

CongressQuarterly

SUMMER 2026



Evolution

Change is the only constant.



CNS

8 Abstract Sessions –
Evolution at Every Podium

10 Neurosurgical Innovation,
AI, and Digital Health at the
2026 CNS Annual Meeting

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EDITOR'S NOTE



Julie L. Chan
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The CNS Annual Meeting is fast approaching – the premier event for neurosurgeons across the world—as we come together to exchange ideas, discover innovations, and strengthen our relationships to advance neurosurgery.

As in years past, the summer issue of *CNS Quarterly* previews and highlights our exciting general sessions, and new content for our members from all backgrounds.

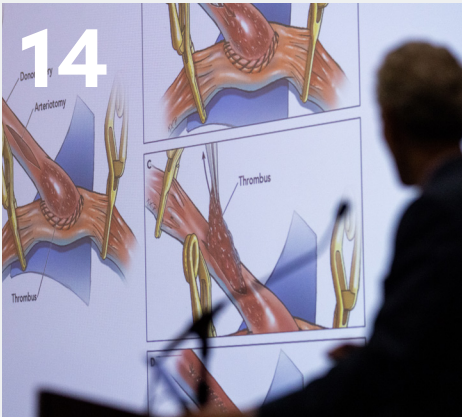
This issue starts with a welcome from Martina Stippler – a historical achievement as she introduces the Annual Meeting as the first female president in the long history of the CNS. This year's meeting specifically focuses on the theme of "Evolution", highlighting how innovation, AI, and digital health are integrated into neurosurgical care.

Our Scientific Planning Committee led by Khoi Than along with Akash Patel, and Anand Veeravagu offer a preview of the meeting, with an emphasis on our abstract sessions, and lunch and dinner seminars. In continuing with the theme of "firsts," this year's Annual Meeting has a total of **nine** CNS member-suggested sessions, ranging from topics such as Outpatient Neurosurgery Centers to Evolving Visualization in Neurosurgery.

As in prior years, we will have dedicated Section-based sessions as well as case-based discussions to further promote and foster engagement among colleagues. Evolution does not stop with the contiguous 50 states but continues to cross borders with our International Symposium and our Connections Reception, special features of our Annual Meeting. We will also be showcasing highlights from our Neurosurgery Publications Team as well as medical student and resident-focused symposiums. SPC Chair Khoi Than reveals exciting events for this year's Experience Lounge which focuses on Connection, Content, and Cutting Edge Technologies, further tying in the theme of evolution.

We look forward to seeing you at the Annual Meeting this Fall in Washington, DC as we continue to learn, innovate, and evolve together!

CONTENTS



Editor's Note

Julie Chan, Ramesh Grandhi

President's Message

Martina Stippler

CNS ANNUAL MEETING

4 A Preview of the CNS Annual Meeting

Martina Stippler, Khoi Than, Akash Patel and Anand Veeravagu

8 Abstract Sessions: Evolution at Every Podium

Anand Veeravagu, Akash Patel

9 Lunch and Dinner Seminars: Evolution Around the Table

Anand Veeravagu, Akash Patel

10 Neurosurgical Innovation, AI, and Digital Health at the 2026 CNS Annual Meeting

Akash Patel, Anand Veeravagu, David Dornbos

12 Evolving Together: Collaborative Special Symposia at the 2026 CNS Annual Meeting

Akash Patel, Anand Veeravagu, Caitlin Barry, Lisa Mastrino

14 Section and Case-Based Sessions at CNS 2026

Laura Snyder

16 Advancing Evidence-Based Neurosurgery: A Preview of the 2026 Guidelines Session and Future of Guidelines

Kunal Vakharia

17 Evolution Without Borders: The CNS International Symposium

Mohamad Bydon, Ramesh Grandhi

18 Neurosurgery Publications Spotlight at the CNS Annual Meeting

Brandon Fiedor, Doug Kondziolka

21 Medical Student and Resident Programming

Julie Chan

22 The CNS Experience Lounge: Connection, Content and Cutting Edge Technology

Khoi Than

24 The CNS Exhibit Hall: Evolution in Action

Sydney Manola, Edjah Nduom, Rushna Ali, David Dornbos, Joseph Osorio, Kunal Vakharia

FOUNDATION UPDATE

26 CNS Foundation Update: Pathways to Neurosurgery Program

Alicia Skulemowski, Lola Chambless

INSIDE THE CNS

28 Washington Committee Update

Alex Khalessi, Charlotte Pineda

CNSQ INSIDE BACK COVER

Images in Neurosurgery

PRESIDENT'S MESSAGE



Martina Stippler, MD, FCNS
President, Congress of Neurological Surgeons

Dear Colleagues,

Serving as CNS President has been the honor of a lifetime, and I have been very intentional with the message I wanted to convey at the CNS 2026 Annual Meeting.

The theme of the meeting is *Evolution* — as it pertains to the evolution of our specialty from a surgical, technical, and scientific standpoint, but also from a policy, socioeconomic, and cultural standpoint. How has our work as neurosurgeons changed, and where do we want to go? How has the composition of our specialty changed over time, and does our vision of the ideal neurosurgeon still match the social trends we see? And we cannot forget how AI will impact our specialty and our lives as surgeons.

Our keynote speakers were carefully chosen to address certain aspects of evolution and challenges I see facing our specialty, now and in the near future. Education — higher education — is in a crisis with the advent of AI and is in the process of reinventing itself in an age where AI can write a student essay in seconds and where college professors describe students struggling to read even one full book. How will AI affect the training of our residents? I already see it in practice. I use the consult or clinic note to ascertain residents' diagnostic reasoning and decision-making skills, and to gauge how clear and succinct their thought process is. Now meet Heidi. She is not a medical student; she is my AI clinic companion, and she is writing my clinic notes. So, should we still teach medical students and residents how to write notes? Is it necessary to teach diagnostic reasoning, or is it the equivalent of training them to perform a pneumoencephalogram in the era of MRIs? Sal Khan, whose free online platform Khan Academy has transformed access to education for hundreds of millions of learners worldwide and who has become one of the most influential voices in reimagining how and what we teach,

will speak to the potential of AI in education, and we will learn how to apply these lessons to neurosurgery.

AI is already affecting not only how we teach medical students and residents, but also how we interact with our patients. Some studies have suggested that AI alone outperforms doctors, and that an AI chatbot is more patient and empathetic when responding to online messages from patients. With AI excelling in diagnostic reasoning and treatment planning, what do we bring to the table? What is the essence of our humanness? In my mind, it is the communication we have with our patients. We meet most of our patients on the worst day of their lives, and how we communicate with them makes all the difference. Charles Duhigg, known by many of you through his book *The Power of Habit*, will talk about his most recent book *Supercommunicators* — what makes some people better communicators than others, and what we can learn from them to lean into our humanness. We will also hear from Meredith Whittaker about the perils of over-reliance on AI and how we can protect our privacy and that of our patients.

The Nash Lecturer this year is Lindsey Vonn — a trailblazer and star athlete best known for her resilience, tenacity, and fearlessness in the face of failure. We don't talk enough about failure and setbacks in neurosurgery. If you have never failed, you have not stretched yourself enough — you played it safe. At the same time, we need to learn how to respond to failure and pick ourselves back up. For high-achieving individuals like us, this can be a particular challenge.

We have so many exciting and novel weekend symposia prepared for you, and while one should not have a favorite child, I have to highlight two that are very dear to my heart.



This year we have an international symposium to compare and contrast clinical decision-making and operative approaches from countries all over the world. The interactive format and case-based focus of this symposium will make it well worth your while to attend.

We are also thrilled to welcome Dr. Sasha Shillcutt, founder of Brave Enough, who will give a keynote address on Sunday and teach an exclusive workshop Sunday afternoon. She is a thought leader in professional longevity and stepping into your power to create the life in medicine that you want – whether that means powering up or stepping away. She is a dynamic speaker who will present you with actionable solutions and concrete steps you can implement right away to transform your professional life. I have worked with Sasha personally, and I am her biggest fan. Inviting her to our meeting is my gift to you – you do not want to miss this workshop.

I hope to see you all at the opening reception on Sunday and cannot wait to address you as President of the Congress of Neurological Surgeons on Monday morning. This meeting is built for you and by you. Come be a part of it – let's celebrate neurosurgery together. 🇺🇸

Yours,

Martina Stippler, MD, FCNS

President, Congress of Neurological Surgeons

"The Elite College Students Who Can't Read Books"
published in The Atlantic in October 2024, written by
Rose Horowitz. **"How Will AI Influence Higher Ed in
2025?"** Inside Higher Ed, December 19, 2024 Author:
Palmer, K.

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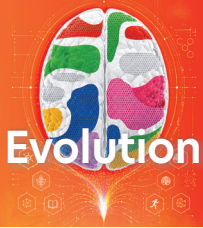
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A Preview of the 2026 CNS ANNUAL MEETING

General Scientific Sessions: Evolution on the Main Stage

The General Scientific Sessions remain the backbone of the CNS Annual Meeting, and this year's program uses that platform to trace how neurosurgery is evolving in real time. Across the week, these sessions will move from foundational clinical and scientific topics to questions of policy, leadership, education, and technology, giving attendees a wide-angle view of the forces reshaping practice.

Each General Scientific Session is designed to feel more like a conversation than a sequence of disconnected talks. Attendees can expect structured debates alongside traditional lectures, creating opportunities to hear contrasting viewpoints, explore gray areas in decision-making, and engage with faculty in a more interactive format. This more dialog-driven approach reflects the reality that many of the most pressing issues in neurosurgery do

not have simple answers and that the specialty advances when experts are willing to test ideas publicly and learn from one another.

The content of the General Scientific Sessions will reflect a broad understanding of *Evolution*. Clinically, the program will highlight how neurosurgeons are approaching trauma in the modern era, including changing patterns of injury, advances in critical care, and new evidence informing operative and nonoperative decision-making. Sessions will also spotlight the continuing evolution of medical education, from residency training and competency assessment to new approaches to teaching in the operating room, clinic, and classroom. These topics align closely with the priorities of current CNS leadership and speak directly to the day-to-day realities of neurosurgeons responsible for both patient care and training the next generation.



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**Anand Veeravagu,
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**Martina Stippler, MD,
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Caitlin Barry



Lisa Mastrino

Policy will also play a more visible role in this year's program. In addition to policy-focused content on the General Scientific Session stage, the meeting will feature a Saturday afternoon collaboration with the Council of State Neurosurgical Societies, SYM08: "The Advocate-Surgeon: Leadership, Policy, and Impact." Together, these offerings emphasize that the evolution of neurosurgery is shaped not only by advances in science and technology, but also by advocacy, organization, and the ability of neurosurgeons to influence the systems in which they practice.

Innovation will remain an important thread throughout the meeting, but always with an emphasis on practical application. Attendees will encounter programming that addresses how artificial intelligence, digital tools, and data-driven approaches are beginning to influence workflow, education, research, and clinical decision-making. Rather than treating these technologies as abstract or futuristic, the meeting will focus on how they can be critically assessed and responsibly used to make neurosurgical care more effective and efficient. Another example of this future-oriented mindset is Special Symposium 03, "Outpatient Neurosurgery Center: The Next Frontier," which will explore how changes in care delivery and site of service may create new possibilities for practice.

Several distinguished guests will help frame these discussions by bringing perspectives from beyond neurosurgery. **Charles Duhigg** will address how habits can be shaped to support high-performing teams and why communication is a superpower that must be harnessed, particularly in the era of AI in medicine. **Salman Khan**, will share insights on the evolution of learning and technology-enabled education themes that resonate with a specialty built on lifelong teaching and training. **Meredith Whittaker** will speak about the realities of today's digital infrastructure and AI ecosystem, offering a candid view of the technologies that increasingly underlie clinical tools and health systems. **Lindsey Vonn** will deliver the Dorothy Nash Lecture, drawing on her experience with elite performance, injury, resilience, and recovery to explore what it takes to adapt and excel over time.

The honored guests, **Gail Rosseau** and **Ron Alterman**, will also play central roles on the General Scientific Session stage, bringing decades of experience in leadership, education, and innovation. Their contributions will highlight the many forms neurosurgical evolution can take—through clinical excellence, global engagement, neuromodulation and functional surgery, advocacy, and mentorship. Together, the scientific content, interactive formats, and featured speakers create a General Scientific Session program that feels both familiar and distinctly forward-looking.



Charles Duhigg



Salman Khan



Meredith Whittaker



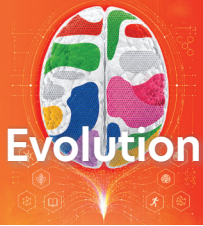
Lindsey Vonn



Gail Rosseau



Ron Alterman



Community Programming and Social Events

If the General Scientific Sessions are the intellectual center of the meeting, the surrounding membership programming demonstrates how the CNS community itself is evolving. Many of the familiar social and networking traditions remain in place, which is part of what gives the Annual Meeting its continuity from year to year. At the same time, several program decisions this year make clear that the organization is responding to changes in who participates in neurosurgery and what participants need from the meeting.

One example is the continued commitment to medical learners. The CNS Annual Meeting has built a reputation as a welcoming environment for medical students and residents, who are encouraged to attend and see themselves as part of the broader neurosurgical community. This year, key programming aimed at learners will be situated to make it easier for students and trainees to participate alongside the broader meeting audience—a subtle but meaningful adjustment that helps integrate learner experiences into the heart of the event rather than relegating them to its periphery.

A significant feature is the development of a dedicated track for advanced practice providers. This APP track recognizes the central role nurse practitioners and physician assistants now play in modern neurosurgical care and acknowledges that their educational needs are both overlapping with and distinct from those of surgeons. The track will feature practical, clinically focused content that speaks directly to daily responsibilities,

including perioperative management, outpatient coordination, quality improvement, and team communication. Framing this track as part of Evolution underscores that the specialty's future will be shaped by all members of the care team.

The international programming is likewise undergoing its own evolution. In previous years, the CNS hosted multiple regionally-focused symposia at the Annual Meeting that created vibrant but somewhat siloed spaces for global engagement. This year, those strands are being brought together into a single, comprehensive International Session conceived as a global neurosurgery symposium. By consolidating regional conversations into one shared forum, the meeting aims to foster richer dialogue across continents and highlight the common challenges and innovations that unite neurosurgeons worldwide.

The social events for members remain essential to the Annual Meeting experience. The Opening Reception, receptions for residents and international colleagues, and informal meetups throughout the week will provide ample opportunities to reconnect with longtime friends, build new collaborations, and celebrate shared accomplishments. Wellness-oriented activities and quieter spaces for reflection will complement the more energetic events, recognizing that the meeting should sustain attendees, not simply occupy their time. Even brief mentions of these events underscore a larger point: neurosurgery evolves through community as much as through innovation, and that evolution is nourished by the conversations that happen in hallways, lounges, and over shared meals.

Within this context, the meeting also arrives at a moment of meaningful leadership evolution for the CNS under President Martina Stippler. Her priorities surrounding trauma care, education, and team-based practice are reflected throughout the program, from the topics selected for the main stage to the structures created for learners, APPs, and international colleagues. Without overstating the point, the shape of the meeting itself communicates that the CNS continues to grow and evolve in visible and meaningful ways.

Washington, DC, a City of Ideas and History

Washington, DC, is an especially fitting setting for a meeting built around *Evolution*. The city is deeply associated with history and institutions, but it is also a place of constant movement, debate, and reinvention—a useful backdrop for a specialty that is continually balancing legacy with transformation. That dual character creates a natural bridge between the scientific program and the host city.

The convention center and host hotels place attendees within easy reach of many of the nation's most iconic cultural institutions.

For participants and their families, the appeal is obvious: the Smithsonian museums, the National Mall, major monuments, and walkable neighborhoods make it easy to extend the meeting experience beyond the lecture hall. Between sessions, attendees might find themselves visiting a museum exhibit with colleagues, walking past the Lincoln Memorial at sunrise, or reconnecting with former co-residents over dinner in one of the city's diverse restaurant districts.

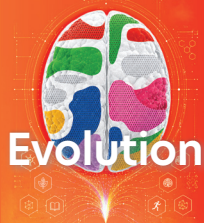
The city also offers an ideal setting for the kind of informal networking that often becomes one of the most memorable aspects of a meeting. Washington supports early morning runs past monuments, impromptu museum visits, and quiet conversations in parks, all of which can help transform professional acquaintances into lasting collaborators and friends. Those moments complement the more formal receptions and events, reinforcing the idea that the CNS Annual Meeting is as much about connection and reflection as it is about content. ■



Join Us in DC!

Taken together, the elements of this year's program make the 2026 CNS Annual Meeting more than a routine annual gathering. The General Scientific Sessions promise a broad view of how neurosurgery is evolving intellectually, with particular attention to trauma, education, policy, global engagement, and the role of innovation in practice. The social and membership programming reflects meaningful changes in how the community is organized, with new spaces for learners, APPs, and international colleagues, as well as a continued emphasis on wellness and connection. The meeting's future-oriented content focuses not on novelty for its own sake, but on practical benefit—whether in advocacy, digital tools, new care models, or the evolving structure of neurosurgical practice itself.

Set against the backdrop of Washington, DC, the meeting offers an opportunity to engage with the future of the specialty while reconnecting with the people and institutions that continue to shape it. As attendees arrive in the nation's capital this fall, they will encounter a meeting that feels familiar in its core structure yet different in important ways: new voices on the main stage, new formats that favor conversation and debate, new tracks for key members of the care team, and a leadership team that reflects an evolving community. In that sense, *Evolution* is not simply a theme—it is an invitation to view neurosurgery, and the CNS Annual Meeting itself, as a living, changing enterprise moving forward together.



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Abstract Sessions: Evolution at Every Podium

The foundation of an innovative and inspirational meeting is the scientific content submitted by our neurosurgical membership. The CNS prides itself on creating diverse and meaningful podium presentation opportunities for surgeon-scientists at every career stage. Under the 2026 theme of Evolution, the CNS Annual Meeting in Washington, DC, October 31 to November 4, will feature an expanded abstract program designed to capture how our specialty is changing — and to spotlight the people, technologies, and global voices driving that change.

Abstracts will be threaded throughout the meeting in three complementary formats. **Sunrise Sessions** will run Monday through Wednesday from 7:00 to 8:30 a.m. at the Convention Center, featuring late-breaking science alongside specialty-spanning topics curated by invited experts. **Afternoon Section Sessions** on Monday and Tuesday from 2:50 to 4:20 p.m. will once again intermix top-rated abstracts with invited lectures from leaders in each subspecialty. The **Interactive Poster Session will also feature Nexus video abstracts with Wine and Cheese** on Monday and Tuesday from 4:30 to 6:00 p.m., allowing more time for conversation, judging, and the kind of unscheduled encounters that lead to collaboration.

A dedicated Innovation Track for what comes next

Building on the data science Sunrise Sessions that have anchored the meeting since 2022, the 2026 program introduces a dedicated Innovation Track that runs across the week. Curated to capture how new ideas actually reach the operating room, the track gathers abstracts at the intersection of technology, technique, and translation — spanning artificial intelligence and computer vision, robotics, novel devices, advanced visualization, and the entrepreneurial side of bringing innovation from concept to clinical practice. Invited lecturers will frame each block, and abstracts have been selected to spark practical and ethical discussion about what it takes to advance our specialty responsibly.

A global stage for neurosurgical science

Neurosurgery is a global discipline, and the questions that matter most rarely respect borders. New for 2026 is a dedicated global neurosurgery Sunrise Session, curated together with our international colleagues, that will showcase scientific work from low- and middle-

income country investigators alongside collaborative projects from established global health programs. The session is designed not as a side track but as a central conversation about access, capacity, and the future of our specialty's reach. Invited discussants from each World Health Organization region will set context for the abstracts and connect them back to the section themes that follow in the afternoon.

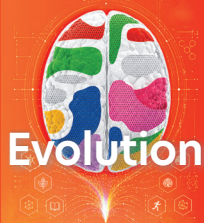
Investing in the next generation

The vitality of our meeting depends on the residents, fellows, and young investigators who fill our podiums and posters. This year we have meaningfully expanded opportunities for them. A new Resident and Young Investigator rapid-fire format will appear within the Section Sessions, chaired by senior section leaders, with focused mentorship feedback built into the format. Trainee award categories have been broadened across every section, and we have added a dedicated pathway for medical-student-led abstracts. Each rapid-fire winner will be paired with an invited mentor from the program for a structured discussion on their work and career trajectory.

Dedicated poster sessions and awards

Posters will be on display throughout the meeting, with the Interactive Poster Session with Wine and Cheese on Monday and Tuesday from 4:30 to 6:00 p.m. anchoring the in-person experience. Abstracts will be judged during these sessions, with the top three abstracts of each specialty announced during the general scientific session. Section-sponsored awards will again be presented in cerebrovascular, stereotactic and functional, neurotrauma and critical care, pediatric neurosurgery, peripheral nerve, and tumor—inclusive of skull-base—surgery, with additional awards recognizing diversity, equity and inclusion (DEI) and medical education. As always, posters will also be available digitally in the CNS Experience Lounge and the CNS Annual Meeting App.

The diversity of our submissions reflects the diversity of our specialty, and we are inspired by what is on its way to Washington this fall. We look forward to seeing you at the podium, in front of a poster, or in conversation over a glass of wine—wherever the *Evolution* takes you. 🍷



Lunch and Dinner Seminars: Evolution Around the Table

Some of the most generative conversations at any CNS Annual Meeting happen with a plate of food in front of you. The lunch and dinner seminar program at the 2026 CNS Annual Meeting in Washington, DC, from October 31 to November 4, has been built to make those conversations count. In keeping with this year's theme of Evolution, the seminars span technical mastery, career inflection points, and the tools and techniques transforming our specialty – all in formats designed for direct exchange with the people who are pushing the field forward.

Lunch Seminars: focused expertise, every weekday afternoon

Lunch Seminars run Monday, Tuesday, and Wednesday at the Walter E. Washington Convention Center, bridging the General Scientific Session and the afternoon Section Sessions. This year's program features 19 sessions across every subspecialty, allowing attendees to tailor the week to their clinical and career interests at every stage.

The week opens with the **Honored Guest Lunch featuring Dr. Gail Rosseau** on Monday, an anchor session that captures the reflective, leadership-forward spirit of the meeting. Two additional career and craft seminars complement it: "Navigating Leadership Pitfalls: Stories of Mistakes and

Growth" assembles a faculty including Ellen Air, James Markert, Christopher Ogilvy, Alan Scarrow, Aviva Abosch, Kimberly Kicielinski, and Venita Simpson for an unusually candid conversation about leadership missteps and recovery, and "Scalpel to Pen: The Neurosurgeon's Guide to Getting Published" brings together Alan Cohen, L. Dade Lunsford, Sheri Dewan, David Sandberg, Theodore Schwartz, and John Wellons to demystify peer-reviewed publication.

Cerebrovascular attendees can move from "Cerebrovascular Robotics" on Monday—to "Intrasaccular Aneurysm Treatment: Update and Future Directions" on Tuesday, and conclude with "Transvascular Access in Neurosurgery" on Wednesday, where J Mocco, Felipe Albuquerque, Thomas Oxley, Charles Matouk, and Peter Kan will examine where vascular access is headed.

Spine offerings include "Adult Spinal Deformity: Evolving Trends, Technology, Techniques," "Mastering Interbody Fusion: Approaches, Advances and Applications" ; and a new "Developing a Collaborative Orthopedic/Neurosurgical Pediatric Spine Program" session led by Vijay Ravindra, Darryl Lau, Mari Groves, and Amer Samdani.

Tumor programming features "Advances in Radiation Therapy for CNS Malignancies," and "Intraoperative Adjuncts for Visualization in Tumor Neurosurgery," discussing fluorescence, stimulated Raman histology, and AI-assisted intraoperative imaging.

Functional and pain seminars include "Where Functional Meets Trauma: Disorders of Consciousness and Outcome Prediction in TBI," "The Facial Pain Summit: Diagnostics, Targets, and Tailored Surgical Strategies," and "Modern Techniques and Future Applications of Therapeutic Ultrasound."

Peripheral nerve attendees can choose between "Surgical Management of Nerve Tumors" and "Radiculopathy vs Nerve Entrapment".

Two visualization-forward Wednesday sessions capture the literal evolution of how



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we see during surgery—"Cranial Endoscopy," with Paul Gardner, Daniel Prevedello, and Stephen Magill, and "Evolving Visualization in Neurosurgery: 3D Exoscope and Augmented Reality," with Robert Louis, Roger Hartl, and Silky Chotai. Rounding out the week, "Geriatric Considerations in Neurosurgery" assembles a deep faculty including Christopher Ogilvy, Mark Hamilton, Ann Parr, and Christian Bowers to address one of the fastest-growing patient populations in our practice.

Dinner Seminars: deeper conversations, set apart

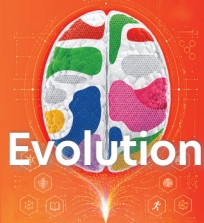
Dinner Seminars take a focused dive into critically relevant topics in a more intimate setting away from the Convention Center. Two are on the schedule for 2026.

Dinner Seminar 01: "Spinal Endoscopy" on Saturday evening at RPM Italian will be co-moderated by Jang Yoon and Michael Wang. Spinal endoscopy is one of the fastest-evolving spaces in our specialty, and this seminar is designed to combine technical pearls with candid discussion about workflow, learning curve, and program-building.

Dinner Seminar 02: "From Complications to Mastery – How to Grow After Tough Cases" on Monday evening at Truluck's will be co-moderated by Drs. David Langer and Carlos David. The seminar covers how surgeons learn from, and ultimately grow because of, their hardest cases. The conversational format is designed to support honest reflection in a way the podium cannot.

Tickets and logistics

Lunch and Dinner Seminar tickets historically sell out. Advance registration is the best time to secure your place. We hope you will join us for one—and ideally a few—and bring your most pressing questions with you to Washington, DC this Fall. 🍷



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Neurosurgical Innovation, AI, and Digital Health at the 2026 CNS Annual Meeting

Over the last decade, neurosurgery has shifted from talking about “future technologies” to living with them in everyday practice. Imaging, navigation, intraoperative monitoring, and digital tools are now so deeply integrated into clinical workflows that it is difficult to separate innovation from routine care. At the same time, the rapid expansion of data science, artificial intelligence (AI), and digital health has created a new set of questions: which tools actually help, what is redundant, which remain experimental, and what skills neurosurgeons actually need to meaningfully shape these developments rather than simply react to them. Neurosurgery as a field has historically responded well to evolving landscapes, incorporating endovascular care into the specialty, adopting minimally and noninvasive means of tackling brain tumors, and building new paradigms for treating movement disorders. The rapidly growing AI field is no different, and its incorporation into the field needs to be cultivated by neurosurgeons with the knowledge and tools to do so in a way that amplifies our ability to care for our patients.

With the theme *Evolution*, the 2026 CNS Annual Meeting in Washington, DC takes these questions seriously. Building on the success of recent innovation and data science programming, this year’s meeting will highlight not only novel technologies but also the culture, infrastructure, and skillsets needed to make them work in real neurosurgical environments. The goal is to move beyond fascination with new tools and toward a more mature, critical, and practical relationship with AI, digital health, and cutting-edge innovations.

From data-driven neurosurgery to digital fluency

Recent CNS Annual Meetings have laid important groundwork for this year’s focus. Previous programs introduced attendees to advanced healthcare analytics, data science methods, and the vision of a data-driven neurosurgery through offerings such as the “Transforming Neurosurgery through Technology (TNT) Symposium” and dedicated data science sessions. Those experiences emphasized that understanding data science is no longer optional. For modern neurosurgeons, fluency in basic concepts—data quality, model building, validation, bias, and implementation—is now part of what it means to practice evidence-based medicine.

That foundation continues in 2026. Once again, the meeting will feature a CNS Data Science Symposium, designed to bring neurosurgeons closer to the methods and tools that increasingly shape clinical research and quality improvement. Faculty will walk through examples of how large neurosurgical datasets are being used to build and test predictive models, evaluate interventions, and generate new hypotheses that can be taken back to the lab or the operating room. Attendees will have opportunities to see the full pipeline: from raw data to cleaned datasets, from models to interpretable outputs, and from research findings to practical changes in care pathways.

The emphasis is not on turning every neurosurgeon into a data scientist, but on giving them enough understanding to be discerning users and collaborators with these emerging tools. Akin to understanding how to interpret clinical trial design and translational research methods, neurosurgeons can more effectively evaluate published literature that relies on complex deep-learning analytic methods, apply these tools to daily practice, partner with data science teams in their own institutions, and advocate for resources that support robust data infrastructure in their departments.

Transforming Neurosurgery through Technology

A dedicated neurosurgical innovation symposium will again serve as a flagship venue for exploring hardware and software developments that are reshaping the neurosurgical landscape. Past meetings have highlighted new devices, surgical platforms, and digital tools that challenge traditional assumptions about what is possible in the operating room and beyond. This year, the innovation programming will once again bring together clinicians, engineers, and industry partners to discuss everything from robotics and extended-reality platforms to novel imaging techniques and intraoperative decision-support systems. This year’s symposium will feature dedicated sections on tumor, vascular, spine, trauma, and functional specialties, allowing attendees to target high-yield opportunities tailored to their daily practice.

The unifying question is how these technologies can meaningfully improve safety, efficiency, and patient outcomes. Attendees can expect presentations that move quickly from concept to application:

where things work well, where they still struggle, and what adoption looks like in different practice settings. By featuring faculty who have navigated the full innovation pathway—from idea to prototype, from trials to implementation—the symposium offers a realistic picture of what it takes to turn a promising technology into a reliable clinical tool. Integrated with the new CNS Innovation Institute fellowship program, this symposium will focus on both understanding and integration of novel tools into practice and will lay the groundwork for building the next wave of neurosurgical innovators.

For residents, fellows, and early-career neurosurgeons, the innovation programming also serves as a window into the broader ecosystem. Discussions often touch on issues such as intellectual property, regulatory strategy, reimbursement, and partnerships with industry—topics that are increasingly relevant for neurosurgeons who want to bring forward new ideas while maintaining scientific rigor and ethical standards. In this way, the meeting reinforces the idea that innovation is not a side project, but part of the profession's core responsibility.

Beyond the hype: AI that actually helps

One of the most distinctive elements of this year's program is a symposium focused explicitly on practical AI: **SYM13: "Beyond the Hype: AI Tools that Actually Help Neurosurgeons."** AI has been a constant topic in medicine, and CNS has been building AI-focused programming over several meetings. SYM13 is the next step in that evolution—a focused, practice-oriented conversation about applications that are already delivering value in neurosurgical care.

Faculty will present concrete examples of how AI is being used to streamline documentation, assist with preoperative planning, support imaging interpretation, triage communication, and inform patient counseling. The emphasis will be on tools that neurosurgeons can realistically adopt in their own settings, including a frank discussion of requirements, limitations, and failure modes. Rather than showcasing speculative algorithms that are years away from clinical deployment, the symposium will highlight workflows that are in use today and the incremental changes that have made those tools sustainable.

Equally important, this session will address the human side of AI integration. How should neurosurgeons communicate with patients about AI-assisted tools? What are the implications for training and supervision? How can departments ensure that algorithms are monitored for fairness, bias, and performance over time? By framing AI as a set of evolving practices rather than a single technology, SYM13 fits squarely within the broader Evolution theme and complements the more technically focused data science content elsewhere.

Digital health and the neurosurgical ecosystem

Innovation at the CNS Annual Meeting now extends well beyond the operating room. Digital health tools—remote monitoring, virtual visits, patient-facing apps, and integrated care pathways—are increasingly part of how neurosurgery is delivered, especially in spine, tumor, and functional practice. This year's programming will explore how to use those tools to create a more continuous, data-rich view of patient experience before and after procedures.

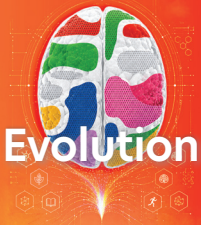
Sessions will address practical topics such as designing digital follow-up pathways, integrating patient-reported outcomes into routine practice, and using remote monitoring data to flag early signs of complications or functional decline. For many neurosurgeons, these conversations are less about technology for its own sake and more about solving persistent problems: missed appointments, fragmented communication, uneven access to care, and the challenge of tracking long-term outcomes in a busy practice.

Innovation in digital health also raises questions about workload and well-being. The meeting will tackle this directly by asking how digital tools can reduce friction and administrative burden rather than add to it. Examples may include smarter scheduling systems, automated data capture for registries, and thoughtful use of templates and decision-support tools that respect clinicians' time and judgment. In this way, digital health is framed not only as a way to extend care to patients but also as a way to make neurosurgeons' working lives more sustainable.

An evolving mindset

Taken together, the innovation, AI, and digital health offerings at the 2026 CNS Annual Meeting reflect a maturing mindset. The focus is shifting from "What is new?" to "What works, and how do we make it part of everyday practice?" Data science is less of a niche interest and more of a foundational competency. AI is moving from hype to utility, evaluated on whether it actually helps neurosurgeons and their patients. Digital health is being treated not as an add-on, but as part of the neurosurgical ecosystem that can strengthen follow-up, extend reach, and illuminate outcomes.

This is exactly the kind of evolution the meeting theme highlights. By pairing returning pillars like the Data Science Symposium and neurosurgical innovation programming with a new, highly practical AI session, the CNS Annual Meeting offers attendees a coherent path from curiosity to literacy to confident use. For neurosurgeons at any career stage—whether they are building models, testing new devices, or simply trying to choose wisely among emerging tools—the innovation and AI program in Washington, DC, will provide both the big-picture framing and the concrete examples needed to move forward. 



Akash Patel, MD,
FCNS



Anand Veeravagu,
MD, FCNS

Evolving Together: Collaborative Special Symposia at the 2026 CNS Annual Meeting

One of the distinctive strengths of the CNS Annual Meeting is its ability to bring together the full breadth of neurosurgery in one setting. Because the meeting is designed to reflect the entirety of the specialty, it creates a unique opportunity for collaborative sessions that cross traditional subspecialty boundaries and focus on problems that cannot be fully addressed from a single point of view. Many of the most important clinical questions in neurosurgery now sit at the intersection of multiple fields, and the Annual Meeting provides the ideal forum for those conversations.

The CNS has long maintained collaborative relationships both within neurosurgery and with multidisciplinary partner organizations in adjacent fields. This year's collaborative symposia reflect that spirit especially well. Some sessions bring together CNS sections whose expertise naturally overlaps in the care of complex patients, while others extend beyond the organization through partnerships with outside societies such as the North American Skull Base Society (NASBS) and the Scoliosis Research Society (SRS). Together, these symposia embody the 2026 meeting theme, *Evolution*, by showing how subspecialties are converging around shared challenges and how joint approaches can lead to more nuanced decision-making, better outcomes, and richer educational experiences.

Neuromodulation for Stroke Recovery (SYM03A)

Course Director: Jonathan Russin

SYM03A, "Neuromodulation for Stroke Recovery," is a collaboration between the cerebrovascular and functional neurosurgery sections. This symposium will explore how advances in neuromodulation are opening new possibilities for patients with persistent deficits after ischemic or hemorrhagic stroke. Faculty will review the current evidence base, emerging trial data, and practical considerations in patient selection, target choice, and timing of intervention.

The session highlights exactly why collaborative programming matters. Stroke recovery does not fit neatly within a single subspecialty lens; it requires an understanding of vascular disease, neuroplasticity, rehabilitation, and the evolving capabilities of functional neurosurgery. By bringing cerebrovascular and functional perspectives together, the symposium aims to give attendees a realistic view of where neuromodulation fits into the broader stroke recovery landscape today and where the field may be headed next.

Decision-Making and Modern Approaches in Epilepsy Surgery (SYM03B)

Course Directors: John Rolston, Hannah Goldstein

SYM03B, "Decision-Making and Modern Approaches in Epilepsy Surgery," brings together the pediatrics and functional sections to tackle some of the most challenging questions in epilepsy care. The symposium will highlight how evolving imaging, monitoring, and minimally invasive techniques are changing the decision tree for both children and adults with medically refractory epilepsy.

Topics will include preoperative evaluation, the role of invasive monitoring, selection among resection, disconnection, and neuromodulation options, and how to counsel patients and families about risks, benefits, and long-term expectations. The collaboration between pediatric and functional specialists reflects the reality that epilepsy care often spans the lifespan and requires a unified approach to cognitive outcomes, development, and quality of life. This is exactly the type of cross-cutting topic that benefits from being discussed in a forum designed around the specialty as a whole.

Management of TBI and SCI in the Setting of Severe Polytrauma and in the Austere Environment (SYM02B)

Course Directors: Deb Stein, Randy Bell

SYM02B, "Management of TBI and SCI in the Setting of Severe Polytrauma and in the Austere Environment," is a joint effort between the trauma and spine sections. This symposium focuses on scenarios in which neurosurgeons must care for patients with traumatic brain injury and spinal cord injury in the context of major multisystem trauma, limited resources, or nontraditional care settings.

Faculty will address priority setting, staging of interventions, and communication within multidisciplinary trauma teams, with particular attention to environments where ideal resources are not immediately available. Discussions will include practical strategies for imaging, monitoring, operative decision-making, and transfer, as well as the ethical and logistical challenges of practicing in austere or remote settings. Because these cases rarely respect subspecialty boundaries, the value of bringing trauma and spine experts together is especially clear.

Advances in Spine Oncology (SYM04B)

Course Directors: Daniel Sciubba, John O'Toole, John Chi

SYM04B, "Advances in Spine Oncology," is a collaboration between the spine and tumor sections. This symposium will provide an updated overview of the rapidly evolving management of primary and metastatic spine tumors, emphasizing integrated decision-making across surgery, radiation, and systemic therapies.

Attendees can expect discussion of contemporary classification systems, risk-stratification tools, and scoring frameworks that guide whether, when, and how to operate. The session will highlight techniques ranging from minimally invasive decompression and stabilization to more extensive oncologic resections, alongside the growing role of stereotactic radiosurgery and targeted therapies. By combining spine and tumor perspectives, the symposium will showcase how multidisciplinary planning improves both oncologic control and mechanical stability while helping patients maintain function and quality of life.

Evolution of Skull Base Surgery: From Radical Exposure to Precision Convergence (Special Symposium 06)

Course Directors: Madison Michael, Paul A. Gardner, Daniel M. Prevedello, Siviero Agazzi

Special Symposium 06, "Evolution of Skull Base Surgery: From Radical Exposure to Precision Convergence," is a collaboration between the CNS and the NASBS, continuing a valued partnership in an area where multidisciplinary exchange is especially important. This session will trace the trajectory of skull base surgery from large, open approaches to today's more focused, often less invasive strategies that integrate microsurgery, endoscopy, and radiosurgery.

A multidisciplinary faculty will review how advances in imaging, navigation, and endoscopic visualization have allowed surgeons to tailor exposure more precisely to pathology while minimizing collateral tissue disruption. Through case presentations, video demonstrations, and structured comparisons of alternative approaches, the symposium will highlight how neurosurgeons and skull base colleagues now converge on surgical plans that balance maximal safe resection with functional preservation. This collaboration with NASBS reflects the importance of learning across societies in areas where shared expertise benefits patients most directly.

CNS-SRS Symposium on Spinal Deformity (Special Symposium 05)

Course Directors: Jeffrey Mullin, Joseph Osorio, Alexander Tuchman

Special Symposium 05, the "CNS-SRS Symposium on Spinal Deformity," reflects another important collaboration with an outside society, the SRS, building on a partnership that has already enriched Annual Meeting programming. This joint session will focus on complex spinal deformity from both neurosurgical and orthopedic perspectives, emphasizing shared principles rather than rigid specialty boundaries.

The program will cover alignment goals, radiographic assessment, indications for surgery, and strategies to mitigate complications in adult and, where relevant, younger patients. Faculty will use case-based discussions to illustrate how deformity care often requires coordinated input from surgeons with complementary backgrounds and how thoughtful collaboration can improve planning, execution, and long-term follow-up. By design, the symposium is meant to be valuable not only to deformity specialists but also to neurosurgeons whose practices increasingly include patients with significant alignment issues.

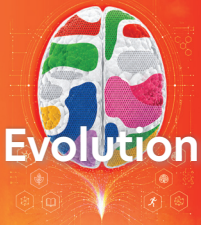
Neuromodulation for Pain: From Head to Toe (SYM14B)

Course Directors: Rushna Ali, Kunal Gupta

SYM14B, "Neuromodulation for Pain: From Head to Toe," is a collaboration between the pain and functional sections. This symposium will survey the expanding role of neuromodulation in treating refractory pain syndromes across cranial, spinal, and peripheral domains.

Topics include patient selection, target choice, and emerging indications for cranial, spinal cord, and peripheral nerve stimulation, as well as practical considerations such as trialing strategies, hardware selection, and long-term management. By integrating pain and functional perspectives, the session will highlight how neuromodulation can be thoughtfully incorporated into multidisciplinary pain care and how neurosurgeons can work effectively with pain specialists, rehabilitation teams, and other colleagues to optimize outcomes.

Across all of these sessions, the common thread is not simply collaboration for its own sake, but collaboration in service of better thinking and better care. The Annual Meeting's broad scope makes it possible to convene these conversations in a way that reflects the full complexity of contemporary neurosurgery. In that sense, the collaborative symposia are not peripheral to the meeting's mission; they are one of the clearest expressions of it. ■



Laura Snyder, MD,
FCNS

Section and Case-Based Sessions at CNS 2026

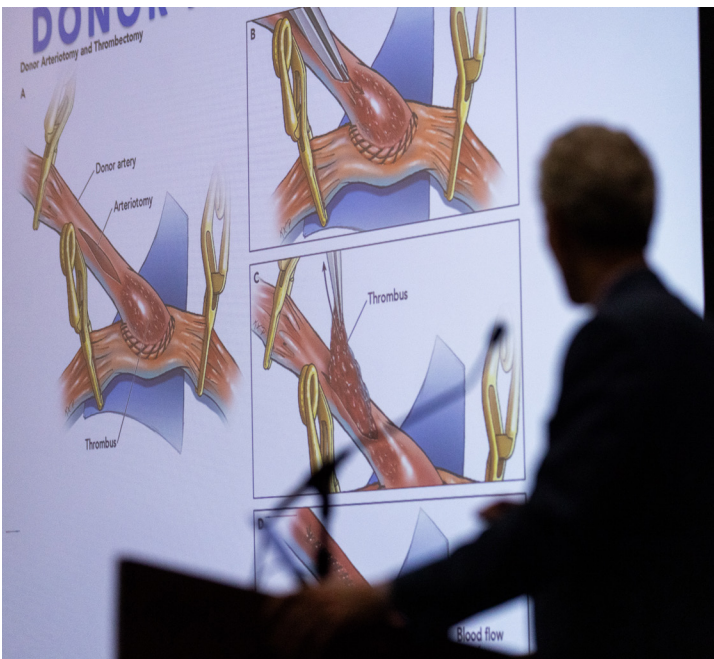


Every year, the CNS Annual Meeting highlights subspecialty experts and rising stars during the subspecialty section sessions. This year is no exception, with engaging topics and distinguished speakers recommended by the subspecialty sections filling the afternoon program. Section sessions will include presentations of the top abstracts submitted to each section, as well as the novel session topics highlighted below.

The first Cerebrovascular Section Session will explore nuances in complex open cerebrovascular cases and will be moderated by

Ryan Kellogg and **Alex Hoang**. The second session will address technological gaps in cerebrovascular neurosurgery through a case-based approach. This forward-looking discussion on the future of cerebrovascular neurosurgery will be led by **Vincent Nguyen** and **David Dornbos**.

The Pain Section will highlight high-impact neurosurgical pain procedures and what every neurosurgeon should know about them. Past Pain Section chair **Steven Falowski** and current secretary-treasurer **Sharon Ben-Haim** will lead the discussion. For attendees



considering incorporating additional pain procedures into their practice, this session will provide valuable insight.

In the first Pediatric Section session, moderators **Scott Wait** and **Jason Hauptman** will lead attendees through discussions of clinical trials in pediatric neurosurgery. The second Pediatric Section session will feature an interactive discussion in which **Jeffrey Greenfield**, **Kelsey Hundley**, **Adam Lipson**, **Robin Bowman**, and **David Hersh** examine challenging cases involving transitions of care. As difficult decisions remain central to pediatric neurosurgery, attendees will gain insight into how colleagues approach these complex situations.

The first Spine and Peripheral Nerve Section session will feature spinal surgery technique videos presented by leaders in the field and will be moderated by **Paul Park** and **James Bayley**. In the second session, **Michael Steinmetz** and **Domagoj Coric** will lead discussions on motion preservation and regenerative medicine. Attendees will be asked to consider what is truly cutting-edge innovation and what may be hype. This year will also mark the

inaugural **Lynda Yang** Peripheral Nerve Lecture at CNS, featuring **R. Shane Tubbs**.

The Section on Stereotactic and Functional Neurosurgery will examine advances in brain-machine interfaces and emerging translational technologies in a session moderated by **David Brandman**. Later in the week, **Nisha Gridharan** and **Ben Shofty** will lead case-based discussions with experts in stereotactic and functional neurosurgery. These sessions will showcase exciting and rapidly evolving technologies in the field.

The Neurotrauma Section will feature two debate sessions. The first, moderated by **Geoffrey Manley** and **Joseph Stern**, will examine the question, "Are We Doing Too Little or Too Much?" The second will feature Crossfire Debates on Hot Topics in Neurotrauma, led by **Richard Rodgers** and **Francis Jareczek**. Surgeons across all specialties can benefit from the perspectives and insights shared during these discussions.

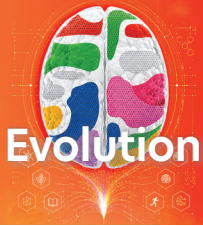
The Tumor Section will highlight current and future applications of LITT in neuro-oncology in a session led by **Albert Kim** and **Ian Lee**. The second Tumor Section Session will explore how to start a brain tumor practice and will be moderated by **Isabelle Germano** and **Kristin Huntoon**. This session will be especially valuable for rising academic tumor surgeons.

With so many exciting sessions to attend, thoughtful planning will help attendees make the most of their schedules. Be sure to use the CNS meeting app to organize your experience at the CNS 2026 Meeting. We look forward to seeing you there. 🇺🇸

SECTION RECEPTION - **NEW!**

Monday, November 2 | 6:00-7:00 pm
Marriott Marquis Washington, D.C.

The CNS is a home for neurosurgeons from all areas of practice. Connect with peers from your section for an evening of focused, subspecialty-based networking complemented by light refreshments. All attendees and their registered guests are welcome.



Tiffany Hodges, MD,
FCNS



Kunal Vakharia, MD,
FCNS



Trish Rehring, MPH

Advancing Evidence-Based Neurosurgery: A Preview of the 2026 Guidelines Session and Future of Guidelines

The morning guidelines sessions at the 2026 Congress of Neurological Surgeons Annual Meeting in Washington, DC represent a pivotal opportunity for the neurosurgical community to engage with the latest evidence-based recommendations shaping clinical practice. This year's sessions reflect the breadth and depth of the CNS Guidelines Committee's ongoing work, spanning spinal surgery, neurotrauma, functional neurosurgery, and more. They underscore the commitment of the CNS to producing rigorous, transparent, and impactful guideline development.

Featured Guidelines at the Annual Meeting

Several highly anticipated guidelines are slated for presentation at this year's Annual Meeting, each addressing critical, high-priority clinical questions. *The Traumatic Brain Injury Transfer Practice Parameter* offers updated evidence-based recommendations for the safe and efficient triage of patients with brain injury, a topic that is especially critical given continued disparities in access to care. The *Spine Metastases* guidelines update reflects the rapidly evolving landscape of neuro-oncology, incorporating an extensive body of literature and leveraging artificial intelligence (AI) for systematic data extraction. In addition, comprehensive Lumbar Fusion guidelines will be presented to address the evolving spine surgery landscape and its clinical implications.

Additionally, updates on topics including plagiocephaly, craniopharyngiomas, and return to physical activity after spinal surgery address common questions that arise in daily practice. These highlight just a fraction of the guideline output this year, with several major updates, including epilepsy and cervical degenerative disease, also in development.

The Guidelines Development Process

Each of the guidelines presented at the CNS Annual Meeting is the culmination of significant work from a dedicated task force composed of subspecialty experts, Guidelines Fellows, and members of the Guidelines Committee. [These task forces](#) evaluate evidence using standardized methodologies and draft recommendations

that undergo rigorous review by the Joint Guidelines Review Committee (JGRC).

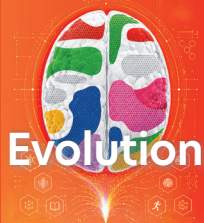
2026 marks a historic milestone in CNS guidelines methodology with the formal integration of artificial intelligence. Currently piloted in the Spine Metastases project, AI-assisted data extraction is demonstrating the potential to drastically accelerate systematic review timelines without compromising the stringent rigor essential to evidence-based medicine. To safeguard this process, the CNS has proactively established an AI subcommittee and formalized strict disclosure policies with Neurosurgery regarding AI use in guideline development, demonstrating its commitment to transparency.

Impact of Guidelines

Guidelines have become increasingly important in practice and reimbursement, which is why they have long been a cornerstone of the CNS educational mission. The CNS has invested in expanding access to each guideline through innovative digital channels. The guidelines podcast series, hosted by Brad Elder, has now surpassed 45,000 listens, a milestone that reflects the community's appetite for accessible, high-quality clinical guidance. Furthermore, ongoing updates to the CNS website and the integration of dynamic AI features within the CNS+ app have created new ways for users to interact with these documents.

The 2026 Program and Guidelines Committee continues to expand its efforts and tackle new initiatives, with more than 20 active projects in various stages of development. Upcoming topics include trigeminal neuralgia, acute cervical spine injury, and spinal cord stimulation. The committee is also continuing to build on prior external collaborations, including partnerships with the American Society of Clinical Oncology (ASCO), the Bobby Jones CSF Foundation, North American Neuromodulation Society (NANS), and the Brain Trauma Foundation (BTF).

Ultimately, the guidelines sessions at the Annual Meeting are more than a reporting mechanism, they are a living forum for continued growth and improvement. We encourage you to not only attend these sessions, but also engage actively in the discussions that shape the future of evidence-based neurosurgical care. ■



Ramesh Grandhi, MD,
FCNS



Kunal Vakharia, MD,
FCNS



Mohamad Bydon, MD,
FCNS

Evolution Without Borders: The CNS International Symposium

At this year's CNS Annual Meeting, the theme of *Evolution* takes on a distinctly global dimension through the International Symposium, held Saturday, October 31. More than a session, it is a convergence—of perspectives, practices, and possibilities—bringing together neurosurgeons from across continents to examine how our field continues to evolve in real time.

Neurosurgery does not advance in isolation. Its progress is shaped by the environments in which it is practiced—by access to technology, by healthcare infrastructure, and by the unique challenges faced in different parts of the world. The International Symposium embraces this reality, creating a forum where those differences are not only acknowledged but leveraged as opportunities for shared learning.

Panelists representing leading partner societies—including the Neurological Society of India (NSI), Sociedade Brasileira de Neurocirurgia (SBN), and Japanese Congress of Neurological Surgeons (JCNS), as well as the Korean National Society (KNS) and the European Association of Neurosurgical Societies (EANS)—will offer insight into how neurosurgical care is adapting across diverse economic and geographic contexts. These perspectives highlight a central truth: innovation looks different depending on where you stand, but its goal remains universal—improving patient outcomes.

"Evolution of our field is strongest when it is shared"

The program spans the breadth of neurosurgery, with focused updates and case-based discussions across subspecialties. Through these conversations, attendees will gain a deeper appreciation for the nuanced decision-making that defines care around the world. True to its spirit, the symposium is designed to be

CNS CONNECTIONS RECEPTION

Saturday, October 31 | 5:00-6:30 pm
Marriott Marquis Washington, D.C.

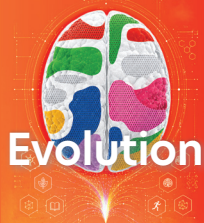
Celebrate a festive Halloween evening with colleagues from around the world. Connect over cocktails and hors d'oeuvres while engaging with leaders in neurological surgery and honoring distinguished award recipients. In the spirit of *Evolution*, this reception highlights the global perspectives and relationships shaping the future of the field.



This complimentary event welcomes CNS Foundation donors, awardees, residents, international attendees, advanced practice providers, and their registered guests. Stay until 7:30 and keep the networking going with Stryker.

highly interactive. Audience members are encouraged to engage directly—through questions, discussion, and even sharing their own cases—transforming the session from a series of presentations into a dynamic exchange of ideas.

In many ways, the International Symposium reflects the future of neurosurgery itself: collaborative, globally connected, and continuously evolving. By bringing together voices from across the neurosurgical community, it affirms a simple but powerful idea—that the evolution of our field is strongest when it is shared. 



Brandon Fiedor

Doug Kondziolka, MD,
MSc, FCNS

Neurosurgery Publications Spotlight

The Neurosurgery Publications team looks forward to welcoming all attendees to Washington, DC. We encourage everyone to stop by the CNS Experience Lounge in the Exhibit Hall to chat with staff from the Editorial Office and to pick up the latest issue of *Neurosurgery*. We welcome your questions on topics both big and small, as well as any suggestions you may have for how Neurosurgery Publications can best serve both the CNS Membership and its readership at large.

The theme of this year's meeting is *Evolution*, and Neurosurgery Publications are in constant evolution. Evolution in content, in format, and even in authorship! Every year, new investigators from across the world add their ideas and science to our burgeoning field. So much is changing, not only in our understanding of disease states and surgical solutions, but in informatics, data science, and use of powerful tools for rapid and efficient work. We will be highlighting these dynamic changes, what to embrace, and when to be wary. 📌



Meeting Highlights

- **Experience Lounge:** Copies of the October and November issues of *Neurosurgery* along with *Neurosurgery* lanyards will be available free of charge, while supplies last.
- **Monday, November 2:** Dr. Kondziolka will provide the annual Editor-in-Chief Update during the General Scientific Session.
- **Monday, November 2:** Dr. Kondziolka, together with Associate Editors Sepideh Amin-Hanjani and E. Antonio Chioocca will host the "Getting Published" seminar, which will provide an overview of some of the issues that residents and early career scholars may encounter in getting published. While registration will be required, this is a free event.
- **The Tenth Annual Neurosurgery Paper of the Year Awards** will honor the most impactful papers published in *Neurosurgery* from June 2025 to July 2026. Awards will be given for Top Paper of the Year as well as at the following section levels: Cerebrovascular, Global Neurosurgery, Neurotrauma and Critical Care, Pain, Pediatrics, Peripheral Nerve, Socioeconomics, Health Policy, and Law, Spine, Stereotactic and Functional, and Tumor.

CNS Annual Meeting Sessions Developed for Members, by Members

To ensure the CNS Annual Meeting continues to be the trusted source for relevant and cutting-edge educational content and to make certain all members have a voice in the content presented, the CNS put out an open call for proposals for Annual Meeting sessions.

The response from our members was overwhelming and we are excited to announce a series of new sessions this fall in DC that were developed through your recommendations:

Outpatient Neurosurgery Center: The Next Frontier

Elad Levy, Hakeem Shakir, and
Erol Veznedaroglu

Neuroplastic Surgery: Advanced Cranial and Spinal Reconstruction for the Neurosurgeon

Alex Ropper and Rafael Vega

Intraoperative Ultrasound in Neurosurgery

Vikram Prabhu

Geriatric Considerations in Neurosurgery

Aristotelis Filippidis and
Mark Dannenbaum

Next-Generation Therapies: Harnessing Cell - and Gene-Based Therapies

Russell Lonser

Evolving Visualization in Neurosurgery: 3D Exoscope and Augmented Reality

Silky Chotai and Timothy Witham

Ethics, Empathy and Humanity in Neurosurgery

Philipp Taussky, Silky Chotai, and
Gnaneswari Karay

Strategies to Manage Giant Skull Base Tumors

Andrew Fabiano and
Miguel Ángel Lopez-Gonzalez

White Matter Dissection & Brain Mapping

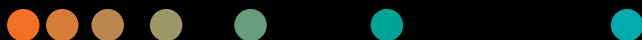
Georgios Skandalakis and
Shervin Rahimpour

**Thank you to all our members who submitted suggestions.
We hope you will join us for these new sessions throughout the program.**

IR-24-NAM-5396

ARTIS icono biplane

**There's a better
way to see the
brain**



It's time to rethink cone beam CT. It's time to explore the ARTIS icono biplane.

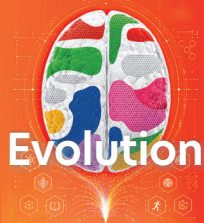
It features *syngo* DynaCT Sine Spin. Now you can reduce artifacts in the basal part of the brain and close to the skull—even near bony structures.

Explore the fixed C-arm that's expanding the possibilities in neuro interventions.



[siemens-healthineers.us](https://www.siemens-healthineers.us)

SIEMENS
Healthineers



Julie L. Chan, MD,
PhD, FCNS

Medical Student and Resident Programming

The mission of the CNS is rooted in innovative neurosurgical education and a commitment to practicing neurosurgeons and trainees who represent the future of our field.

The CNS Annual Meeting remains the premier destination for cutting-edge neurosurgical education while also serving as a vital forum for connection and collaboration among colleagues from around the world. For many of us, it is one of our earliest experiences of truly feeling part of the neurosurgical community.

Each year, the CNS dedicates programs and engagement opportunities that specifically focus on welcoming and educating medical students, residents, and fellows. We recognize that the future of neurosurgery is driven by the intelligence, talent, and dedication of our trainees. As in the past, this year's CNS Annual Meeting highlights long-standing traditions while elevating the experiences and moments that make these programs so meaningful.

CNS Connections Reception

The Connections Reception welcomes CNS Foundation donors, awardees, residents, international attendees, advanced practice providers, and their registered guests. One of the premier events of the meeting, this year's reception will be especially memorable as it takes place on Halloween night. Filled with music, food, and camaraderie, the event offers a unique opportunity for trainees to connect with international colleagues and established neurosurgeons alike, fostering lifelong relationships and future collaborations. The reception is complimentary with conference registration and will be held at a beautiful venue on the Marriott Marquis property.

CNS Resident SANS Challenge

The CNS Resident SANS Challenge returns for another exciting year. In this game-show style competition, resident cohorts compete not only for bragging rights and trophies, but also for monetary prizes. Qualifying rounds have concluded. The top 12 qualifying teams will advance to the live preliminary and championship rounds during the Annual Meeting.

Complimentary Housing for CNS Resident Members

The CNS offers complimentary housing for CNS Resident Members on a first-come, first-served basis. To be considered, trainees must register for the Annual Meeting by August 16, 2026. CNS Resident Membership is complimentary for trainees in good standing. Learn more and apply here: [CNS Resident Membership](#)

Sergeant-at-Arms Program

The CNS Annual Meeting also offers trainees the opportunity to serve the organization while enjoying many of the meeting's educational offerings. The Sergeant-at-Arms (SAA) Program plays an important role in welcoming neurosurgeons during the Annual Meeting. Residents, fellows, and medical students who participate in the SAA Program at the 2026 CNS Annual Meeting receive complimentary admission to their selected symposium and lunch seminars.

Medical Student Town Hall

The Medical Student Town Hall provides an open forum for students to engage directly with neurosurgical training program leadership, including program directors. We encourage all interested students to attend this exciting opportunity for discussion and mentorship.

"Swimming with the Sharks"

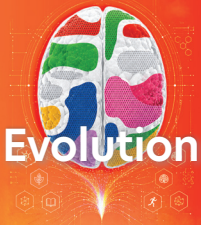
This special symposium for medical students features a diverse group of speakers who offer guidance on successfully navigating the path toward neurosurgical training. Faculty speakers include academic neurosurgeons, department chairs, and program directors. The program also incorporates interactive small-group sessions focused on interview preparation, CV development, and one-on-one mentorship opportunities with faculty members.



Neurosurgical Medical Student Specialty Session

Each year, the CNS provides medical students with the opportunity to propose and present specialty sessions designed to advance neurosurgical education. Sessions are selected based on their ability to provide practical knowledge, skills, and experience while maintaining balanced educational content. Presentation formats are diverse and include interactive learning opportunities.

We look forward to welcoming residents, fellows, and medical students to the 2026 CNS Annual Meeting in Washington, DC, this fall. We hope you enjoy the trainee programming and continue building lifelong connections with colleagues from around the world. 🇺🇸



Khoi D. Than, MD,
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The CNS Experience Lounge: **Connection, Content and Cutting Edge Technology**

In an era when medical conferences are evolving to meet the expectations of a more connected, tech-savvy, and wellness-conscious audience, the CNS Experience Lounge stands out as a model of innovation. Located at the center of the CNS Annual Meeting Exhibit Hall, the lounge is far more than a place to pause between sessions—it is an intentionally designed environment where education, collaboration, and inspiration come together.

Blending cutting-edge technology with meaningful human interaction, the CNS Experience Lounge transforms the traditional conference experience into something more dynamic and engaging. Whether attendees are looking to expand their clinical knowledge, connect with colleagues and leaders, or simply grab a latte or cold brew, the lounge offers a versatile and welcoming space that supports a wide range of needs.

A Central Hub for Connection and Community

At its core, the CNS Experience Lounge fosters connection. It provides an open, accessible space where attendees can engage directly with the organizations and people shaping the future of neurosurgery. One of the most valuable opportunities within the lounge is the ability to meet staff from CNS, Neurosurgery Publications, and the CNS Foundation. These interactions offer insight into ongoing initiatives, available resources, and ways to become more involved in the neurosurgical community.

For early-career neurosurgeons, residents, and medical students, these conversations can be especially meaningful. They create opportunities to ask questions, explore mentorship pathways, and better understand the broader professional landscape. More experienced attendees can reconnect with peers, exchange ideas, and contribute to conversations about the direction of the field.

Adding to the energy of the space, the lounge features Experience. These offerings create excitement and encourage attendees to return regularly, reinforcing the lounge as a central gathering point throughout the meeting.

Immersive Learning Through Live and Digital Experiences

Education remains a cornerstone of the CNS Experience Lounge and is delivered in ways that go beyond traditional formats. One of the most compelling features is the opportunity to watch Live Surgery presentations. These sessions provide a rare, real-time view into neurosurgical procedures, allowing attendees to observe techniques, clinical decision-making, and innovations as they happen.

Complementing these experiences is the opportunity to see the latest science in the digital poster gallery, a self-guided platform



that allows attendees to explore a broad range of research topics at their own pace. The format enhances accessibility by making it easy to navigate content, revisit presentations, and engage more deeply with the material.

Another distinctive feature is the Art of Neurosurgery digital display. This exhibit highlights the intersection of science and creativity by showcasing visually compelling interpretations of neurosurgical concepts. By presenting the field through an artistic lens, the display encourages attendees to think differently about their work and appreciate the broader impact of neurosurgery.

Together, these elements create a flexible learning environment. Whether attendees prefer real-time observation, independent

exploration, or creative engagement, the lounge offers multiple pathways to deepen understanding and spark new ideas.

Access to Expertise and Professional Guidance

Beyond education and networking, the CNS Experience Lounge serves as a valuable resource for professional development. Attendees can ask questions about ABNS certification requirements, examination processes, and career progression. This direct access to information is particularly helpful for those navigating important milestones in their training or practice.

The lounge also hosts book signings, providing a chance to meet authors, discover new publications, and engage in thoughtful discussions about emerging topics in neurosurgery. These events add a personal and interactive dimension to the conference experience.

By bringing together expertise, resources, and opportunities for dialogue, the CNS Experience Lounge supports attendees at every stage of their careers. It is a space where questions are welcomed, ideas are exchanged, and professional growth is encouraged.

A Space to Recharge and Reflect

Recognizing the demands of a busy conference schedule, the CNS Experience Lounge also emphasizes comfort and well-being. At the center of this effort is the CNS Café, where attendees can enjoy a complimentary latte or cappuccino while taking a break from sessions and meetings.

This inviting café environment creates a natural setting for informal conversations, whether reconnecting with colleagues or meeting someone new. It also provides a moment to recharge before continuing with the day's activities.

The lounge's design further enhances this experience, with comfortable seating areas and an open layout that supports both casual interactions and focused discussions. It is a space that balances energy with relaxation, helping attendees stay engaged without feeling overwhelmed.

Bridging Innovation and Human Experience

What truly sets the CNS Experience Lounge apart is its ability to integrate innovation with human connection. Live surgical broadcasts and digital exhibits highlight the latest advancements in neurosurgery, while networking and interaction reinforce the importance of community.

This balance reflects a broader shift in how medical professionals learn and engage. Conferences are no longer solely about attending lectures—they are also about participating in experiences, sharing knowledge, and building relationships. The CNS Experience Lounge embodies this evolution by offering an environment that is both informative and interactive.

A Destination Within the Meeting

For many attendees, the CNS Experience Lounge becomes a destination they return to throughout the conference. It may begin as a morning stop for coffee, evolve into a place to explore research or attend a live presentation, and later serve as a hub for networking, book signings, or professional conversations.

This versatility is one of the lounge's defining strengths. It adapts to the needs of each attendee, providing a consistent yet flexible space within the larger meeting and fostering a sense of familiarity that enhances the overall conference experience.



Shaping the Future of Neurosurgical Meetings

As neurosurgery continues to advance, so too must the ways in which professionals come together to learn and collaborate. The CNS Experience Lounge represents a forward-thinking approach to conference design—one that prioritizes interaction, accessibility, and engagement.

By bringing together opportunities to meet staff from CNS, *Neurosurgery Publications*, and the CNS Foundation; offering giveaways and CNS swag; showcasing live surgeries and digital research; highlighting artistic perspectives; providing access to ABNS information; hosting book signings; and creating a welcoming café environment, the lounge delivers a comprehensive and memorable experience.

Ultimately, the CNS Experience Lounge is more than a feature of the Annual Meeting—it reflects the values that drive the neurosurgical community forward. It emphasizes curiosity, connection, innovation, and well-being, creating a space where attendees can expand their knowledge, build relationships, and feel inspired.

For those attending the meeting, the CNS Experience Lounge is not simply a stop along the way—it is an essential part of the experience, where ideas come to life and the future of neurosurgery continues to take shape. 



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The CNS Exhibit Hall: **Evolution in Action**

Evolution is not a single moment but a continuous process built through countless incremental advances, bold leaps, and wisdom accumulated over time. The theme of the 2026 CNS Annual Meeting, *Evolution*, captures something deeply true about our specialty: neurosurgery does not stand still. As we gather in Washington, DC, from October 31 through November 4 for the 76th CNS Annual Meeting, nowhere will that spirit of evolution be more alive than on the floor of the CNS Exhibit Hall.

The exhibit hall itself is a testament to evolution. What was once a traditional trade floor has transformed into an immersive environment that reflects the growth of our field. The days of passively browsing booths are fading. Today, the exhibit hall serves as a dynamic showcase of the operating room, bringing together neurosurgeons, trainees, researchers, and industry leaders around rapidly advancing technology. With more than 160 exhibitors expected this year, attendees will have hands-on access to the technologies, instruments, and educational resources shaping modern neurosurgical care.

At the center of the exhibit hall experience is the CNS Experience Lounge, a space that has evolved into something remarkable since its early days. Whether attendees stop in for a handcrafted espresso or latte, connect with the CNS Membership team, review digital abstracts, or observe one of the live surgery demonstrations in the surgical amphitheater, the Experience Lounge offers a rare, front-row perspective on cutting-edge techniques and technology.

The live surgery platform remains one of the most compelling features of the Annual Meeting, inspiring attendees to consider how emerging technologies and strategies can improve patient outcomes.

For attendees seeking a guided introduction to new technology, the Crossroads of Innovation program offers exactly that. Participants can preregister for focused, in-booth demonstrations tailored to specific neurosurgical subspecialties, with expert peers leading curated tours that connect clinical questions to real-world solutions. As neurosurgery evolves, so does the need to understand how new tools fit into the subspecialty settings where they can have the greatest impact.

The spirit of evolution at this year's meeting is also reflected in the expanded Skills Challenge, offered in collaboration with industry partners. Throughout the meeting, attendees will have



opportunities to earn points by expanding their neurosurgical knowledge. During exhibit hall hours Monday through Wednesday, participants can test their technical abilities through in-booth challenges. The top three point-earners will receive cash prizes of up to \$500, and all participants will be entered into raffles for additional rewards. The expanded Skills Challenge promises to be one of the meeting's most engaging experiences.

Perhaps no force is shaping the evolution of neurosurgery more profoundly than artificial intelligence, and the exhibit hall will reflect that reality in full. The partnerships formed there between academic institutions and industry are not incidental; they are an essential driver of progress. CNS staff members, including colleagues from *Neurosurgery Publications*, will also be available throughout the meeting to connect attendees with the latest resources and advances in the field.

Evolution, by its nature, requires engagement. It requires curiosity, collaboration, and a willingness to encounter ideas that challenge and expand the way we practice. We invite you to bring that spirit to the CNS Exhibit Hall this October as the evolution of neurosurgery continues to unfold before us. 📌

Thank You

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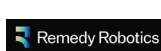
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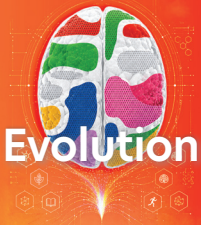


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Pathway to Neurosurgery: Inspiring the Next Generation of Neurosurgeons

The CNS Foundation's *Pathway to Neurosurgery* program continues to grow as one of the organization's most impactful initiatives focused on expanding awareness, mentorship, and opportunity within medicine and neurosurgery. Entering its sixth year in 2026, the program reflects the CNS Foundation's ongoing commitment to addressing healthcare disparities by introducing students from underrepresented backgrounds to careers in medicine.

Held in conjunction with the CNS Annual Meeting, the program provides local high school students with a unique opportunity to experience neurosurgery firsthand through a full-day immersive symposium featuring inspiring presentations, mentorship opportunities, and hands-on laboratory activities led by neurosurgical professionals. The initiative is designed not only to educate students about careers in medicine, but also to help them envision themselves within those careers by connecting them directly with neurosurgeons, residents, medical students, and other leaders. Since its inception, more than 180 high school students across the United States have gone through the Pathway program, and each year we hear feedback from participants who are looking at careers in medicine and neurosurgery through a new light as a result of their experience.

The 2026 Pathway to Neurosurgery Program will take place on Monday, November 2, during the CNS Annual Meeting in Washington, DC. The CNS Foundation will partner with Charles H. Flowers High School to bring 30 students to the Convention Center for a full day of programming. Students will gain exposure to the day-to-day realities of neurosurgery while engaging in interactive learning experiences that showcase innovation, teamwork, and patient care.

A hallmark of the program is its emphasis on long-term mentorship and sustained engagement. Following the program, participating students are invited to apply for a year-long mentorship opportunity with a local neurosurgeon. These mentorship experiences are designed to provide continued support, guidance, and encouragement as students explore academic and professional pathways in medicine.

The initiative has also fostered strong collaborations with local and national community organizations dedicated to educational access and student development. Previous partnerships have



included organizations such as Breakthrough Houston, E.L. Haynes Public Charter School in Washington, D.C., Oasis for Girls, and San Francisco Achievers in partnership with University of California San Francisco Neurosurgery.

The Pathway to Neurosurgery initiative aligns closely with the broader efforts of the CNS Foundation to foster a more representative neurosurgical workforce for our patients in the future. As highlighted in previous CNS Foundation feature articles, these efforts are centered on inspiring, mentoring, and empowering the next generation of healthcare professionals while creating meaningful opportunities for students who may not otherwise have access to the field.

In 2026, the CNS Foundation remains focused on building a sustainable pipeline of future physicians and neurosurgical leaders through mentorship, education, and exposure. Through initiatives like Pathway to Neurosurgery, the CNS Foundation continues to invest in the future of the specialty while helping students discover new possibilities for their own futures. We look forward to hosting our next round of students at the CNS Annual Meeting in Washington, D.C., this fall; keep an eye out for them and make sure to say hello! 🍀

INSIDE THE CNS



Washington Committee Update



Alexander Khalessi, MD, MBA, FACS, FCNS
Chair, Washington Committee



Charlotte Pineda, MPP
Vice President, Health Policy and Advocacy

FDA in Focus

As federal policymakers continue to evaluate how to accelerate patient access to emerging technologies, the Washington Committee has significantly expanded its direct engagement with the U.S. Food and Drug Administration (FDA) and key stakeholders shaping the future of medical innovation. Throughout the quarter, the Committee prioritized a multi-pronged strategy focused on clinical evidence generation, artificial intelligence (AI) integration, physician entrepreneurship, and the modernization of federal regulatory device pathways affecting neurosurgical care.

These efforts culminated in the participation of then-FDA Commissioner **Marty Makary, MD, MPH**, at the 2026 AANS Annual Scientific Meeting in San Antonio, Texas. Dr. Makary delivered the prestigious Charles L. Plante Lecture and participated in a high-level fireside chat moderated by Washington Committee Chair **Alexander A. Khalessi, MD, MBA**. The discussion focused on ongoing FDA modernization initiatives, centering on the integration of real-world evidence, adaptive clinical trial models, and real-time data workflows within device development.

A central focus of the dialogue involved the [FDA-CMS Regulatory Alignment for Predictable and Immediate Device \(RAPID\) pathway](#)—an initiative intended to better coordinate FDA approval and Medicare coverage determinations for Breakthrough Devices earlier in the product lifecycle. The Washington Committee has consistently advocated for greater alignment between the FDA and CMS to address the “coverage gap” for neurosurgical technologies, in which prolonged delays between regulatory clearance and Medicare reimbursement determinations slow patient access and stifle physician adoption. Committee leadership actively raised these operational realities in concurrent discussions with both FDA and CMS officials, safeguarding rigorous patient safety standards while streamlining pathways for clinically significant technologies.

Dr. Makary's participation reflected months of sustained engagement by organized neurosurgery. Beyond the plenary stage, Dr. Makary joined targeted, concurrent meetings with the CNS Executive Committee, the AANS Executive Committee, the Washington Committee, and members of the Drugs and Devices Subcommittee. These sessions allowed neurosurgical leaders to engage directly on regulatory predictability, clinical evidence standards, post-market surveillance, barriers affecting physician innovators, and the expanding footprint of AI in clinical decision-making.

Through the Drugs and Devices Subcommittee, chaired by **Joshua M. Rosenow, MD**, organized neurosurgery expanded its presence in national policy conversations. The subcommittee advanced neurosurgical perspectives within the FDA's Office of Neurological and Physical Medicine Devices, participated in [Medical Device User Fee Amendments \(MDUFA\) VI](#) stakeholder consultations, and collaborated with participants in the Total Product Life Cycle Advisory Program to ensure federal regulators grasp the clinical realities of neurosurgical device deployment.

The subcommittee has also accelerated its focus on physician innovation and safety tracking. In May, Subcommittee Vice Chair **Paul M. Arnold, MD**, and Resident Fellow **Faith C. Robertson, MD**, organized the highly successful webinar, “Surgeons as Entrepreneurs.” Featuring active neurosurgeon innovators and direct FDA participation, the program examined regulatory pathways, commercialization hurdles, and clinical evidence development.

In parallel, the subcommittee continues to work to mitigate risks to patient safety by strengthening neurosurgeons' engagement in adverse event reporting. Driven by **Laura Stone McGuire, MD, MS**, the subcommittee met directly with FDA staff to explore critical technical improvements to the Manufacturer and User Facility Device Experience (MAUDE) database to optimize post-market surveillance and physician reporting systems.

Building the Case Against the Efficiency Adjustment

The Washington Committee is leading a disciplined campaign to challenge the finalized “efficiency adjustment” under the [CY 2026 Medicare Physician Fee Schedule \(MPFS\)](#), which imposes an across-the-board 2.5% reduction to work relative value units (RVUs) for non-time-based codes. This flawed policy relies on economy-wide labor metrics, under the mistaken assumption that technological advancements automatically reduce physicians’ work.

Rejecting broad, generic specialty appeals, the Committee engineered a multi-stage screening framework to isolate high-acuity neurosurgical services where CMS’s premise breaks down clinically. By analyzing RUC activity, utilization data, and procedural intensity, the framework identifies complex services where technology complements, rather than substitutes for, intricate surgical execution.

This evidence-based approach forces a fundamental paradox: CMS cannot validly recognize the distinct intensity of complex neurosurgical procedures — as it does via separate exemptions under the CMMI WISER model — while simultaneously applying arbitrary, mathematical cuts. The Committee continues to engage CMS, HHS, and congressional stakeholders to secure targeted, data-backed carve-outs that safeguard beneficiary access against mechanisms that threaten to suppress physician adoption and limit patient care.

CMS Opens Door to Physician-Owned Hospital Integration in IPPS Proposed Rule

In June, the AANS and CNS [submitted comments](#) on CMS’ FY 2027 Hospital Inpatient Prospective Payment System (IPPS) proposed rule, focusing on two major priorities for neurosurgery: recognition of complex spinal fusion procedures and the future role of physician-owned hospitals in value-based payment models.

The organizations strongly supported CMS’ proposal to establish new Medicare Severity Diagnosis-Related Groups (MS-DRGs) for extensive and complex spinal fusion procedures, recognizing that highly complex spinal deformity and reconstruction

cases require substantially greater resources than routine spinal fusions. The comments also urged CMS to refine the proposal using clinically grounded definitions of complexity rather than device-specific criteria.

The letter also responded to CMS’ request for information on physician-owned hospitals and participation in the Transforming Episode Accountability Model (TEAM). While supporting opportunities for physician-owned hospitals to voluntarily participate in TEAM, the AANS and CNS cautioned CMS against expanding the model without stronger evaluation methods, reliable risk adjustment, and meaningful performance measures. The comments highlighted concerns regarding CMMI’s historical track record, noting findings from both the Congressional Budget Office and Government Accountability Office showing limited success in translating demonstration models into scalable reforms. The organizations also opposed the immediate inclusion of newly proposed spinal fusion MS-DRGs in TEAM, warning that insufficient historical claims data could expose hospitals treating the most complex patients to inappropriate financial risk.

The inclusion of the RFI follows months of sustained engagement between the Washington Committee and key federal officials in Congress and HHS. Advocacy efforts included direct meetings with CMS and HHS leadership, coalition coordination, policy letters, podcasts, op-eds, and congressional testimony. Earlier this year, [Anthony M. DiGiorgio, DO, MHA](#), highlighted the role of physician-owned hospitals during [House Energy and Commerce Committee testimony](#) examining healthcare affordability and provider consolidation. Washington Committee leadership also engaged Administration officials over the past year as part of broader advocacy efforts on physician autonomy, site neutrality, and competition policy.

Spine Societies Push Back on Cervical Fusion Coverage Restrictions

In May, the AANS and CNS joined other leading national spine organizations in [issuing a multi-society position statement](#) calling for an end to insurance denials of

interbody biomechanical devices used in cervical fusion procedures.

The statement responded to payor policies that continue to classify interbody biomechanical devices (CPT 22853) as experimental or not medically necessary despite more than two decades of routine use in cervical fusion surgery and extensive peer-reviewed evidence supporting their safety and effectiveness. Neurosurgical and spine leaders emphasized that these implants remain a standard component of modern cervical fusion procedures and warned that coverage restrictions may limit patient access to appropriate surgical care. The effort reflected ongoing collaboration between organized neurosurgery and spine stakeholders to address utilization management and coverage policies that are inconsistent with current standards of care.

CMS Proposes Prior Authorization Reforms for Drugs

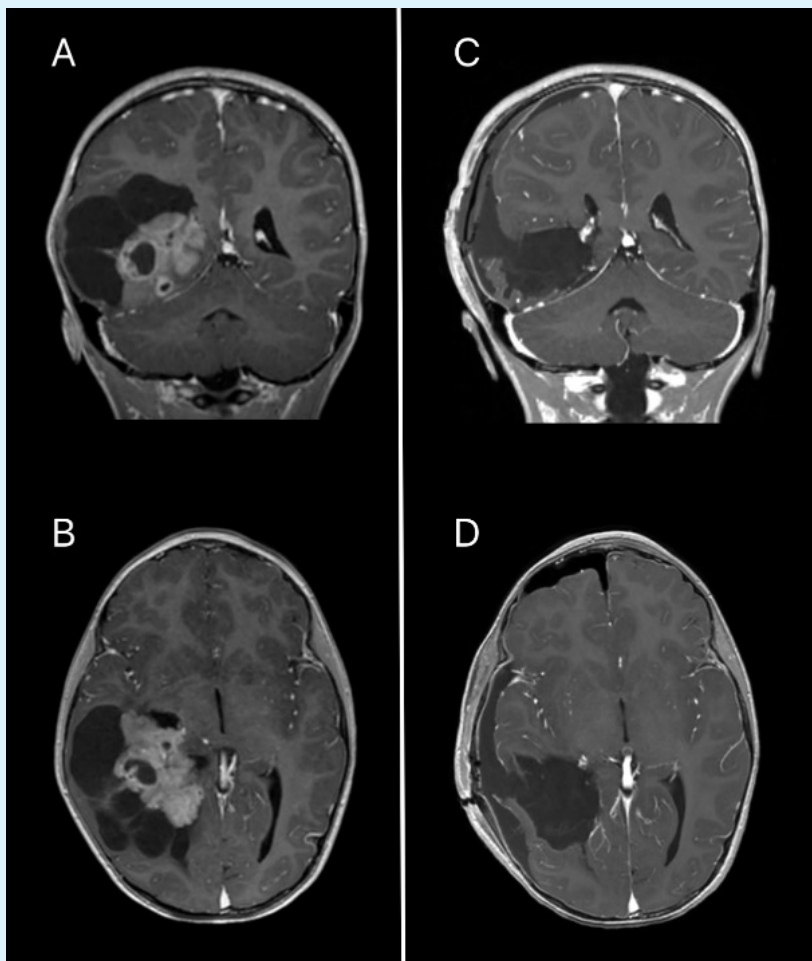
In June, the AANS and CNS joined the Alliance of Specialty Medicine in [comments](#) responding to CMS’ proposed rule, Interoperability Standards and Prior Authorization for Drugs. The proposal would extend existing interoperability, transparency, and electronic prior authorization requirements to prescription drugs covered by Medicare Advantage and other federally funded payor markets. It builds on CMS’ 2024 prior authorization reforms.

The comments supported CMS’ efforts to modernize prior authorization processes through greater use of electronic data exchange, faster decision-making, and expanded public reporting of prior authorization metrics. At the same time, the Alliance urged CMS to adopt shorter decision timelines, establish meaningful enforcement mechanisms for plans that fail to meet required response deadlines, and improve coordination between medical and pharmacy benefit systems. ■

IMAGES IN NEUROSURGERY

Resection of a Supratentorial ependymoma, YAP1 fusion positive, in a pediatric patient.

A 7-year-old previously healthy female presented to her pediatrician, complaining of a year and a half of monthly headaches, now associated with emesis and sleepiness for the past six months. She was initially being managed conservatively with a presumed diagnosis of migraines; however, due to persistent symptoms, an MRI of the brain was performed, which demonstrated a large right-sided heterogenous, mixed solid/cystic, contrast enhancing lesion for which urgent neurosurgical referral was placed (**Figure 1. A-B**). Upon examination, she was well-appearing, awake and alert, without focal neurologic deficit. She was admitted to the hospital, started on dexamethasone. An MRI of the spine was obtained, which was negative for any drop metastases. She underwent a right temporoparietal craniotomy for resection of the lesion which occurred without complication. Post-operatively, she did well and her neurologic examination remained stable without focal deficit. Post-operative imaging demonstrated gross total resection without complication (**Figure 1. C-D**). Her steroids were tapered off over three days and she was discharged home on post-operative day five in good condition. Pathologic diagnosis was Supratentorial Ependymoma WHO grade 2, YAP1 fusion positive. YAP1 fusion positive ependymomas account for approximately 7% of all supratentorial ependymomas and have a very favorable long-term prognosis. They are one of two molecular subtypes of supratentorial ependymoma, the other being ZFTA fusion positive tumors which are more common and have a much worse prognosis.¹ Imaging characteristics of supratentorial ependymomas tend to be heterogenous with solid and cystic components with heterogeneous enhancement, as well as areas of calcification or intra-lesional hemorrhage. Restricted diffusion can also be seen and tends to suggest a higher grade lesion.² 



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Figure 1. Pre- and Post-operative magnetic resonance imaging. **A.** Coronal view and **B.** Axial view, T1-weighted post-contrast image in the pre-operative setting demonstrates a heterogeneously enhancing solid and cystic mass centered within the atrium of the right lateral ventricle, measuring up to 8.9 cm. Scattered regions of calcification present within the lesion. **C.** Coronal view and **D.** Axial view, T1-weighted post-contrast in the post-operative setting demonstrates gross total resection of the lesion without evidence of residual enhancing tumor.



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