

Young Neurosurgeons NEWS



Fall 2014

Y o u n g N e u r o s u r g e o n s C o m m i t t e e

Editor: Krystal Tomei, MD, MPH

Chairman's Message:



Stacey Quintero Wolfe,
MD, FAANS

This has been a landmark year for the American Association of Neurological Surgeons (AANS) Young Neurosurgeons Committee (YNC). The AANS has shown an incredible commitment to its young constituency, through expanded

membership and support. We are excited about the commitment to education and mentorship.

This year, the AANS YNC has expanded the number of voting members by eight, in order to fill the need for our expanding role in the AANS. We now have a liaison position to nearly every AANS committee and Joint section, as well as to the Council of State Neurosurgical Societies (CSNS), American Medical Association (AMA) and American College of Surgeons (ACS). Top Gun was newly reinigorated this year with a team competition and new stations. YNC support of the Neurosurgery Research and Education Foundation (NREF) continued with a new pilot program to support "The Race for Research" in conjunction with Alex Valadka, MD, FAANS, running the Boston Marathon.

We are happy to announce that the YNC is coming online with its own Twitter account (@youngneuros) and an updated webpage, under the leadership of Jeremiah Johnson, MD (JJohnson.Neuro@gmail.com), who is chairing our new IT committee. We are looking for creative minds to help with our new commitment to social media.

Perhaps most exciting is the new commitment to medical students, with the goal of recruiting the best and brightest and creating the neurosurgical leaders of tomorrow. We elected the first medical student voting members of the AANS YNC this summer. Our first MISSION (Medical Student in Organized Neurosurgery) fellow is in the midst of an outstanding project, and we will soon be selecting our next fellow. Randy Bell, MD ([\[Med.Navy.Mil\]\(mailto:Med.Navy.Mil\)\), is chairing the YNC Medical Student Committee, and is looking for medical students and seasoned young neurosurgeons to become a part of this exciting endeavor.](mailto:Randy.Bell@</p></div><div data-bbox=)

Under the visionary leadership of Robert Harbaugh, MD, FAANS, and the AANS board of directors, the AANS has launched a nationwide network of AANS Medical Student Chapters, for students interested in neurosurgery. Our goal is to have a chapter at every North American medical school and residency program, and we are currently accepting applications ([Follow this link](#)). We encourage you to become founding members of your local chapter! Additionally, please plan to attend the next AANS Annual Scientific Meeting in May 2015, which will feature the first **Young Neurosurgeons Science and Education Symposium**, dedicated to the research of neurosurgery residents and students.

My congratulations to our newly elected YNC members, as well as all who were nominated. As always, the elections were highly competitive, due to the many outstanding candidates, and I would encourage each of you to get involved. Our newly elected members are:

Faiz U. Ahmad, MD
Shakeel A. Chowdhry, MD
Brian M. Howard, MD
Stephen T. Magill, MD, PhD
Debraj Mukherjee, MD
Luis Savastano, MD
Walavan Sivakumar, MD
Anand Veeravagu, MD

We look forward to seeing you in Boston, and invite everyone to the Young Neurosurgeons Committee Meeting on October 20 from 5:30-7:30 p.m. at the Westin Boston Waterfront in the Douglass Room.

*Stacey Quintero Wolfe, MD FAANS
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Secretary's Message

by Krystal Tomei, MD, MPH

"An investment in knowledge pays the best interest"

– Benjamin Franklin

Franklin's quote sums up the theme behind this issue of the *Young Neurosurgeons News*. As neurosurgeons, we remain entwined in education: As residents, we are responsible for the education of medical students as well as ourselves; as young neurosurgeons, we continue to seek our own educational opportunities as we transition into the realm of continuing medical education.

The American Association of Neurological Surgeons (AANS), through the Young Neurosurgeons Committee (YNC), has maintained this focus throughout our initiatives, and this issue highlights some of the new and evolving opportunities in neurosurgical education.

The latest of the AANS initiatives is the development of medical student membership and AANS medical student chapters. With this latest endeavor, the AANS is creating a formalized process by which students at institutions across North America can apply to create AANS Medical Student Chapters. This process calls for mentors at the faculty and resident levels, and uses a structure similar to AANS governance, providing a framework for local and national mentorship of students interested in a career in



neurosurgery. In addition, the YNC has developed the MISSION fellowship, allowing a medical student to work alongside the YNC. We highlight our current MISSION fellow, Daniel Lubelski, in this issue.

Transitioning into residency training, we highlight an ongoing project of the YNC, the Top Gun competition, held at the AANS annual meeting. This booth looks at the role of simulation in resident education. A fantastic article by our Top Gun chairman, David Connor, DO, highlights the history of simulation in medical education and our Top Gun competition.

Finally, the increasing focus on subspecialty training has brought about the enfolded fellowship, an opportunity to gain subspecialty neurosurgery training during the time period of residency training. Our YNC member, Laura Snyder, MD, has crafted an excellent article highlighting the benefits and pitfalls of such opportunities and gives pointers for those individuals who may want to consider an enfolded fellowship.

Our highlighted interview of Randy Bell, MD, our YNC Public Service Citation Award winner, gives us a peek into the life of a military physician, balancing duty and service with a demanding practice.

I hope you enjoy this issue!

Krystal L. Tomei, MD, MPH



The YNC shows support for traumatic brain injury (TBI) research and the NREF.

The MISSION Fellowship: A Perspective

Daniel Lubelski

As the Young Neurosurgeons Committee's (YNC) first Medical Student Organized Neurosurgery (MISSION) fellow, I was asked to write a perspective piece on organized neurosurgery and, more specifically, the YNC. This was an unusual task for me. With little knowledge or experience in neurosurgery, let alone organized neurosurgery, I questioned why anyone would care about my perspective. But in thinking about the origins and goals of the YNC, I recognized that this is precisely its purpose: to give the future members of neurosurgery a voice.

When I walked into the conference room in the basement of the San Francisco Marriott Marquis during the AANS Annual Scientific Meeting this past spring, it was unlike any of the conference rooms I had previously seen. This was a room filled with individuals in their late 20s and 30s, not your typical demographic of an organized neurosurgery meeting. There were multiple conversations among different groups of people, but from the bits that I was able to pick up, it seemed like enthusiastic discussions of the various YNC initiatives. Stacey Quintero Wolfe, MD, FAANS, the current YNC chairman, began the meeting in a formal, Congress-like style, reviewing the previous meetings minutes and requesting and approving motions of various types. To be honest, I was initially taken aback, but as the meeting progressed, I was continually impressed by the idealism, energy and enthusiasm of the committee members.

The committee systematically went through its various initiatives. Some I was already familiar with, such as the successful Marshals Committee, YNC Newsletter, Neurosurgical Top Gun, YNC Luncheon and the annual softball tournament in New York City. Others were new to me, such as the connection with the ThinkFirst organization, Women in Neurosurgery and the Council of State Neurosurgical Societies (CSNS) Washington Committee and socioeconomic fellowship. There were also members that represented the YNC to each of the AANS/CNS Joint Sections that voiced the interests of medical students, residents and junior staff. I kept thinking to myself that if this is the future of neurosurgery, if the future initiatives of organized neurosurgery will be forged with such energy and passion to improve, then the field is heading in the right direction.

The meeting eventually got to the topic of medical students and the medical student task force. Traditionally, medical students are the lowest on the totem pole, the proverbial "seen-but-not-heard" individuals in the organization. But during the YNC meeting medical student recruitment, retention and promotion was a cornerstone initiative. The MISSION fellowship, spearheaded by Bill Ashley, MD, PhD, MBA, is just one part of a multi-pronged approach that includes the development of a national network of AANS medical student interest groups with associated mentorship, research, educational and organizational components. As envisioned by Dr. Ashley, I will be attending *and* contributing to the YNC committees, as well as helping develop the interest groups. In conjunction, it will be my role to develop a research study that evaluates the impact of these interest groups in a prospective fashion. But I was just one of several medical students that participated in the meeting. The other medical students were actively involved in the inception and development of online tools to help with housing and transportation for interviews and sub-internships, online forums for discussion and integration of educational applications with social media. There was consensus among all participants that attracting the best and brightest to neurosurgery is imperative, and the YNC should be the leader in this effort.

I am excited and grateful to have been selected the first YNC Medical Student Organized Neurosurgery fellow, and look forward to carrying out these initiatives and making an impact. The MISSION fellowship is just a start; however, and through the AANS and YNC, medical students will have an increasingly important role in organized neurosurgery. Through local and national chapters, medical students are the ones that are best suited to develop programs to attract and foster interest in neurosurgery. It is the students, residents and young faculty of the field that will continue to make neurosurgery great.

Simulation Training in Neurosurgery: History and Future Directions

To appropriately frame any discussion of a new technology's impact upon the growth of a particular field, one must, at least briefly, reflect upon the history of its application. The use of simulation in medicine has historically been modeled upon the successes demonstrated by the aerospace industry in the early 20th century. The ability to perform a sequence of complex, high-risk tasks within the safety of a controlled environment were qualities embraced by the Allied Air Forces in the 1930s and were factors leading to the adoption of a combination of electric pumps, valves and bellows attached to a toy plane known as the ANT-18 Basic Instrument Trainer.

Likewise, the use of simulators in neurosurgery has similarly humble beginnings. One of the earliest examples was a Web-based ventriculostomy simulator created by combining standard CT and MRI images with a digital scan of the creator's face (9, 7). The program was originally free to download and allowed manipulation of the catheter and patient head in space and gave an audio feedback when the ventricle had been accessed. What this application lacked in what we now recognize as true immersion and feedback, it certainly made up for in availability and practical usage.

While the term "virtual reality" was coined in the mid-1980s, the explosive development and application of immersive multimedia did not occur until the early 1990s. Again, much of the initial research was focused on the military and aerospace fields; however, one small Singapore firm applied these technologies to patient-specific MRI and CT scans to create a holographic image projection system that they named the Dextroscope. The system allowed users to manipulate a virtual surgical field with two handheld positional controllers. Dextroscope technology has been utilized to simulate neurosurgical procedures from aneurysm clipping to temporal bone drilling, and it represented a significant advancement in visual immersion for preoperative planning; however, it still lacked the tactile feedback that could simulate the experience of actually performing surgery (6, 13).



The endovascular simulator is another newer addition to Top Gun.

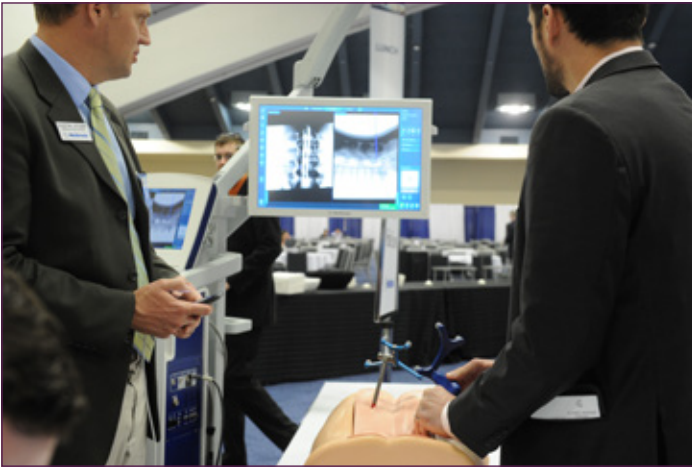
The next evolutionary step occurred in 1993, when a Massachusetts Institute of Technology (MIT) student by the name of Thomas Massie connected a thimble to a robotic arm and created a device that could simulate the sensation of touch based upon virtual input. That year, he founded a company and began to market his PHANToM interface device (SensAble Technologies, Woburn, Mass.), by this time refined into an omnidirectional stylus capable of providing force feedback or haptics in up to six degrees of freedom. This device was subsequently utilized by multiple groups intending to improve the quality neurosurgical simulation. The PHANToM provides haptic feedback for brain cutting and deformation at the University of Nottingham, for delineating normal brain from glioma at the University of Central Florida and for recapitulating the puncture of the floor of the third ventricle at Case Western Reserve University (3, 11, 12).

For much of the 1990s, the majority of neurosurgical simulators remained either under development or housed within a handful of university settings, relatively distant from the application phase. The same cannot be said for endovascular surgery. In fact, during the latter 20th and early 21st centuries, interventionalists from multiple specialties were not only actively adopting the use of endovascular simulators, but were demonstrating reproducible improvement in task performance with their usage. The three commercially available devices — Vascular Intervention System Training or VIST (Mentice AB, Göteborg, Sweden), ANGIO Mentor (Symbionix, Cleveland) and SimSuite (Medical Simulation Corp., Denver) — all provide varying degrees of haptic and aural feedback in the performance of tasks from catheterization to stenting and embolization.

Either following the successes of endovascular simulation or as a testament to technological advancement with time, the early 2000s saw significant increases in the utilization of simulation in open and endoscopic neurosurgical training. A corollary 630-percent increase in publications related to the use of virtual reality in neurosurgery was similarly noted in a recent review by Schirmer et al (11). This time period also saw a major paradigm shift from



Another long-standing booth is the University of Florida-sponsored ventriculostomy station.



Placement of image-guided pedicle screws has been a staple booth at Neurosurgery Top Gun.



Participants were able to perform simulation trigeminal rhizotomies.

individual training simulators capable of reproducing and testing a single technical task to true simulation platforms capable of performing multiple surgical approaches. At the University of Illinois at Chicago, a group of researchers combined the features of holographic 3D display and stylus-based haptic feedback with surgeon head tracking to create user-centric, “immersive” experience.

In 2005, the group incorporated under the name ImmersiveTouch and, since that time, has created simulation environments for neurosurgical, orthopaedic, as well as ophthalmological procedures. Similarly, in 2008, a consortium of engineers from the National Research Council Canada and neurosurgeons from 23 teaching hospitals across Canada collaborated in the creation of a simulation platform called NeuroTouch (5). Their technology combined stereoscopic 3D graphics, with bimanual haptic feedback controls modeled after actual surgical instruments, including suction, bipolar cautery, microscissors and ultrasonic aspirators. Clinical scenarios are based upon patient-specific imaging, and tasks performed can include tumor debulking and cauterization, endoscopy (intracranial and transnasal) and cranial bone drilling (4, 10). The most recent addition to the simulation platform market comes from a Cleveland-based company called Surgical Theater. Its Surgical Rehearsal Platform combines stereoscopic 3D graphics with patient-specific imaging to allow presurgical rehearsal of aneurysm clipping, including selection of appropriately sized aneurysm clips. The device is currently involved in a randomized, blinded study to evaluate the effect of preoperative rehearsal on efficacy in open aneurysm clipping; however, the company hopes to expand its offerings to include microvascular decompression and acoustic neuroma resection (1).

In 2006, the Young Neurosurgeons Committee (YNC), recognizing the growing demand and future need for neurosurgical leadership in this fledgling industry, sponsored the first “Top Gun: Neurosurgery Challenge” at the 2006 AANS Annual Scientific Meeting in San Francisco (8). Under the leadership and direction of Michael Oh, MD, the inaugural competition included stations for hand tremor motion analysis from the Carnegie Mellon robotics laboratory, virtual ventriculostomy placement from

ImmersiveTouch, and computer-simulated pedicle screw placement from Medtronic navigation. The response was overwhelming, with a total of 61 residents and fellows completing the competition for the singular top prize of “Neurosurgical Top Gun.” The event was 100-percent sponsored by industry partners, and all surplus funds were donated to the Neurosurgical Research and Education Foundation (NREF).

In each of the following years, the Neurosurgical Top Gun competition has showcased the state of the art in simulation technology before the future leaders of neurosurgery. In 2007, a simulated fluoroscopy environment was generated to simulate percutaneous placement of DePuy Spine lumbar pedicle screws. 2008 saw the introduction of an endoscopic simulator, with virtual thoracic spinal navigation being introduced in 2009. 2009 also marked the first year that a “mixed reality” simulator was introduced, in the form of a new ventriculostomy simulator from the research faculty at the University of Florida. This device involved combining physical models created from patient-specific imaging, coupled to virtual image guidance (2). Participants had the opportunity to perform a ventriculostomy from skin incision to catheter insertion on a model created on a 3D printer. In 2011, residents and fellows were put to the test, utilizing the immersive brain tumor debulking station from NeuroTouch. 2013 saw the competition broadened into the realm of endovascular neurosurgery with virtual aneurysm embolization using the SimSuite simulator from Medical Simulation Corp. This April, the ninth annual competition featured a new station simulating the percutaneous rhizotomy of the trigeminal nerve, utilizing ImmersiveTouch’s platform.

Over the years, the Neurosurgical Top Gun has provided not only a means to introduce the growing possibilities of neurosurgical simulation to the field’s youngest members; it has also stimulated a healthy, oftentimes intense level of competition among its participants. The institution of a team competition at this year’s booth generated the greatest amount of interest and participation yet seen. Also, in recognition of the value of neurosurgical simulation at all levels of training, and in line with similar initiatives within the AANS and organized neurosurgery, 2014 marked the first year when medical student participants’ scores

would be tallied and a separate winner would be announced.

Recognizing the value and impact of simulation upon the future of neurosurgical training, the CNS initiated a full-day practical course for residents at the 2011 annual meeting in Washington, D.C., entirely dedicated to neurosurgical simulation. This has been repeated at the 2012 and 2013 meetings with increasing interest and participation every year. The most recent iteration included both physical, as well as virtual, simulators and tested skills from spinal fusion to aneurysm clipping.

Simulation has been seen as a potential solution to the challenge of training competent neurosurgeons in an environment limited by duty-hour restrictions and diminished opportunity for surgical autonomy in a health-care model increasingly focused on clinical productivity. Training programs in larger cities or with strong institutional support have been able to purchase simulation platforms from the companies listed above; however, the majority of programs will be limited by the extreme cost, which is often in the hundreds of thousands of dollars. Continued improvement and advancement of the field of simulation will likely require the strong support of our parent bodies, not to mention the continued collaboration of our industry partners. We at the YNC Top Gun competition recognize that our progress would not have been possible without their ongoing support.

Past sponsors of the Neurosurgical Top Gun competition have included:

Aesculap, Allegheny General Hospital, Anspach, Carnegie Mellon Robotics Institute, Codman, DePuy/Synthes Spine, Immersive Touch, Integra, Leica Microsystems, Medtronic, MicroVention, National Research Council of Canada, Thieme and University of Florida

David E. Connor, Jr., DO
Top Gun Committee Chair
AANS Young Neurosurgeons Committee

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Early participants received their own Neurosurgical Top Gun t-shirts.



This year's winner, Chine Logan, DO, is presented with his certificate.

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Evaluating the Enfolded Fellowship

Laura A. Snyder, MD

In recent years, enfolded fellowships have become increasingly popular options for neurosurgery residents. Enfolded fellowships involve spending a dedicated time on a given service or with a given attending at one's own or another institution, often during their research time. Enfolded fellowships were initially popularized by residents pursuing endovascular neurosurgery, as this often requires another two years of training to demonstrate enough case experience for accreditation; however, different versions of enfolded fellowships exist in all subspecialties. The benefits to the resident depend on one's career goals, and residents should seriously consider the advantages and disadvantages before committing.

Location Considerations

For many residents, an enfolded fellowship away is not an option. Allocated research time may not be long enough to travel away from the home institution. Residents may still be required to take call, preventing them from leaving. The resident's home institution must contract with the away institution to transfer malpractice coverage, or coverage must be provided by the away institution. The source of the resident's salary becomes a factor in regard as to which institution is responsible for the resident's salary at a given time — something particularly nuanced when considering the limitations in payment of a Medicare-funded resident line via federal funding for graduate medical education. Furthermore, the state in which the resident is travelling to must be willing to approve a visiting resident license or temporary training license, or the resident, if able, must obtain a full license. The hospital or hospitals that the resident travels to must agree to any temporary license as well.

Fellowship Acknowledgement

Regardless of where the training occurred, the issue may arise as to whether an enfolded fellowship truly makes one “fellowship-trained,” particularly within the academic community. Even if you performed the same amount and type of work that a post-graduate fellow would have performed, many academicians feel that this learning is stifled by the fact that you do not take “attending-level responsibility” for the patients in the operating room or in clinic. This lack of attending-level responsibility is also what prevents many traditional fellowships from taking residents prior to completion of their training. The resident cannot take attending call, nor can the institution bill for the resident. The away institution feels the loss, even when the institution may technically receive “free” work from the resident and not pay malpractice, should the funding come from the primary program. In addition, many post-graduate fellowship positions argue that the skill level of a graduated resident allows the resident to have far more involvement in cases. Residents performing enfolded fellowships at more junior levels may not have the operative experience to

master the subtleties of technique acquired during a fellowship. The Society of Neurological Surgeons has a list of accredited fellowships, very few of which have the option of being enfolded. Thus, for a resident to gain acknowledgement of being “fellowship-trained,” he or she may still need to perform a post-graduate fellowship even after their enfolded fellowship during residency.

Fitting In

Depending on the volume and how well the fellowship role has been established at the away institution, the environment in which you find yourself at the away institution will vary. If there are not enough residents for all cases or to help in clinic, or if you can offer a significant amount of teaching for younger residents, you will likely be seen as a help and find a welcoming environment. However, as with all fellowships, enfolded or post-graduate, you may be seen as taking away from the resident operative experience at that institution, which can lead to uncomfortable discussions about “whose case it is” and “who gets to do what” and, in some instances, an uncomfortable working environment.

A Great Opportunity

Enfolded fellowships, whether or not they are respected or accredited by academicians or institutions, provide residents with an indispensable opportunity to learn and become better neurosurgeons. Training at a separate institution for a period of time gives one a new perspective. As many institutions may hire their own residents after graduation, residents who were given the opportunity to visit other institutions learn new viewpoints and techniques in almost every aspect of patient care. This learning includes differences in both common and uncommon procedures, pre- and post-operative care, patient selection, and even hospital and neurosurgical practice organization and administration. Even if at one's own institution, an extra dedicated period of training to a given subspecialty allows one to focus on the details and subtleties in the care of these patients.

Building a Network

Another significant benefit to the enfolded fellowship is the development of a new mentor or further development of a mentor at one's own institution. The repetition in performing the consistent techniques of one's mentor, and your attachment to that mentor over time, will increase your chances of retaining what was learned. A mentor can also introduce you to new research and new communities of neurosurgeons. The extended one-on-one time in working with mentors makes them good references when one applies for jobs or post-graduate fellowships later on. Furthermore, as they see you as a representation of their teaching and their career, they will support you in furthering your career, even after your fellowship is over.

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Research Considerations

It must be noted that performing an enfolded fellowship may detract from other goals that one might have that year. For example, it can be difficult to perform clinical or lab research with the clinical duties of an enfolded fellowship, and thus this may take away from the resident's publishing power and appeal to academic positions. However, very productive residents may still be able to do both and may actually be provided with more publishing opportunities by being at a different institution with a different mentor and different resources.

Other Considerations

Personal life can also suffer, especially if one's significant other and/or children cannot relocate to accompany the resident during that time. Even if one's significant other and/or children can relocate, they may have a difficult time adjusting. Children may find difficulty in adjusting to new schools, new friends and a new routine in general, which will have to be readjusted on their parent's return to the home institution. A previously employed significant other may not be able to find a desirable job for that period of time. Resident finances may make housing uncomfortable or simply impossible. There are few scholarships for funding resident housing during enfolded fellowships, and this can be a strain on resident family finances, depending on how the resident is maintaining or changing their housing status at their home institution location. At the same time, many residents and their loved ones enjoy the opportunity to explore a new location and culture, even in a less-than-ideal living situation.

Getting There

Finding a good enfolded fellowship opportunity is often a matter of researching leaders in your field of interest, identifying events in your field of interest, a recommendation by a current mentor

and luck. A good start is to look at the fellowships that already exist in your area of interest and contacting that fellowship's staff to see if residents would potentially be accepted. If the answer is yes, you can proceed with the standard application process for the fellowship with the knowledge that if you are accepted, there will be some further contracting between hospitals that will need to occur. Most often the answer is no, although more senior residents are usually looked upon more kindly.

Thus, the next option is to discuss leaders in your field of interest with mentors at your own institution. You can ask them to make a few phone calls or send some emails to these leaders or even to friends who are specializing in what your areas of interest. Your mentors can ask for you if the person from the other institution would consider teaching an enfolded fellow. Another way to acquire an enfolded fellowship is to attend lectures, meetings, conferences and courses in your area of interest, and then ask the faculty at these events if they would consider having someone observe them or serve as their fellow for a period of time. Your attendance at the event already demonstrates your interest above other residents. Whether or not they are at an academic institution, many attendings enjoy teaching and having the assistance of an enthusiastic senior resident.

Conclusions

Enfolded fellowships offer residents a unique chance to fine-tune desired skills without spending additional time in training. However, as with any opportunity, residents must be mindful of the advantages and disadvantages. Residents should explore their research options as well as enfolded fellowship options early, as it is not always clear which is the better option when considering future goals. Both meaningful research projects and worthwhile enfolded fellowships require significant planning as well as a little bit of luck.

WINS Update

In keeping with its stated goal to "serve neurosurgery in addressing the issues inherent to training and maintaining a diverse and balanced workforce," Women in Neurosurgery (WINS) continues to support residents through mentorship, as well as the funding of yearly travel scholarships. The Sherry Apple and Louise Eisenhardt Resident Travel Scholarships are granted yearly to an outstanding (male or female) resident abstract and provide a travel stipend for meeting attendance to the annual meetings of the American Association of Neurological Surgeons (AANS) and the Congress of Neurological Surgeons (CNS), respectively.

With its new status as an AANS/CNS joint section, WINS will have a scientific session at the upcoming 2014 CNS meeting in Boston on Monday, Oct. 20, 2014. The preliminary program will focus on mentorship and leadership within neurosurgery. The WINS reception at the CNS meeting will be held on the evening of Tuesday, Oct. 21, 2014, from 6-8 p.m. Look for emails for more events to come.

An Interview with the YNC Public Service Citation Recipient, Dr. Randy Bell

What initially inspired you to become a U.S. Navy physician?

My family has a long tradition of military service dating back, as far as we know, to the American Civil War. I always intended to serve in some capacity, it was just a question of how. I took my commission in the Navy when I got into medical school, in no small part because the scholarship helped to defer some of the costs. With respect to which branch of service, there really was never any question. My father was a Baltimore City police officer who had served in Saigon during Vietnam, and who gave his life in the line of duty in Baltimore in 1978. My mom always said he hoped I would serve in the Navy. Pretty simple.

Likewise, how did you find yourself in the field of neurosurgery?

Like most medical students, I was as excited as you could be on the first day of medical school. My very first class was Neuroanatomy taught by Dr. Jack Nolte at the University of Arizona (U of A). At the time (1998), 3D computer-generated anatomic representations of the central nervous system were in their infancy. I was hooked. I left class that day and sought out clinical mentors that could forward this interest. I knew within moments of talking to a very friendly and supportive neurologist that I was not suited, personality-wise, for neurology. I then tried to find any neurosurgeon at the U of A to talk to. All but one were too busy to talk. That one was Allan Hamilton, MD, FAANS. He was actually in the middle of a meeting with the Dean of the College of Medicine when I knocked on his door on the second day of medical school. He stepped out of the meeting, talked to me for a minute and invited me to see clinic with him that Thursday. It was there that I met Dr. Hamilton's fellow, Istvan Takacs, MD. Both were amazingly dedicated, worked amazing hours, had a patient-first mentality and included me as a regular member of the team. I spent the next four years shadowing both, and in the end, decided that I not only wanted to be a neurosurgeon, but a neurosurgeon like them. To this day, they both remain dedicated to the education of medical students and residents. I count myself fortunate to have met them.

What were some of your most impactful memories of your time spent in Okinawa, Japan, and Afghanistan?

There are two things that stick out in my mind concerning Okinawa. I was stationed there from July 2010 to July 2011. I'd just finished my cerebrovascular and endovascular neurosurgery fellowships when I hopped on the plane for Okinawa. I was absolutely certain that I was ready for and could handle anything. I was fortunate to have a senior partner in Okinawa, Diana Wiseman, MD, FAANS, who was supportive, but who also knew when to say "no, we can't do that here." Naval Hospital Okinawa is the largest forward-deployed Navy hospital in the



Randy with his children.

world, but it is still a very small hospital. I can't say enough about how important it was to have someone with the experience-based judgment to guide in that environment. Dr. Wiseman was a great mentor. I was also fortunate enough to spend some time with my Okinawan neurosurgery partners. I was able to work directly with one in particular, Dr. Hirokatsu Yonaha, at the Okinawa Red Cross Hospital. It definitely broadened my view of neurosurgery watching, assisting and learning from our extremely skilled Japanese partners.

So, Afghanistan. I am still processing this experience. I was deployed to Kandahar, Afghanistan, from January 2013 to August 2013. I remember taking the pager from my mentor and friend, Jeff Tomlin, MD, FAANS, under the "Kandahar Institute of Surgical Sciences" sign that hangs above the OR doors at the Role III in Kandahar. He had just finished more than 200 straight days of call, and I was getting ready to start mine. As the burden shifted, I could see the relief on his face, mixed with a bit of regret. It was surreal. Right now, I would just say that I am truly grateful for the opportunity to have served in this capacity. I was fortunate enough to work with some of the greatest professionals in all disciplines while there, and I count all of them as friends for life. I was pushed beyond my limits in almost every sense, and I don't think I will ever forget the face of any patient that I cared for. I would say that training as a military resident at Walter Reed was key, and what I learned from my military mentors, Rocco Armonda, MD, FAANS, in particular, was essential. Yeah, I think I'll just leave it at that.

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What were some of the most difficult aspects of being away?

For me the hardest part of being away was not having daily, physical contact with my family. I have four kiddos, and my third was born just before I left for Okinawa, and my fourth just before I went to Afghanistan. Skype and iChat certainly helped, but it is definitely not the same. It could have been so much harder, but my wife, Kameha, is truly amazing. She defines the mantra of the resourceful, effective, supportive and dedicated military spouse.

How have your deployment and overseas assignments changed your view on neurosurgery in the U.S.?

I think that both experiences have broadened my view of not just neurosurgery in the United States, but around the world. We certainly have an outstanding neurosurgery system in the U.S., and we are fortunate to be in a specialty that is as connected with our global partners as we are. Moving forward, I think that fostering international relationships, visiting institutions around the world, learning from our global partners and supporting the same for



Randy Bell with his wife, Kameha.

visitors to U.S. institutions should continue to be an integral part of resident education and post-residency professional development.

How did you come to be involved in the Young Neurosurgeons Committee and organized neurosurgery?

I know of no one more enthusiastic and dedicated to organized neurosurgery than Dr. Stacey Wolfe. We have been friends for a very long time, and Stacey does not take "no" for an answer. Spend five minutes talking to her about neurosurgery, and it does not matter who you are or what you do, you will want to be a neurosurgeon and on one of her committees. I think Stacey directly supported my nomination to the Young Neurosurgeon's Committee because we share a dedication to resident and medical student education. This is the area of organized neurosurgery that I hope to continue to influence.

What advice would you give to medical students considering a career in the armed forces?

Being in the military is both challenging and rewarding. I would say that a desire to serve something greater than yourself is critical to the military physician in specific, and all military personnel in general. Attitude is everything. The sacrifices you make as a military physician are rewarded by the experiences you have and the relationships you make in this environment.

What long-term goals do you have both in neurosurgery and the Navy?

My Navy service obligation takes me to 2022. I hope to make captain in the Navy, and will likely finish my military career where I started, at Walter Reed. With respect to neurosurgery, I enjoy and continue to expand my vascular practice. As far as organized neurosurgery, I hope to continue to be a part of the resident training process, both locally and around the United States. There is considerable debate from many corners on how best to train residents in the current and forthcoming environments. I hope to continue to exercise a voice in this debate.

YNC Luncheon



This year's featured speaker was Dan Resnick, MD, FAANS, who spoke on "Herding Cats: The history of 'organized' neurosurgery."



The Young Neurosurgeons Luncheon always draws a crowd.

Affiliated Organizations Update

CSNS

All residents are welcome to apply for the Council of State Neurosurgical Societies (CSNS) socioeconomic fellowships that fund travel to the two CSNS meetings each year. A resolution was passed to allow resident and fellow socioeconomic works to be presented at the CSNS meeting, so watch for opportunities to submit. All young neurosurgeons (defined as those within 10 years of completing training) are welcome to attend the young neurosurgeons caucus meeting, typically held on the Friday of the CSNS meeting.

Joint Guidelines

The Guidelines Committee welcomed the new members from the YNC. The most productive section in terms of guideline creation was the vascular section. There was a prevalent recommendation to invite other specialties (i.e. neurologist,

neurocritical care specialists, etc.) that have an interest in neurosurgical subjects to participate in the guideline creation process, to avoid work duplication.

ThinkFirst

The mission of ThinkFirst is to prevent brain, spinal cord and other traumatic injuries through education, research and advocacy. For the first time since its inception by the AANS and CNS in 1986, ThinkFirst is free of debt to its parent organizations. Nicholas Theodore, MD, FAANS, from the Barrow Neurological Institute is the new ThinkFirst president, replacing Daniel Michael, MD, PhD, FAANS. ThinkFirst has a host of resources on its website — www.thinkfirst.org — regarding the prevention of traumatic brain and spine injury, in addition to information on starting a new local ThinkFirst chapters in the United States and worldwide.

Education Division Report

The Neurosurgery Research and Education Foundation (NREF):

The NREF is now a 501c3 organization, with 12 board members, including representatives from organized neurosurgery and one public member. In 2013, Cushing Circle donors increased from 35 to 59, funding eight resident research fellowships and two young clinician investigator award recipients. In addition to existing research awards, ongoing educational projects include a newly established stereotactic neurosurgery registry for outcomes research; application for a grant to support analysis and clinical translation of data emerging from NeuroPoint Alliance's (NPA) N²QOD efforts; creation of online videos of resident conferences to increase access to educational material; and work to establish courses and exchange programs in developing markets, such as China and India.

Marshalls: We are pleased to report that we filled all of our available slots for the Marshalls program and had 44 participants! We encourage everyone — residents, fellows and medical students — interested in attending breakfast seminars and practical workshops for free in return for helping to provide technical assistance, to apply for the Marshalls program next year!

Maintenance of Certification/Continuing Medical Education

(MOC/CME): There are new changes being enacted for Part IV of the MOC. The American Board of Neurological Surgery (ABNS) will approve on a case-by-case basis quality improvement projects as the requirement for part IV of the Maintenance of Certification exam.

Education and Practice Management (EPM): The EPM Committee continues to be a valuable resource in providing education to neurosurgery providers, and young neurosurgeons in particular. The EPM has many offerings of interest to young neurosurgeons, including the coding course, which is offered five times a year. This course helps neurosurgeons and their staffs to better understand the intricate nuances of billing/coding. The *Goodman Oral Board Preparation* course,

considered the gold standard for those taking their oral boards, is offered twice annually. As for online courses, there are upcoming free course topics that include *Penetrating TBI*, *Cervical Spine Clearance in the Obtunded Patient*, and *Spinal Cord Stimulation for Failed Back Surgery Syndrome*. Finally, there are resident courses, a series of nine free courses, covering a wide array of topics, organized by the AANS in 2014.

The EPM Committee is asking for help from young neurosurgeons for *AANS Operative Grand Rounds*, the endeavor of Aaron Cohen-Gadol, MD, FAANS. Any residents interested in identifying a surgical topic, finding/making video recordings of the surgical technique, and recruiting an available faculty member to discuss the procedure via webinar are encouraged to contact Khoi Than, MD, at khoi@med.umich.edu.

NeuroPoint Alliance (NPA)/National Neurosurgery Quality and Outcomes Database (N²QOD):

The NPA analyzes and reports on nationwide clinical data from neurosurgical practices using online technologies. Of note, it is considering creating a neurosurgeon “dossier” that would allow a surgeon to collect cases from residency through fellowship and into practice as one longitudinal collection. The N²QOD is one of the projects of the NPA, and in its meeting, it confirmed the very productive course of the project in the last two years. The cervical and lumbar spine modules have accrued data for six- and 12-month follow-up, and NPA continues to develop various modules, including SRS, spinal deformity, tumor and cardiovascular projects.

The Scientific Planning Committee would like to thank all those who attended the AANS Annual Scientific Meeting in San Francisco. Please stay tuned for the abstract submission information and registration details for the next AANS meeting, May 2-6, 2015, in Washington, D.C.

Communications Division Report

The Development Committee is now part of the new NREF. Its main purpose remains the coordination of the relationship of organized neurosurgery with industry, especially as it pertains to securing funds for educational activities and resident courses. The establishment of “One Ask” is giving neurosurgery a strong and unified voice during negotiations with our industry partners. The committee has done a very good job of securing funds for the upcoming courses. It has also led the successful negotiations that resulted in the development of the first prospective industry-supported radiosurgery registry. An additional responsibility of the committee involves fundraising in the context of the NREF. The NREF is now an independent organization that can receive funding from individuals, trusts and corporations. Growing our endowment is critical for the survival of neurosurgery, and there is a major campaign to create a culture of giving within our specialty.

AANS Neurosurgeon is the socioeconomic publication of the AANS, published online quarterly. The most recent issue focuses on international neurosurgery. Previous issues this year covered pediatric neurosurgery, as well as “Icons, Innovations, and Inventions in Neurosurgery.” The upcoming issue, due out in November 2014, addresses the theme, “Neurosurgery and the Future of Health Care.” Participation by members of the YNC in the publication process is welcomed.

The Public Relations committee is working on drafting short updates pertaining to YNC activities, health-care policy and research. They are planning on displaying these in the AANS website and utilizing social media for their promotion. They are also working on creating standardized PowerPoint presentations on common and important topics, such as TBI, concussion, SAH, etc. These will become available to AANS members for community lecturing purposes. Help from interested YNC members is welcomed.

Book Reviews

Thieme eSpine

The newest addition to the online education platforms by Thieme, *eSpine* provides a comprehensive resource for spine surgery material. The website contains e-books inclusive of all of the major Thieme spine titles, as well as links to procedure descriptions, images and journals. Similar to the *eNeurosurgery* platform, the interface is user-friendly, and resources are constantly being added. For the spine surgeon or resident in training, it could easily become a one-stop-shop.

Normal Pressure Hydrocephalus

Michael J. Fritsch, MD; Uwe Kehler, MD; Ullrich Meier, MD, PhD

This is a comprehensive resource for the evaluation and treatment of normal pressure hydrocephalus (NPH). The book begins with a historical perspective on the disease, including epidemiological studies dating back to 1995 and a historical overview dating to the time of Hippocrates. It continues to discuss clinical characteristics and the nuances of differentiating NPH from the multitude of other neurodegenerative diseases. The pathophysiology, imaging and other workup, and current treatment options with supporting literature and outcomes are subsequently reviewed. A lengthy section on the physiology and biomechanics of treatment options makes this book a particularly useful resource for clinician scientists and those with bioengineering affiliations.

Moyamoya Disease

John E. Wanebo, MD, FAANS; Nadia Khan, MD; Joseph M Zabramski, MD, FAANS; Robert F. Spetzler, MD, FAANS

This text is a thorough review of Moyamoya disease, from diagnosis and workup, to classification, treatment and outcomes. It is divided into three well-defined sections: diagnosis, treatment options and the regional, long-term experience of the authors. Each section has several detailed chapters that provide concise yet detailed quick-reads of subtopics. Detailed illustrations within the techniques section make it a useful resource for anyone treating patients with Moyamoya disease and Moyamoya syndrome.

Neurosurgery Tricks of the Trade, Spine and Peripheral Nerves

Remi Nader, MD, FAANS; Scott C. Berta, MD; Cristian Gragnaniello, MD, PhD; Abdulrahman J. Sabbagh, MD; Michael L. Levy, MD, PhD, FAANS

The experts of spine and peripheral nerve surgery have come together to share their tips. This easy-to-read reference covers everything from spine approaches to trauma and infections, tumors, vascular malformations, spasticity, pediatric spine and peripheral nerves. The table of contents clearly delineates each chapter as “approach based” or “pathology based.” The approach-based chapters include alternative treatments, advantages to the treatment being discussed and bullet points on preoperative

planning along with expert suggestions. Key steps of the procedures are discussed, along with complications, hazards and outcomes. Pathology-based chapters include additional background on epidemiology and pathophysiology of diseases. This excellent resource is concise but comprehensive.

Neurosurgery Tricks of the Trade Cranial

Remi Nader, MD, FAANS; Cristian Gragnaniello, MD, PhD; Scott C. Berta, MD; Abdulrahman J. Sabbagh, MD; Michael L. Levy, MD, PhD, FAANS

The cranial counterpart to the authors’ other “Neurosurgery Tricks of the Trade” book translates the easy-to-read format into a comprehensive cranial reference. Again, written in “approach based” and “pathology based” chapters, it covers all aspects of cranial surgery, including open craniotomy, endoscopic surgery, trauma and infections, cerebrovascular, stereotactic and functional and pediatric surgical procedures. The authors have created yet another fantastic reference for a neurosurgical library.

MRI Essentials for the Spine Specialist

A. Jay Khanna

As neurosurgeons, we are entrenched in neuroimaging, yet rarely get more than a few months of formal education. This text provides a great reference for spine MRI interpretation and clinical correlation. The first section provides a general overview of MRI physics, spine anatomy and clinical correlation, as well as a systematic approach to viewing MRIs. The second section breaks down the spine by regions, from the occipital-cervical junction to the lumbar spine, reviewing anatomy, common measurements and pathology accompanied by MRI images. Final chapters discuss nuances of the pediatric spine, advanced techniques and correlation with other imaging modalities. This would be an excellent resource for a neurosurgical resident or spine specialist.

Seven AVMs, Tenets and Techniques for Resection

Michael T. Lawton, MD, FAANS

The AVM equivalent to Lawton’s previous book, *Seven Aneurysms*, this is yet another excellent addition to a neurosurgical library. The first section to the book is geared toward general principles of AVM management, discussing nuances for resection and planning. The second section of the book covers the seven general AVMs: frontal, temporal, parieto-occipital, ventricular and periventricular, deep, brainstem and cerebellar. Each of these subtype chapters discusses relevant vascular anatomy and even further breaks down these AVMs based upon their more specific location. These chapters include illustrations, radiographic imaging and intraoperative photos. Finally, patient selection and multi-modality treatment strategies are discussed. Once again, Dr. Lawton has created a detailed must-have of neurosurgical textbooks.

Controversies in Neuro-Oncology

Alfredo Quinones-Hinojosa, MD, FAANS; Shaan M. Raza, MD

The field of neuro-oncology is ever-changing, with considerations for surgery and adjuvant therapy, each tumor type is laden with treatment options. This resource is divided by tumor pathology and covers such controversies as the roles and extent of surgical resection, and roles of chemotherapy and adjuvant therapy. Contrary to the title, this text is set up as more of a treatment-based literature review rather than a controversy-based “point, counterpoint” method. It is comprehensive and offers an excellent review of the current literature and treatment options. It would be an excellent addition to any neurosurgeon’s library.

The Facial Nerve

William H. Slattery III, MD; Babak Azizzadeh

One of the tenets of skull base anatomy is the preservation of facial nerve function. Slattery and Azizzadeh have prepared a detailed resource that outlines the facial nerve, its histology and anatomy, examination and evaluation of the facial nerve and various pathologies that affect the facial nerve.

Controversies in Neurosurgery II

Ossama Al-Mefty, MD, FAANS

The most recent trend in neurosurgical books – presenting point-counterpoint evaluation of various pathologies - continues with *Controversies in Neurosurgery II*. Exploring topics that have historically been amenable to multiple treatment paradigms, this reference explores each option in depth, with expert opinion on

choosing the most appropriate treatment strategy as the concluding section for each chapter. Each of the possible treatments are discussed in depth, covering background, preoperative evaluations, surgical approaches, outcomes and complications. The end of each section is a “Moderators” chapter where the considerations for surgical strategy are discussed along with nuances of choosing the optimal treatment. Overall, a great compilation of the supporting literature for each approach, this tome would be a worthy addition to your bookshelf.

Controversies in Stereotactic Radiosurgery

Jason P. Sheehan, MD, PhD, FAANS; Peter C. Gerszten, MD, MPH, FAANS

Sheehan and Gerszten have done an excellent job compiling an exceptional radiosurgery resource for neurosurgeons. The book is divided into seven main sections: benign and malignant intracranial tumors, functional, spinal cord tolerance, fractionation and complications, and benign and malignant spine tumors. Each section discusses common pathologies which may be treated with radiosurgery and presents arguments for the available forms of radiosurgery as well as arguments for surgery and multi-modality treatments. Evidence tables compile the available literature for easy reference. This is certainly an excellent resource for residents training in radiosurgery or for those with a neuro-oncology or functional neurosurgery interest.