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Message from the President



M. Sean Grady, MD

Our annual virtual meeting has come and gone, but not the spirit and commitment of the SNS membership. Over 300 people signed on for the “Just in Time” meeting. Dr. Deb Benzil, the scientific chair, assembled the program and orchestrated the event with critical help from our CNS partners. By all accounts it was highly successful, as was the more recent PDPQ (Program Director Patient Safety and Quality) seminar that we would have heard in person. Much essential activity that we needed to communicate at the annual meeting is now underway as a result of these virtual seminars.

Congratulations to our new members who are listed in this newsletter; we voted on a new set of members at our virtual annual business meeting who we will congratulate in the future, hopefully in person! I would like to give special thanks to our past president, Dr. Karin Muraszko who led the SNS through a most tumultuous time in these past 3 months. She has a steady hand and outstanding judgment as the pandemic really unfolded. I would also like to thank Dr. Deb Benzil, who as the scientific program chair did a magnificent job putting the whole program together for the in-person meeting, then did a complete pivot to condense critical elements and deliver key messages for the virtual meeting. I’m very pleased to welcome Dr. Warren Selman, as president elect, Dr. Sander Connolly, as vice president and Dr. Rich Byrne, in his new role as

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treasurer. Most of you know that this had been my position, and we’ve had some struggles, which I’ve reported. Fortunately, with the help of the CNS and ABNS, our path forward is much brighter. Rich has a bit of a radioactive hot mess to manage, but he knows how to do it. And finally for the other members of the Executive Council and most importantly Dr. Nate Selden, our secretary, for all of their efforts on behalf of the Senior Society, thank you.

And so we look forward to all of the activities of the Society for the upcoming year, most virtual through the rest of this calendar year, as expected. Our next big challenge will be the resident applicant season with recent communications from the SNS regarding sub-I’s and recommendation letters. Dr. Stacey Wolfe is leading these efforts through the Medical Student Committee, which, while always important, has had incredible impact in these past 3 months. The committee, under Dr. Wolfe’s leadership, has been coordinating our approach with multiple bodies including the ACGME, AAMC, AMA, ERAS as well as the neurosurgery leadership organizations that belong to our Summit group. This resident application season will be like no other we have experienced, and, as the Neurosurgery leadership organization whose primary mission is education, equity and balance are foremost for us to identify and recruit the best students for our residencies. We will be sure to keep you updated because, like the pandemic, it’s a constantly evolving landscape.

Finally, as Dr. Muraszko and I sent in our recent message, the Society is more attentive than ever to the national landscape on diversity and inclusiveness. These themes were significantly emphasized in the program that Dr. Benzil assembled; we will not lose the opportunity to use much of that in our meeting in Detroit in 2021. You can count on it!

SNS Website Committee By Sepideh Amin- Hanjani, MD

As a new ad hoc committee, we were formally charged in late 2017 to update and help administer the Society's website. The first task was populating the Committee with standing members and now includes Sepideh Amin-Hanjani (Chair), Randy Jensen (Program Director Tool Kit editor, Lola Chambless (Toolkit wellness curriculum), Ciaran Powers (Toolkit faculty development), Scott Simon (Web platform consultant), in addition to Stacey Wolfe (Medical Student Committee liaison), Gregory Zipfel (CORE Resident Courses Subcommittee liaison), Michael Lemole (Historian liaison) and Kathy Guzman (ARANS liaison).

First we developed the new PD toolkit which provides vital resources, templates and residency materials for Neurosurgery Program Directors. We then partnered with the CNS to update our user experience and site with the modern up-to-date look and functionality that will best serve our membership, with information in easy-to-navigate and intuitive locations.

The public facing side allows quick links to medical student, resident and fellowship/CAST content. On the member login side, access to the PD toolkit materials and to member account information registration and dues functions. Thanks to our hard-working committee, and Nate Selden and CNS staff for their ongoing efforts!

Please contact me if you are interested in volunteering to serve on this group.

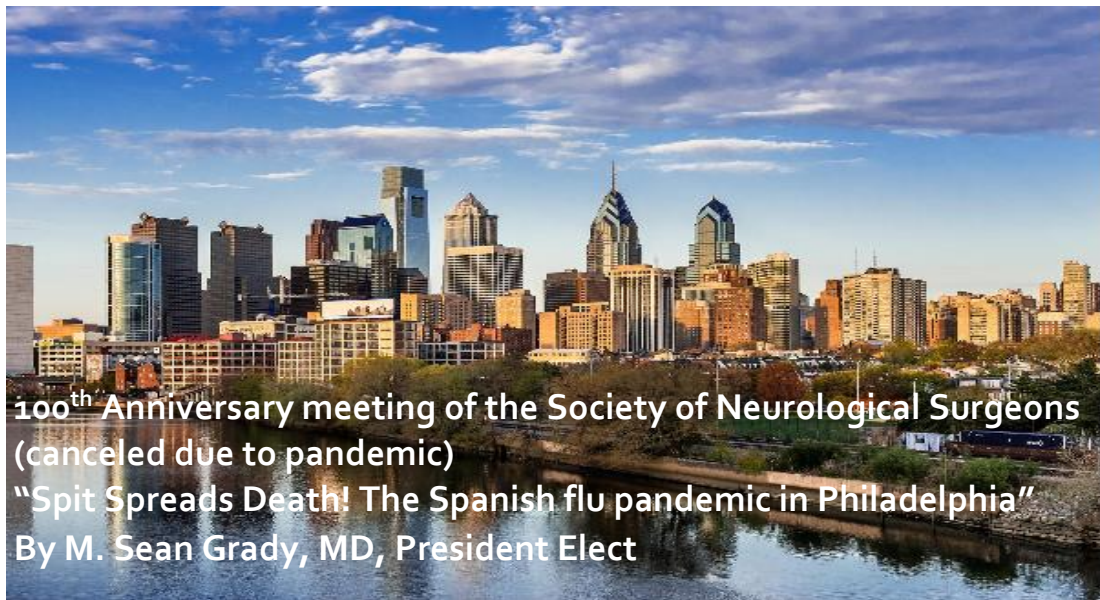
Overall, the committee hopes that the updated website provides the content and accessibility to enhance our members' roles in neurosurgical education. We invite you to explore the site at www.societyns.org, and welcome any suggestions or feedback!

SNS Secretary's Report by Nathan Selden, MD, PhD

The COVID-19 pandemic has posed unprecedented challenges to clinical medicine and our professional organizations. Since the breadth and depth of the impact became clear, the SNS has altered almost all its activities in some way or another, often profoundly:

- The three 2020 SNS Junior Resident Courses scheduled for March and April were cancelled and partially replaced with an innovative online curriculum, designed by Dr. Martina Stippler, on May 29th and 30th.
- The 11th consecutive year of the SNS Neurosurgery Intern Boot Camps scheduled for July at 6 sites around the country was also cancelled. The Boot Camp courses will also be partially replaced by live interactive online experiences for the newest neurosurgery trainees in the United States. The extensive work to re-organize SNS courses was led by SNS Courses Subcommittee Chair, Dr. Greg Zipfel, and CoRE Chair, Dr. Rich Byrne, and supported by CNS meetings staff.
- The One Neurosurgery Summit, crucial to align the activities and priorities of the SNS, AANS, CNS, Academy, ABNS, Neurological Surgery RRC, and AANS-CNS Washington Committee, was originally scheduled to occur in conjunction with the AANS Annual Meeting. Instead, the Summit went forward as a virtual meeting on Tuesday April 28th, 2020.
- The 2020 SNS Annual Meeting, in the historic 100th year of the Society, was originally scheduled to occur at the University of Pennsylvania, from May 28th to June 2nd. The SNS Executive Council made the difficult decision to cancel the Annual Meeting, but remained committed to continue to provide members, Chairs and residency directors with the critical just-in-time information needed to lead their departments and programs. The Society presented what may be the first virtual major neurosurgical meeting, *Need-to-Know, Right here, Right now*, on May 30th, 2020. SNS members also held our first ever virtual Annual Business Meeting the same morning, electing new officers and members for the coming year. Annual Meeting Program Chair, Dr. Deb Benzil, and Secretary, Dr. Nate Selden, worked extensively with SNS and CNS staff to make these changes for the seminar and business meeting.
- SNS Historian Dr. Kim Burchiel launched two videos at the Need-to-Know seminar: a brief 100-year history of the SNS, and a touching two hour collection of mentor tributes recorded by current SNS members.
- Work proceeds on a special 100th SNS Anniversary Membership volume with historical notes and biographies of past and current SNS members that will now be distributed at the 2021 SNS Annual Meeting.
- The SNS Medical Student Committee, led by Dr. Stacey Wolfe, has worked tirelessly to provide information and craft recommendations regarding sub-internship rotations and residency interviews for the 2020-21 cycle. Dr. Wolfe and SNS Secretary Dr. Nate Selden appeared in various webinar and podcast forums to explain these evolving changes.
- Members of SNS CoRE and its subcommittees are working with the AANS and CNS to develop an online program of learning resources for idled U.S. neurosurgery residents.
- The SNS continues work on the ACGME's national PDPQ project to develop a national QI curriculum for all residency trainees in the United States, across all specialties. Leading one of only three specialties piloting the project, Drs. Cormac Maher and Deb Benzil hosted a phase II virtual launch event for residency directors and coordinators on June 9th.
- The SNS has expanded communication with members, in part through this newsletter, which replaced a nearly complete 1st edition whose distribution was cancelled by the pandemic outbreak (as a historical curiosity, see the draft of the "newsletter that wasn't" [here](#)).
- SNS-CAST fellowship accreditation activities, now housed at the ABNS headquarters office in Rochester, MN, continue without interruption, utilizing a new and improved web-based application and renewal process.

The SNS remains committed to and focused on its mission to support U.S. academic neurosurgery programs in facilitating outstanding education for neurosurgical residents and fellows and encouraging the engagement of medical students interested in a career in neurosurgery, as well as supporting governance best practices in neurosurgical departments and training programs.



**100th Anniversary meeting of the Society of Neurological Surgeons
(canceled due to pandemic)
"Spit Spreads Death! The Spanish flu pandemic in Philadelphia"
By M. Sean Grady, MD, President Elect**

Dear SNS members,

Well, the weather would have been perfect for the meeting! However, Philadelphia remains closed due to corona virus, so all of the sites would have been off limits. As some of you may have noted, I broadcast my part of the virtual meeting from the Perelman School of Medicine atrium, where we would have had lunch, with the new hospital and the Philadelphia skyline as a backdrop.

One of our evening venues was scheduled to be at the Mutter Museum, which is part of the College of Physicians of Philadelphia. The College was established in 1787 to "to advance the science of medicine and to thereby lessen human misery", and is one of the oldest physician organizations in the United States. The Mutter Museum originates from a gift of anatomic specimens and financial support by Dr. Thomas Dent Mutter, a surgeon and fellow of the College in the mid 1800's. From this gift has grown one of the finest collections of medical instruments, anatomic specimens and models in the world. Notable specimens include

- Plaster cast and conjoined liver of "Siamese twins" Chang & Eng
- Specimen from John Wilkes Booth's vertebra
- Jaw tumor of President Grover Cleveland
- Rotating exhibits of photographic art and illustrations
- Tallest skeleton on display in North America
- Einstein's brain

And most notable for us as neurosurgeons, an extraordinary collection of human skulls by Dr. Joseph Hyrtl. All of these are on display and we would have walked through and been truly impressed by both the collection and the setting,

while drinking cocktails, mingling with colleagues and watching the SNS 100th history and mentor video put together by Dr. Kim Burchiel.

One of the exhibitions we would have passed and said, "ho hum, not so interesting, could never happen today" is the "Spit Spreads Death" exhibition on the Spanish flu Pandemic of 1918. Well, as we all know now, it can and has most definitely happened! That pandemic struck Philadelphia particularly hard compared to other US areas. This was the result of official leadership permitting a war bond rally and parade to happen in September 1918 just as soldiers were returning to the Philadelphia area and carrying the virus. The disease exploded in the population over the next 4 weeks, killing 17,000 people locally and infecting well over 100, 000 citizens, overwhelming the hospital system at the time. Somewhere between 50-100 million people died worldwide of the Spanish flu. Below is a photo of the best approach to managing the flu from that era- looks like not much has changed in over 100 years!

All of that being said, the great things to see and do in Philadelphia will be here after the pandemic: the great restaurants and museums, the "Rocky" statue where we would have had a group photo shoot, the trails and bikeways and all the things that make Philadelphia a great place to visit and live. And, the AANS is meeting here in 2022, so not so far away! I'm looking forward to returning to our meetings in person in the not so distant future and keep Philly in mind for a destination to visit- the cheese steaks await you!

**Centennial Celebration:
History, Mentors, and
our Future**
By Deborah L. Benzil,
MD Chair Scientific
Program Committee

**(Committee members-
Matthew Ewend MD,
Judy Huang MD)**

The Society of Neurological Surgeons was founded 100 years ago- this year's annual meeting was to celebrate that heritage at the canceled 2020 Annual SNS Conference while providing outstanding educational program on the theme "Higher Education" chosen by SNS President Dr. Karin Muraszko. This was designed to be truly a once in a lifetime opportunity that every SNS member would benefit from.

***Honor your mentor was a
subtext of the whole event.***

Dr. Kim Burchiel, SNS Historian, unveiled 2 hours of mentor tributes at the "Right Here, Right Now" virtual seminar on May 30th. The full tribute will run during the SNS annual meeting next year and is available [here](#)."

The full tribute was to have run continuously during the Sunday evening gathering at the Mutter Museum

Contact Dr. Kim Burchiel (burchiek@ohsu.edu) for more information On Honor your mentor.



We had an incredible line-up of key Speakers planned for the Conference!

Stephen Starr, American Restaurateur

Grossman Lecture: Huda Akil, PhD, Gardner C. Quarton Distinguished University Professor of Neurosciences

Sigal Barsade, Joseph Frank Bernstein Professor, Wharton Management

Astronaut and Physician James Bagian, MD

RRC Executive Director Pamela Derstine, PhD

Jody Foster MD and Beulah Trey PhD-specialists in achieving optimal professionalism

Reshma Jagsi, MD, Newman Family Professor of Radiation Oncology

Eve Higginbotham, MD Vice Dean Perlman School of Medicine

ACGME Leader Kevin Weiss, MD

University of Pennsylvania leaders J Larry Jameson, Kevin Mahoney, Peter Quinn and Cynthia Morgan

SNS Medical Student Initiatives By Miriam Shao; MD Candidate|Class of 2021 Albany Medical College

To ensure safety, education, and equity during the COVID-19 pandemic, the SNS has made changes regarding external medical school rotations for the 2020-2021 application cycle. External rotations have played an integral part in the neurosurgery residency application process by giving students opportunities to experience neurosurgery up close and providing faculty with chances to evaluate applicants with letters of recommendation. However, travel required for these external rotations increases potential disease spread. Furthermore, different regions have been impacted by COVID-19 in varying degrees, and many institutions are not allowing students to rotate in or out.

To minimize disease spread and ensure the most equitable experience for all students and programs, the SNS has decided to defer all neurosurgery external medical student rotations in 2020. Students should instead complete at least 8 weeks (2 rotations) of neurosurgery at their home institutions to receive adequate experience in the specialty. Students without a home program should

complete their 8 weeks (2 rotations) at the closest ACGME accredited program.

Letters of recommendation should all come from the student's home institution. Those from external rotations will be looked upon unfavorably except for those students without a home program. Two letters should be written by neurosurgical faculty and 1 by general surgery faculty, such as a program director, clerkship director, or surgical faculty mentor. Given the more limited time for neurosurgery rotations this year, letters from general surgery faculty will play an important role in providing insight into the breadth of applicants' surgical experience. Forthcoming are templates for letters of recommendation and guidelines for interviews. These guidelines will closely align with those from ERAS and NRMP.

Lastly, all neurosurgery training programs must honor the contracts of incoming PGY-1 trainees. We congratulate the incoming trainees for completing their medical school education and embarking on the next steps towards becoming future neurosurgeons.

In Memoriam

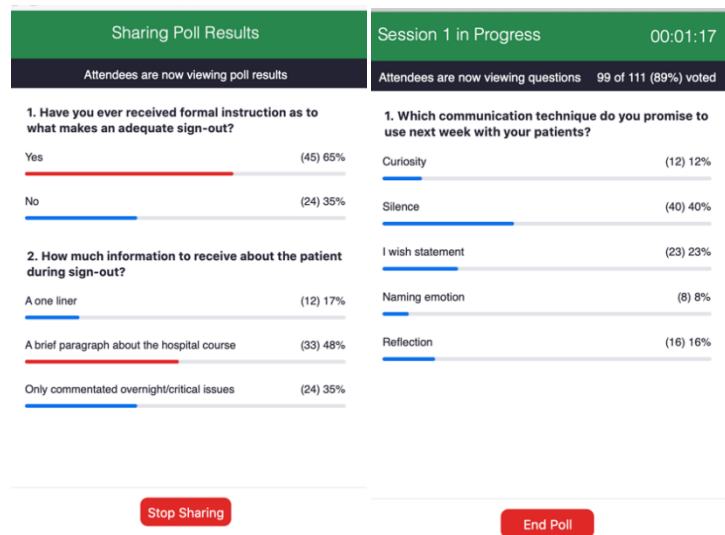
Norman C. Hill, MD: 1928-2020

Born and educated in Winnipeg where he was an award-winning medical student at the University of Manitoba, graduating in 1952. During residency at Mayo, he won the American Academy of Neurological Surgery Award. Dr. Hill returned to Winnipeg in 1958 where he became chief of the neurosurgical service and built a modern, subspecialized and interdisciplinary clinical neurosciences program that he led for almost 40 years. He was known for his humor and love of family.

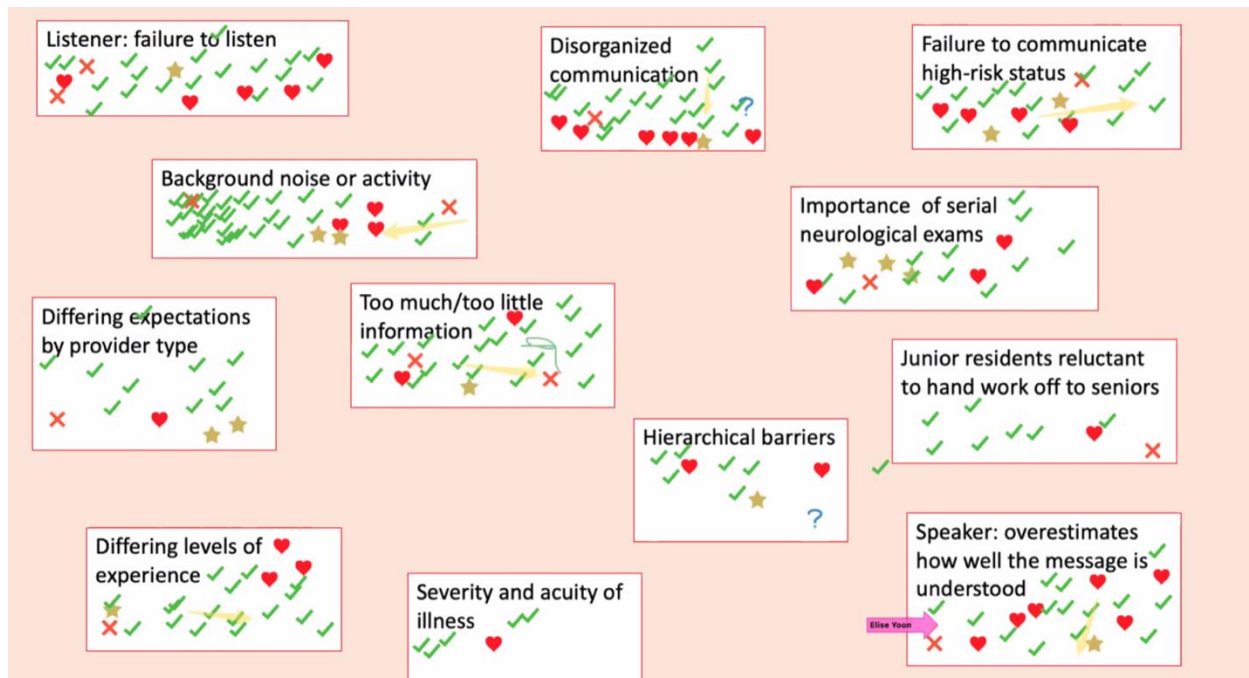
Donald P. Becker, MD: 1935-2020

Dr. Becker was born in Cleveland, Ohio and earned his MD at Western Reserve Medical School in 1961, returning to Cleveland to complete an internship and residency in neurological surgery. He joined the Western Reserve Faculty through 1968 when he moved to UCLA as Assistant Professor and Chief of Neurosurgery at Harbor General Hospital in Torrance, California. Dr. Becker's early work there in hydrocephalus led to an interest in intracranial pressure dynamics which he applied to the many head-injured victims seen there. In 1971, at the age of 36, he became the Chair of Neurological Surgery at the Medical College of Virginia, Virginia Commonwealth University. He returned to UCLA as Chief of Neurosurgery in 1985 where he advanced the department's academic research programs with major NIH programs in several neurosurgical specializations inclusive of traumatic brain injury. He was on staff at UCLA until 2008. He was well known for the number of quality individuals in clinical and basic science who achieved career success under his leadership.

SNS Resident Courses Go Virtual-continued



We used in-course polling to stimulate discussion and inform our faculty on the experience of the residents to tailor their discussion points, but also to help residents recall what they learned and commit to a change in behavior — in this case, to try a new communication technique.



This was an in-class exercise in which we asked the residents to annotate which handoff barriers they encountered. We had great participation!

COVID-19 impact on Neurosurgery Resident Training and ABNS certification examination

Stephen T. Magill, Kunal P. Raygor and Line G. Jacques,
University of California San Francisco, San Francisco CA, USA

The COVID-19 pandemic has had a significant impact on neurosurgical training programs, although the manifestation of this impact has varied by location. While some programs in hard hit areas have had neurosurgery residents reassigned to cover units filled with COVID patients (<https://weillcornellbrainandspine.org/redeployed-covid-19-front-lines>, accessed 2020-05-26), this is not the case in most of the country where the number of COVID positive patients has not overwhelmed the health care system. The impact we have experienced in San Francisco is primarily characterized by less operative training as hospitals shut down all elective procedures to prepare for a wave of patients that never arrived, presumably due to effective early social distancing and community interventions. Once the decision was made in mid-March to limit operative cases, we divided our service into two teams that did not overlap or have any contact with each other¹. We also had residents who stayed home and were in a backup role. This effectively dropped clinical work by more than 75%. The inpatient service dropped from a normal census of 60-80 patients at our primary hospital to 20 patients. Informal survey of resident case logs comparing the months prior to the elective shutdown, revealed an 80-90% drop in case volume beginning mid-March and continuing to late April. Further, social distancing brought weekly educational conferences, grand rounds, and journal clubs to a pause until effective virtual learning strategies were implemented as it became apparent the shutdown would be prolonged. These measures were effective at protecting our residents and fellows from exposure to the coronavirus and prevented spread within the staff were someone to become infected.

For high-volume programs, where meeting case minimums is not a problem and usually achieved by mid-residency, the 5-week period where operating rooms were paused should have relatively little impact on surgical skill development. While operative learning occurs in every case throughout one's career, and those opportunities are lost, new unique avenues of learning have emerged. Learning to adapt to new working conditions while continuing to provide emergent care has forced neurosurgical trainees to stay up to date while on the front lines, adopting new standards of PPE, and developing systems and gadgets to allow us to continue to provide safe and effective care during these times. Further, we have had opportunities to experience education in health systems that we may not otherwise have gained during residency. Trainees have played important roles in contingency planning, valuable training and life skills that will prepare residents to respond to future challenges. Discussions of what constitutes emergent, urgent, and priority cases have forced thoughtful assessment of case triage. The down time when on backup at home and with fewer patients on service has allowed extra time to focus on clinical research efforts (research laboratories were shut down, so basic research was also paused) and complete projects that could be done virtually.

COVID-19 has also impacted the ABNS Primary Exam. While our examinees felt maximally prepared for the original testing date, they understood the decision to postpone the testing date. Multiple steps were taken as a result of the COVID-19 pandemic to ensure safety of the test-takers and proctors as well as security and integrity of the exam. These included delaying the exam date by two months, setting

up secure web browsers for test-taking, and instituting web-based remote proctoring. At our institution, individuals taking the exam for credit were set up in individual academic offices, while those taking it for self-assessment did so remotely. All examinees tested the secure browser and remote proctoring application prior to taking the exam, and no technical issues were reported on the exam date. While the changes implemented this year were robust, additional contingencies, including the use of large testing rooms to facilitate social distancing while utilizing in-person proctoring, may be considered if remote exams are required in the future. Overall, while our examinees would have preferred to take the exam as originally scheduled, the delayed testing schedule was implemented smoothly, for which the ABNS should be commended.

Perhaps one of the most beneficial long-term outcomes of this terrible pandemic, has been the advent of telehealth. At our program, residents and fellows have stayed involved in patient care, joining in virtual clinics where they learn, along with attendings venturing into telehealth for the first time, the best ways to evaluate and manage patients from afar. For quaternary care centers where neurosurgeons often practice, these skills and the associated infrastructure will allow us to provide more convenient care for our patients long after the pandemic has passed.

While the cancellation of national and international meetings has hurt resident education and career development by limiting opportunities for research presentations and networking, it has led to the rapid development and dissemination of online lectures, panels, discussions and other educational content that has provided trainees sheltering at home with numerous options for expanding their education in ways that would not have occurred if they had been in the operating room. It has also leveled the educational playing field, bringing teaching from surgical masters that might be restricted to conferences that require expensive travel costs, or lectures at individual institutions, to neurosurgical trainees globally. The recorded lectures are often distributed freely or at low cost afterwards and have created access to incredible resources that trainees might never have had the time or opportunity to learn. In conclusion, while the loss of operative time has undoubtedly impaired education and the loss of national meetings has limited career development and networking opportunities, the neurosurgical response to the COVID pandemic has provided numerous new opportunities for learning in complementary areas that might otherwise have been overlooked or inaccessible. The explosion of telehealth and virtual educational content has spurred dissemination of neurosurgical educational content, which will undoubtedly benefit all trainees, especially those at smaller programs, or internationally, which will strengthen and promote the diversity of the neurosurgical workforce moving forward.

1. Burke, J. F. *et al.* Letter: The Coronavirus Disease 2019 Global Pandemic: A Neurosurgical Treatment Algorithm. *Neurosurgery* (2020) doi:10.1093/neuros/nyaa116.

Neurosurgery Response to Resident Application Challenges During the 2020-2021 Cycle

Stacey Q. Wolfe, MD; Chair, SNS Medical Student Committee
Nathan R. Selden, MD, PhD; Secretary, SNS

The residency application cycle has changed dramatically in response to the COVID-19 pandemic. Neurosurgery has prioritized **safety, education, and equity** during the development of our specialty's national response and planning. External sub-internship rotations, or Acting-Internships (AIs), the interview process, and ERAS and Match dates have all been affected. There are significant implications for applicants, as well as for programs. We here report on recommendations made by national medical leadership bodies as well as policies specifically developed by organized neurosurgery to help navigate this extraordinary time.

The Coalition for Physician Accountability (CPA), representing all major national stakeholders in medical education and training, including the AACOM, AAMC, ACCME, ACGME, AMA, AOGME, AOA, CMSS, ECFMG, FSMB, LCME, NBME, and NBOME, has developed four national guidelines for the 2020-2021 residency application cycle in all specialties. Although this guidance does not supersede requirements imposed locally by medical schools, sponsoring institutions, and residency programs, it has been widely adopted by most institutions and programs. Of highest importance are ensuring that core competencies are met by all students and that the residency selection process remains as equitable and transparent as possible for applicants and training programs. The CPA recommendations 1) discourage away rotations (with rare exceptions), 2) encourage online interviews in all cases, 3) commit to delayed opening of the ERAS application platform (with likely delays in the National Residency Match Program), and 4) plan transparent communication around all forthcoming changes. The full recommendations can be viewed https://mkonrmp3oyqui6wqfm.kinstacdn.com/wp-content/uploads/2020/05/2020.05.06-Final-Recommendations_Final.pdf.

In parallel with these recommendations, the SNS Medical Student Committee has developed a policy for the current neurosurgery residency application cycle. That policy was distributed for comment to all U.S. residency programs, approved by the SNS Executive Council, and individually endorsed by leadership representatives to the One Neurosurgery Summit from the following organizations: the SNS, AANS, CNS, ABNS, RRC for Neurological Surgery, American Academy of Neurological Surgery, and the AANS-CNS Joint Washington Committee.

- The neurosurgery policy, answers to these and other FAQs, and general objectives for neurological surgery sub-internship rotations are all available on the SNS website <https://www.societyns.org/medical-students/external-medical-student-rotations>, and will continue to be updated as the situation unfolds. Neurosurgery's policy has also been posted at the AAMC website and elsewhere. Please also note, to improve the quality and consistency of applicant evaluations, faculty recommenders should use templated forms. Neurosurgery-specific forms are under development and will be available on the SNS website soon.

Interview Season

The SNS Medical Student Committee and other stakeholders continue to actively monitor developments and discuss a policy regarding the 2020-2021 neurosurgery match season interview process. We recognize, however, that external developments, local conditions, and the decisions of CPA members and other national stakeholders are likely to make any specialty-specific policy a *fait accompli*. At this point in time, we strongly encourage all programs to prepare for the eventuality of an entirely remote interview process. To preserve equity, local candidates should also complete interviews virtually, following the same process as candidates from other medical schools and geographic locations. It is therefore vitally important to develop ways now to showcase your program online, possibly including:

- Virtual tours of clinical, research, and academic learning environments.
- Updated websites with granular information such as resident publications, awards, and other accomplishments.
- Taped resident and faculty interviews.
- Virtual attendance at departmental didactic conferences and teaching sessions (with attention to institutional HIPAA guidelines).
- Research and writing experiences.
- Resident mentoring of applicants.
- Virtual gatherings of applicants and residents to help transmit program culture, expectations, and training methods.
- Effective interview forums for applicants with current residents, advanced practice providers, faculty, and affiliate faculty.

Working Together to Sustain a Strong Future

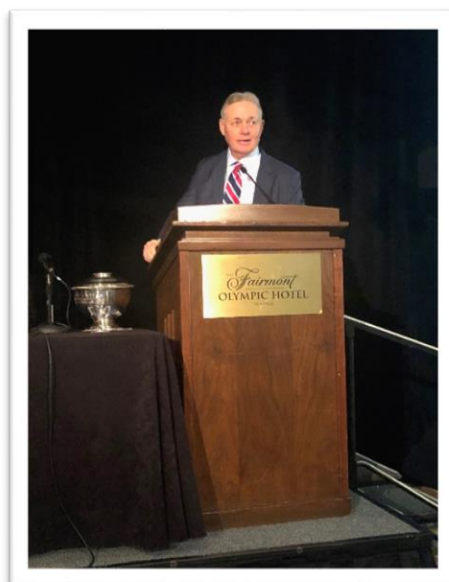
The SNS has worked diligently to make all neurosurgical policies and recommendations actionable and specialty specific, given the distinct nature of neurosurgical training. To do so, we have depended on the collective wisdom of neurosurgery program leadership around the country in order to enhance the application process despite the unique challenges posed by the COVID-19 pandemic. We anticipate that the present challenges will drive innovation and even closer collaboration between programs across the nation that will outlast the present challenges and better serve our specialty and, ultimately, our patients.

During the pandemic, the SNS remains committed to and focused on its core mission of supporting the educational and governance functions of U.S. academic neurosurgery departments and ACGME-accredited programs. We recognize that the success of our specialty will depend for decades to come on the quality and accomplishments of the residents we recruit and begin to train during this pandemic.

"Appeared previously in AANS Neurosurgeon"

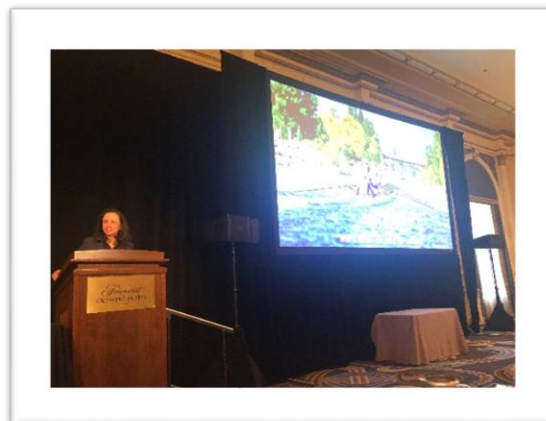
Calendar of cancelled and virtual events

AANS					
Date	Cranial	Spine	Type	EVENT	Status
6/9/20 - 6/10/20			Webinar	28th International Conference on Nanomedicine and Nanomaterials	
6/27/20 - 7/1/20	X	X	Conference	Neurotrauma 2020	CANCELLED
*	X			Stanford Brain Tumor Center Symposium: Breakthroughs in Brain Tumor Treatment	CANCELLED
7/13/20	X		Webinar	3rd Annual Aspen Conference on Pediatric Cerebrovascular Disease and Stroke	Rescheduled for 7/13/21 - 7/17/21
7/23/20 - 7/24/2020	X	X	Conference	NeuroSafe 2020 Symposium	Rescheduled for 7/29/21 - 7/30/21
8/2/20 - 8/5/20	X	X	Conference	200 Annual SUN Meeting-Montana	Rescheduled for 8/8/21 - 8/11/21
8/4/20 - 8/8/20	X		Conference	2 nd Rhoton Society Meeting & 8 th International Symposium in Microneurosurgical Anatomy	Being rescheduled
8/12/20 - 8/15/20	X		In Person Course	The Pittsburgh Course: Comprehensive Endoscopic Endonasal Surgery of the Skull Base	
8/28/20 - 8/31/20	X	X	Conference	Western Neurological Society 66th Annual Meeting	CANCELLED
9/2/20 - 9/5/20	X	X	Conference	2020 From Cranial to Spine: An Overview of Neurosurgical Topics for the Advanced Practice Provider	
9/10/20 - 9/12/20	X	X	In Person Course	2020 Managing Coding and Reimbursement Challenges-Pittsburgh, PA	
9/25/20	X	X	Conference	Recognition and Management of Common Neurosurgical Conditions in the Pediatric Practice	
9/30/20 - 10/3/20	X		In Person Course	The Pittsburgh Course: Comprehensive Endoscopic Endonasal Surgery of the Skull Base	
9/30/20 - 10/2/20	X		In Person Course	6th Endoscopic Skull Base Dissection course Hands-on dissection, lectures & mini symposium	
10/28/20 - 10/30/20	X	X	In Person Course	GOODMAN Oral Board Preparation Course	LEVI
*	X		Conference	11th International Symposium on NEUROPROTECTION and NEUROREPAIR 18th International Conference on BRAIN EDEMA and CELLULAR INJURY	Postponed to 2021 but no date
*	X	X	Conference	48th Annual Meeting of International Society for Pediatric Neurosurgery	Postponed to 2021 but no date
10/22/20		X	Conference	Spine Tumor Seminar 2020	
11/2/20 - 11/6/20	X		In Person Course	Mayo Clinic Skull Base and Aneurysms Rhoton Course: Microsurgical and Endoscopic Approaches 2020	
11/18/20 - 11/21/20	X		In Person Course	The Pittsburgh Course: Complex Endoscopic Endonasal Surgery of the Skull Base	



Calendar of cancelled and virtual events - continued

CNS					
Date	Cranial	Spine	Type	EVENT	Status
6/3/20		X	Virtual Visiting Professor	Osteotomies for Cervical Deformity Correction Faculty: Vincent C. Traynelis,	
6/5/20	X		Virtual Visiting Professor	Is Functional Neurosurgery Elective? Faculty: Aviva Abosch & Ellen L. Air	
6/9/20	X		Virtual Visiting Professor	Venous Sinus Stenting for Pseudotumor Cerebri Faculty: R. Webster Crowley	
6/11/20	X		Virtual Visiting Professor	Towards a Greater Understanding of the Surgical Management of Facial Pain Faculty: Raymond F. Sekula, Jr	
6/20/20 - 6/23/20	X		Conference	American Society for Stereotactic and Functional Neurosurgery Biennial Meeting	CANCELLED
6/29/20 - 7/3/20	X		In Person Course	International Summer School Transnasal Endoscopic Surgery: From Sinuses To Skull Base	
7/13/20			Webinar	3rd Annual Aspen Conference on Pediatric Cerebrovascular Disease and Stroke	Rescheduled for 7/13/21 - 7/17/21
*			In Person Course	Mayo Clinic's 1st Annual Complex Spinal Disorders and Techniques Hands-On Workshop: Innovations in Procedural Training	Postponed - No Date
7/23/20 - 7/24/2020	X	X	Conference	NeuroSafe 2020 Symposium	Rescheduled for 7/29/21 - 7/30/21
8/12/20 - 8/15/20	X		In Person Course	The Pittsburgh Course: Comprehensive Endoscopic Endonasal Surgery of the Skull Base	
8/25/20 - 8/26/20	X	X	In Person Course	2020 Surgical Treatment of the Craniocervical Junction	
8/27/20 - 8/28/20	X		In Person Course	2020 Skull Base Fellows Course	
9/11/20 - 9/12/20	X	X	Conference	2020 Tumor Section Satellite Symposium	
9/12/20 - 9/13/20	X	X	In Person Course	2020 September Oral Boards Review Course	
9/12/20 - 9/16/20	X	X	Conference	CNS Annual Meeting	
9/30/20 - 10/2/20	X		In Person Course	6th Endoscopic Skull Base Dissection course Hands on dissection, lectures & mini symposium	
9/30/20 - 10/3/20	X		In Person Course	The Pittsburgh Course: Comprehensive Endoscopic Endonasal Surgery of the Skull Base	
11/2/20 - 11/6/20	X		In Person Course	Mayo Clinic Skull Base and Aneurysms Rhoton Course: Microsurgical and Endoscopic Approaches 2020	
11/7/20 - 11/8/20	X	X	In Person Course	A Career Guide for New and Attending Physicians and Fellows	
11/18/20 - 11/21/20	X		In Person Course	The Pittsburgh Course: Complex Endoscopic Endonasal Surgery of the Skull Base	



NEW 2019 MEMBER PROFILE HIGHLIGHTS

Warren W. Boling, MD. is Chairman of the Department of Neurosurgery and Residency Program Director at Loma Linda University and Chief of Neurosurgery at Loma Linda University Hospital. He has a dedicated interest in improving the lives of people with epilepsy and in elevating the medical and surgical treatment of neurological diseases in underserved regions of the world. Dr. Boling had developed the first surgery for epilepsy program in East Africa.

Aaron A. Cohen-Gadol, MD. is a professor at the Department of Neurosurgery, director of Neurosurgical Oncology and its fellowship, and Co-director of the Signature Center for Brain and Neurological Tumors at Indiana University. His clinical research interests include neurosurgical operative anatomy using virtual reality and advanced three-dimensional modeling, innovative operative approaches to deep lesions, and intraoperative fluorescence/mass spectroscopy. His basic science research is focused on novel drug therapies for glioblastoma and has published more than 450 publications on that subject.

Curtis E. Doberstein, MD. is director of the Neurosurgery Residency Program and professor of neurosurgery at The Warren Alpert Medical School of Brown University. He specializes in the surgical treatment of cerebrovascular disease and skull base tumors and is director of the cerebrovascular and skull base surgery programs at Brown. He has research interests in occlusive cerebrovascular disease and ischemic cell death and has been nominated as a top neurosurgeon by his peers in Rhode Island Monthly for over 20 years.

Chirag D. Gandhi, MD. is Professor of Neurosurgery, Neurology, and Radiology and Director of Neurosurgery for the Westchester Medical Center Health Network. His main clinical and research focus is in patients with cerebrovascular disorders, with an interest in cerebral aneurysms, AVMs, and stroke. He has over 150 peer-reviewed publications and has dedicated much of his career to educating medical students, residents, and fellows and focusing on delivery of high-quality neurosurgery through an entire health network.

Anand V. Germanwala, MD. is an Associate Professor in the Departments of Neurological Surgery and Otolaryngology at the Loyola University Chicago Stritch School of Medicine and Neurological Surgery Residency Program Director and Chief of Neurological Surgery at the affiliated Edward Hines, Jr. VA Hospital. He specializes in the treatment of patients with brain tumors, especially those involving the cranial base and maintains a federally funded laboratory investigating genetics of skull base tumors. He has been recognized by the CNS as one of ten emerging leaders through the Vanguard Leadership Award in neurosurgery.

Costas G. Hadjipanayis, MD, PhD. is a Professor of Neurosurgery and Oncological Sciences at the Icahn School of Medicine at Mount Sinai. He also serves as Chair of the Department of Neurosurgery at Mount Sinai Union Square/Beth Israel and as Director of Neurosurgical Oncology for the Mount Sinai Health System in New York City. He is a neurosurgeon-scientist with a focus on novel translational treatments of brain tumors was the first to use Gliolan and perform FGS on a glioma patient in the US in 2011. One of his most notable accomplishments was leading the FDA approval in the US of 5-ALA (Gliolan) for glioma surgery in June of 2017.

Matthew Allan Hunt, MD. Dr. Hunt is an adjunct professor of neurosurgery at the University of Minnesota Department of Neurosurgery and with a practice in the community which includes brain tumor and spine surgery. While at the University he developed NeuroSafe, a department-sponsored national conference dedicated to quality and safety in neurosurgery and worked as part of a multi-disciplinary team treating pet dogs with spontaneous brain tumors as a model of human disease.

Line G. Jacques, MD. is the Vice-chair of the Department of Neurological Surgery at the School of Medicine at the University of San Francisco, and recently received the John Adams Endowment for Peripheral Nerve and Pain Research. She is known nationally and internationally for her lecturing and teaching and has a keen interest in Neuromodulation and Peripheral Nerve surgery. She is the current Chair of the Division of Spine and Peripheral Nerve (Peripheral Nerve Section) and has numerous publications and book chapters and is a peer reviewer or deputy editor for 13 different journals.

Alexander Arash Khalessi, MD has been with the University of California, San Diego since 2011 where he was charged with developing a destination cerebrovascular service. He led UC San Diego's recognition as the third comprehensive stroke center in the country and ultimate expansion to one of few health systems nationally with two comprehensive stroke centers in both Hillcrest and La Jolla. He is now Chair of the Department of Neurological Surgery at UC San Diego. Dr. Khalessi directs national and international courses, including the intermediate resident course for the Society of Neurological Surgeons. He has published over 130 peer reviewed papers and monographs with over 175 abstracts and presentations and has served as principal or co-investigator of more than 15 clinical trials and grants. His translational research interests include the impact of neurovascular devices on endothelial cell biology.

NEW 2019 MEMBER PROFILE HIGHLIGHTS

Ricardo Jorge Komotar, MD is Professor of Neurological Surgery at the University of Miami School of Medicine where he holds several Directorship positions. His main clinical interests are surgical and radiosurgical (Gamma Knife) treatment of primary and metastatic brain tumors, as well as meningiomas and pituitary lesions. He is an internationally recognized leader in the field of brain tumors and performs nearly 700 procedures for these conditions each year using advanced cutting-edge surgical/radiosurgical techniques. His research interests include clinical trial development and translational neurooncologic investigations designed to pioneer new therapies for brain tumors. He has over 500 peer-reviewed scientific articles, book chapters, and invited editorials and has received research funding from the NIH as well as other national and regional grants. He is Founder and Director of the Annual Neurosurgery Charity Softball Tournament to benefit brain tumor research. He is also an Emmy nominated physician for his work on the series "Breakthrough Medicine".

N. Scott Litofsky, MD has been on staff at the University of Missouri in Columbia since 2004 where he directs the neuro-oncology, radiosurgery, and skull-base efforts. He is currently Professor and Chief of Neurological Surgery and Director of their Residency Program. He is also the Trauma Program liaison and an ATLS instructor, co-Director of the Neurosciences Center, and Department of Surgery Vice-Chair for Leadership, Professional Development, and Wellness. He has over 100 peer-reviewed articles and book chapters, with research focused on brain tumors (quality of life) and traumatic brain injury (anemia and coagulopathy). He is Coordinating Editor of Practical Reviews in Neurosurgery and does peer-review for over 40 different journals. He and his wife successfully climbed Mount Kilimanjaro in 2018.

William J. Mack, IV, MD is Professor of Neurosurgery, Vice Chair of Academic Affairs and a faculty member of the Neuroscience Graduate Program at the University of Southern California where his practice is focused almost exclusively on cerebrovascular disease. He also completed a Master's degree in Clinical and Biomedical Investigation at USC. He is the Director of the Cerebrovascular Laboratory at the Zilkha Neurogenetic Institute. His overarching academic goal is to examine the effects of inflammation in experimental and clinical models of stroke and cerebrovascular disease. He has been continuously funded by the NIH for his research efforts and has authored over 200 scientific articles and chapters in medical textbooks.

Julie G. Pilitsis, MD, PhD is a Professor of Neurosurgery and of Neuroscience at Albany Medical College and Chair for the Department of Neuroscience and Experimental Therapeutics. She is also the Chief of the Division of Functional Neurosurgery and plays a very active role on several committees in organized neurosurgery. She is the past chair of AANS/CNS Section on Pain, AANS/CNS Section on WINS, on the officer track for ASSFN. Her passion is to support everyone involved in neuromodulation to be successful in their pursuits, advancement and ongoing professional development. She developed a leadership development program at her institution and introduced it nationally at the North American Neuromodulation Society where the program will be starting its third year. Dr. Pilitsis has published over 120 journal articles and has maintained 10 years of continuous NIH funding.

Marjorie C. Wang, MD, MPH. Dr. Wang is Professor, Vice Chair of Clinical Operations and Quality, Chief of the Community Division of Neurosurgery, and Director of the Complex Spine Fellowship Program as well as several other roles at the Medical College of Wisconsin. Her clinical practice and research focus on spine, patient reported outcomes, quality of care, and health services. She has particular interest in cervical spinal disorders and imaging techniques and has been involved in a number of funded clinical trials. She is the Director of the Spine Service Line for the Froedtert/Medical College of Wisconsin Enterprise, which includes three hospitals and 32 community-based clinics. She is co-chair of the Safety Committee for the Integrated Procedural Platform of Froedtert/Medical College of Wisconsin. She is passionate about the role of surgeons in leadership, quality, and patient advocacy. Dr. Wang is also one of 61 senior female faculty members from across the United States and Canada selected to participate in the 2019-2020 Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women.

Michael Y. Wang, MD. Dr. Wang currently serves as a Professor in the Departments of Neurological Surgery and Rehabilitation Medicine at the University of Miami, Miller School of Medicine. He is the Director of Neurosurgery at University of Miami Hospital and the Spine Fellowship Director. Dr. Wang has been an advocate for neurosurgeons and spinal surgeons. He was elected to the AANS Young Neurosurgeons Executive Committee in 2003 and has served and chaired on multiple committees in AANS and CNS as well as within the North American Spine Society. He has also served in numerous other leadership roles for several national and international organizations. His research and clinical interests include minimally invasive spinal surgery, spinal deformity, new technologies, ERAS, robotics, and spinal cord injury biomarkers. He has edited 12 medical textbooks and authored over 600 publications in the medical literature, over 200 of which are peer-reviewed and sits on several editorial review boards.