

cnsq IS THE OFFICIAL NEWSMAGAZINE OF THE CONGRESS OF NEUROLOGICAL SURGEONS

CongressQuarterly

SUMMER 2022



NEUROSURGERY CONNECTED

SAN FRANCISCO, CALIFORNIA | OCTOBER 8-12, 2022

2022 ANNUAL
MEETING



Congress of
Neurological
Surgeons

8 Abstract Sessions - Expanded
Opportunities and Enhanced
Forums

16 Section and Case-Based
Sessions

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The Congress of Neurological Surgeons exists to enhance health and improve lives through the advancement of neurosurgical education and scientific exchange.

Congress Quarterly is the official newsmagazine of the Congress of Neurological Surgeons, located at 10 North Martingale Road, Suite 190, Schaumburg, IL 60173. Members of the Congress of Neurological Surgeons may call 847.240.2500 with inquiries regarding their subscription to *Congress Quarterly*.

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**Congress of
Neurological
Surgeons**

EDITOR'S NOTE



Ellen L. Air
2021-22 Co-Editor



Clemens M. Schirmer
2021-22 Co-Editor

Connecting you with the ongoing issues in neurosurgery is the continuing focus of *Congress Quarterly* and probably the reason you are holding this issue in your hands. The CNS Annual Meeting provides the ultimate forum to directly connect with colleagues, share experiences, and exchange ideas. This year's meeting in San Francisco will be no different. We look forward to greeting all of you in

person to celebrate the theme *Neurosurgery Connected*. Here we preview the many offerings that make the CNS Annual Meeting THE place for cutting-edge science, skill-building courses, and key resources for a successful practice. Attendees can personalize their experience with expanded abstract sessions, case-based and subspecialty sessions, symposia, luncheons, and dinner seminars. It also remains the premier platform for our corporate partners to bring you the latest technology and expertise to experience, touch, and discuss. While in the exhibit hall, stop by the Xperience lounge for sustenance and more stimulating experiences that are unparalleled, like our daily live surgery session.

The CNS continues to be an innovator and again breaks ground by planning two special sessions focused on data science and medical education in neurosurgery. Not well captured by traditional subspecialty-focused programming, these areas are consistently ranked among the top areas of interest by our members. Collaborations with CSNS, Joint Sections, our partner international societies, and the North American Skull Base Society are the basis of additional innovative sessions. Expanded medical student and resident programming provide critical resources for a successful neurosurgical career. Of course, we don't want you to miss the featured speakers highlighted on pages 4-7.

We want to highlight that the annual meeting is again focused on promoting diversity and inclusion through a diverse array of speakers, a special session on "Navigating Workplace Culture" and the return of the Pathway to Neurosurgery program (see page 19). Providing a strong platform for exchanging ideas moves the conversation in our field forward and keeps our specialty as vibrant and exciting as it has been throughout the times. We know once you've read all that's to come, you'll be as excited to head to San Francisco for the CNS 2022 Annual Meeting as we are!

Clemens M. Schirmer, MD and Ellen L. Air, MD
Co-Editors

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PRESIDENT'S MESSAGE



Nicholas C. Bambakidis, MD
President, Congress of
Neurological Surgeons

Dear Colleagues,

I am honored and excited to invite you all to San Francisco, October 8-12, for the 2022 CNS Annual Meeting as we explore our theme, *Neurosurgery Connected*. This theme celebrates not only the importance of connectivity in our field, but also the many ways our connections with our colleagues, industry partners, and essential neurosurgical organizations help to advance our individual practices and our specialty as a whole.

Working with Annual Meeting Chair, Ashok Asthagiri, Scientific Program Chair, Lola Chambless and Vice Chair, Garni Barkhoudarian, we have highlighted this interconnectedness throughout our scientific program. We are proud to partner with organizations throughout our specialty to introduce several new offerings in San Francisco, as well as to bring back some perennial favorites. To expand our abstract offerings and spotlight a key area affecting neurosurgery, we have collaborated with the Senior Society to create a new abstract session on Medical Education and Training on Tuesday, October 11, from 7:00-8:30 am. We have also collaborated with the North American Skull Base Society (NASBS) to develop a new joint symposium, called "Frontiers in Skull Base Surgery," on Saturday, October 8.

Our Diversity, Equity and Inclusion committee has partnered with both the American Society of Black Neurosurgeons (ASBN) and Women in Neurosurgery (WINS) to bring important talks and courses to the program that address DEI issues in our field. The committee will also partner with the CNS Foundation (CNSF) to bring back the successful Pathways to Neurosurgery program that was introduced in Austin last year. For details, see Tiffany Hodges' update on page 19.

We are once again honored to welcome our International society partners, the Japanese Congress of Neurological Surgeons (JCNS), the Neurological Society of India (NSI), and the Sociedade Brasileira de Neurocirurgia (SBN). Peter Nakaji and Clemens Schirmer share an update on page 21 on our international offerings in San Francisco. And of course, we are pleased to partner with the Sections as always to bring you the most relevant and timely updates in each neurosurgical subspecialty. Be sure to check out Khoi Than's update on page 16.

Of course, you will also find all the dynamic neurosurgical content, expert insights and engaging presentations you have come to expect from the CNS. We have an outstanding lineup of special speakers headlining each general scientific session, from award-winning actor and entertainer, William Shatner, and NFL legend, Troy Aikman, to combat pilot, Vernice "FlyGirl" Armour. More than 1,500 original scientific abstracts will be presented throughout the meeting in our sunrise sessions, section sessions and our Interactive Multimedia Research Presentation Session. More than 60 optional courses are available, allowing you to make the most of your time in San Francisco by taking a deeper dive into the clinical and non-clinical topics relevant to your practice.

It is my great privilege to welcome our 2022 Honored Guest, Dr. Robert F. Spetzler. Dr. Spetzler is a pioneer in cerebrovascular neurosurgery and skull base tumors, contributing a number of innovations to the field. In the more than 30 years that Dr. Spetzler was at the helm of the Barrow Neurological Institute (BNI), it grew



into an internationally recognized center of excellence that attracts both visiting health care professionals and patient referrals from around the world. Dr. Spetzler will be hosting a meet and greet session in the CNS Xperience Lounge, where you can also connect with your colleagues and corporate partner contacts.

This is just a glimpse of all that is planned in San Francisco. Throughout this issue of Congress Quarterly, members of our Scientific Program Committee have shared more details about the sessions they are working on. On behalf of the CNS Executive Committee and the entire Annual Meeting Committee, I want to express our gratitude to these volunteers for their work in pulling this incredible program together. We look forward to welcoming you to this year's Annual Meeting in San Francisco. ■

STAY CONNECTED



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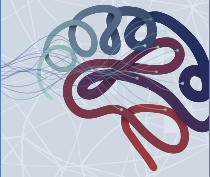
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Ashok Asthagiri, MD



Lola B. Chambless, MD



Garni Barkhoudarian, MD



Nicholas Bambakidis, MD

A Preview of the 2022 CNS Annual Meeting

The CNS Annual Meeting Committee is proud to highlight the 2022 CNS Annual Meeting in San Francisco, California. Our theme, *Neurosurgery Connected*, is not only meant to emphasize connectivity within the central nervous system, which will integrate into the scientific portions of the meeting, but also emphasize the nature of interpersonal connections that make our meeting meaningful to attendees.

Based on your feedback, we continue to evolve the scientific and social programs to meet your needs. Understanding that our membership prioritizes impactful research and scholarly presentations, we have added *five abstract sessions* to give authors more opportunities to present their work at the podium. We look forward to the meaningful engagement that will be produced in the fields of data science and medical education/training, as we create sessions dedicated to underscore these areas that have seen a significant increase in abstract submissions over the past few years. Coupled with this, we are pleased to announce that the CNS will be introducing new categories for abstract awards in pediatrics, health care disparities in workforce diversity, and medical education.

In addition to bringing more hands-on courses on topics like pediatric scoliosis, stereotactic approaches to epilepsy, and peripheral nerve exposure and surgeries, we are also excited to introduce a new collaboration with the North American Skull Base Society (NASBS) that will bring an entire Saturday symposium related to the unique challenges, complex anatomy and management for these conditions.

The CNS has demonstrated a deep commitment to the spirit of diversity, equality and inclusion, which you will see reflected throughout our program. Whether you are seeking relatable insights from our diverse group of special speakers or participating in one of our plethora of educational offerings, you'll find our speakers truly represent the breadth of our membership. On Tuesday, we are excited to invite you all to a free lunch seminar on the topic of the changing face of neurosurgery and navigating workplace culture.

In the spirit of connection, we also hope you will join us for our Opening Reception on Sunday, October 9 at Oracle Park, home to the San Francisco Giants. It will be a fun and relaxed opportunity to reconnect with your colleagues from around the world. We look forward to seeing you there.

2022 Honored Guest

Robert F. Spetzler, MD

Robert F. Spetzler, MD, is Emeritus President & CEO; Emeritus Professor and Chair, Department of Neurosurgery, Barrow Neurological Institute.

Born in Stierhoferstetten, Germany, Dr. Spetzler immigrated to the US with his family as a young child. Dr. Spetzler's interest in neurovascular surgery developed while training as a resident under Dr. Charles B. Wilson at the University of California at San Francisco. During his final year of training, he was awarded a Trauma Fellowship from the National Institutes of Health (NIH), and received the CNS Resident Award at the 27th CNS Annual Meeting.

After residency, Dr. Spetzler joined the Department of Neurosurgery at Case Western Reserve in Cleveland, OH. In 1980, he received his first major NIH grant, developing a baboon model of stroke that has been particularly generative for testing new therapeutic treatments for stroke and cerebral ischemia.

In 1983, Dr. Spetzler was recruited by Dr. John R. Green to assume the J. N. Harber Chair of Neurological Surgery at the Barrow Neurological Institute (BNI) in Phoenix, Arizona. Under Dr. Spetzler's leadership, the BNI has grown into an internationally recognized center of excellence that attracts both visiting health care professionals and patient referrals from around the world. The residency program has become the largest, and one of the most highly sought-after programs because of the diversity of clinical experience and emphasis on developing independent research projects.

Dr. Spetzler's many contributions include the development of the NPPBT and a grading system for cranial and spinal AVMs; cardiac



arrest for giant intratentorial aneurysms and the development of innovative approaches for CM's in the brainstem and thalamus. Overall, he has published 856 articles in refereed journals and authored 29 books. He has presented virtually every named lectureship nationally and internationally.

Among countless honors, Dr. Spetzler was awarded an honorary doctoral degree from his undergraduate alma mater, Knox College, and was chosen as the CNS Honored Guest in 1994-the youngest member ever to receive this award. In 2017 he received the AANS highest honor, the Cushing Medal. He is happily married to Nancy, his inspiration and the mother of their two precious children.

Be sure to catch Dr. Spetzler's presentations throughout the Annual Meeting:

Monday, October 10

- **M01:** Honored Guest Lunch "My Journey in Neurosurgery"
- **GSSII:** 9:22 – 9:42 am Honored Guest Presentation: "What Cavernous Malformations Have Taught Us"

Tuesday, October 11

- **GSS:** 9:15 – 9:40 am Honored Guest Presentation: "Management of Vascular Lesions of the Spinal Cord"

2022 Highlights

This year's meeting is full of can't-miss content and opportunities to enrich your practice. We encourage you to engage with the following features of this year's meeting:

- Outstanding neurosurgical research with dedicated awards for every oral presentation session and best clinical, basic science, and operative technique posters for each section, as well as new abstract award categories in pediatrics, health care disparities in workforce diversity, and medical education.
- The CNS Xperience Lounge remains an essential area to network, explore, and immerse yourself in technology and education. Attendees will have the opportunity to meet and interact with the Innovator of the Year, and participate in wellness activities.
- Daily live surgeries, broadcast via telemedicine to the CNS Xperience Lounge main stage!
- International Neurotrauma Symposia – "Neurotrauma Across the Lifespan and Around the World" brings together experts in both pediatric and adult neurosurgery to illustrate the challenges they face and the best practices they endorse as they offer insights

into the care of patients across borders, through highly varied clinical settings, and throughout the human lifespan.

- New Sunrise Session and Late Breaking Abstract Session focused on Data Science research, held on Monday, October 10.
- Interactive Multimedia Research Presentation Session – A dedicated poster session with wine and cheese on Tuesday afternoon will allow neurosurgeons to present their work to colleagues, with additional opportunities for mini-oral presentations during the poster session.
- Symposia on Saturday and Sunday offer a deeper dive into clinical issues relevant to your practice, with more clinical and scientific content at a great value.

Featured Speakers

William Shatner, CNS Walter E. Dandy Orator

William Shatner has cultivated a career spanning more than 60 years as an award-winning actor, director, producer, writer, recording artist, and horseman. He is one of Hollywood's most recognizable figures and a major philanthropist.

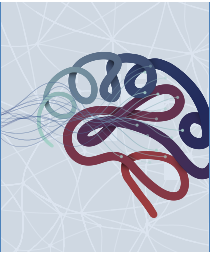
Perhaps best known for his role "Captain James T. Kirk" in the television series *Star Trek* and related *Star Trek* movies, Shatner also won Emmys and his first Golden Globe for his portrayal of eccentric lawyer "Denny Crane" on both *The Practice* and *Boston Legal*, along with other Emmy, Golden Globe and SAG Award nods. He is currently the host and executive producer of *The UnXplained* on The History Channel, which explores the world's most fascinating, strange, and inexplicable mysteries.

Off the screen and broadcast waves, Shatner has authored nearly 30 best sellers in both fiction and non-fiction, including his autobiography *Up Till Now*, and *Leonard: My Fifty-Year Friendship with a Remarkable Man*. Shatner's newest book, "Live Long And... What I Might Have Learned Along the Way," was released in September 2018.

A longtime dedicated breeder of American Quarter horses, Shatner has also had enormous success developing and riding world champions and has won numerous world championships in several equine events. His passions for horses and philanthropy were united when he started the Hollywood Charity Horse Show, which benefits Southern California children's and veterans' charities.



William Shatner will present, "Space Is Not the Final Frontier," during the General Scientific Session on Monday, October 10.



Dee Caffari

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

Dee Caffari, MBE, is the first woman to have sailed single-handedly and nonstop around the world in both directions, and the only woman to have sailed nonstop around the world a total of three times. A world record-setting yachswoman, Caffari is continuing to challenge herself; this summer, she will be teaming up with Shirley Robertson, OBE, to take on the nonstop Round Britain and Ireland Race doublehanded in a 33-foot yacht. An inspirational skipper and passionate ocean advocate, Caffari is keen to nurture diversity and inclusion.

Outside of sailing, Caffari continues to showcase her talents as a presenter and on the international motivational speaker circuit. She also values her roles supporting charities including RNLI, UKSA, Sail 4 Cancer, and charities committed to improving marine life and reducing plastic such as Fauna & Flora Int. and A Plastic Planet. She is Chair of the World Sailing Trust, a global charity that aims to safeguard our planet's waters and the future of the sport of sailing.

One of Britain's most inspirational women, Caffari's warm delivery brings her story alive—the drama, the challenges, and the lessons hard-learned during her world record-setting voyages circumnavigating the planet.



Dee Caffari will present "Inspiring Leaders: Inspiring Teams" during the General Scientific Session on Wednesday, October 12.

Troy Aikman

Former NFL Quarterback, Hall of Famer, and Broadcaster

Troy Aikman has harnessed the drive and dedication that formed the foundation of his Hall of Fame football career with the Dallas Cowboys in several successful business ventures since retiring from the game following the 2000 season. Through broadcasting, real estate, and The Troy Aikman Foundation, Aikman has quickly discovered numerous ways to occupy himself with "retirement."

After leaving the playing field, Aikman joined the NFL on FOX as a game analyst. He quickly displayed the accuracy and work ethic that marked his playing career and moved up to FOX's No. 1 broadcast crew prior to the 2002 season. Teamed with Emmy Award-winning, play-by-play announcer Joe Buck, Aikman has impressed both critics and fans with the consistently entertaining



and informative brand of coverage the duo provides. Aikman has received three Emmy nominations for his broadcasting efforts and has broadcast four Super Bowls.

During Aikman's 12-year playing career, he set 45 Cowboys' passing records, including the club's career record for completions (2,898), passing yards (32,942), touchdowns (165), and completion percentage (61.3). Aikman is one of only four quarterbacks to guide his team to victory in three Super Bowls (XXVII, XXVIII, and XXX). In February 2006, Aikman was voted into the Pro Football Hall of Fame, becoming just the sixth player in Cowboys history to enter those hallowed halls.

Join us for "A Moderated Conversation with Troy Aikman" during the General Scientific Session on Tuesday, October 11.

Vernice "FlyGirl" Armour

John Thompson History of Medicine Lecturer.

Vernice "FlyGirl" Armour has been tested her whole life. A gutsy trailblazer, her resume is an impressive collection of "firsts," including America's first Black, female combat pilot. She served two tours of duty in Iraq as a Marine, and was a diversity liaison officer to the Pentagon for Headquarters Marine Corps.

After her military service, FlyGirl revved up her career in the private sector as an entrepreneur, consultant to business, and author of "Zero to Breakthrough, The 7-Step, Battle-Tested Method for Accomplishing Goals that Matter." As a speaker, FlyGirl unleashes hard-hitting advice and amazing anecdotes from her adventures on the battlefield and in business. In 2007, she launched VAI Consulting & Training, LLC, helping individuals and organizations make gutsy moves and create breakthrough results by applying her "Zero to Breakthrough" Success Model—a mindset that helped to propel her career and kept her safe in air combat.

As a Black, gay woman and single mom, FlyGirl brings vital experience to her role as a member of the Forbes School of Business & Technology Board of Advisors and COMCAST/NBCUniversal Joint Diversity Council. She has received two honorary doctorates and has received numerous awards as a pioneering pilot, including honors for her commanding role in Science, Technology, Engineering, and Mathematics (STEM).



Vernice "FlyGirl" Armour will inspire you with her talk, during the General Scientific Session on Sunday, October 9.

Cliff A. Megerian

Cliff A. Megerian, MD, is Chief Executive Officer of University Hospitals (UH), a comprehensive health system with annual revenues of \$5.2 billion, 23 hospitals (including five joint ventures), more than 50 health centers and outpatient facilities, and over 200 physician offices located throughout 16 counties. He is also a Professor in the Department of Otolaryngology, Head and Neck Surgery, at Case Western Reserve and co-founder of UH's Cochlear implant program—one of the largest programs in the country, performing more than 1,500 cochlear implant surgeries.



In previous leadership roles within UH, Megerian managed the clinical integration strategies, policies, and practice guidelines for over 2,500 UH employed physicians across 14 UH system institutes. He also raised physician productivity to its highest level and significantly increased physician engagement and research funding.

Megerian's clinical career has been devoted to the management of hearing loss, chronic ear disease, cholesteatoma, otosclerosis, vertigo, and other otology and neurotology issues. He is also an expert in the diagnosis and treatment of acoustic neuroma. He has published over 130 peer-reviewed manuscripts and abstracts and has served as visiting professor at numerous medical schools and institutions throughout the world.

His research interests in the pathogenesis of Meniere's disease have been funded by the NIH and DRF. He sits on the Editorial Board of key journals in his field and has been selected by the FDA to serve as a consultant in the regulation of Ear, Nose and Throat Devices. He has been appointed by the American Academy of Otolaryngology to represent the Academy on the Joint Committee on Infant Hearing.

Dr. Megerian will be presenting "Health Care for Tomorrow, Today" during the General Scientific Session.

Warren R. Selman

Inaugural Warren R. Selman Lecture on Mentorship.

Warren R. Selman, MD is the Harvey Huntington Brown Jr Emeritus Chair and Professor of Neurosurgery at Case Western Reserve University School of Medicine and University Hospitals Cleveland Medical Center. Dr. Selman's clinical specialties and research interests include the surgical management of cerebrovascular and pituitary disorders, and traumatic brain injury. He is also actively involved in the development



and application of virtual and augmented reality in preparation and navigation for neurosurgical procedures, and for resident and medical student education, and patient education and engagement.

Following medical school at Case Western Reserve, Dr. Selman completed two years of research on focal cerebral ischemia under the direction of Dr. Robert Spetzler at University Hospitals and obtained neurosurgical residency training at Case Western Reserve, under the leadership of Dr. Frank Nulsen and Dr. Robert Ratcheson. Prior to the completion of residency, he received specialty training in transsphenoidal surgery at the Mayo Clinic from Dr. Edward Laws.

Dr. Selman was appointed Assistant Professor of Neurological Surgery at University Hospitals Cleveland in 1984 and later promoted to various roles, including Director of the Cerebrovascular Center, before being appointed Chair of Neurosurgery and The Harvey Huntington Brown Jr Professor of Neurosurgery at Case Western Reserve University SOM in 2005, where he served until 2022.

Dr. Selman has been active in organized neurosurgery, holding leadership and editorial positions at the CNS, AANS and the Section on Cerebrovascular Neurosurgery. He is a Diplomate and former Chair of the American Board of Neurological Surgery, as well as Past President of the Society of Neurological Surgeons.

Dr. Selman will present "Walk This Way: The CNS and the Evolution of Neurosurgical Mentoring" during a General Scientific Session.

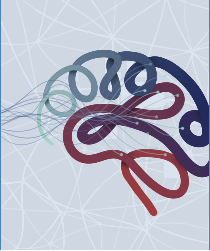
Partner Societies

The CNS is proud to welcome our colleagues from our International Partner Societies—the Japanese Congress of Neurological Surgeons (JCNS), the Brazilian Society of Neurosurgery (SBN), and the Neurological Society of India (NSI).

We are pleased to continue our collaboration with the Association of Neurological Physician Assistants (ANSPA) again this year, with their Annual Fall CME Meeting hosted in partnership with the CNS as a full-day course on Sunday, October 9. We are also looking forward to our new partnership this year with the North American Skull Base Society (NASBS) to deliver the full-day "Frontiers in Skull Base Surgery" symposium.

Register Today

We are excited to welcome you to San Francisco to not only celebrate the innovation and bright future of our profession, but also to connect and share our diverse experiences. 📍



Lola B. Chambless, MD

Abstract Sessions – Expanded Opportunities and Enhanced Forums



Over recent years, we have noted an exciting trend in the original science submitted to the CNS Annual Meeting: the number and the quality of submissions has steadily increased, reflecting the meeting's reputation as "the" place for top neurosurgical science. Maintaining and building upon that reputation is the charge of the Scientific Program Committee. In 2022, our team made several adjustments to enhance the experiences of both presenters and the audience, and to help our scientists get their work the attention it deserves. Cutting edge science needs to be discussed, and effective presentation forums must promote dialogue. In San Francisco, you will see a variety of sessions aimed towards this goal.

Increased Abstract Sessions for CV, Tumor and Spine

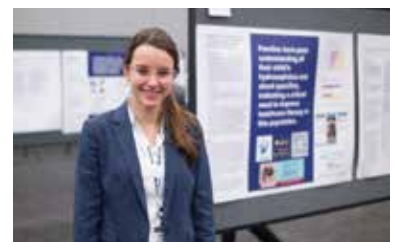
The majority of submitted abstracts focus on work in a single subspecialty area. The number of abstracts directed towards the CV, Tumor and Spine subspecialty sections has increased dramatically in recent years, warranting additional speaking slots on these topics. Accordingly, new Sunrise Science abstract sessions have been added on Monday, Tuesday, and Wednesday from 7:00-8:30AM to give more researchers the opportunity to present to a sub-specialty focused audience.

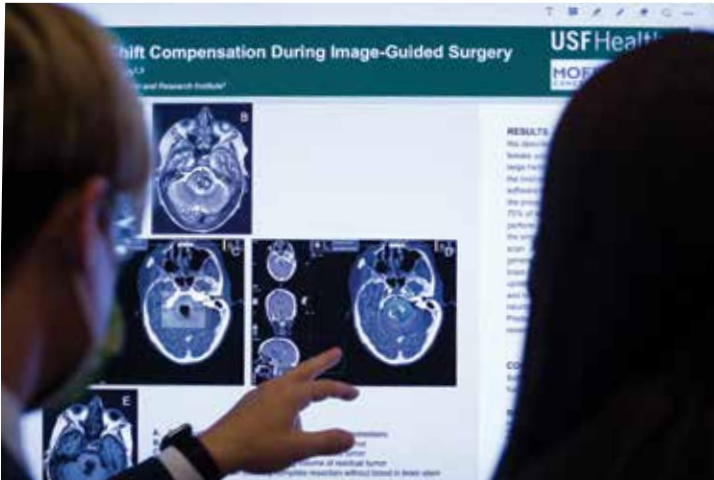
New Abstract Sessions on Data Science and Medical Education/Training

There are some exciting research topics that defy our traditional subspecialty-based orientation. These may be based more on shared methodology than disease states, like work in the data science space. They may also reflect emerging scientific fields, like the empiric study of surgical training. For the first time, in 2022, researchers have the option of submitting their work to these specific sessions where their brand of research will be concentrated in a single forum. These sessions are specifically designed to promote audience participation and discussion, mixing abstracts with exciting keynote addresses from content experts and featuring "audience choice" awards. Grab a coffee and join us for Data Science on Monday from 7:00-8:30 am and the CNS/SNS Session on Medical Education and Training on Tuesday from 7:00-8:30 am.

Focus on Mini-Podium and Live Poster Presentations

The Tuesday evening multimedia poster session debuted at the 2019 CNS Annual Meeting, and it was an instant hit. In this session, some presenters give very short, focused podium presentations. They and





> AS CHAIR OF THE SCIENTIFIC PROGRAM COMMITTEE, MY GOAL IS TO SEE THE MOST RELEVANT, IMPACTFUL, AND INNOVATIVE SCIENCE PRESENTED IN SAN FRANCISCO. WE DO THIS BY GIVING OPPORTUNITIES TO THE SEASONED MASTERS IN OUR FIELD AS WELL AS THE YOUNG RISING STARS WHO WILL GUIDE THE CARE OF OUR PATIENTS IN THE YEARS TO COME. <

others also present their printed posters live to an audience which includes experts from every subspecialty section; they are there to provide feedback, enhance discussion, and ultimately vote on the winners of the top subspecialty poster awards. This dynamic session is a great opportunity for young scientists to present their research, network, and build relationships with others interested in the same topics. Look for expanded presentation slots, more section delegates, and (of course!) wine and cheese at this event in San Francisco, held Tuesday from 5:45-7:15 pm.

More Awards than Ever Before

Why do awards matter? They incentivize top researchers to submit their work to the CNS Annual Meeting, allowing us to concentrate the best new science for our audience. They support young investigators financially and with moments of recognition that are valuable for grants and promotion. Finally, they help motivate scientists to focus on topics that we as a field feel are important or perhaps underexplored.

In 2022, we worked with several sections to offer new awards with these goals in mind. These include new awards in the tumor section

sponsored by KLS Martin, Elekta, and Leica. The Section on Pediatric Neurosurgery is sponsoring two new awards, for the best abstracts in basic science and clinical research. The best abstract in Peripheral Nerve will also receive an award, as will the top abstract from a junior faculty in the Stereotactic and Functional Section. We are also offering several new awards to reward research in emerging fields, including data science and medical education, where an "audience choice" award will honor the presenter with a particularly polished delivery. Finally, the CNS Foundation has joined us as a partner to sponsor awards for research related to issues of diversity, equity, and inclusion within neurosurgery.

The CNS Scientific Legacy

As Chair of the Scientific Program Committee, my goal is to see the most relevant, impactful, and innovative science presented in San Francisco. We do this by giving opportunities to the seasoned masters in our field as well as the young rising stars who will guide the care of our patients in the years to come. I hope you will join us in October to engage in the vigorous dialogue and exchange of ideas that is at the heart of scientific discovery. 🍷



Eric Karl Oermann, MD

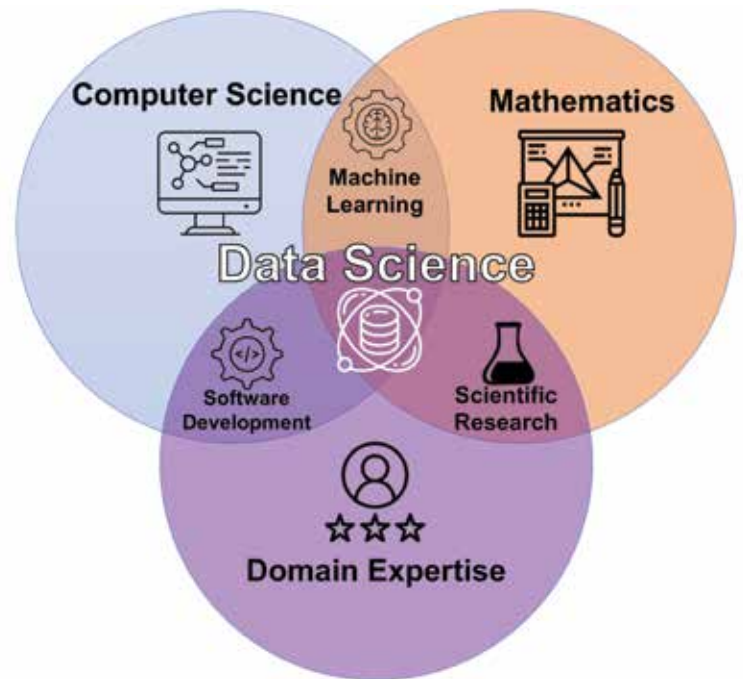
Daniel Orringer, MD

2022 CNS Annual Meeting: The CNS Data Science Abstract Session

It isn't hard to find several recent examples of neurosurgical data science that have an impact beyond the field of neurosurgery, ranging from the analysis of neurological imaging^{1,2}, digital pathology³, or administrative clinical data⁴. The emergence of Data Science as its own, unique, interdisciplinary field can be viewed as simply being part of the continued march of applied mathematics seeking to bring mathematical theory to bear on the concrete realities of the world. In this sense, Data Science is the "science of data" with its roots in the mathematics of linear algebra, numerical optimization, information theory, and computer science (itself arguably a very special subfield of applied mathematics). Another conception of Data Science though is not just the science of data, but the "science of the data" whatever that may be. A data-centric view of data science isn't an excuse to ignore the applied mathematics, but it is an acknowledgment that data science begins and ends with real world data. Real world data necessitates domain expertise then—expertise in how the data is generated, distributed, altered, and interacts with the rest of the world.

If Data Science requires domain expertise, then there is no better place to promote it than at our national meeting, where experts around the world can gather to collectively discuss, listen to, and advance the future of neurosurgical data science. Over the past eight years the Congress of Neurological Surgeons has increasingly featured data science at our Annual Meetings under the leadership of our Scientific Program Chair, Lola Chambless, MD. At the 2022 CNS Annual Meeting, for the first time, we will be featuring Data Science in its own abstract session. This coming-of-age of data science both recognizes the importance of data science to our field, and also showcases the current efforts by some of neurosurgery's premier researchers. Perhaps most importantly though, the entire CNS Annual Meeting is, in that latter sense, a data science abstract session as the data science of neurosurgery begins and ends with the real world practice of neurosurgery itself.

The Data Science Abstract Session will be held Monday, October 10, from 7:00-8:30 am. ■



References

- 1 Titano, J. J. et al. Automated deep-neural-network surveillance of cranial images for acute neurologic events. *Nat. Med.* 24, 1337–1341 (2018).
- 2 Gevaert, O. et al. Glioblastoma Multiforme: Exploratory Radiogenomic Analysis by Using Quantitative Image Features. *Radiology* 276, 313 (2015).
- 3 Hollon, T. C. et al. Near real-time intraoperative brain tumor diagnosis using stimulated Raman histology and deep neural networks. *Nat. Med.* 26, 52–58 (2020).
- 4 Muhlestein, W. E., Akagi, D. S., Davies, J. M. & Chambless, L. B. Predicting Inpatient Length of Stay After Brain Tumor Surgery: Developing Machine Learning Ensembles to Improve Predictive Performance. *Neurosurgery* (2018) doi:10.1093/neuros/nyy343.



Jason Heth MD



Nitin Agarwal MD



David Limbrick, MD PhD

Medical Education and Training Abstract Session

This year, the 2022 CNS Annual Meeting will include a new scientific session on Medical Education and Training in neurosurgery. This reflects a trend towards more empiric assessment of educational methods in the field of neurosurgery and the growth of educational science within surgery as a whole. The leadership of the CNS and Society of Neurological Surgeons (SNS) jointly seek to promote research and professional development in medical education and training. These organizations are optimally positioned to carry out this mission. Since its inception in 1951, the CNS has sought to be a society dedicated to neurosurgical education and research, encouraging and facilitating active debate of new ideas. The SNS began as the first society devoted specifically to Neurosurgery in 1920, with a primary focus on the evolution and iterative improvement in neurosurgical education. Today, the SNS serves as the representative society for U.S. residency program directors and academic chairs. Thus, the CNS and SNS share primary missions devoted to neurosurgical education and research, forming a natural partnership to establish a forum to discuss neurosurgical education as a discipline unto itself.

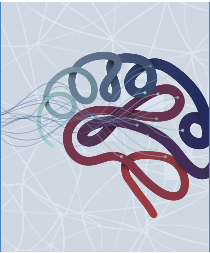


The CNS is honored to partner with the SNS to deliver this important new scientific session on Medical Education and Training in neurosurgery.

Medical education and learning science are broad and dynamic areas of study. Topics include assessments of medical knowledge and surgical skill, simulation, attainment of competency, and longitudinal methods to ensure progression of knowledge, skills, and attitudes across the entire arc of an individual's medical education. Mentoring across medical school, residency, fellowship, and junior faculty positions is a crucial feature of a successful training program. Motivation for this research comes from several quarters: the requirements of national accreditation organizations, professional responsibility to patients and families, and academic programs themselves. All seek to maximize educational outcomes, produce skilled surgeons, and identify and remediate surgeons not meeting metrics or standards. Within the broader field of graduate medical education, many frameworks have been developed but application to the field of neurosurgery requires involvement by experts in our specialty. Neurosurgery has many opportunities to advance our field by stimulating this research.

This unique inaugural session is structured as a forum dedicated to the exchange of ideas, experience, and data by established authorities and future educational scholars. The session is aimed at a neurosurgical audience at all levels, ranging from medical students to junior faculty and residency and fellowship program directors, with an overall goal of fostering career interest in neurosurgical education. Invited educational leaders will present and debate hot topics in this field. The remainder of the session will be devoted to top abstracts that explore assessment of knowledge and surgical skills, simulation, assessment of competency and autonomy, ways for training programs and residency applicants alike to reach the optimal match results, and other related ideas. These can be submitted directly to this session at the CNS abstract center, and two awards for abstracts will be presented. The most outstanding abstract as judged by meeting organizers will be recognized and an "audience choice" award will recognize the best presentation during the session.

This inaugural session at the 2022 CNS Annual Meeting is an exciting opportunity to develop learning science in our field. Join us in the Tuesday Sunrise Session to be a part of the future of training in Neurosurgery. ■



Lola B. Chambless, MD

Customize your Meeting with Symposia and Seminars

Participation in weekend Symposia and Luncheon Seminars offers meeting attendees the chance to customize their meeting, focusing on a variety of specific topics each with expert discussants. Symposia occur on Saturday and Sunday; most are half-day events, which can often be paired to offer a full-day experience at a discounted price. Luncheons take place on Monday, Tuesday, and Wednesday. These bridge the gap between the General Scientific Sessions and the Subspecialty Section sessions in the afternoon, providing a nice opportunity to focus on a topic of interest while also sharing a table and discussion with colleagues.

The menu of ticketed options at the 2022 Annual Meeting is incredibly diverse. Subjects and faculty for many sessions were proposed by the subspecialty members of the Scientific Program Committee and reflect the most interesting hot topics in their fields, both in clinical practice and research. Common themes reflect the key subjects our membership values: technical skill acquisition, clinical advances driving progress for our patients, and methods to optimize one's own career throughout the lifespan of the neurosurgeon.

Learn new technical skills

Looking to bring a new technique to your practice? Hoping to learn core principles from master surgeons? Many of our weekend symposia offer these opportunities. Spine surgeons will be interested to attend sessions like Saturday morning's "Spinal Biomechanics for the Practicing Neurosurgeon" which can be paired with the always popular "My Worst Spinal Complication – Lessons Learned" symposium in the afternoon. There, experts share candidly from their own experiences, and the audience is encouraged to bring their own cases for discussion. Tumor and Cerebrovascular surgeons may opt to attend the all-day Saturday symposium "Frontiers in Skull Base Surgery" which represents a new partnership with the North American Skull Base Society and brings experts from a variety of disciplines for a dynamic and interactive program. Alternatively, they may choose to focus on specific topics such as "Cerebrovascular Bypass" (Sunday morning) or the top selling "3D Surgical Anatomy" (Sunday afternoon). Trainees and practicing neurosurgeons alike can get exposure to cutting edge techniques

in "Hands on Stereotactic Epilepsy" (Saturday morning) and work with the masters in "Peripheral Nerve Surgery: Techniques and Exposures" (Saturday morning). Those interested in pediatrics will want to attend "Hands on Pediatric Scoliosis" (Saturday afternoon) to gain an understanding of a field where neurosurgeons have made major recent contributions.

Get familiar with the latest advances in your field

What are the most interesting breakthroughs in patient care? How will they lead you to change your practice in the next few years? Stay up to date by participating in sessions that bring experts to you to help you interpret recent studies and evaluate novel technologies. For example, the "International Ultrasound Symposium" (Saturday AM) brings global expertise to teach you to incorporate a technology that is relatively easy to obtain but challenging to use well. Speakers in Sunday's "Pain Management in Your Practice" symposium bring perspectives from spine, functional, and pain neurosurgery to report on advances in one of the most important but often neglected areas of neurosurgery: perioperative pain management. Alternatively on Sunday, consider joining the all-day symposium "Neurotrauma





Across the Lifespan and Around the World” where pediatric and adult neurotrauma specialists from disparate practices around the globe converge to learn from each other’s unique perspectives.

If you are looking for a shorter, highly focused session, many of the lunch seminars offer a 90-minute well-defined exploration of a particularly timely subject. With a nod to this year’s meeting theme, *Neurosurgery Connected*, a Monday lunch seminar on “Connectomic Approaches to Neural Modulation” promises to provide an exciting overview of this emerging field of neuroscience. “Artificial Intelligence in Cerebrovascular Surgery” returns on Monday with updates about the rapid expansion of AI-powered technology in this sub-specialty. On Tuesday, consider “Spinal Surgical Options and Clearance for the Professional Athlete” to learn from the neurosurgeons who work with this interesting patient population. On Wednesday, learn how to bridge the gap between pediatric and adult patients with spinal dysraphism in “Management of Complex Tethered Cord in Transitional and Adult Patients.”

Explore ways to optimize your career

One key benefit to attending a live meeting is the opportunity to meet colleagues and engage in organic conversations. Often those discussions help us reflect on our current roles and identify ways to make positive steps in our career planning. Many sessions at the Annual Meeting are designed to encourage those conversations and introduce attendees to ideas that might make their careers more successful and fulfilling.

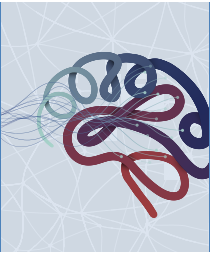
Young neurosurgeons will not want to miss the Saturday morning symposium “The Value of a Neurosurgeon” where they will learn how to evaluate their own contribution to a practice. This can be paired with “Neurosurgeons as Entrepreneurs” on Saturday afternoon to

help attendees think outside of the traditional neurosurgical career structure towards additional rewarding opportunities. Sessions such as “Getting Published” (Tuesday Luncheon) help the academic neurosurgeon or trainee better understand how to improve their writing and disseminate their work. “The Neurosurgeon as Student” (Tuesday Luncheon) features a number of faculty who have obtained complementary degrees that have brought new insights into their neurosurgical practices.

Finally, two sessions warrant special attention. “Swimming with Sharks: Succeeding in the Neurosurgery Match and Residency” (Sunday morning) features an all-star lineup of faculty who have seen it all. This session is a must-attend for students and residents looking to hear candid stories of success, failure, and resilience. As a bonus, the first 20 registrants receive a free copy of the new textbook *Neurosurgery Fundamentals*. Later in the week, I strongly suggest attending “The Changing Face of Neurosurgery: Navigating Workforce Culture” (Tuesday Luncheon.) This session will be offered **FREE** to all attendees and will involve a rich discussion of the role of diversity, equity, and inclusion in our institutions. Trainees and senior leaders alike will find ways to contribute and lessons to learn from this conversation.

Browse the program for even more content

While I have highlighted a few exciting sessions here, there will be many more available in San Francisco. In total, we will offer 30 half-day and two full-day weekend symposia as well as 30 lunch seminars spread across Monday, Tuesday and Wednesday. There is truly something of interest for every meeting attendee. I hope you will enjoy exploring the meeting program and building your own unique schedule for the week. 📌



Garni Barkhoudarian, MD



Ivan El-Sayed, MD

Philip Theodosopoulos,
MD

Lee Zimmer, MD

Frontiers in Skull Base Surgery Symposium

For nearly 70 years, skull base surgery has been a cornerstone of neurosurgical practice. Some of the most formidable and challenging pathology are encountered within this discipline. Over these past decades, there have been many approaches taken to address these pathologies, but one aspect remains constant: Skull Base Surgery is a multidisciplinary problem. The North American Skull Base Society (NASBS), much like other skull base societies worldwide, embodies this very fact. Its members are comprised of neurological surgeons, otorhinolaryngologists, ophthalmologists, radiation oncologists, radiologists, and plastic / reconstructive surgeons among other subspecialists. The wealth of knowledge and

experience brought forth in this organization is fodder for the advancement of this field and the care of our patients.

In the spirit of multidisciplinary collaboration, The Congress of Neurological Surgeons (CNS) and NASBS have organized a joint symposium to be held on Saturday, October 8, 2022 prior to the 2022 CNS Annual Meeting in San Francisco. This symposium, led by Dr. Philip Theodosopoulos, Dr. Ivan El-Sayed (ENT) and Dr. Lee Zimmer (ENT and NASBS President), will feature a multidisciplinary panel of skull base surgery experts addressing the diagnosis and management of commonly encountered skull base pathology. This symposium is ideal for any neurosurgeon or trainee who encounters such patients, no matter how infrequent. The data for treatment options and outcomes are continually updated and a fresh update is necessary to stay current with the field.

Experts will provide updates on the medical, surgical and radiation management of skull base pathology. Following each session, surgeons will explore challenging cases and complications followed by expert panel discussion with audience participation. A thorough debate should highlight challenges that all neurosurgeons face within this patient population.

Dr. Ricardo Carrau, professor of Otolaryngology – Head and Neck Surgery at The Ohio State University, a well-known pioneer of endoscopic endonasal skull base surgery will be our keynote speaker. He will be discussing the role of Innovation in Skull Base Surgery, which is certain to be an inspiring lecture.



All attendees are invited to a reception immediately following the symposium (included in price of symposium), where faculty and attendees can further deliberate these issues, and more, in a relaxed environment.

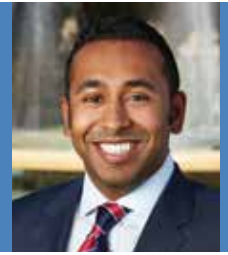
The CNS and NASBS hope this joint symposium will further the knowledge of skull base surgery within the neurosurgical membership, as well as foster collaboration and research amongst the participants to better advance the delivery of care for these patients. ■



Dr. Ricardo Carrau, Professor of Otolaryngology - Head and Neck Surgery at The Ohio State University will deliver a keynote address on the role of innovation in skull base surgery.



Jennifer Sweet, MD



Anand Veeravagu, MD

Guidelines Sessions



Sessions designed to deliver these evidence-based reviews from our recently published practice guidelines in a comprehensive 90-minute presentation. Each session is led by the same volunteer neurosurgeons who served on the task force that developed the guidelines.

We begin Monday morning with two concurrent sessions. “Guidelines Session I: The Preoperative Spine” session presents the key conclusions of our 2021 guideline, reviewing the best evidence in the management of opioid medication in the preoperative spine patient. The session, led by Drs. Daniel Hoh, Marjorie Wang and Basma Mohamed, will also review the evidence related to preoperative opioid weaning and patient-reported outcomes or adverse events. A concurrent session “Guidelines Session II: Spinal Cord Stimulation” will review the findings of the upcoming Guideline regarding the indications for spinal cord stimulation as well as the best management practices and technical nuances of using these devices. This session will be led by Drs. Mark Malinowski, Todd Sitzman and Ashwin Viswanathan.

On Tuesday, “Guidelines Session III: Chiari Malformations” will address the evidence basis for the operative and non-operative management of Chiari malformations. This session will be led by Drs. Libby Kosnik Infinger, Sarah Jernigan and Jogi Pattisapu. Running concurrently, “Guidelines Session IV: Progressive Glioblastoma” presents a critical review of the best current evidence for treatment of glioblastoma, including discussions of the role of surgery and the impact of extent of resection on overall management. This session, led by Drs. Abigail Goodwin, David Ormond and Evan Winograd, will also cover the evidence around the benefits of additional radiation therapy, the utility of cytotoxic chemotherapy and the use of targeted agents informed by an expanded understanding of the molecular events in tumorigenesis.

On Wednesday, “Guidelines Session V: Pediatric Hydrocephalus” will present the consensus regarding standard of care approaches for pediatric hydrocephalus, published in late 2020. The session, led by Drs. Lissa Baird, David Bauer, Ann Flannery and Dimitrios Nikas, covers infection prevention and treatment, the effect of valve design, ventricular catheter location and third ventriculostomy on outcome, as well as the use of assistive technologies. ■

With the peer-reviewed neurosurgical literature ever-expanding, it is not only difficult to stay abreast of all key clinical trials but increasingly challenging to judge the quality and value of each study as you gauge how it should impact your clinical practice. That’s why the CNS Guidelines Committee develops guidelines that comprehensively evaluate the published literature and provide evidence-based recommendations on the most important and relevant topics in neurosurgery. For the past decade, the CNS has invested tremendous resources in this effort, maintaining an in-house infrastructure and robust committee structure that allows us to produce, review and disseminate new guidelines each year.

One of the primary reasons our members come to the CNS Annual Meeting is to stay up to date on best practices in the field. In San Francisco, we have put together five morning Guidelines



Khoi D. Than, MD

Section and Case-Based Sessions



The section and case-based sessions at the CNS Annual Meeting offer a renewed focus on discussing complication management and debating the latest controversies in all fields of neurosurgical practice. The programming truly is relevant whether one is a general neurosurgeon or a sub-specialist. Below are a few of the more interesting topics to be discussed. All Monday and Tuesday section sessions also include presentations for the highest-graded abstracts submitted to the Annual Meeting.

Cerebrovascular

The CV Section will discuss the evolving treatment paradigms for cerebrovascular disease, with Monday lectures on management of cerebral spinal fluid dural fistulae, endovascular shunting, venous stenting for pseudotumor cerebri, and middle meningeal artery embolization for chronic subdural hematoma. Tuesday's session focuses on the future of stroke care, with lectures on stem cells in stroke treatment and robotic thrombectomy, amongst others. Case-based sessions cover the multimodality treatment of AVM (Tuesday) and management of dural arteriovenous fistulae (Wednesday).

Council of State Neurosurgical Societies

On Monday, the CSNS offers an interesting panel of neurosurgeons that have gone beyond the department chair role to become hospital and health system leaders. Tuesday's session focuses on quality, patient safety, and cost reduction. The CSNS has organized two "case-based" sessions that will be valuable for younger and experienced neurosurgeons alike: Tuesday's session goes over financial planning for neurosurgeons, while Wednesday's focuses on key points of neurosurgical contracts. These will be valuable sessions for both younger and more experienced neurosurgeons alike.

Pain

The Pain Section offers a dedicated session on Monday focused on headache and migraines, followed by three exciting debates at the case-based session. On other days, Pain Section ambassadors will also deliver talks at other section sessions—including Dr. Steve Falowski's Tuesday presentation to the Spine Section on interventions pain neurosurgeons offer patients with low back pain. This is a great way to promote discussion between the various subspecialties of neurosurgery and to break out of our silos.

Pediatrics

The Pediatric Neurosurgery Section sessions focus on the fetal repair of myelomeningocele (Monday) and surgical management of skeletal dysplasias (Tuesday). They also offer two case-based sessions: a Monday panel discussion on experts' worst complications in pediatric neurosurgery, and a Tuesday discussion on when to perform instrumented fusion in patients with Chiari malformation. Of note, Monday's case-based session will be followed by a networking reception for surgeons, trainees, and students interested in pediatric neurosurgery.

Peripheral Nerve

The peripheral nerve programming really focuses on the latest advancements in the field, including brain plasticity for nerve transfer, nerve stimulation for regeneration, and intraoperative nerve monitoring during Monday's session and nerve reconstruction on Tuesday. A case-based session on Tuesday covers management of sports-related spine and peripheral nerve injuries, while Wednesday's session featuring premier surgeons' operative videos on some of the more common peripheral nerve conditions should be particularly useful to all of the meeting's attendees.

Spine

The Spine Section explores hot topics with Monday's session on spinal endoscopy, spinal cord injury, and metastatic spine disease. Tuesday's session focuses more on current economic and practice trends in spine surgery. Case-based sessions feature a panel of preeminent surgeons discussing their most difficult cases (Monday), as well as a discussion on arthroplasty vs. ACDF vs. cervical foraminotomy (Tuesday). Of note, there is another case-based session on Tuesday (being categorized under the Tumor Section) that will cover the multidisciplinary treatment of spinal metastatic disease.

Stereotactic and Functional

On Monday, the Stereotactic and Functional Neurosurgery Section discusses the latest in movement disorder management, including multi-lead DBS and DBS for speech modulation. Tuesday's session features two debates covering thalamic sEEG, and RNS vs. DBS for MRI-negative dominant mesial temporal epilepsy. The case-based session on Monday covers cases in psychiatric neurosurgery, while Tuesday's case-based session discusses thalamic neuromodulation for epilepsy.



Trauma

The Trauma Section's Monday session includes the annual Tabor and Miller lectures, delivered by Drs. Ann Parr and David Okonkwo, respectively. Tuesday's session focuses on decision-making and prognosis in the care of patients with TBI. Monday's case-based session featuring debates on controversial topics in the management of neurotrauma should be particularly entertaining, while Tuesday's session features a panel of traumatologists discussing their worst complications.

Tumor

The Tumor Section's focus on Monday will be on the intraprocedural delivery of adjuvant treatments for brain and spine tumors. On Tuesday, the Section focuses on precision medicine, with lectures on CAR T-cells and organoid-based therapy for glioblastoma, targeted therapy for brain metastases, and precision medicine for pediatric brain tumors. Case-based sessions will cover the multidisciplinary treatment of spinal metastatic disease (Tuesday) and the use of mapping and monitoring for tumors in the eloquent cortex (Wednesday).

Thanks to the tremendous efforts of the CNS Scientific Program Committee (fearlessly led by Dr. Lola Chambless) and our Section liaisons, you are sure to gain valuable tips and tricks that will benefit your pre-, intra-, and postoperative care of patients. We are so excited to see you in San Francisco! 🇺🇸



Laura A. Snyder, MD

CNS Annual Meeting 2022 Dinner Symposia

After an exciting day of presentations at the 2022 CNS Annual Meeting, enjoy a relaxed meal with your colleagues discussing some of the most important topics affecting neurosurgeons today. This year, our members once again have the opportunity to enjoy San Francisco's culinary scene while engaging with neurosurgical thought leaders during our Dinner Symposia. For ease, transportation will be provided from the CNS Headquarters Hotel, the Marriott Marquis.

On Saturday, October 8, find yourself in a little bit of Italian heaven as you dine out at Palio and attend Dinner Symposia 1: "Know Your Worth: Negotiation, Compensation, and Reimbursement for the neurosurgeon." As you enjoy steaming plates of Branzino and Bistecca, discuss with your colleagues how to develop the skills to understand your value as a neurosurgeon and negotiate effectively to ensure you are getting what you need from your employers. Compensation can come in many forms, and faculty will discuss ways to achieve appropriate financial remuneration as well as compensation models that also promote academic productivity, appropriate



work-life balance, and other necessities for a long and fulfilling career. This discussion will offer valuable insights for all neurosurgeons, regardless of age, subspecialty, and their current practice environment. Faculty includes Fred B. Meyer, Troy Payner, L. Madison Michael, Shelly Timmons, Joseph Cheng, and Maya Babu. Course Directors are Clemens Schirmer and Anthony L. Asher.

On Monday, October 10, settle in at the hip culinary setting of Prospect with farm-to-table fare and attend Dinner Symposia 2: "Enabling Technologies in Spine Surgery: Fad or Future?" As you enjoy the flavorful artistry of James Beard award-winning Chef Nancy Oakes, discuss with your colleagues the latest technological advances in the field of spine surgery. Topics covered include expandable cages, awake surgery, navigation, robotics, and the surgeon's role in the development of these technologies. Attendees and faculty will critically evaluate this technology regarding its clinical applications, evidence, outcomes, and cost. With this detailed discussion, spine surgeons

of all practice models and at any point of their career can determine which technologies will add value to their practice and how they can do so. Faculty includes Michael Wang, J. Patrick Johnson, Nicholas Theodore, John Pollina, Christopher Maulucci, and Robert Issacs. Course Directors are Christopher Shaffrey and Corinna Zygourakis.



Join us as we enjoy the robust San Francisco dining scene and good food for thought! Please note that the tickets to the Dinner Symposia must be purchased in advance, and they often sell out. Early bird registration is the best time to book these tickets. We look forward to seeing you and your colleagues in the evenings in San Francisco! 🍷



Tiffany Hodges, MD



Maryam Rahman, MD

Diversity, Equity, and Inclusion at the CNS Annual Meeting

Diversity, equity, and inclusion (DEI) are vital components of strategic planning in a growing number of organizations across all sectors. The healthcare sector is especially relevant, as DEI issues directly affect health outcomes. In the United States, a racial reckoning has resulted in necessary dialogue around implicit bias' harmful effects, and has drawn attention to the Black, Indigenous, and people of color who are disproportionately impacted by long-standing systems that were not created with their whole personhood in mind. Together, we can foster equitable access to high-quality care, while building cultural competencies that increase a sense of belonging in spaces where some have historically been excluded. Within neurosurgery, DEI initiatives that engage and educate teams have a great deal of potential.

To address DEI within CNS, the DEI committee spent time discussing DEI through the lens of race, gender, sexual orientation, practice type, and socioeconomic status. The committee went on to identify three overarching goals: **1.** Addressing implicit bias and diversity within the CNS Executive Committee, **2.** Ensuring diversity and equity among CNS members, **3.** Eliminating barriers to attract a diverse pool of neurosurgical residents. These goals were supported by concrete milestones with measures of success and failure, and we were able to achieve some tangible results in a short period of time, which is critical for momentum.

This year, during the CNS Annual Meeting in San Francisco, we will be building on

these successes and continuing to expand our DEI initiatives. First, the DEI committee has implemented concerted efforts to improve diversity within CNS programming and membership, actively reviewing course offerings and faculty representation to reflect this diversity. Ongoing efforts have been made to invite speakers with a diversity of gender, race, ethnicity, geography, practice type, and more.

Moreover, the CNS Annual Meeting will include DEI offerings. A free lunch event *"The Changing Face of Neurosurgery: Navigating Workplace Culture"* will kick off the program. The course will explore power dynamics, biases, and one's own limitations, as well as strategies to enhance one's voice and position in the workplace. A message from the President of the American Society of Black Neurosurgeons (ASBN) will also be delivered during the General Scientific Session. In addition, the schedule for the Annual Meeting will include a number of Women in Neurosurgery (WINS) programs.

We are also working with the CNS Foundation (CNSF) to bring back the successful *Pathways to Neurosurgery* program. Initially developed by the CNS DEI committee to diversify applicants for neurosurgical residency, the inaugural Pathways to Neurosurgery program launched in memory of Dr. Timothy George during the 2021 Annual Meeting in Austin. Thirty-five students from Austin joined us for an immersive experience at the convention center alongside other attendees of the Annual Meeting. Students who participated also applied for a one-year stipend and



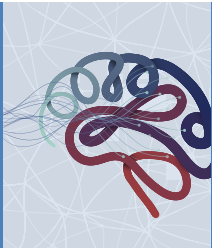
mentorship opportunity with a Dell Medical School neurosurgeon. We are thrilled to announce that two students were awarded a stipend for the year and an opportunity to spend one year with a local neurosurgeon.

In that same vein, the CNS *Pathways to Neurosurgery* program will hold its second event at the Annual Meeting in San Francisco this year, where local high school students from disadvantaged backgrounds will participate in a one-day immersive experience in the convention center. We strongly encourage CNS members to support the event by lending their time to support young learners.

CNS DEI is actively working to impart necessary changes to improve diversity within our programming and promote diversity within neurosurgery. We have accomplished so much within a short period of time, but there is so much more to do! If you are interested in joining this effort, we would be thrilled to have you on board! 📧



Click to learn more about volunteering for the Pathways to Neurosurgery program.



Edjah Nduom, MD

Resident and Medical Student Highlights



Neurosurgical Program Directors answering questions during the Medical Student Town Hall at #2021CNS in Austin, TX

On behalf of the Congress of Neurological Surgeons (CNS) Resident Committee, we are looking forward to welcoming all medical students interested in neurosurgery and neurosurgery residents and fellows to the 2022 CNS Annual Meeting in San Francisco - #2022CNS. The meeting theme this year is *Neurosurgery Connected*, and we are providing many fantastic opportunities for connecting with colleagues and mentors for current and future neurosurgical trainees.

In addition to our stellar longstanding Neurosurgical scientific offerings and programming like the SANS Challenge, there are several new and recurring programs that are specifically aimed at neurosurgical trainees.

If you are in town Saturday night and have questions about how to negotiate a neurosurgical contract, definitely sign up for "Know Your Worth: Negotiation,

Compensation, and Reimbursement for the Neurosurgeon" on Saturday, October 8, from 6:30-8:30 pm. Together with the Council of State Neurosurgical Societies (CSNS), the CNS faculty will provide a primer on issues related to neurosurgical reimbursement, contracts, negotiation and the like.

For Medical Students, make sure not to miss the Medical Student Symposium bundle on Sunday, October 9. From 8 am to 4:15 pm, there are two fantastic programs: "Swimming with Sharks" and "How to get the Most out of your Mentor." Swimming with Sharks provides you with the tools you will need to excel in the competitive landscape of a specialty like neurosurgery. "How to get the Most out of your Mentor" is valuable to neurosurgical trainees at any stage, as being a mentee is an active process. Come find out how to make the relationship work for mentee and mentor alike! The Medical Student Town Hall with neurosurgical program directors was a major highlight of the 2021 CNS meeting in Austin, TX and 2022 will be no different. At this forum, held Monday, October 10 from 5:45 - 7:15 pm these residency directors answer questions from medical students interested in neurosurgery and give you their opinion on the future of the neurosurgical match. There are also opportunities to network with members of the CNS Resident Committee following the formal panel. Hope to see you all there!

Tuesday morning, October 11, there is a sunrise session entitled the CNS/Society of Neurological Surgeons (SNS) Session on Medical Education and Training. For any students or trainees interested in building a career in neurosurgical education, this is a phenomenal opportunity to interact

with leaders who are shaping the future of neurosurgery residency and the match. Attendees will also hear original abstract presentations pertaining to scientific advances in the way we educate future neurosurgeons, with an "audience choice" award for the top abstract.

For lunch on Tuesday, there will be a session from our own NEUROSURGERY Publications group, entitled "Getting Published." Led by the new Editor-in-Chief of Neurosurgery, Douglas S. Kondziolka, this is a great session to learn how to maximize your interactions with our journals and increase your chances of adding additional publications to your CV. If you would rather spend lunch learning how the culture of neurosurgery is changing, check out "The Changing Face of Neurosurgery: Navigating Workplace Culture." In this session, attendees will learn about how the culture of neurosurgery is changing with the times and learn strategies for integrating one's unique identity into our diversifying field.

The CNS Annual Meeting has always been a fantastic meeting for trainees, and it is only getting better. We are looking forward to seeing you there. Are you a medical student or neurosurgical trainee? Tell us what you're most looking forward to at the annual meeting on Twitter at [@CNS_Update!](https://twitter.com/CNS_Update) 📌

Resident SANS Challenge

Join us to watch your colleagues compete live for the **SANS Challenge Cup**.

Preliminary Rounds

Sunday, Oct 9 1:00 - 3:00 pm

Championship Round

Tuesday, Oct. 11 1:45-2:45 pm



Peter Nakaji, MD

Clemens M. Schirmer,
MD, PhD

2022 International Division Update

Coming out of a global pandemic allows reflection and renewed focus on the Congress of Neurological Surgeons, aim to serve its members domestically and worldwide. The International Division has spent the last decade developing programs to connect neurosurgeons globally and provide educational content through international collaboration, through furthering partnerships with key international societies, including the Japanese Congress of Neurological Surgeons (JCNS), the Neurological Society of India (NSI), and the Sociedade Brasileira de Neurocirurgia (SBN).

Due to the COVID-19 situation, most of our international colleagues could not attend the 2021 meeting in Austin in person. As a result, the CNS paused most of the dedicated international scientific programming. Instead, we shifted some content to virtual delivery formats. In other instances, we took the opportunity to engage each partner society individually, resulting for example, in a series of webinars by the CNS International Division and the *Neurosurgery* journal editorial staff and editor-in-chief addressing challenges on the pathway to publication that some junior international colleagues may face. Each of these sessions with SBN, NSI, and JCNS was exceptionally well attended and explicitly geared towards the empirical challenges colleagues face. This type of interaction was a great solution for continuing engagement last year and may even be key to expanding our international engagement to those not able to attend in person.

Perhaps even more than last year, we look forward to welcoming our colleagues from these partner societies to the Annual Meeting in October in San Francisco and promoting the expertise of our respective



societies for scientific exchange. We will kick it off by welcoming our international colleagues at our International Reception Saturday, October 8, from 5:00–6:30 pm at the Marriott Marquis San Francisco. This popular networking event is open to all international attendees and their guests.

We are also planning to feature the expertise and research of our international colleagues in several different forums. On Saturday, October 8, we are offering the “International Ultrasound Symposium”. As Intra-operative ultrasound (ioUS) technology has advanced rapidly over the last decade, there has been a tremendous worldwide increase in its use in routine neurosurgical practice. Global experts on the technology will help neurosurgeons build the skills they need to incorporate state of the art ioUS technology in their own practice. On Sunday, October 9, we present a full-day symposium, “Neurotrauma Across the Lifespan and Around the World,” which brings together international experts to present their unique perspectives on neurotrauma management. Experts in both pediatric and adult neurosurgery will illustrate the challenges they face and the best practices

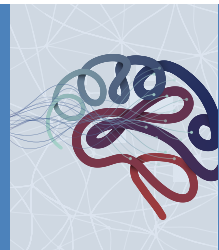


they endorse as they offer insights into the care of patients across borders, through highly varied clinical settings, and throughout the human lifespan.

This year, we have also added a new feature to the subspecialty sessions, in which each of our International Partner societies has submitted top manuscripts published in their society’s journal for presentation at the podium. While the individual manuscripts have not yet been selected, we anticipate these presentations will be essential to facilitating scientific exchange between our societies.

Together with the CNS Foundation (CNSF), we continue to bring a more diverse audience to the Annual Meeting. We are excited to provide an in-person short-term observership or fellowship experience with a center of excellence. These efforts aim to give young neurosurgeons a foundation for life-long relationships and learning. We also encourage our international members, colleagues, and friends to join us.

We are looking forward to welcoming you to San Francisco, CA, for an exciting meeting and celebration of global neurosurgery. ■



Douglas Kondziolka,
MD, MSc, FRCS, FACS



Brandon J. Fiedor, MA

NEUROSURGERY Publications at the CNS Annual Meeting

The theme of this year's meeting is *Neurosurgery Connected*, part of which inspires us all to (re)discover what connects us as neurosurgeons. As Editor-in-Chief of NEUROSURGERY Publications I would suggest that our journals, and the exchange of scientific knowledge and correspondence they make possible, are undoubtedly one of the central conduits through which we all engage whether it be as readers, authors, or reviewers. With this in mind, and on behalf of the entire Editorial Office, I am delighted to provide the membership with a brief overview of what we have planned for the 2022 CNS Annual Meeting.

The past year has been one of significant change for NEUROSURGERY Publications with both a publisher transition and an Editor-in-Chief transition. We thank the membership for their patience during the publisher transition from Oxford University Press to Wolters Kluwer Health. The Editor-in-Chief transition officially concludes on September 1, 2022 with Dr. Oyesiku joining the ranks of Editors-in-Chief Emeriti Dr. Robert Wilkins, Dr. Clark Watts, Dr. Edward Laws, Jr., and Dr. Michael Apuzzo. Under Dr. Oyesiku's tenure NEUROSURGERY Publications evolved to the multi-title portfolio it is today, replete with content and features that deliver outstanding new scientific insights across our specialty. Dr. Oyesiku will provide an overview of his tenure on Tuesday, October 11, and I encourage all attendees to join us for his presentation and celebrate his time as Editor-in-Chief. I am honored to take the reins from Dr. Oyesiku in leading NEUROSURGERY Publications and its editorial staff on behalf of the CNS and

look forward to sharing my vision with the membership in the months and years ahead beginning with this year's Annual Meeting.

In order to help guide this vision, I have asked a focused group of accomplished authors and investigators to serve the journal at the highest level as Associate Editors. These include Drs. Aviva Abosch, Fred Barker, Langston Holly, Michael Lawton, Russell Lonser, Praveen Mummaneni, and Howard Riina. These individuals have all served with me as leaders at either *Neurosurgery*, the *Journal of Neurosurgery*, or both. They will work on strategic planning, development and integration of new topics, participate in high-level reviews, and foster journal oversight. In addition I have appointed Dr. Maryam Rahman as Associate Editor for Diversity and Equity, and Dr. Eric Oermann as Associate Editor for Data Science to oversee these important areas of medical journal management.

Each area within neurosurgical science will continue to have peer-review management leadership by one or more Section Editors. They work to select reviewers for individual manuscripts, and assist in the adjudication of decisions for publication. Each Section Editor is an established subspecialty leader with a strong track record of authorship and review, and is committed to efficiency in the peer-review process.

The Editorial Office staff will be on hand at the CNS Xperience Lounge to review the latest journal websites and answer any questions attendees may have. We encourage all attendees to stop by while they are in the Exhibit Hall.

CNS Xperience Lounge Highlights

- Gratis copies of *Neurosurgery* and *Operative Neurosurgery*.
- Several digital features, including CNS Spotlight, and CNS Journal Club Podcast will be on display.

Session Highlights

- **Tuesday, October 11:** Editor-in-Chief Emeritus, Dr. Nelson Oyesiku will address the membership during the General Scientific Session providing an overview of the NEUROSURGERY Publications' evolution under his tenure.
- **Tuesday, October 11:** Dr. Douglas Kondziolka will provide the annual Editor-in-Chief update during the General Scientific Session.
- **Tuesday, October 11:** The Luncheon Seminar, "NEUROSURGERY Publications: 'Getting Published'," will focus on the elements of writing, reviewing, and publishing a scientific manuscript in a peer-reviewed journal. Faculty will include Editorial Board representatives. Don't miss this unique opportunity to engage with NEUROSURGERY Publications leadership!
- **The Sixth Annual Neurosurgery Paper of the Year Awards** will honor the most impactful papers published in *Neurosurgery* from June 2021 to May 2022. Awards will be given for Top Paper of the Year as well as select subspecialties. Join us as we celebrate the exploration and expansion of scientific knowledge by attending a Paper of the Year session! 📌



Ashok Asthagiri, MD

The CNS Xperience Lounge: Connection, Content and Cutting Edge Technology

Over the years, the CNS has developed a reputation for its innovative educational offerings and dynamic experiences at the Annual Meeting. The exhibit hall, and specifically the CNS Xperience Lounge, embodies this spirit of innovative design facilitating meaningful function. Although the exhibit hall has always been a place to meet with industry representatives and have hands-on exposure to cutting-edge technology, over the past few years, the Xperience Lounge has played a key role in transforming this into a vibrant networking event, flush with opportunities that have piqued interest among our membership.

Located centrally within the exhibit hall, the Xperience Lounge is the physical nexus of numerous opportunities for connection, engagement, and unique, captivating presentations. In San Francisco, we invite you to grab a table and extend the conversation with industry partners and colleagues over a latte from our complimentary cappuccino bar. The Xperience lounge also hosts our NEUROSURGERY Publications booth where you can meet with editorial staff from our flagship journal, *Neurosurgery* and sister journals, *Operative Neurosurgery* and *Neurosurgery Open*. Honored Guest, [Robert Spetzler](#), will host a meet and greet session in this area as well.

As you are passing through the exhibit hall, you will notice that a number of important events will be held at the CNS Presentation Stage and Theater, both located within the Xperience Lounge. Live surgeries via telemedicine, planned for Monday and Tuesday mornings, will be conducted by pioneers in neurosurgery and moderated by subspecialty experts who will take the time to explain the critical steps. At the CNS presentation stage on Monday at 1:45 pm, finalists for the CNS Innovator of the Year award will deliver presentations describing potential breakthroughs that may impact neurosurgical practice in the future and you will then have the opportunity to vote for the winner. Gain inspiration, share in the lived experiences, or simply show support of our colleagues as they share their stories on the CNS presentation stage during our Voices of Neurosurgery program Tuesday afternoon.

In whatever capacity you choose, we encourage you to take this great opportunity and space to network with your friends, colleagues and industry colleagues. ■



Xperience Lounge Highlights:

Meet & Greet Sessions:

Robert Spetzler, Honored Guest
Tuesday, October 11 from 10:00-10:30 am.

Live Surgery

Daily from 10–10:30 am

Wellness Tuesday

Tuesday, October 11 from 1:45–2:45 pm

Voices of Neurosurgery

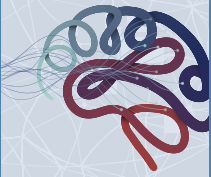
CNS – Wellness give-away (limited quantities)
Smoothie station

Innovator of the Year Presentations

Monday, October 10 from 1:45–2:45 pm

Educational Update Sessions

Afternoons from 1:45–2:45 pm



Brian Nahed, MD

Clemens M. Schirmer,
MD, PhD

Khoi D. Than, MD



Sydney Manola

Exhibit Hall

At the heart of every in-person meeting is the exhibit hall. Unlike other conventional showrooms, the 2022 Congress of Neurological Surgeons Annual Meeting in San Francisco, will be an interactive and multifaceted experience that facilitates exchange with colleagues and jumpstarts discussions with vendors to strengthen your daily surgical practice and address practice challenges.

Daily Live Surgery sessions during the morning General Session break showcase thought leaders and technical masters performing complex procedures in real-time and bring the decision-making and technical details to the audience live from their operating theatre. Combined with expert local commentary from CNS faculty responding to audience questions on stage, these sessions offer a complementary learning experience and direct practical application of the science of neurosurgery.

We present Educational Update Sessions in the afternoon breaks, highlighting a particular device or issue in case-based sessions. These round out the sponsored mid-day symposia, which bring more in-depth discussion with lectures, panel members, and experts addressing the pearls and pitfalls of topics requiring more nuance and discussion.

The Xperience lounge is a cornerstone of the exhibit hall, offering an inviting area for members to relax and catch up with friends and colleagues. Here you can network with industry partners and new and old colleagues, learn about exciting new research, discuss current clinical practice



guidelines, and hear from insightful guest speakers.

Neurosurgery is amongst the most technologically advanced fields in medicine, and technology has been an attraction for many of us. The exhibit hall is the place to see, touch, experience, and learn about all our available and advanced solutions and latest innovations ranging from intraoperative navigation, deep brain stimulation, surgical robotics, augmented reality, and precision endoscope and exoscopes for operative visualization in a fantastic display in one convenient space.

In addition, you have access to specialists and leadership from our corporate partners, who can provide in-depth technical information and would like to engage in further discussion. This kind of exchange is what makes an in-person meeting valuable for everyone. In addition, some vendors can provide hands-on training and instruction experiences in mobile labs, accessible from the convention center.

We look forward to greeting you at the Congress of Neurological Surgeons Annual meeting and exhibit hall this October, come and join us! 🇺🇸



CNS

Thank You

The Congress of Neurological Surgeons gratefully acknowledges our Industry Allies Council Partners for their continued support.

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FOUNDATION UPDATE



CNS

Foundation



Inaugural Massachusetts General Hospital International Observership Winner Announced

Chrystal Calderon, BMedSci (Hons), MBBS (Hons), MRCS, of Trinidad and Tobago, is the winner of the CNS Foundation Massachusetts General Hospital (MGH) 2022 International Observership for Neurosurgery. Dr. Calderon will spend six months observing general neurosurgery practices under the mentorship of Brian Nahed, MD, MSc., and Myron Rolle, MD, both neurosurgeons at MGH Department of Neurosurgery, as well as participate in weekly coursework at the Program in Global Surgery and Social Change at Harvard Medical School. To learn more please visit foundation.cns.org/international

Dr. Chrystal Calderon is currently a faculty member of the University of the West Indies at St. Augustine, Trinidad, and Tobago.

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\$2,000

Make your gift at [Foundation.cns.org/donate](https://foundation.cns.org/donate) or when you register for #CNS2022 in San Francisco.

New CNS Foundation Awards

The CNS Foundation will open applications for the following awards Summer 2022. For details on application requirements: foundation.cns.org/diversity-equity-inclusion foundation.cns.org/international-philanthropy. Watch for announcements in CNS Weekly, Instagram ([CNS Update](#)) and Twitter ([@CNS Update](#))

International Visitorship Programs

(Two-to-three-week mentorship and CNS Annual Meeting intensive)

- Cerebrovascular Visitorship
Graciously supported by Penumbra, in collaboration with the Cerebrovascular Section
- Trauma Care Visitorship
Graciously supported by the Trauma Section

International Observerships (Three-to-six month in-person observerships)
On the heels of the success of CNS Foundation Observerships offered at Miami University and Massachusetts

General Hospital (MGH), the CNS Foundation is seeking mentors and their institutional partners to develop up to three new observerships.

- Phase I: Application window for host institutions and mentors
- Phase II: Application window for early career applicants
Generously supported by Medtronic and Stryker

Diversity, Equity, and Inclusion in Neurosurgery Awards

- **DEI Scholar Award** to examine disparities in health care services
- **DEI Innovation Pilot Project:** A pilot project to implement an intervention to correct a known health care disparity/ies and/or improve diversity in the neurosurgery workforce.
- **DEI Impact Award:** Award celebrating a neurosurgeon's outstanding work to apply best practices for improving diversity, equity and inclusion in neurosurgery and health care.

Generously supported by Medtronic

Volunteer for Pathways to Neurosurgery during the 2022 CNS Annual Meeting!

Spend a fun hour introducing young women and men to neurosurgery. Register for your one-hour slot at foundation.cns.org/volunteer

- Assist high school students' as they go through hands-on surgical stations.
- Enjoy a casual lunch and answering students' questions about being a neurosurgeon.
- Inspirational speakers needed! 📌

foundation.cns.org/volunteer



Alexander A. Khalessi
CNSF Co-Chair



Martina Stippler
CNSF Co-Chair

INSIDE THE CNS



Washington Committee Report



Katie O. Orrico, Esq

FDA Issues Safety Notice for Imaging Software for Intracranial Large Vessel Occlusion

On April 11, the Food and Drug Administration (FDA) issued a [notice](#) reminding health care providers about the intended use of radiological computer-aided triage and notification devices for intracranial large vessel occlusion. The statement includes the following information:

- Intended use of these devices;
- Recommendations for health care providers;
- Actions that the FDA is taking; and
- Instructions for reporting problems with these devices.

More information on the FDA process for reporting adverse events is available in the [online issue](#) of CNSQ.

Neurosurgery Urges Funding for Firearms Injury Prevention Research

On April 28, the Congress of Neurological Surgeons (CNS), American Association of Neurological Surgeons (AANS), the Section on Neurotrauma & Critical Care, Section on Pediatric Neurological Surgery and the American Society of Pediatric

Neurosurgeons (ASPN) joined in a letter to Congress urging additional funding for firearms-related research. Specifically, the groups requested \$35 million for the Centers for Disease Control and Prevention and \$25 million for the National Institutes of Health to conduct public health research into firearm morbidity and mortality prevention.

View the [online issue](#) to read the letter.

Federal Watchdog Agency Raises Concerns about Prior Authorization in Medicare

On April 28, the U.S. Department of Health and Human Services Office of Inspector (OIG) General released a report criticizing prior authorization in the Medicare Advantage program. According to the report titled "Some Medicare Advantage Organization Denials of Prior Authorization Requests Raise Concerns About Beneficiary Access to Medically Necessary Care," an estimated 13% of denied prior authorization requests reviewed met Medicare coverage rules and likely would have been approved under fee-for-service Medicare. Moreover, the OIG found that about 18% of denied payment requests met Medicare coverage and Medicare Advantage billing rules. The

OIG recommends, among other things, that the Centers for Medicare & Medicaid Services (CMS) update its guidance on the clinical criteria for medical necessity reviews and revise audit protocols for Medicare Advantage plans.

Following the report, the sponsors of [H.R. 3173](#), the Improving Seniors' Timely Access to Care Act, which would streamline prior authorization in the Medicare Advantage Program, issued a [press release](#) stating:

Today's HHS Inspector General report underscores the urgent need for reforms in the current prior authorization system. Seniors should not be denied care for routine treatments and procedures that would otherwise be covered. This complicates and delays care and worsens health outcomes for this vulnerable population.

It is well past time to bring prior authorization into the 21st century so seniors can get the care they deserve by passing the Improving Seniors' Timely Access to Care Act. The reforms in this legislation have widespread bipartisan support and the backing of hundreds of leading national health care organizations.

The House must move on this bill quickly. With more than 325 co-sponsors, this legislation is poised to move forward in the House of Representatives and would be a significant step in reforming prior authorization in Medicare.

[Links](#) to the OIG report and a [supplemental video](#) related to the report are available in our online issue.

CMS Issues Proposed 2023 Medicare Inpatient Payment Rule

On April 18, the Center for Medicare & Medicaid Services (CMS) released the Fiscal Year (FY) 2023 Medicare Hospital Inpatient Prospective Payment [proposed rule](#). Among other things, CMS proposes to return laser interstitial thermal therapy (LITT) procedures to open craniotomy Medicare Severity Diagnosis-Related Group (MS-DRG) Classifications. Last year neurosurgery joined other stakeholders in objecting to the reassignment of LITT to MS-DRGs associated with percutaneous procedures. The CNS and the AANS plan on submitting comments in response to the proposal, which will be finalized before Oct. 1.

A fact sheet is available in the [online issue](#).

Neurosurgery Urges CMS to Reconsider Shared Visit Policy

On March 29, the CNS and the AANS joined the AMA and more than 30 national medical societies in urging the CMS to rescind its shared visit policy. The policy, finalized in the [2022 Medicare Physician Payment Fee Schedule](#), outlines how providers should bill for split or shared visits when elements of the visit are performed by both a physician and qualified health care professional

(QHP). Rather than the long-standing policy of permitting reporting by the providers that perform the critical medical decision-making elements of the visit, the new CMS policy only allows billing based on the physician or QHP who conducts more than 50% of the total time of the visit. In the letter, the societies ask that CMS withdraw this new policy requirement and allow for additional public comments.

View the [online issue](#) to read the letter.

CNS and AANS Comment on Updated CDC Opioid Guidelines

On April 4, the CNS and the AANS submitted comments to the Centers for Disease Control (CDC) regarding its updated draft of [Clinical Practice Guideline for Prescribing Opioids](#). The letter notes that while the document addresses many of the misinterpretations of the 2016 version and devotes significant discussion regarding nonpharmacologic treatments for pain as alternatives to opioid therapy, the new guideline fails to adequately explore surgical treatment options to reduce or eliminate opioid use. The groups recommended adding decompressive (spinal, peripheral nerve, cranial nerve), reconstructive, ablative and neuromodulatory options for treating pain in the guideline as additional pain management strategy options.

View the [online issue](#) for a link to read the comments.

President Signs Legislation to Fund the Government

On March 15, President **Joseph R. Biden, Jr.** signed the \$1.5 trillion omnibus federal funding bill, the Consolidated

Appropriations Act of 2022 ([H.R. 2471](#)). Highlights relevant to neurosurgery include:

- A 151-day blanket extension of pandemic telehealth waivers after the Public Health Emergency ends, temporarily eliminating Medicare originating site and geographic restrictions, removing in-person requirements and allowing audio-only telehealth appointments;
- \$2,000,000 for civilian trauma centers to train and incorporate military trauma care providers and teams into care centers;
- \$7.25 million for traumatic brain injury research;
- \$12.5 million for firearm injury and mortality research; and
- \$45 billion for the National Institutes of Health, including \$620 million for the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative.

[Links](#) to for the report language and summary are available in our online issue.

Former Washington Committee Chair Reappointed to AMA Council on Legislation

Former Washington Committee chair and AANS president, **Ann R. Stroink, MD**, was reappointed to serve another one-year term on the AMA's [Council on Legislation](#) (COL). The COL reviews proposed federal legislation and recommends appropriate action. The council also develops model state legislation, recommends changes in existing AMA policy to accomplish effective legislative goals, and recommends to the Board of Trustees new federal legislation and legislation to modify existing laws of interest to the AMA. ■

IMAGES IN NEUROSURGERY

Intradural Schwannoma Presenting as a Second Opinion for TLIF

A 51-year-old man with a past surgical history of left L5-S1 discectomy 12 years ago at another institution presented to the clinic for a second opinion after he was told he may need a L5-S1 transforaminal lumbar interbody fusion (TLIF) and redo decompression. His main symptom was excruciating pain in the left buttock with numbness and tingling in the left calf and the lateral malleolus. He described the symptoms as being similar to preoperative symptoms 12 years ago but with more severity. Prior to presentation, he had already undergone conservative management including physical therapy and epidural steroid injections. After failure of conservative management, he saw an orthopedic spine surgeon in the community who tentatively offered him L5-S1 TLIF pending a contrasted MRI. He presented with a non-contrasted MRI (**Fig 1A** and **1B**) to the author's clinic for a second opinion.

Contrasted MRI was ordered by the author and this revealed an enhancing intradural mass measuring 1.8 cm causing displacement of sacral nerve roots (**Fig 2A** and **2B**). The patient also underwent a metastatic workup. The patient was brought in for microsurgical resection of the intradural mass (**Fig 3**) with intraoperative neuromonitoring and ultrasound. The mass was attached to functional nerve roots requiring microdissection. Postoperatively, the patient reported resolution of preoperative pain with minimal residual numbness around left lateral malleolus. Surgical pathology revealed WHO grade 1 schwannoma. Follow-up postoperative contrasted MRI did not reveal any recurrence (**Fig 4**). This is a cautionary tale of the importance of careful assessment of the imaging for uncommon intradural pathology which could present with symptomatology (and even surgical history and assessment) indicating common degenerative spine pathology. ■

Submitted by: Hoon Choi, MD, PhD

Affiliation: Cleveland Clinic Florida, Weston, FL



Figure 1A: Preoperative T2-weighted sagittal MRI showing a circular intradural mass measuring 1.8 cm **Figure 1B:** Preoperative T2-weighted axial MRI showing an intradural mass causing displacement of nerve roots

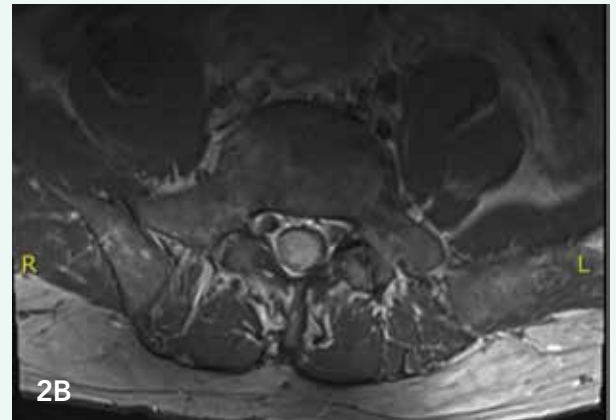


Figure 2A: Preoperative contrasted T1-weighted sagittal MRI showing an intradural mass with contrast enhancement **Figure 2B:** Preoperative contrasted T1-weighted axial MRI



Figure 3: Microsurgical resection of intradural mass

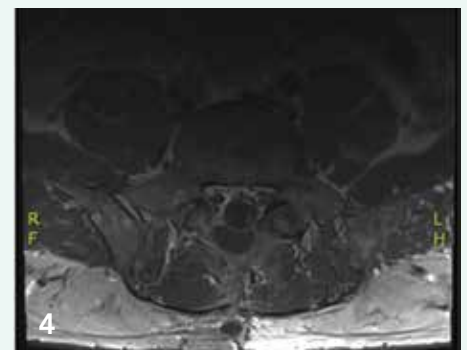


Figure 4: Postoperative contrasted T1-weighted axial MRI after tumor resection



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