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The Society of Neurological Surgeons

this issue

SNS Executive Council

Message from the President

M. Sean Grady, MD

As the pandemic goes past the 7 month mark, we have all been as busy as ever and COVID 19 looks very much like it will affect all of our activities in the new year. That being said, we are planning an "in-person" meeting in Detroit with the Department of Neurosurgery at Henry Ford Health System being the host. It will be a terrific meeting and may well be the first in-person meeting we have in academic neurosurgery!

These past 4 months have seen a tremendous amount of activity around one of our most important academic activities, the Neurosurgery Match. Drs. Stacey Wolfe and Reza Yassari have important updates both in this newsletter and on the SNS website regarding video interviews and "second looks", as well as what programs can do to highlight the features of their program. It is a difficult year, to be sure, as many of us count on the in-person interview to gather the more subtle elements in the applicant's personality, as well as insuring that the applicant appreciates the culture of the program. This is likely true across many smaller subspecialties though none has as long a training interval as Neurosurgery. I'm quite certain we will find some efficiencies in going through the Match this year that we will want to continue in the years to come, no matter what.

"No margin- no mission" is a commonly heard aphorism, and it certainly applies to the SNS. As the mission of the SNS expanded over the past 10 years (CAST, the resident courses, the Summit as examples), we faced substantial financial pressure in achieving those missions. The only source of revenue for the SNS is membership dues and any residual monies from our annual meeting. The exclusion of direct industry sponsorship has been a deliberate choice by the SNS to keep our educational mission free from critique about potential for industry bias. It is important to note that industry does provide pass through support and educational grants for our resident courses as well as the RUNN course, and we are grateful for that support. Nevertheless, we faced a critical point about 18 months ago and through the Summit process, the CNS leadership stepped forward in multiple different ways to sustain our mission. The partnership has been terrific. We are now in the early stages of recovery, and between getting costs under control and examining very carefully our revenues, I am confident we will be in a secure position several years from now.

Mark your calendars now for the Detroit meeting- May 22-25, 2021!

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

Despite the ongoing impact of the COVID-19 pandemic, the SNS continues to vigorously pursue its mission of support for U.S. neurosurgery programs and academic departments. This mission includes facilitating outstanding education for neurosurgical residents and fellows, encouraging the engagement of medical students interested in a career in neurosurgery, and supporting governance best practices in neurosurgical departments and training programs. A partial listing of SNS activities since the June newsletter:

- The SNS Junior Resident Courses in March and April were partially replaced with an asynchronous online didactic curriculum and other learning resources. The SNS PGY1 Boot Camp Courses were held in July utilizing a combination of online lectures and interactive content plus hands on simulations taught by each local program.

- The One Neurosurgery Summer Summit was held virtually on Thursday July 27th, 2020. In addition to the regular agenda, Summit representatives spent half the meeting discussing their individual organizations' strategic plans, with the goal of maximizing progress by the specialty of neurosurgery as a whole. A fall virtual Summit meeting is planned for late October.

- The 2020 SNS Annual Meeting, originally scheduled for the end of May in Philadelphia, PA, at the University of Pennsylvania, was cancelled. The SNS instead held virtual annual business and Executive Council meetings, plus a virtual members' meeting that presented just-in-time information for academic programs and residencies as they navigated the first stages of the COVID-19 pandemic. The virtual members meeting was the first major, live neurosurgical meeting during the pandemic and allowed the SNS to carry on its core functions such as membership and officer elections and bylaws revisions, as well as to advance our mission of service to residency programs and academic departments.

- The SNS Historian has collected and curated mentorship tribute videos by current SNS members and also created an SNS historical video. Both videos premiered at the virtual annual members meeting. Work proceeds on a special 100th SNS Anniversary Membership volume, with historical notes and biographies of current and past SNS members.

- As detailed in the President's report, the SNS Committee on Medical Students has done extensive work to provide information and advice as well as issue recommendations regarding sub-internship rotations and the upcoming residency interview season.

- The SNS Curriculum Committee has launched a collaboration with the ABNS to link the SNS residency curriculum to ABNS primary exam questions.

- The SNS continues work as one of only three specialties nationally participating in an ACGME pilot project to create a national residency QI curriculum. Four neurosurgery residency programs participated in phase 1. After launching phase 2 of the project with a virtual seminar for program directors, about 20 programs are now participating.

- SNS-CAST fellowship accreditation activities continue apace online, despite the pandemic.

- Representatives to the One Neurosurgery Summit have completed a white paper on the last two decades of advances in neurosurgical education and training in the United States, which is now in press at the *Journal of Neurosurgery*.

2021 Annual meeting of the Society of Neurological Surgeons
by Matthew G. Ewend, MD one behalf of the Program Committee

It was tremendously disappointing to be unable to convene as a society in Philadelphia this past May. This missed opportunity demonstrates the importance of our annual gathering, where we think and debate about the future of organized neurosurgery, along with how it relates to education and research.

The leadership of the SNS, in conjunction with the scientific program committee, is now deep into planning the May 2021 meeting in Detroit. While our society had originally planned to commemorate of our 100th anniversary at the meeting in Philadelphia, we plan to pivot our gaze forward to look at the next 100 years in Detroit.

Detroit is the perfect host city for this discussion in so many ways. Similarly to how neurosurgery must look at what strategies will be successful in the coming few decades and acknowledge how they may be different than what brought our success in the past, Detroit – or "America's Comeback City" – must make similar, difficult decisions as it leads the rebuilding of the Midwest.

We are lucky to be able to build off the outstanding scientific program from 2020, utilizing the following agenda:

Saturday – This program will focus on the needs of the residency program directors.

Sunday – We will look at the changing landscape of healthcare, viewed through the experience of Henry Ford Health System. Faculty from Henry Ford will talk to us about how the role of value-based care, patient-reported outcomes and social determinants of health have influenced the strategy of its System and outstanding Department of Neurosurgery.

Local hosts Dr. Steve Kalkanis, the newly appointed CEO of Henry Ford Medical Group and Chair Emeritus of Neurosurgery, Interim Neurosurgery Chair Dr. Jack Rock, Program Director Dr. Ellen Air, and their colleagues will focus on the translational research innovation that Henry Ford has led, and then pivot to breakthroughs in their education and clinical programs.

Henry Ford Hospital will host this meeting, following with a luncheon at their new Henry Ford Cancer Pavilion, which opens in a few months.

On Sunday afternoon, we will focus on ethics and professionalism, which includes conversations around troubled surgeons and how to both identify and coach them.

Monday – The theme of this morning's meeting is the next 100 years. We will look into what practice may encompass in the future and discuss what it is like to practice in rapidly changing environments –we have all had a crash course on this in 2020! Next, we will talk about teaching and learning in the next several decades, including a discussion on how we continue to attract the best students to our discipline. Finally, we will pivot to what patients will expect in the future, and how we can meet them on their journey to improve neurosurgical care through improved partnerships with patients.

For the first time, we will have two presidential addresses. The first will be by Dr. Karin Murazko, who served as SNS president from 2019 - 2020. Then, our current president, Dr. Sean Grady will share his vision for the next 100 years.

Monday's afternoon session will focus on cultural competency and diversity, and highlight the Grossman award lecture.

Tuesday – This morning's meeting will focus on the culture of our training programs, and we will hear crucial updates from SNS efforts, which includes ABNS and the RUNN course.

In between, there will be plenty of time to enjoy outstanding venues, including dinner at the Detroit Institute of Art and the Gala at the National Constitutional Center. This is a beautiful time of the year to be in Michigan, and the opportunity to convene our group and discuss the future of neurosurgery should make for a memorable few days together.

SNS in Motown
Ellen L. Air, MD, PhD and Steven N. Kalkanis, MD

After a wild and unpredictable 2020, the Department of Neurosurgery at Henry Ford Health System is eager to welcome you to Detroit in May. We can't wait to show you all the ways in which Detroit is the greatest Comeback City! The revitalized downtown is home to an ever-growing number of restaurants, offering food from around the world. There is no shortage of unique coffee houses, cocktail bars and breweries in which to gather and reconnect with colleagues. The central entertainment district is home to three sports venues and numerous theaters creating a hub of activity.

We will host the meeting at the well-appointed MGM Grand Hotel and Convention Center. On Saturday night, the opening reception will be held in the brand-new event space on the 16th floor of One Campus Martius. In May, the weather should be perfect to enjoy the incredible panoramic views of Detroit and the river from its 5,500 sq.ft. covered, wrap-around terrace. Located in the heart of downtown, adjacent to Campus Martius Park, the many restaurants and bars are easily accessible.

Sunday morning, we welcome you to the flagship Henry Ford Hospital. Founded by Henry Ford himself, we look forward to sharing all the ways the health system, and specifically the Department of Neurosurgery, exemplify his philosophy of innovation. We will then proceed to lunch in the newly completed Brigitte Harris Henry Ford Cancer Pavilion. This 187.000 sq. ft. facility has been specifically designed to provide the highest level of patient-centered and multi-disciplinary care.

Sunday night's reception at the Detroit Institute of Art will be a special treat. The Great Hall and Rivera Court are home to magnificent architecture and Diego Rivera's masterpieces: the Detroit Industry frescos. Founded in 1885, the Detroit Institute of Art houses one of the largest and most significant collections in the United States. With more than 65,000 works, it is also one of the most diverse collections in the country, ranging from Vincent van Gogh's Self-Portrait (the first Van Gogh painting to enter a U.S. museum collection) to housing the General Motors Center for African American Art.

Monday, we cap off the meeting with a formal dinner at the MGM Grand. We can't think of a better reason to celebrate than finally being together in person.

Hopefully you will take the opportunity to explore the many great things to see and do in Detroit and Southeast Michigan. One can enjoy a walk or run along the International Riverfront walk, while capturing views of Canada. Take a cruise down the Detroit River. Explore Eastern Market, which includes a bustling Saturday Farmer's Market and many shops offering local products. The Henry Ford Museum and Greenfield Village is a museum like no other. A walk through the indoor museum is a tour through America's history of innovation. Outside, Greenfield Village, is home to an unprecedented collection of places that defined America from Thomas Edison's laboratory to the Wright Brothers Bicycle shop. Of course, don't forget Motown!

We can't wait to show you all the Motor City has to offer.

Reception and Strolling Dinner on Sunday for all attendees and Guests in the Grand Atrium and Rivera Court of the Detroit Institute of Arts

Update on SNS Virtual Resident and Intern Bootcamps 2020

Dr. Martina Stippler, Director of Neurotrauma, Beth Israel Deaconess Medical Center
Dr. Carolyn Quinsey, Associate Program Director, Department of Neurosurgery, University of North Carolina at Chapel Hill
Dr. Gregory Zipfel, Chair, Department of Neurological Surgery, Washington University School of Medicine
Dr. Richard Byrne, Chair, Department of Neurosurgery, Rush University Medical Center

Because of the COVID-19 pandemic, we held the SNS bootcamps virtually over the summer. The Resident Bootcamp took place on May 28 and 29, and the Intern Bootcamp on July 16 and 17, 2020. Course directors provided virtual hands-on education/direction if a site director was not available.

Our 4-hour curriculum was taught over 2 days. The resident bootcamp covered leadership, breaking bad news, risk management, hand-offs, and the consent process. The intern bootcamp covered ICP management, neurosurgical emergencies, and pearls for the junior resident. The fourth session was a hands-on session reviewing EVD placement setup, LD placement, VPS taps, and gowning and gloving; one of the post-course exercises was a suturing workshop.

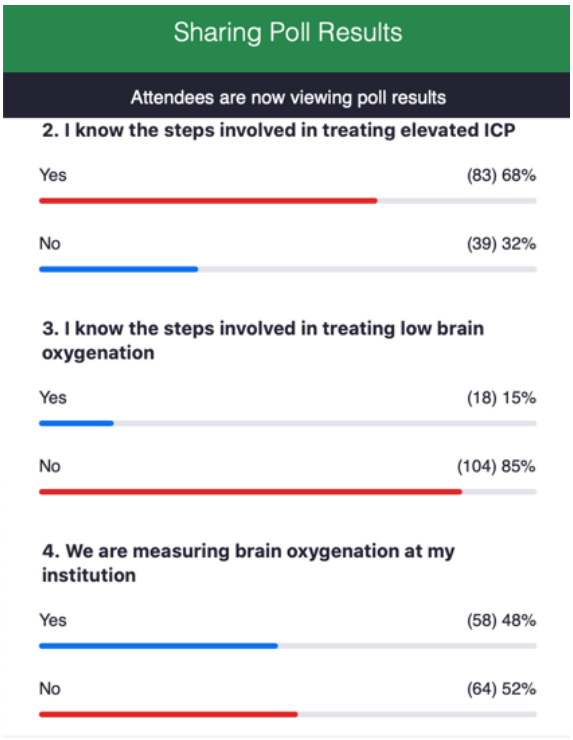
Because of the virtual format, we used new active teaching and learning techniques to engage the residents. We used polling, word clouds, comment walls, white boards, surveys, and breakout rooms. Of residents attending, 73% to 80% rated the engagement with course faculty and in class exercises as excellent or good. The overall rating compares favorably to the 2019 in-person bootcamp evaluation. Polls had the most favorable response, with 90% of the residents finding them helpful and engaging. Interestingly, 52% found reflection paragraphs the most difficult preclass or postclass exercise. This is not surprising, since this exercise has a higher cognitive load and incorporates several elements of active learning at once: recall, reflection, and generation.

To allow for synchronous and asynchronous learning, we developed a webpage (https://www.societyns.org/junior-resident-course) that laid out the objectives, pre-course assignments and post-course work in a succinct way. A total of 77% of residents completed the pre-course work. Of those who did not complete the work, they cited lack of time (30%) or that they were unaware of the expectation (70%) as the reasons. The post-course work was completed by only half of the residents.

Sessions were recorded and are now posted together with the in-class learning material on the website to be accessed by residents who could not attend the live event. This also gives the residents the opportunity to revisit lectures and course material throughout their junior year. We looked at the website analytics, and as of October 12, 2020, the course material was viewed 151 times after the course. It is important to note that the average time on the course webpage is 93 minutes, which signals that the viewers find the content engaging. The SNS office also has fielded multiple requests asking what learning materials for residents who could not attend the live course; they were able to direct the residents and program coordinators to the SNS webpage. This online resource might be useful for learners for some time to come.

With the hands-on-training portion, consisting of videos, discussion, and small-group learning with a local faculty member, we could overcome some of the drawbacks of a virtual teaching format. Most of the residents embraced it and found it a positive experience (83%). We ended the intern bootcamp with a Kahoot! game that reviewed the content and also incorporated the social and fun aspects of the traditional bootcamp.

Although the SNS was unable to hold in-person bootcamps, the virtual boot camps were a success and well received by the residents. The recordings and web landing page for course material also seem to be great resources for residents even after the course. It remains to be seen how our experience with virtual teaching will inform the SNS bootcamps to come.



Update on SNS Virtual Resident and Intern Bootcamps 2020 - continued

Here is a screenshot of our Pearls for Residents discussion, which was moderated by Dr. Sean Grady, Dr. Richard Byrne, and 3 chief residents: Drs. Nitin Agarwal (University of Pittsburgh Medical Center), Wes Northam (University of North Carolina), and Dan Hafez from Washington University.

Hands-on training session on day 2 of the virtual intern bootcamp. One of the post-course activities was to upload a group photo.

ANNOUNCEMENTS

Dr. Karin Muraszko has been elected to the American College of Surgeons Board of Governors as the Surgical Specialty Governor from the SNS. This appointment was made official by the Fellows at the Annual Business Meeting of Members on October 7, 2020 for an initial three-year term ending at the conclusion of the 2023 Clinical Congress.

Dr. Stacey Quintero Wolfe was a recipient of the prestigious national 2021 ACGME Parker J. Palmer Courage to Teach Award for program directors.

Original Motown Recording Studio and Museum

COVID-19 impact on Resident Training

Dr. Ketan R. Bulsar, University of Connecticut
Dr. Line G. Jacques, University of California, San Francisco

The COVID-19 pandemic, likely to continue for quite some time, has taken away an important and fundamental ingredient in the growth of our specialty. Neurosurgery is a story of passionate and inquisitive surgeons travelling the globe to learn new ideas and new concepts. This hails from the days of Cushing who through his travels facilitated the cross pollination of ideas which ultimately improved patient care globally. This has been our paradigm, and unfortunately, for the foreseeable future we may only be able to say "was" our paradigm.

Faced with significant uncertainties, different programs and institutions sometimes within the same city had varying guidelines regarding patient care and protection of frontline healthcare workers, including residents. At the University of Connecticut, we closely followed the ACGME response to the pandemic. Specifically, The ACGME initially identified 3 stages of response: Stage 1 – Business as usual; Stage 2- Increased clinical demands in the hospital resulting in GME awareness that residents are front line providers and need to be part of the hospital plan; no change in educational infrastructure; no change in duty hours; Stage 3 – Extraordinary circumstances with programs focused only on providing patient care; change in educational infrastructure; no change in duty hours. We moved into Stage 2 between March 25-April 20, 2020 3/and then Stage 3 between April 21-June 7, 2020. Subsequently the classifications were changed to Emergency and non-Emergency. We have been operating under the status of non-emergency since June 6, 2020.

Initially, moving into Stage 2 during a time of limited testing correlated with a 52% reduction in neurosurgery case volume due to the suspension of elective cases and this remained stable when we moved into Stage 3. Since June 6, 2020, however, due to the availability of improved testing which allowed return to the OR for elective cases, neurosurgery cranial and spine volume increased by 35 percent, a trend that continued through the time of writing this article and significantly exceeded pre-COVID-19 volumes. This persistent increased volume may be reflective of a paradigm shift by these patients to seek care at academic medical centers as other practices try to recuperate from the devastating consequences of the economic manifestations of the pandemic. It may also be reflective of patients seeking to get their operations done sooner rather than later, in fear of the anticipated resurgence of pandemic. It may also reflect catching up with the back log.

Of note, during Stage 2 and 3, approximately 21% of the total resident workforce in all specialties at UConn was in quarantine. To date our total resident infection in all specialties has been about 2%.

Though the increased volume will certainly benefit resident training, modifications have been needed in terms of didactic teaching. For the most part, no in-person teaching sessions have been conducted. The selection of our future residents virtually is a true paradigm shift with as of yet unknown consequences. The cancellation of our mainstay in-person meetings has altered critical educational and networking opportunities.

Whether one is on the east or west coast or in the midwest, the general issues facing us all in terms of resident education are likely similar. The ability to adapt to human toil and financial strains may vary from institution to institution. There has been disruption to both the clinical and research years of our residents requiring additional resiliency and adaptability to ensure our quality training persists.

On the plus side, a new closeness and comradery has emerged. The expanded use of webinars by our societies and leaders in neurosurgery has given access to all learners to educational material that would never have been imaginable less than a year ago. A greater connectivity at the resident level is also emerging through these joint webinars. Simulation laboratories are playing a greater role in what previously were cadaveric teaching courses held at our meetings.

There is no doubt that the educational experience of residents during this time has been modified. Our specialty has always emerged as the leading voice for adaptation and continued evolution for improvement in medicine. This time is no different. Our rapid adoption of audiovisual conference learning and simulation laboratories will continue the global connectivity of our residents to a greater extent than ever imagined before due to increased access. "Change is the only constant in life." As in the past, adapting to this change will lead to newer and improved neurosurgery resident education. It already has.

Medical Student Committee

Stacey Q. Wolfe, MD, Chair

Bernard R. Bendok, MD
Ketan Bulsara, MD
Lola Chambless, MD
Mark S. Dias, MD
Gerald A. Grant, MD
Costas Hadjipanayis, MD
Jason Heth, MD
Brian L. Hoh, MD
Judy Huang, MD
Michael T. Lawton, MD
Madison Michael, MD
Jonathan P. Miller, MD
Peter Nakaji, MD
Clemens Schirmer, MD
Alejandro Spiotta, MD
Jamie Ullman, MD
Jamie Van Gompel, MD
Reza Yassari, MD
Gregory J. Zipfel, MD
Susan Panullo, MD, ex-officio
Kathy Guzman, ARANS
Stephen Bowden, MD, Resident member

Medical Student Committee Update: Collaboration amidst the COVID-19 Pandemic

Stacey Quintero Wolfe, MD, FAANS

The year 2020 has presented tremendous challenges. The SNS Medical Student Committee has responded and adapted to the changing landscape of the 2020-2021 recruitment cycle, maintaining the goals of safety and equity at the forefront. With the clear realization that schools would not be able to continue with the normal away externships, we worked with program directors around the country to ensure access to a home or adopted home neurosurgery program for an 8-week sub-internship experience. We developed a unified set of curriculum goals for students during their acting internships, and standardized assessment template for letters of recommendation to ensure that applicants were measured along ACGME competencies that would serve as proficiency metrics for residency. With input from program directors and coordinators across the country, and One Neurosurgery Summit leadership, we prepared the path for a completely virtual recruitment cycle, including virtual informational visits, virtual interviews for all applicants (including home students), and virtual second looks.
https://www.societyns.org/medical-students/external-medical-student-rotations
We doubled the number of SNS members serving on the SNS Medical Student Committee, and created program coordinator, student, and resident liaisons, to ensure full representation during these critical changes.

We have seen several new initiatives this year. Dr. J. Mocco and colleagues from Mount Sinai led the effort for academic video submissions to be posted on a central SNS web-site catalogue. This will be maintained by the Department of Neurological Surgery at Mount Sinai Health System on behalf of the SNS and available for review by all programs for candidates they have invited to interview. https://www.societyns.org/research-presentation-submissions Participation is optional and intended to allow applicants a chance to highlight their academic efforts, and provide the programs a chance to get to know applicants better outside of the interviews, to prevent "zoom" fatigue. We have also spearheaded an exciting pilot project with OHSU and our new resident liaison developing Medical Student Milestones for rotating sub-interns. This follows the resident milestones progression and is designed to further improve granularity and transparency in letters of recommendation. We are looking for 5 more sites to participate. If interested in participating, please email: SQWolfe@Wakehealth.edu.

National cooperation has allowed us to accomplish the following achievements nationally, to ensure all programs and applicants are on equal footing and to optimize our processes during COVID-19:

-External rotation policy
-Sub-I curriculum
-Student and Program Director Webinars
-Letter of Recommendation Templates
-Academic Video Submissions
-Medical Student Milestones Pilot
-Virtual Interviews
-Post-Match Evaluation

This year has given us the opportunity to innovate and harness the opportunities afforded by technology. These advances could have lasting benefits, including cost savings (a long-time concern of the SNS), but critical study is required. This committee will be performing a robust evaluation following this recruitment study including all Program Directors, Program Coordinators, and SNS members, with applicant and resident input, to understand which new elements have worked, and which must be changed or eliminated. It will take everyone's input to understand the potential benefit of recommendation letter templates and how they can be optimized, whether academic video submissions are of value, whether and how we should limit numbers of student applications, and feasibility of national/regional coordination of interviews. There is no question that we are seeing changes in increased numbers of applications per program, and we are unsure of how that may affect the Match. Honest communication and advocacy for your home and "adopted" students is paramount to ensuring a successful national Match in neurosurgery, pairing the right people with the right programs. This year we will need to work as a national team to accomplish the goal!

As we enter this final stretch of the 2020-2021 recruitment cycle, we ask that you continue to keep safety and equity at the forefront. Please hold all interviews in a virtual manner, even for your home students. Impress upon your faculty and residents that any "second look" must be done virtually, and that applicants cannot meet up with or drop by, even if they are in town. Please participate in the evaluation survey regarding this season which will be sent out right after the Match, so we can critically evaluate the many changes during this season, and optimize upcoming recruitment cycles. And finally, please join me in heartfelt thanks to every member of this committee, who has served tirelessly to help execute a successful recruitment cycle in the midst of national crisis.

Tips for Resident Interviews
Reza Yassari, MD, MS

The medical community is not only at the forefront of the fight against coronavirus but has to also adapt to the new realities that this struggle has created. One of the biggest educational challenges relates to the recruitment process and selection of the next group of residency applicants. The Coalition for Physician Accountability (COPA), a cross-organizational group including the Association of American Medical Colleges (AAMC), the Accreditation Council of Graduate Medical Education (ACGME) and the American Medical Association (AMA), called for programs to "commit to online interviews and virtual visits for all applicants, including local students, for the entire cycle." The Society of Neurosurgical Surgeon has recommended that all interviews should be done by Web-based Interviews (WBI) to replace the traditional face-to-face (FTF) approach.

The selection of resident through a FTF platform creates a bidirectional, direct interaction between the program and the applicant to exchange pertinent tangible and intangible information. Applicant are able to get a glimpse into the ethos of the program and assess whether they can see themselves part of that culture; and the program has an opportunity to assess the communication skills, maturity, and personality of the applicant to assess whether the applicant should part of their collective. In fact, FTF interviews have a solid theoretical foundation in the Media Richness Theory, Media Naturalness Theory and the Signaling Theory.

The introduction of WBI limits the communication modality to a screen (visual cues). The overall plethora of signals that normally allows for a more complete and immediate feedback (verbal, emotional and behavioral) becomes limited. The less the communication mode feels natural, the more compensatory cognitive effort is necessary. This informational asymmetry requires an adjustment by the recipients, who will invariably utilizing their own mental models to fill the void, leading to misinterpretation and miscommunication.

Pilot projects utilizing WBI generally indicated that both applicants and faculty prefer FTF. However, over the years, a more positive trend toward integrating WBI as another tool has developed. As such these early projects may provide us with insights to optimize the process now that it has become the sole medium at our disposal.

Format: While the traditional format of breakout sessions can be replicated virtually, we would propose that the interview length is reduced, and the break times increased to adjust to the greater cognitive efforts necessary. The goal is to avoid fatigue and monotony. Our recommendation would be to follow one-on-one or panel (2-3) formats and avoid asynchronous interviews, as research indicates that the latter was perceived unfavorably by both applicants and faculty.

Technology: Select a WBI platform that will work on all computers and stick to it for the entire process. Test your connectivity in advance to avoid back-out zones. The participants should trial the platform in advance and verify/optimize the lightening, background noise, distractive background images, camera angle and audio. Always have a Plan B: 1) back-up computer; 2) provide phone numbers for both faculty and applicants in advance.

Interview Techniques: Encourage your faculty to provide ample opportunity for the applicants to ask questions. Look into the camera and avoid looking at the picture-in-picture frames. Determine in advance what the key components of your messaging are and highlight them in the conversation. A Program Director presentation can help set the tone. A virtual "Meet and Greet' with the residents can substitute for the traditional resident dinner and be a good way to convey the culture and camaraderie of the program.

These are truly unprecedented times. Our collective experience across specialties will help to adapt and endure.

NEW 2020 MEMBER PROFILE HIGHLIGHTS

- **Ketan R. Bulsara, MD, MBA** is Professor and Chief of Neurosurgery at the University of Connecticut where he is also Residency Program Director. Over his career he has built very successful programs in neuroendovascular techniques and skull base surgery. Dr. Bulsara has won numerous awards from the AANS and CNS and has been listed as one of the top physicians and surgeons in the US by the Consumer Research Group of America based in Washington, DC. He is a frequently invited national and international lecturer and has published three books and over 200 peer reviewed publications. Dr. Bulsara also serves on the National Quality Forum for neuroscience issues.

- **Justin S. Cetas, MD, PhD** is Associate Professor and Residency Program Director at Oregon Health & Science University in Portland, Oregon. He is Chief of Neurosurgery at the Portland Veteran Health Care System. Dr. Cetas has an active research interest in vascular neurosurgery and skull base tumors. He has published on the role of the brainstem in subarachnoid hemorrhage and the role of diffusion tensor imaging in skull base tumors. In current ongoing clinical and basic science studies, he is studying the role of the glymphatic system and P450 eicosanoids in skull base and vascular disease. Dr. Cetas has helped build a busy endoscopic and open skull base program at OHSU.

- **Lola Chambless, MD** is Associate Professor of Neurological Surgery and Radiation Oncology at Vanderbilt University Medical Center. She has served as the Residency Program Director since 2018. Her clinical practice is devoted to the surgical treatment of brain tumors and she is the surgical director of the Vanderbilt Pituitary Center and the Vanderbilt Radiosurgery Center. During her tenure as faculty at Vanderbilt, Dr. Chambless built the Vanderbilt Brain Tumor Outcomes lab. Her research interests include the use of machine learning to develop predictive models for neurosurgical outcomes, as well as collaborative efforts with the department of biomedical engineering to model brain shift and design real-time stereotactic navigation systems. Dr. Chambless is deeply passionate about medical education and some of her scholarly work has focused on the application of scientific methodology to the study of neurosurgical training.

- **Ian F. Dunn, MD** is the Harry Wilkins, MD Chair and Professor of the Department of Neurological Surgery at the University of Oklahoma College of Medicine. Prior to joining the University of Oklahoma, he served for 8 years on the faculty of Harvard Medical School and the Brigham and Women's Hospital, during which time he built a high-volume, complex cranial and skull base surgical practice and founded the Center for Skull Base and Pituitary Surgery. The central themes of his research are the genomic and immunologic underpinnings of cranial base tumors and technical nuances of skull base and endonasal surgery. Dr. Dunn has authored over 180 publications and 40 book chapters and has presented nationally and internationally concerning his central focus on complex brain tumors at the skull base.

- **Bharat Guthikonda, MD** is Professor and Chair of the Department of Neurosurgery at Louisiana State University Health Shreveport in Shreveport, Louisiana. His areas of expertise include open and endoscopic skull base surgery, cerebrovascular surgery, and general neurosurgery. His research primarily focuses on anatomic skull base research, clinical outcomes research, and the socioeconomics of neurosurgery. He is passionate about training the next generation of neurosurgeons, especially in microsurgical technique. Dr. Guthikonda is very involved with the North American Skull Base Society (NASBS) serving as a frequent member of its summer resident course faculty, as past co-chair of the NASBS pre-meeting course, and as a current member of the NASBS scientific program committee and research committee. He has given over 200 presentations at national and international meetings and published more than 100 peer reviewed journal articles, comments, and book chapters. Dr. Guthikonda participates in global neurosurgery as part of an annual medical mission trip to Duhok in the Kurdistan region of Iraq by bringing much needed neurosurgical equipment, delivering lectures and mentoring local neurosurgeons in performing complex neurosurgical procedures.

NEW 2020 MEMBER PROFILE HIGHLIGHTS

- **David Harter, MD** is Director, Division of Pediatric Neurosurgery and Residency Program Director at New York University Grossman School of Medicine, where he is an Associate Professor of Neurosurgery. His areas of specialization include ventricular endoscopy for hydrocephalus, tumors and congenital anomalies. Additional areas of clinical focus include pediatric cerebrovascular disorders, pediatric spine surgery and craniofacial surgery. Dr. Harter has authored 45 publications and contributed multiple book chapters. He is the current President of the New York State Neurosurgical Society, and has served on its board for over ten years.

- **Mark D. Johnson, MD, PhD** is Professor and inaugural Chair of the Department of Neurological Surgery at the University of Massachusetts Medical School and UMass Memorial Health Care. He is also Program Director of the neurological surgery residency program. Dr. Johnson has received numerous awards for teaching and mentorship throughout his career and maintains an NIH-funded research laboratory that is focused on the cellular and molecular biology of brain tumors as well as the pathophysiology of idiopathic normal pressure hydrocephalus

- **David Langer, MD** is Chair of Neurosurgery at Lenox Hill Hospital and Vice President of Neurosurgery for Northwell Health's Western Region. He is Professor of Neurosurgery and Radiology at the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell. Dr. Langer established the Moyamoya Center of the Neuroscience Institute and developed a project focused on the use of social networking technology and video to enhance the patient experience and improve the medical record. This project has grown into the health system, supported Cirrus Health, which continues to creatively disrupt the status quo in patient communication and the current electronic medical record. Dr. Langer is internationally recognized as an expert in cerebral revascularization and cerebral aneurysms. He maintains an active practice in spinal disease and benign brain tumors including acoustic neuromas and meningiomas and is currently involved in the study, development and adoption of the use of three dimensional exoscopic surgery in spine and cranial surgery. Dr. Langer's work has been featured in numerous peer-reviewed publications and he has spoken nationally and internationally on vascular disorders.

- **L. Madison Michael, MD** holds the positions of Director of Cranial Base Surgery for the Methodist Brain and Spine Institute and is Program Director at the University of Tennessee. Service within the field of neurosurgery is very important to him, and he is active in multiple national and international organizations at the leadership level. Dr. Michael's research interests are focused on resident education and skull base neurosurgery.

- **Clemens M. Schirmer, MD, PhD** is Vice-Chair in the Department of Neurosurgery and Professor of Neurosurgery and Neuroscience at the Geisinger Commonwealth School of Medicine. He serves as the System Director of the Geisinger Comprehensive Stroke Center and System Director of Cerebrovascular and Endovascular Neurosurgery. He specializes in the treatment of vascular disorders using surgery, endovascular and radiation modalities. Dr. Schirmer also is the Residency Program Director and director of the CAST Neuroendovascular Fellowship program. Dr. Schirmer's research interests focus on quality metrics, shared decision making, patient-centered outcomes, genomics, biomarkers of stroke, machine learning, and data analytics. He serves as principal investigator of several clinical trials in the stroke and has created premier Geisinger initiatives such as Early Recovery, ProvenCare, and ProvenExperience.

- **Alejandro M. Spiotta, MD** is Professor of Neurosurgery & Neuroendovascular Surgery, Division Director of Neuroendovascular Surgery, and Residency Program Director at the Medical University of South Carolina. Dr. Spiotta's research focus is outcomes research in cerebrovascular disease and novel training paradigms for neurosurgical residents. Dr. Spiotta has lectured physicians around the world on neuroendovascular techniques and outcomes in treating aneurysms and stroke. He is the co-Founder and Principal Investigator of STAR (Stroke Thrombectomy and Aneurysm Registry), the largest international research collaboration on stroke, which is currently enrolling patients from 50+ sites worldwide. Dr. Spiotta has co-authored greater than 190 peer-reviewed original research articles, numerous book chapters and is an editor of three textbooks on the management of cerebrovascular diseases and ischemic stroke.

NEW 2020 MEMBER PROFILE HIGHLIGHTS

- **Jamie S. Ullman, MD** is Professor in the Department of Neurosurgery at the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell. She currently serves as the Director of Neurotrauma and the Director of Quality Improvement for the Northwell Health Department of Neurosurgery. She served as Vice President of the CNS and was the first woman to be elected to an officer's position in the organization's 60+-year history. Dr. Ullman also served as the Chair of AANS/CNS Section on Neurotrauma and Critical Care and Women in Neurosurgery. In addition, she is a fellow of the American College of Surgeons (ACS) and served as chief of the neurosurgery subspecialty group of the prestigious ACS Committee on Trauma and held a 6-year term on the Board of Governors. Dr. Ullman was appointed by the Commissioner of Health to serve as the neurosurgeon member of the New York State Trauma Advisory Committee. She currently serves on the Boards of the Brain Injury Association of New York and ThinkFirst. She is Chair-Elect of ThinkFirst. Dr. Ullman has presented on numerous neurotrauma topics regionally, nationally, and internationally. She is a co-author on the Brain Trauma Foundation's third and fourth Edition of the Guidelines for the Management of Severe Traumatic Brain Injury, and is the co-editor of the Atlas of Emergency Neurosurgery, published by Thieme in 2015.

- **Jamie J. Van Gompel, MD** is Professor in Neurosurgery and Otolaryngology and specializes in endoscopic/open skull base surgery focusing on pituitary tumors and Epilepsy at the Mayo Clinic. He has worked at the NIH as well as completed a Howard Hughes Fellowship in research. His neurosurgical training was undertaken at the Mayo Clinic and he went on to complete a complex cranial fellowship under the tutelage of Dr. Harry van Loveren at the University of South Florida. Currently, Dr. Gompel is the Education Vice Chair, Residency Program Director and Associate Program Director of the Skull Base Oncology program. Pituitary surgery and outcomes are his primary focus.

- **Reza Yassari, MD, MS** is Professor of Neurosurgery and Residency Program Director, serves as the Surgical Director of the Montefiore Spine Center and is a faculty member at the Albert Einstein Global Health Center. As Program Director, he has developed an innovative tracking system to oversee the progress and development of individual residents' surgical skills. He is the Neurosurgical Team Leader of the annual Mongolia Surgical Mission Program between the Albert Einstein Global Health Center and the Virtue Foundation, that brings together several US and international Programs for joint missions to Mongolia. He is the Mongolia Liaison for The Foundation for International Education in Neurological Surgery (FIENS). Dr. Yassari's clinical practice is focused on the surgical treatment of spinal disorders with special focus on spinal oncology. He has helped design and implement the first program in the country to integrate the spine training of neurosurgery and orthopedic surgery residents into a comprehensive, combined residency training program within an administratively and clinically unified spine center including orthopedic surgeons, neurosurgeons, physical medicine & rehabilitation providers and pain specialists. Dr. Yassari's research focuses on optimization of patient care and healthcare delivery, innovation in surgical education and global health. He established the Center for Spine Care Optimization (CSCO) together with his partners at the Montefiore Spine Center with the goal to create a platform for research and development to improve the care of spine patients.