ISSUE
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The Society of Neurological Surgeons

Message from the President

Nino Chiocca, MD, PhD

Dear Society of Neurological Surgeons members and colleagues:

The SNS continues to thrive as a society where its members "roll up their sleeves" to continue their work on behalf of our educational programs for residents, fellows, and medical students as well as in support of our program directors in their efforts to provide the best conditions possible to train our future neurosurgical colleagues.

Several initiatives continue to frame our work: **a-** on the research front under the direction of Dr. Linda Liau, we have completed another year of the RUNN course this October which was attended by almost 100 residents from across the USA with a list of engaging speakers. This continues to be a major educational effort that distinguishes our specialty, in its engagement on research and innovation. The new NSTP program, under Drs. Hadjipanayis and Liau awarded its first 4 awards this year as well to support research endeavors from our residents during and after their research years: **b-** on the resident educational front, we are working to re-establish live participation of the neurosurgery boot camps, under the direction of Dr. Bambakidis. The selection process of sites is underway to ensure that this activity can go back live in 2024; **c-** we continue with our support of efforts by CAST, under the direction of Dr. Branch, to provide direction for our fellowship educational programs.

In 2024, our annual meeting will be held in NYC at the Weill Cornell Medical School. Our hosts, Drs. Phil Stieg and Mike Kaplitt, are looking forward to showing to the membership their program and its numerous accomplishments. The theme of the meeting will be focused on forthcoming disruptions in education with a focus on how AI and VR will and can be used to improve resident education as well on how recent unionization efforts may change how our current residencies are structured. The scientific program is being prepared by Dr. Limbrick and his committee who are assembling a great slate of invited speakers to make the program compelling and instructive. We expect another great awardee to be honored with the Winn Prize as well!

It is a great honor to serve as your President this year and I look forward to seeing you in New York in May of 2024!

Sincerely,

Nino Chiocca, MD, PhD

this issue

Message from the President Elect
Nathan R. Selden, MD, PhD

Looking Ahead

The Society is the oldest professional organization for neurosurgeons in the world. Across its history, the SNS has served to share surgical techniques, honor leaders in the field, and most recently, to organize residency and fellowship training curricula and represent educational leaders.

After 5 years as SNS Secretary and a year leading the Mission, Membership, and Money (M3) strategic planning task force, I have developed a strong sense of responsibility to helping advance the Society's success. It is humbling to serve now as SNS President-elect and to anticipate the opportunity to lead the Society next year. I am particularly grateful to follow the outstanding example of our current President, Nino Chiocca, and to work with a superlative group of officers that also includes Secretary Greg Zipfel, Vice-president Judy Huang, and Treasurer Linda Liau.

We have a lot to do: implementing membership changes, re-starting in person courses, adding educational science to our meeting, expanding the accreditation of neurosurgical fellowships, providing funding for early career education and research training, representing neurosurgery to the ACGME and partnering on a national quality improvement curriculum are just a few examples of the Society's work.

Most important to our success is your engagement and input. SNS officers and executive council members need to hear your ideas and to learn about the challenges you are seeing in your own department and medical school. We also need your participation teaching courses, developing curricula, serving on committees, and engaging in discussions at the SNS Annual Meeting.

Please feel free to reach out to Drs. Chiocca, Zipfel, or myself with your ideas and suggestions. I look forward to joining you in New York City in May 2024 and in Cleveland in May 2025!

In -Person Boot Camp Update

Gregory J. Zipfel, MD

After a successful 4-year run holding the Intern Boot Camp Course virtually, the *Society of Neurological Surgeons* is excited to return to an in-person format in 2024. Dr. Nick Bambikidis (Chair of the Committee on Resident Education) and Dr. Martina Stippler (Chair of the Resident Course Subcommittee) are busy preparing for these regional courses, which will take place this summer. These basic skills courses are designed to prepare PGY1 Residents for their first year of training. Each course includes cranial skills training as well as neurosurgical bedside procedures. Incoming PGY1 neurosurgical residents (essentially all incoming residents in ACGME accredited programs) will participate along with invited faculty members. These courses will assist incoming PGY1 neurosurgery residents to develop basic clinical skills, professionalism, and communication in an educationally designed, systematic and safe environment, in preparation for their first year of neurological residency.

Update on Resident Courses

Martina Stippler, MD

Since summer 2020, we have transitioned our SNS boot camp course for PGY 1 residents and our Junior Resident course for PGY 2 residents to the virtual format. This allowed us to continue teaching through the pandemic, plus we learned valuable lessons. First, there are specific didactic topics that can be taught effectively in the virtual setting and, with the help of active teaching techniques, can be pretty engaging and effective, and there are others that are not.

With case-based teaching and polling of the learners, one can effectively teach the tiered approach to ICP management or the first steps in the workup and treatment of neurosurgical emergencies. The placement of an EVD catheter, how to handle difficult conversations, and learning about the nuances of the consent process are much more challenging topics to teach virtually.

Hence, the Committee on Resident Education and the CoRe Resident Course Subcommittee aim to move the SNS Bootcamp course for our PGY 1 residents back to in-person learning for 2024. We also found that in-person courses are more expensive and consume more faculty resources and time. With this in mind, we want to optimize the time spent to gather and refocus our curriculum to teach the content that cannot be taught virtually or is challenging to teach virtually. In short, no more slide presentations or talks! The SNS boot camp 2.0 will be organized to include small group teaching and practical stations and simulations.

The topics we plan to cover are: how to respond to the most common medical, brain, and spine emergencies; teaching communication techniques for difficult conversations and for analyzing the aspects and intricacies of the consent process; disclosing medical errors; risk management; and handoffs via small group sessions. Detailed teaching plans and case scenarios with teaching highlights and objectives will be provided to each site to scaffold their small group session.

The simulation will encompass, as in the past, an image-guided station for EVD trajectory, endovascular simulators, stereotactic frame placement, microscope basics, sagittal sinus injury simulation, and vessel anastomosis, to mention a few.

To streamline the planning process, the SNS is planning to hold the in-person boot camp at three sites: Boston, Houston, and Portland. The junior resident course (for PGY2 residents) will remain in the virtual format. The feedback has been very positive, and the participation of programs and engagement of residents has been outstanding.

The Resident Course Subcommittee is excited about being back in person for the boot camp and is looking forward to connecting with established and new course directors and faculty to teach the next generation of neurosurgeons.

CAST Update

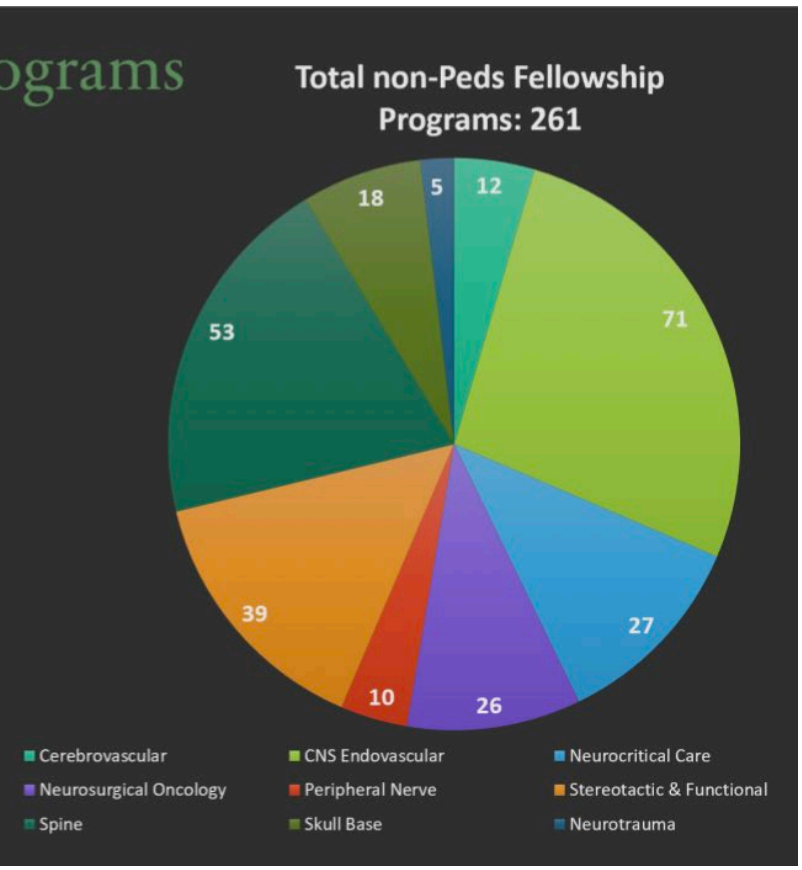
Vincent Traynelis, MD and Charles Branch, MD

The Committee of Advanced Subspecialty Training (CAST) is charged with overseeing the accreditation of 261 Subspecialty Fellowship Programs in Neurological Surgery. Charles Branch is the current Chair of CAST and Vincent Traynelis is the Chair-elect. The CAST Committee has representation for each of the subspecialty fellowships: Bill Mack, CNS-endovascular; Perry Ball, Neurocritical Care; Brian Hoh, Cerebrovascular; Jonathan Miller, Stereotactic and Functional; Linda Liau, Neurosurgery Oncology and Skull Base; and Michael Steinmetz, Spine and Peripheral Nerve. There are another 33 Pediatric Fellowships that are accredited by the Accreditation Council for Pediatric Neurosurgery Fellowships (ACPNF). Douglas Brockmeyer currently represents Pediatrics on CAST. He will be replaced by David Limbrick next year. CAST has input from multiple other medical disciplines in the endovascular and critical care domains. Russel Lonser (ABNS Secretary), Robert Harbaugh (RRC Chair), and Corey Parker (ACGME Director) are ex-officio members of CAST. Starting in 2024, Linda Liau will rotate off the Committee and she will be replaced by John Golfinos who will represent Skull Base and Jeff Weinberg who will cover Neurological Oncology. Leann Lepa is the CAST Coordinator and Dr. Pam Derstine provides critical administrative support.

CAST Accreditation of Programs

(as of Dec. 1, 2023)

Programs	Approved
Cerebrovascular	12
Endovascular	71
Neurocritical Care	27
Neurotrauma	5
Neurosurgical Oncology	26
Peripheral Nerve	10
Stereotactic/Functional	39
Spine	53
Skull Base	18
Pediatric	33
TOTAL	**294**



CAST Update (continued)

Vincent Traynelis, MD and Charles Branch, MD

Currently, each accredited program is required to submit an annual report in July. This allows for continuous accreditation and has led to the elimination of the 5-year renewal application. Applications for new programs are accepted from January 1 through February 28. Requests for Program Director changes can be made at any time. Programs must inform CAST in writing within 90 days of a change in Fellowship Program Director (FPD). Ideally, the FPD is replaced with an adequately experienced and credentialed individual. If a suitable FPD is not immediately available, the program shall name an interim FPD to oversee the Fellowship for the remainder of that academic year.

CNS Endovascular will be moving to a two-year fellowship to better follow the preliminary year numbers. This will start with the 2025 annual report that reviews 2024/25 academic year. Each program will be responsible for obtaining, submitting, and attesting to the prerequisite year numbers from previous institution for those fellows that transfer after their prerequire year. Minimal case requirements have been updated for Skull Base, Neurosurgical Oncology, Cerebrovascular, and Neurocritical Care. These updated requirements will begin in 2024 and are posted on the CAST/SNS website. CAST has supported an effort by the Spine Section to develop a case tracking module that will utilize CPT data. If successful, it may be modified for use by other subspecialties.

CNS Endovascular and Neurocritical Care Program Directors are required to have an ABNS Certificate of Recognized Focused Practice (RFP) or other subspecialty credential. CAST Certificates will no longer be accepted for this position after July 1, 2027. There is a relatively straightforward process to convert a CAST Certificate to an ABNS RFP, but the deadline is 12/31/2023.

There has been great interest in using a match process for Fellow selection and a number of subspecialties are already successfully doing so. CAST supports Fellowship Matching and ultimately it is likely to become a requirement for all programs at some time. There is a plethora of information on the CAST website (Home - New (sns-cast.org))including specific details for each subspecialty fellowship, and timeline data for applications and annual reports.

Updates from SNS Medical Student Committee

Lola B. Chambless, MD

Updates from the SNS Medical Student Committee:

The committee has been active this fall educating neurosurgery applicants and residency leadership about changes to the match process. As a reminder, we published updated SNS Recruitment Guidelines in late May which can be found here:

https://www.societyns.org/medical-students/external-medical-student-rotations

Chief among these changes was a move to a high-signal model of preference signaling, mirroring the success pilot of Orthopedic Surgery in the 2023 match. We recognized that education about these changes is critical to their success, and we began by teaching program leadership about preference signaling with our first webinar of the season on May 31. We will continued with webinars and town halls, led by Dr. Ellen Air, intended for both leadership and applicants throughout the summer and fall. These employ a diverse group of expert mentors to guide programs and residency candidates alike, and cover a variety of topics from preparing applications to interview techniques and rotation tips. If you miss the live broadcast of one of these events, don't worry; they are archived on the SNS website for playback here:

https://www.societyns.org/medical-student-committee-webinars

Please also help us make sure that your mentees know about these events and receive other important updates from the SNS by signing up to our mailing list, created and managed by Dr. Ketan Bulsara.

https://www.societyns.org/sign-up-for-important-communications

Beyond these efforts around the residency match, we continue to work on projects aimed at improving mentorship for medical students as well as developing better means of evaluating their neurosurgical aptitude and knowledge. Dr. Krystal Tomei continues to lead an effort to understand the specific challenges faced by medical students coming from schools without associated neurosurgery residency programs. This effort has included a stakeholder analysis and research effort aimed to clarify the match outcomes for this group, and the results of those analyses will be used to pilot new models of mentorship for students and guidance for medical school deans who may be advising them.

Dr. Nate Selden and his resident Dr. Stephen Bowden have partnered with the committee to further their recently published work studying the use of Medical Student Milestones as a feedback and evaluation tool for medical students on 4th year neurosurgery rotations. Dr. Jason Heth now leads this new working group to study this topic on a national scale.

Immediately after the 2024 match we will again survey applicants and program leadership about their experiences and preferences for future match seasons. Please make sure you fill out your survey to help guide our recommendations for the future!

SNS Neurosurgeon-Scientist Training Program (NSTP)

Costas Hadjipanayis, MD, PhD and Linda M. Liau, MD, PhD , MBA

The SNS successfully launched the Neurosurgeon-Scientist Training Program (NSTP) in 2023 to increase the number of neurosurgery residents conducting research and to enhance their success rate in becoming independent neurosurgeon-scientists. The NSTP serves as a formal mentored research program (1 or 2 years) for those neurosurgery residents who are beginning a protected research year or have already completed their protected research year. Residents can enter into Year 1 or Year 2 of the program based on whether they have completed a protected year of research. Current funding for the NSTP has been from the nonprofit StacheStrong and the AANS/CNS Section of Cerebrovascular Surgery and the American Society for Stereotactic and Functional Neurosurgery (ASSFN). After a rigorous peer-review selection process that included interviews of all applicants, a total of 8 neurosurgery residents from across the country were selected for the NSTP and initiated their research this past summer. Each NSTP recipient has been paired with a national neurosurgeon-scientist mentor.

Four residents entered Year 1 of the NSTP, which includes funding for attending the 2024 NIH NINDS R25 annual meeting (Boston, MA) and the CNS annual meeting (Houston, TX) to present their original data and network with other established neurosurgeon-scientists and physician neuroscientists. The following individuals were selected:

Charuta Furey, MD (Barrow Neurological Institute) · Yuhao Huang, MD (Stanford University) · Brandon Luck-Wold, MD, PhD (University of Florida) · Yagmur Muftuoglu (University of California, Los Angeles)

Four other residents, who have already completed a full year of protected research, entered Year 2 of the NSTP. These residents received actual research funding to continue their important research projects as they complete their residency. These recipients are the following:

David Asuzu, MD, PhD (National Institutes of Health) · Kate Carroll, MD (University of Washington) · Kurt Lehner, MD (Johns Hopkins University) · Genaro Villa, MD, PhD (Brigham and Women's Hospital)

Please join the SNS in congratulating our first class of NSTP participants. The call for new NSTP applications (Years 1 and 2) will be released on the SNS website in January of 2024. Applications will be reviewed in the Spring of 2024 and selection of applicants will be determined thereafter. Please reach out to Costas Hadjipanayis for any questions at hadjipanayiscg2@upmc.edu.

WELCOME TO NEW SNS MEMBERS

Dr. Chetan Bettegowda is currently the Jennison and Novak Families Professor of Neurosurgery and Oncology and Vice Chair for Research in the Department of Neurosurgery at the Johns Hopkins University School of Medicine. His clinical focus is on the surgical management of brain tumors and directs and metastatic brain tumor center, meningioma center and trigeminal neuralgia. He directs the Reza Khatib Brain Tumor Center and the Physician Scientist Training Program at Johns Hopkins.

As Medical Director of the Ludwig Center for Cancer Genetics and Therapeutics, his laboratory efforts have focused on the applications of cell free tumor derived DNA for the early detection and monitoring of a myriad of cancers. His research has been funded by the Burroughs Wellcome Career Award for Medical Scientists, Doris Duke Clinician Scientist Award, Department of Defense and the National Cancer Institute. He has been recognized with numerous awards including being named the 2022 William Baumgartner Johns Hopkins Physician of the Year. He has published widely with over 250 articles including in journals such as *Science*, *Science Translational Medicine*, *Nature Genetics*, *Nature Communications, Cell Reports Medicine* and *PNAS*.

Dr. Bettegowda attended Duke University as a Benjamin N. Duke Scholar, where he graduated with a double major in Biology and Religion. He went on to complete his MD and PhD degree in Cellular and Molecular Medicine at the Johns Hopkins University School of Medicine, in the laboratory of Drs. Bert Vogelstein and Ken Kinzler. After finishing the MD/PhD program, Dr. Bettegowda completed his neurosurgery training at Johns Hopkins. While a resident, he returned to the Vogelstein/Kinzler lab to finish a post-doctoral fellowship.

Dr. D. Kojo Hamilton was born in Accra Ghana. He came to the United States soon after graduating from the prestigious Mfantsipim School, an all-boys boarding secondary school in Cape Coast, Ghana, established by the Methodist Church in 1876. He then matriculated to the University of Maryland College Park and graduated with a Bachelor of Science degree in biochemistry with high honors.

He received his medical degree and residency training from the University of Virginia in Charlottesville, Virginia under the chair and program directorship of Dr. Jane Sr. Dr. Hamilton also had an enfolded senior year of subspecialty cranial training in Auckland City Hospital in Auckland, New Zealand during residency. He underwent further subspecialty training in complex spine, spinal deformity, scoliosis, and spine surgical oncology, with a combined neurosurgical and orthopedic (AOSpine) fellowship, at the University of Virginia. He joined the faculty at University of Maryland Medical Center and the school of medicine immediately after training, subspecializing in neurological trauma and spinal deformity. Dr. Hamilton was subsequently recruited to the Oregon Health and Science University Spine Center where he treated patients with neurological trauma as well as degenerative and spinal deformity conditions including, adult idiopathic scoliosis and cervical kyphoscoliosis. Since July 2014, He has been at the University of Pittsburgh School of Medicine and Medical Center (UPMC). He holds the rank of Professor of Neurological Surgery and has been the Residency Program Director since January 2022. He is also the Director and Chief of Spine for UPMC.

Dr. Hamilton is married to Dr. Elizabeth Gillespie, a child psychiatrist he met in Virginia. They are blessed with two children. The family enjoys traveling, hiking, and seeking new adventures.

Dr. Nir Lipsman is a neurosurgeon and senior scientist at Sunnybrook Health Sciences Center, and an Associate Professor in the Department of Surgery at the University of Toronto. He completed his undergraduate degree in psychology at the

University of Toronto, followed by a medical degree at Queen's University, in Kingston, Ontario. He finished neurosurgical training in Toronto, during which he completed his PhD under the supervision of Dr. Andres Lozano, investigating the clinical and imaging correlates of neuromodulation in treatment-resistant neuropsychiatric disease. During this time, he helped launch the Focused Ultrasound program at Sunnybrook Health Sciences Center, and completed his fellowship in stereotactic and functional neurosurgery also at the University of Toronto. On active staff at Sunnybrook, Dr. Lipsman's clinical and academic practice focuses on psychiatric and movement disorder surgery, as well as oncology and trauma.

Dr. Lipsman holds the Harquail Chair in Neuromodulation as the Director of Sunnybrook's Harquail Centre for Neuromodulation, where he leads a comprehensive clinical trials program spanning multiple disciplines, including several world-first trials in cancer, psychiatry and neurology. He has published over 180 peer-reviewed papers and textbook chapters, including in *The Lancet* and *New England Journal of Medicine*, and has been the recipient of several national and international recognitions, including the FUS Foundation's Ferenc Jolesz Award for Excellence, Temerty Medicine's Emerging Leader Award, and being selected as one of *Canada's Top 40 under 40*. As the residency program director, Dr. Lipsman leads one of the largest neurosurgery training programs in the world, in partnership with the Dan Chair of Neurosurgery, Dr. Gelareh Zadeh. A committed educator with a passion for training neurosurgeons, Dr. Lipsman works closely with education scholars and psychologists to enhance and better understand neurosurgical training, from program and surgical development to resident and trainee wellness.

Husband to Sarit, a visual artist, and father to Leah and Elie, he is an avid reader, and a lover of art, history and travel.

Dr. Andre Machado is the Chairman of the Neurological Institute and the Charles and Christine Carroll Family Endowed Chair in Functional Neurosurgery. Dr. Machado performs deep brain stimulation (DBS) surgery for patients with Parkinson's disease, tremor, dystonia and obsessive-compulsive disorder as well as surgical procedures for patients with trigeminal neuralgia, intractable pain syndromes and spasticity.

Dr. Machado received his medical degree from the University of Sao Paulo in 1997. He completed his residency in the same institution in 2003 and obtained his Ph.D. in 2004. He came to the Cleveland Clinic in 2004, completed his fellowship in Stereotactic and Functional Neurosurgery in 2006 and has been on the staff of the Cleveland Clinic since then.

Dr. Machado is a Professor of Neurosurgery at the Cleveland Clinic Lerner College of Medicine and has Joint Appointments in the Departments of Neuroscience and Biomedical Engineering. He is the President of the American Society of Stereotactic and Functional Neurosurgery and past Chairman for the Joint Section for Pain of the CNS/AANS. Dr. Machado is an Associate Chief of Staff at Cleveland Clinic and leads several enterprise-level projects with the Office of the Chief of Staff, including innovations in the model of care and a new program for professional career development.

Dr. Machado leads several deep brain stimulation and neuromodulation clinical trials as well as laboratory research. His research in deep brain stimulation for thalamic pain syndrome was awarded the National Institutes of Health Director's New Innovator's Award. His current research, funded the NIH BRAIN initiative is aimed at developing novel treatments to promote rehabilitation after stroke and traumatic brain injury. He is a principle investigator of the Cleveland Clinic Brain Study.

Dr. Joshua W. Osbun is an Associate Professor of Neurosurgery, Radiology and Neurology at Washington University School of Medicine in St. Louis. He is currently the Vice-Chair of Education, Director of the Neurosurgery Residency Program and Director of Cerebrovascular Surgery and Interventional Neuroradiology at Barnes-Jewish Hospital.

Dr. Osbun grew up in Arkansas and is a graduate of Texas A&M University and the University of Texas Southwestern Medical School. He trained in neurological surgery at the University of Washington and spent one year as a Specialist Registrar in neurosurgery at Atkinson Morley and St George's Hospital in London, UK. He completed a fellowship in cerebrovascular surgery and interventional neuroradiology at Emory University and received his Master of Science in Clinical Investigation from Washington University. He is board certified in Neurological Surgery and has a Recognized Focus Practice in CNS Neuroendovascular Surgery.

Since joining Washington University, Dr. Osbun's surgical practice has focused on cerebrovascular disease, including open surgical procedures, neurointerventonal procedures and thrombectomy for acute stroke. In addition, he specializes in the surgical management of patients with skull base tumors, and general cranial and spine conditions. Dr. Osbun's research is focused on the biomechanics of catheter navigation in the aortic arch and great vessels and its subsequent effect on neurovascular device deployment. He runs a laboratory dedicated to vascular biomechanics in conjunction with the Department of Mechanical Engineering and the Center for Mechanobiology at Washington University. Past honors include the award for "Best Biotechnology Device Design" at the 2021 Biomechanics, Bioengineering, Biotransport Conference and the "Best Basic Science Research Paper, Cerebrovascular," at the 2019 Congress of Neurological Surgeons Meeting, and a LEAP award from the Skandalaris Center at Washington University. He received the "Faculty Teaching Award" in 2018 and 2019 by the Department of Neurosurgery at Washington University, and the "Team Award for Quality Improvement: Endovascular Stroke Team" presented by Barnes-Jewish Hospital from 2017-2022 for his efforts leading the Stroke and Cerebrovascular Serviceline.

Dr. Osbun is committed to providing compassionate and comprehensive care to his patients, while helping to train the next generation of neurosurgical and scientific leaders. When outside of the hospital he prefers to spend as much time outside as possible with his wife Alexandra and two daughters, Magnolia and Evangeline.

Dr. Min S. Park was born in Seoul, Republic of Korea in 1975 and immigrated to the United States at the age of three. He grew up in Indiana and attended the Washington University in St. Louis where he received a Bachelor of Arts degree in Anthropology. He received his medical degree from the Indiana University School of Medicine and completed his neurosurgery residency at the University of California San Diego Medical Center in 2009 under Dr. Lawrence F. Marshall. Following graduation, he served as a Lieutenant Commander and Staff Neurosurgeon at the Naval Medical Center San Diego. He deployed to the NATO Role III Multinational Medical Unit at the Kandahar Air Field, Afghanistan in 2010 in support of Operation Enduring Freedom as part of the Alpha and Bravo rotations. He was awarded the Navy and Marine Corps Commendation Medals (with gold star in lieu of second award), Navy Unit Commendation, Afghanistan Campaign Medal, and NATO Medal, among others.

He was honorably discharged from active duty service and completed his endovascular neurosurgery fellowship at the Barrow Neurological Institute under Drs. Cameron McDougall and Felipe Albuquerque. Dr. Park then joined the neurosurgery faculty at the University of Utah and served as the inaugural director of the newly CAST-accredited endovascular neurosurgery fellowship and associate program director of the neurosurgery residency. He was recruited to the University of Virginia in 2017 and again served as the APD of the residency and the inaugural PD of the CAST-accredited endovascular neurosurgery fellowship. He assumed the residency program directorship in 2023.

Dr. Park has authored/co-authored over 200 peer-reviewed publications and chapters. He is the lead editor of the textbooks *Flow Diversion of Cerebral Aneurysms*, *Evidence-Based Decision Making in Neurointerventional Surgery, and Carotid Artery Disease: Evaluation and Management*. He is a member of the American Association of Neurological Surgeons, Congress of Neurological Surgeons, the Joint AANS/CNS Cerebrovascular Section, Neurosurgical Society of the Virginias, American Heart Association/American Stroke Association, and the Neurosurgical Society of America. Along with his role as the Residency Program Director, he is a Professor of Neurosurgery, Neurology, and Radiology, the Director of Cerebrovascular and Endovascular Neurosurgery, Director of the Neurointerventional Service Line, and Director of the Joint Commission-certified Comprehensive Stroke Center. He resides in Charlottesville, Virginia with his wife, Tina, and three children, Jae, Jin Joo, and Jihae.

Dr. Akash Patel is an Associate Professor, Residency Program Director and Director of Brain Tumor Surgery in the Department of Neurosurgery at Baylor College of Medicine in Houston, Texas. Dr. Patel was born in Camden, NJ. He attended Rice University for his undergraduate studies as part of the Rice/Baylor Medical Scholars Program. He received a B.A. in Biochemistry from Rice and his M.D. from Baylor College of Medicine. He completed his internship in surgery and residency in neurosurgery at Baylor College of Medicine. During his residency, he was the recipient of the NIH R25 award where he

performed research under the mentorship of Dr. Huda Zoghbi. Dr. Patel joined the faculty of the Department of Neurosurgery at Baylor College of Medicine in 2014.

As a clinical neurosurgeon, Dr. Patel specializes in skull base oncology and has a particular interest in the treatment of meningiomas and schwannomas. Under Dr. Zoghbi's mentorship, Dr. Patel was awarded an NIH K08 grant to develop a laboratory studying the molecular underpinnings of inherited and sporadic meningioma. Dr. Patel is passionate about medical education. Dr. Patel is on the Executive Committee of the Congress of Neurologic Surgeons, serves on the Education Committee of the CNS, and serves on the Board of the CNS Foundation. He is an active member of the American Association of Neurological Surgeons. Dr. Patel's wife, Pooja, is an obstetrician and gynecologist. They have three children, Ishan, Kishan and Shiven.

Dr. Francisco Ponce is the Residency Program Director and an Associate Professor at the Barrow Neurological Institute.

He was born in San Francisco, California and grew up in the Bay Area. He attended Harvard University, where he concentrated in Physics. Following college, he spent a year at Oxford University, where he studied tissue engineering in the Department of Materials Science. He graduated from the University of Chicago Pritzker School of Medicine in 2004. During residency at the Barrow Neurological Institute, he completed advanced training in stereotactic and functional neurosurgery at the University of Toronto with Dr. Andres Lozano. In 2011, he joined the faculty at the Barrow as the Director of Stereotactic and Functional Neurosurgery. In 2019, Dr. Ponce was appointed the Program Director of the Neurosurgery Residency.

Dr. Ponce specializes in functional neurosurgery, specifically deep brain stimulation (DBS) and focused ultrasound. He has grown a high-volume DBS practice and founded the Barrow Center for Neuromodulation. He has sought to expand access and lower barriers for patients and neurologists to DBS therapy through surgical standardization and education. He participates as an investigator in multiple neuromodulation trials, including the ADvance I and II trials evaluating DBS therapy for Alzheimer's disease. His research focuses on validation of DBS techniques and, through collaborations with faculty at Arizona State University, characterization of electrophysiological functional connectivity in human cortico-basal ganglia network.

Dr. Nader Pouratian is Professor and Chair of the UT Southwestern Medical Center Department of Neurological Surgery, where he holds the Lois C.A. and Darwin E. Smith Distinguished Chair in Neurological Surgery. He received his B.S. degree in Neuroscience from the University of California, Los Angeles in 1996 after which he matriculated into the Medical Scientist Training Program at UCLA, where he earned his Ph.D. in Neuroscience in 2001 and his MD degree in 2003. He completed his residency in neurosurgery at the University of Virginia in 2009, under the mentorship of Dr John A. Jane, Sr., Dr Edward Laws, and Dr Edward Oldfield, which included an enfolded fellowship in functional neurosurgery under the mentorship of Dr Jeff Elias and a year of training abroad at Auckland Hospital. In 2009, he joined the faculty of the Department of Neurosurgery at the David Geffen School of Medicine at UCLA, where he eventually served as Chief of Functional Neurosurgery, Vice Chair of Clinical Affairs, Vice Chair of Academic Affairs, and Chair of the School of Medicine Faculty Senate. In 2021, he accepted the position as Chair of Neurosurgery at UT Southwestern Medical Center. In His clinical practice includes neuromodulation, radiosurgery, peripheral nerve surgery, and neuro-oncology. As a neurosurgeon, neuroscientist, and bioengineer, he uses his unique perspective and training to integrate these fields and take advantages of the unparalleled opportunities presented by neurosurgery to study human brain function and design novel neurotechnologies. His research focus is in understanding the network basis of disease and neuromodulatory therapies and designing novel network-based interventions to address neurological and psychiatric disease. His work currently focuses on Parkinson disease, chronic pain, depression, blindness and neuroethics, supported by several NIH grants. He is passionate about training the next generation of neurosurgeons and neuroengineers, having served as a mentor for innumerable medical students, residents, and fellows. He is active in organized neurosurgery, having served on the Executive Committee of the Congress of Neurological Surgeons, including serving as Chair of Education Committee, Guidelines Committee, SANS, and Scientific Program Committee. He is recognized for both his clinical and scientific excellence, having authored over 200 manuscripts and served as an invited speaker.

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Dr. Nitin Tandon is Vivian L Smith Professor in the Department of Neurosurgery at the McGovern Medical School and Vice-President for Neurosciences, Strategy and Development at the University of Texas Health Science Center in Houston Texas. He holds the Nancy, Clive, and Pierce Runnells Distinguished Chair in Neuroscience and is the BCMS Distinguished Professor in Neurological Disorders and Neurosurgery. He co-directs the Texas Institute of Restorative Neurotechnologies and the Functional and Stereotactic Neurosurgery Program. He also holds a joint appointment as a Professor in the Department of Electrical and Computer Engineering at Rice University.

Dr Tandon's practice spans the surgical treatment of epilepsy, brain tumors, trigeminal neuralgia and face pain syndromes, radiosurgery and general neurosurgery. He has pioneered innovative techniques in robotic stereo-electroencephalography, laser interstitial ablation and other minimally invasive approaches to brain tumors and epilepsy. He has a particular interest in functional mapping and preservation of eloquent cortical and subcortical regions during cortical resections. His research focus is on the study of the neurobiology of language and epilepsy via intracranial recordings and direct cortical stimulation. He has been the recipient of multiple NIH and NSF grants over the years and was awarded a STARS award by the State of Texas. He has authored over 140 peer reviewed publications and has an h index of greater than 40.

Dr. William Taylor is a board-certified neurological surgeon. His practice focuses on the neurosurgical evaluation and treatment of spinal disorders. He is also dedicated to further developing and refining minimally invasive surgical procedures used to treat spinal conditions and diseases.

Dr. Taylor is renowned in the medical community for his expertise in minimally invasive spine surgery and receives patient referrals from around the world. As a patients' rights advocate, he has spoken before the U.S. Food and Drug Administration (FDA) and created several position statements to help ensure that patients with spinal conditions have access to adequate care.

He is the founder and former executive director of the Society for Minimally Invasive Spine Surgery (SMISS), which develops educational training for surgeons. Dr. Taylor is also editor of *The Scientific World Journal* and a member of many professional scientific organizations, including the American Medical Association and the American Association of Neurological Surgeons. He is an HS Clinical Professor of Surgery and has been a member of the faculty at UC San Diego School of Medicine since 1994. He served on the Admissions Committee and the Education Committee for the Division of Neurosurgery, and has received several teaching awards during his career. He is currently the Program Director for Neurosurgery Residency

Dr. Taylor completed his residency training at Albert Einstein College of Medicine in the Bronx in New York City, and completed his specialty training in spinal surgery at New York-Presbyterian/Columbia University Medical Center. He earned his medical degree from UCLA School of Medicine.

Dr. Krystal Tomei, is the Reinberger Endowed Director in Pediatric Neurological Surgery at Rainbow Babies & Children's Hospital and University Hospitals Cleveland Medical Center. She is an Associate Professor of Neurosurgery, Case Western Reserve University School of Medicine. She is also the Residency Program Director of the neurological surgery residency program at University Hospitals of Cleveland and Case Western Reserve University.

Dr. Tomei earned a bachelor's degree in chemistry with honors from the University of Florida, Gainesville, Fla., and was elected to Phi Beta Kappa. She earned her doctorate in medicine from the University of Florida College of Medicine, and a Master's of Public Health from Harvard School of Public Health, Boston, Mass. Dr. Tomei completed her residency in neurosurgery at Rutgers – New Jersey Medical School, Newark, N.J., and a fellowship in pediatric neurosurgery at The Barrow Neurological Institute at Phoenix Children's Hospital, Phoenix, Ariz.

Dr. Tomei is board certified in neurological surgery and pediatric neurosurgery. Her clinical interests include congenital spinal disorders and spina bifida, craniosynostosis, and Chiari malformations. She also has interests in health policy and medical

education. She is currently the Chair-Elect of the American Medical Association Council on Medical Education, a 12 member elected group that considers all medical education policy for the AMA. In addition she is a representative for the AMA to the Coalition for Physician Accountability. She also serves as the Congress of Neurological Surgeons representative to the AANS/CNS Washington Committee.

Dr. Christopher Winfree grew up in Jupiter, Florida, and attended Dartmouth College, where he graduated with a degree in Chemistry. After completing medical school at Columbia University College of Physicians and Surgeons in New York, he joined the Department of Neurological Surgery at Columbia University as a resident. Following residency, he completed a fellowship in Peripheral Nerve Surgery in New Orleans, Louisiana, and then a second fellowship in Functional and Stereotactic Neurosurgery in Portland, Oregon.

Currently, Dr. Winfree is an Associate Professor of Neurological Surgery and the Neurosurgery Residency Associate Program Director at the Columbia University in New York City. He specializes in peripheral nerve surgery and pain neurosurgery. His research interests include the diagnosis and treatment of peripheral nerve tumors while his academic interests focus on neurosurgery resident and medical student education.

He is a member of several different professional organizations, including the American Association of Neurological Surgeons (AANS), Congress of Neurological Surgeons (CNS), World Federation of Neurosurgical Societies (WFNS), North American Neuromodulation Society (NANS), Neurosurgical Society of America (NSA), New York Presbyterian Society of the Alumni, Society of Neurological Surgeons (SNS) Boot Camp Committee, and the CNS Self Assessment in Neurological Surgery (SANS) Advisory Board. He served on the Washington Committee for Neurosurgery and as President of the AANS / CNS Joint Section on Pain. He is currently a Section Editor for Neuromodulation, Assistant Editor for Neurosurgery, and an Associate Editor for Operative Neurosurgery.

Dr. Gelareh Zadeh, is Dan Family Chair and Professor of Neurosurgery, University of Toronto. She is Harold & Esther Halpern Chair and Head of the Division of Neurosurgery at Toronto Western Hospital and Co-Director for the Krembil Brain Institute at University Health Network. Dr. Zadeh has a dedicated skull base and neuro-oncology practice, with a number of multidisciplinary specialized programs including a skull base clinic, brain metastases, pituitary clinic, and neurofibromatosis clinics.

Dr. Zadeh is a Senior Scientist at Princess Margaret Cancer Centre where she runs a translational research program at MacFeeters-Hamilton Neuro-oncology Program and holds the Wilkins Family Brain Tumor Research Chair. She has an active research laboratory focusing on integrated multi-platform molecular analysis of brain tumors, together with a focus on understanding molecular response to targeted therapies, such as anti-angiogenesis and metabolic inhibitors. She has published impactful investigative research in Cancer Cell, Nature Communication, Nature, Nature Medicine and her research has translated to direct advances in clinical care. She has consistent peer-review funding from CIHR, NIH, DOD, CCS, Terry Fox, Brain Tumor Charity, UK. Her contributions have been recognized through awards such as most recently the prestigious Gairdner Momentum Award, the P. Rawl Prize from Canadian Cancer Research Society, American Brain Tumor Translational Research Award and many others.

She is also involved in a number of national and international organizations. She served as the President of Society of Neuro-Oncology (SNO), Scientific Chair of Tumor Section of American Association of Neurological Surgery/Congress of Neurological Surgeons, Chair of Women in Neurosurgery Committee, WFNS as well as being the co-founder of the International Consortium on Meningiomas (ICOM) and Editor-in-Chief of Neuro-Oncology Advances, an open access journal of SNO and EANO.

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