000 sq. ft. of meeting space, including Houston's largest ballroom. Enjoy quick access to George R. Brown Convention Center via skybridge and a location convenient to popular attractions like Minute Maid Park, Toyota Center and BBVA Compass Stadium in the nearby entertainment districts. Float around the unique Texas-shaped lazy river, then make a splash in the heated infinity pool — all on the rooftop overlooking Discovery Green Park. The hotel also features a full-service spa and fitness center, high-energy two-story sports bar, two specialty restaurants, wine bar, café, and pool bar and grill. This urban oasis features lavish guest rooms and suites with luxurious bedding, spacious work desks and stunning views.



HILTON AMERICAS-HOUSTON

1600 Lamar Street, Houston, TX 77010

Distance to Conv. Center: Connected via Skywalk

Single/Double Rate per night: \$321

(Excludes state/local tax and fees)

Room service: Yes (6-11am and 5-10pm)

Pool: Yes

Fitness Center: Complimentary

Spa: Yes

WiFi: Complimentary in-room service

This AAA Four-diamond hotel is conveniently located in the heart of downtown Houston and connected to the George R. Brown Convention Center via two indoor skywalks. Whether traveling for business or pleasure, Hilton Americas-Houston is a refreshing experience. Enjoy the hotel lobby's Italian marble, sparkling inlaid tile floor mosaics, Venetian glass chandeliers and an impressive art collection by Texas artists. Relax to the sounds of the cascading water wall before meeting friends or business associates at the Lobby Lounge.



HOTEL & TRAVEL INFORMATION

FOUR SEASONS HOTEL HOUSTON

1300 Lamar St, Houston, TX 77010

Distance to Conv. Center: Center: 0.3 miles/6 min walk

Single/Double Rate per night: \$335

(Excludes state/local tax and fees)

Room service: Yes

Pool: Yes

Fitness Center: Complimentary

Spa: Yes

WiFi: Complimentary in-room service

Gather where business deals get done, friends and family reconnect, and celebrities and athletes make their home. After a day exploring the city, unwind at the rooftop pool oasis, enjoy the ultimate in entertainment at the Topgolf Swing Suites, indulge and pamper at The Spa and the Krigler perfumery boutique, and savor flavorful dishes from Chef Partner Richard Sandoval at Toro Toro and Bayou & Bottle.



HAMPTON INN HOUSTON DOWNTOWN

710 Crawford Street, Houston, TX 77002

Distance to Conv. Center: 0.3 miles/6 min walk

Single/Double Rate per night: \$229

(Excludes state/local tax and fees)

Room Service: No

Pool: Yes (outdoor)

Fitness Center: Complimentary

Spa: No

WiFi: Complimentary in-room service

Stay in the middle of all the action at the Hampton Inn Houston Downtown hotel. From the minute you walk into the modern and stylish lobby, you'll feel right at home. This upscale, high-rise building is in an excellent location to walk to attractions, restaurants, shopping and businesses. Walk to the George R. Brown Convention Center, Discovery Green urban park and Minute Maid Park, home of the Houston Astros. Network with other business professionals at the convention center and in the downtown Houston Central Business District.



EMBASSY SUITES HOUSTON-DOWNTOWN

1515 Dallas St, Houston, TX 77010

Distance to Conv. Center: 0.3 miles/6 min walk

Single/Double Rate per night: \$289

(Excludes state/local tax and fees)

Room Service: Yes

Pool: Yes (outdoor)

Fitness Center: Complimentary

Spa: No

WiFi: Complimentary in-room service

The Embassy Suites Houston Downtown hotel in Texas is an urban high-rise, all-suite hotel overlooking Discovery Green Park, and is just steps away from the George R. Brown Convention Center, Houston Astros Minute Maid Park, Houston Rockets, Toyota Center, the Houston Pavilions, Park Shops and close to the second largest theater district in the U.S. The Embassy Suites Houston Downtown is Houston's first LEED Certified hotel in the downtown.



The following exhibitors have confirmed their participation as of May 1, 2024

- Abyrx, Inc.
- ACE Medical Company
- Ad-Tech Medical Instrument Corp.
- Aesculap, Inc.
- American Association of Neurological Surgeons
- American Surgical Company
- Arthrex, Inc.
- Baylor Scott & White Health
- Bioplate, Inc.
- Bioventus
- BK Medical
- Black Forest Medical Group
- Boss Instruments Ltd.
- BR Surgical, LLC
- Brain Aneurysm Foundation
- Brain Navi Biotechnology Co., Ltd
- BrainSpace
- CarboFix Spine
- Carlsmed, Inc
- Cerapedics
- ClaroNav Kolahi Inc.
- Clarus Medical, LLC
- CMF Medicon Surgical Inc.
- Comprehensive Level One Staffing
- Designs for Vision, Inc.
- DIXI Medical USA
- elliquence, LLC.
- Elsevier, Inc.
- Enovis
- evonos GmbH & Co. KG
- Fehling Surgical Instruments
- FujiFilm Healthcare of Americas
- GammaTile
- Glioblastoma Foundation
- Globus Medical
- Highridge Medical
- HOTRY (Beijing) Co., Ltd.
- icotec Medical, Inc.
- IMRIS
- Insightec
- Integra LifeSciences
- i-PRO Americas
- IRRAS
- Johnson & Johnson Medical Devices
- Joimax
- Journal of Neurosurgery
- JTS Surgical
- Karl Storz Endoscopy - America, Inc.
- Kirwan Surgical Products
- KLS Martin
- Leica Microsystems
- Life Instrument Corporation
- Longevity Neuro Solutions
- Medex Medical
- Medexus Pharma
- Medical Education & Research Institute (MERI)
- Medical Metrics
- Medivis
- Medtronic
- MEGIN
- Merck & Co., Inc.
- Mercy Clinic
- MicroVention
- Mitaka USA, Inc.
- Mizuho America, Inc.
- Monteris Medical
- Nadia International, Inc.
- Natus
- Nexstim
- NICO Corporation
- NordicNeuroLab, Inc.
- Novarad
- NSK America Corp.
- Nurami Medical
- Olympus America, Inc.
- Omniscient Neurotechnology
- Pacira Pharmaceuticals, Inc
- Penumbra, Inc.
- Peter Lazic U.S. Inc.
- Phasor Health LLC
- PMT Corporation
- Q-Optics
- Raumedic
- Renishaw Inc.
- Rhaeos
- Ronin Surgical Corp.
- RosmanSearch, Inc.
- Scanlan International, Inc.
- Shukla Medical
- SI-BONE
- Siemens Healthineers
- Sophysa
- Spineology Inc.
- Spine Wave
- Stryker
- Surgeons Capital Management
- SurgiTel
- Sutter Medical Technologies USA
- Takayama/Mutoh
- TeDan Surgical Innovations, Inc.
- Thieme Publishers
- Thompson Surgical Instruments, Inc.
- Tobra Medical
- VPIX Medical
- Wolters Kluwer Health
- Zap Surgical Systems, Inc.
- ZEISS
- Zimmer Biomet



| 2025 ANNUAL MEETING

SAVE THE DATE!

Los Angeles, CA
October 11-15, 2025

