

# CongressQuarterly

FALL 2019

## Philanthropy

Growing a Strong Foundation for  
Neurosurgery's Future.



Congress of  
Neurological  
Surgeons

**6** The Impact of the  
NINDS/CNF Getch  
K12 Scholar Award

**8** Neurosurgery on the  
Ground: International  
Medical Missions

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**Congress of  
Neurological  
Surgeons**

## EDITOR'S NOTE



**Martina Stippler, MD**  
2018-19 Editor  
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Yuval Harari dissects happiness in the last chapter of his book *Sapiens*. He states, "Happiness is not the surplus of pleasant over unpleasant moments. It is seeing one's life in its entirety as meaningful and worthwhile." As physicians, we hear a lot about burnout, wellness and work-life sway these days. At the same time, our culture seems to be obsessed with happiness. Where does this leave us?

Emily Esfahani Smith, in her TED talk "There is more to a life than being happy," explains that a meaningful life is a more fulfilling path. People leading a meaningful life are more resilient, function better and live longer.

But how do you live a meaningful life? The psychologist Martin Seligman defines the meaningful life as "using your signature strengths and virtues in the service of something much larger than you are." By the nature of being neurosurgeons, we have a direct path to finding meaning in our lives. We alleviate pain, cure brain tumors and prolong lives all in a day's work. But sometimes we lose sight of it and the meaning often gets infringed on by RVU targets, overbooked clinics, and unrealistic expectations from everyone around us.

The quest for purpose and the calling to give back is the topic of this issue of the *Congress Quarterly*. Philanthropy and humanitarian effort in neurosurgery can help us to have more fulfilling lives and at the same time diminish disparities in access to neurosurgery care globally.

With this notion in mind the Congress of Neurological Surgeons started the #CNSfoundation. The CNS Foundation is here to serve the international neurosurgical community. Please find out more about the mission and goal of the CNS Foundation by reading Dr. Elad Levy's message.

This issue also contains interviews with Dr. Gail Rosseau, Dr. Barth Green and Dr. Robert Dempsey, pioneers in humanitarian efforts, on lessons they have learned and about their vision for the future of global neurosurgery.

If you are interested in how to start your own neurosurgery mission, you will find the reports by Dr. Lawton informative. If you want to get inspired, please read the profiles of two medical missions: one in Dar es Salaam, Tanzania, by Dr. Jeremy Hosein and Dr. Katherine Kunigelis, and one in Kurdistan by Doctors Dossani, Bolles and Guthikonda.

I hope that with this issue, I sparked your interest in humanitarian work in neurosurgery and a commitment to a meaningful life—should that be starting your own philanthropic work or by joining forces with the CNS Foundation.

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# PRESIDENT'S MESSAGE



**Ganesh Rao, MD**  
President, Congress of  
Neurological Surgeons

Philanthropy is a critical part of the mission of any non-profit professional organization. The Congress of Neurological Surgeons (CNS) has a strong commitment to philanthropy and our philanthropic endeavors reside within the CNS Foundation (CNSF). The CNSF exists alongside the CNS as its own non-profit organization. As such, the CNSF has its own board and bylaws. This allows the CNSF to maintain a separate mission with a relatively narrow scope, making it much more focused on achieving its goals. These goals include the NINDS/CNSF Getch K12 Scholar Award, the CNS Guidelines effort, and its own philanthropic efforts. The NINDS/CNSF Getch K12 Scholar Award was created to honor the memory of the late Christopher Getch, MD, President of the CNS in 2010-11. "The "Getch", as we call it, is actually a research grant funded in-part by CNS through a donation to the Foundation for the National Institutes of Health (FNIH). This \$200,000 two-year grant is awarded by the National Institute of Neurological Disorders and Stroke (NINDS) to a burgeoning surgeon/scientist who has

recently completed training. We recently expanded our funding of the K12 award every year, which represents an additional per year commitment to help more promising surgeons/scientists achieve their scientific goals. This award is supported by the generous donations from our members. The NINDS has recognized the K12 program as an important step toward independent funding for the surgeon/scientists in our field as many recent awardees have gone on to secure much larger independent research grants. Be sure to read Steve Korn's article on page 6 to learn more about the impact. We are proud that one of these grants is associated with the CNS.

The CNS Guidelines effort has been a major contribution to the neurosurgical literature. CNS practice guidelines are available for nearly every subspecialty of neurosurgery. Guidelines not only provide a synthesis of the best available medical literature, but also help our Rapid Response Team (part of the Washington Committee) respond to dropped coverage from payors and other threats to coverage for procedures that are supported by the evidence. The CNSF supports guidelines including the complex infrastructure needed to create them. In other words, contributions to the CNSF directly support our ability to get reimbursed for the procedures we are performing.

Finally, the CNSF also supports other philanthropic efforts around the world. We are entering into agreements with international partners to allow neurosurgeons, particularly trainees, to come to the US to observe important neurosurgical procedures. These relationships allow us to expand the reach of the CNS worldwide.

I encourage you to make a tax-deductible donation of any amount to support these efforts. Although the scope of the foundation is focused, its importance to neurosurgery cannot be overstated. Your support of the CNSF is crucial to creating the next generation of neurosurgical leaders, developing guidelines to protect our practices, and fostering international collaboration. ■



# CNS

## Foundation

### CNS FOUNDATION PILLARS

- 1) Practice Guidelines Dissemination
- 2) Clinical Research
- 3) International Philanthropy



Elad I. Levy, MD, MBA

# CNS Foundation: Mission and Purpose

As individual members of the neurosurgical community, the positive impact we have on those entrusted to our care is incalculable. But as a collective, is there more we can do to augment our service to the global community of neurosurgeons and patients? With the growth of information exchange and globalization of care, we have the capabilities to significantly improve neurosurgical access in underserved regions. We can amplify our efforts by unifying through philanthropy, which by definition is the “love of humanity.” Such joint philanthropy would propel the objective of the CNS Foundation, namely to reduce the barriers to exceptional education and care.

CNS Foundation’s core mission is to create a strong, positive impact in the field of neurosurgery worldwide. The three pillars of the Foundation are the dissemination of scientific evidence through publication of guidelines, clinical scientist career development, and international philanthropy. Resources for advanced research are

increasingly competitive. The Clinical Scientist Career Development Initiative is paramount for the CNS Foundation, as this funding source contributes to establishing young clinicians in their research career in medicine. Donations to the Clinical Scientist Career Development Initiative help to fund CNS’ most prestigious award, the NINDS/CNSF Getch K12 Scholar Award, providing unparalleled support for a young neurosurgeon-scientist starting their clinical research for two years at their home institution. The CNS Foundation and the Foundation for the National Institutes of Health (FNIH) have collaborated to fund two awards for early career neurosurgeon-scientists.

Surgery in general and neurosurgery specifically, have been severely underfunded as a global health initiative, resulting in a paucity of quality neurosurgical care in many regions around the globe. With fewer than 34,000 neurosurgeons to serve 103 countries, this translates to less than two neurosurgeons for every 100,000 people worldwide. The International Philanthropy Initiative commenced with the goal of information exchange



## **MATCH THE MISSION!**

Are you one of more than 660 CNS members who have supported worldwide health through the CNS Foundation?

**Donate to the  
“Match For The Mission” today!**  
<https://www.cns.org/about-us/foundation/donate-now>



The **CNS GUIDELINES APP**, available for free thanks to a CNS Foundation grant, from the Neurotrauma and Critical Care Section, provides clinicians with immediate, point-of-care access to 16 guideline topics, in six subspecialty areas, including links to the full-text of the guideline.



## **SILENT AUCTION**

Get ready to bid and give! The CNS Foundation Silent Auction at the CNS Annual Meeting offers autographed sports and entertainment memorabilia, jewelry and more. Join us in San Francisco (October 19-23, 2019) and visit the Silent Auction booth to support the CNS Foundation.



in order to promote cross-pollination of education, information, and technology for neurosurgeons worldwide. Contributions will help provide neurosurgeons with deeply rewarding opportunities for observation and mentorship at American academic centers of excellence.

CNS Guidelines, a critical initiative of the CNS Foundation, was developed to support dissemination, development, and review of neurosurgical guidelines, and provides younger neurosurgeons with unique alternatives through guideline development projects. The best example of innovative approaches to information dissemination is the development of the CNS Guidelines App in 2017, with support from the Section on Neurotrauma and Critical Care. This app consolidates the information from a variety of different protocols, providing current information for clinical practice on mobile platforms. The CNS Foundation's CNS Guidelines Initiative continues to fund development of new recommendations as a critical resource in our rapidly evolving health care environment. We applaud the Spine Section's funding of a three-year project to develop a comprehensive set of clinical practice guidelines on the topic of Perioperative Spine Surgery. This visionary project will help the CNS develop clinical practice guidelines on the topics of preoperative, intraoperative, and postoperative spine to support the work of all neurosurgeons.

Support for the CNS Foundation is sincerely appreciated, with individual contributions rising more than 20% in 2017, resulting in a net asset growth of 50% for the year. In excess of 660 donors (<https://www.cns.org/about-us/foundation/thank-you-donors>) have generously supported the efforts of CNS Foundation, and we hope you are


inspired to join our team at the Foundation through volunteerism or contributions. We would also like to thank Medtronic, Microvention, Penumbra, and Minnetronix Neuro for their generous donations, as these industry partners have continually supported our efforts to improve neurosurgical care across the globe. The CNS Executive Committee must be acknowledged for their tremendous support to galvanize a new stage in CNS community philanthropy with a \$1 million gift to match all 2019 gifts from individual neurosurgeons and sections.

**Finally, I am very pleased to announce the newest members of our CNS Foundation board:**

David Crawford	Ganesh Rao, MD
Ricardo Komotar, MD, FACS	Clemens Schirmer, MD, PhD
Brian Nahed, MD, MSc	Martina Stippler, MD

Please help me thank them for their volunteer service in leading the CNS Foundation into a new era of dynamic philanthropy to improve worldwide health.

I deeply appreciate your past support to build the CNS Foundation's current success. I ask you to continue supporting the CNS Foundation to elevate its future.

To learn more about the CNS Foundation, volunteer, or to contribute to our mission, please visit us at <https://www.cns.org/about-us/foundation>. 

## — CNS FOUNDATION AWARDEE PROFILES —

In pursuit of its mission to create a strong, positive impact in the field of neurosurgery worldwide, the CNS Foundation grants significant awards to neurosurgeons pursuing research and clinical training. The following profiles detail the work being accomplished through these important grants.



### Alexis Morrell

In 2018, we introduced the CNS Foundation international observership, made possible thanks to a generous donation from the TransAtlantic Education Foundation. This new award was granted to Dr. Alexis Morrell. Dr. Morell spent three months at the University of Miami, participating in the Brain Tumor Program under the direction of Doctors Ricardo Komotar and Michael Ivan.

During this time, Dr. Morell observed almost 250 brain tumors, from acoustic neuromas to awake craniotomies for gliomas, and participated in a research project focused on brain tumor metabolism and the effects of nutritional interventions in high-grade gliomas.

**"Throughout this program, I learned not only about neurosurgery but also about teamwork, commitment, professionalism, and leadership," said Dr. Morell. "I think that transmitting those values is a critical part of education and mentorship in Neurosurgery."**

## — CNS FOUNDATION AWARDEE PROFILES —

The CNS Foundation, in partnership with the CNS and the Foundation for the National Institutes of Health (FNIH), funds the biennial NINDS/CNSF Getch K12 Scholar Award, one of neurosurgery's most prestigious awards. The Getch Scholar Award is unique among K12 Awards, in that the award can be used to support a surgeon scientist who stays at their home institution to complete their research. (To learn more, see Dr. Stephen Korn and Russell Lonser's article on page 6.)



### Brian Dlouhy

The inaugural NINDS/CNSF Getch K12 Scholar Award was granted in 2016 to Dr. Brian Dlouhy of the University of Iowa. Dr. Dlouhy's research focuses on the amygdala and its potential role in sudden unexpected death in epilepsy (SUDEP). SUDEP is the most common cause of death in intractable epilepsy patients and the cause is unclear. Wanting to translate previous animal work back to humans, while testing his hypothesis that the amygdala inhibited brainstem respiratory motor neuron output in humans, Dr. Dlouhy found that seizures spreading to the amygdala resulted in complete loss of breathing. Moreover, electrical stimulation of the amygdala reproduced the apnea observed during seizure spread. Most striking was the lack of awareness and lack of dyspnea the subjects experienced while not breathing. These findings may have broad implications for SUDEP, sudden infant death syndrome (SIDS), and respiratory changes that occur in panic disorder patients and other emotional pathology. Since the award, Dr. Dlouhy has continued his research on SUDEP. This led to a first author publication in *The Journal of Neuroscience*. Related to this work, Dr. Dlouhy also authored a review on SUDEP in the *Journal of Neurology, Neurosurgery, and Psychiatry* and co-authored another review in *Nature Reviews Neurology*. He presented his research in Houston at the 2018 CNS Annual Meeting.

**"The NINDS/CNS Getch Scholar K12 Award was absolutely instrumental to my early career as a neurosurgeon-scientist. Our research has spurred the development of an entire new field of science on understanding how the forebrain controls breathing. I am so very grateful."**



### Babacar Cisse

In 2018, the second NINDS/CNSF Getch K12 Scholar Award was granted to Dr. Babacar Cisse of Weill Cornell Brain and Spine Center. Dr. Cisse is the principle investigator of a basic research laboratory that studies the interactions between the immune system and brain tumors. These interactions are critical for the promotion or repression of brain tumors, their growth, and malignant transformation. The research uses human brain tumor samples and mouse brain tumor models to develop a thorough and basic understanding of how brain tumors develop and grow, and eventually identify therapeutic targets against which agents can be developed. His work has been published in respected peer-reviewed journals including *Clinical Cancer Research*, *Cell*, and *Immunity*. With the funding provided by the Getch Scholar Award, Dr. Cisse will continue his research, paving the way for the development of better adjuvant non-surgical therapies against the tumors.

**"One of the factors that attracted me to neurosurgery was the fact that some of the most common and aggressive brain tumors are not curable by surgery," said Dr. Cisse. "We need a better understanding of how these tumors form, develop and became malignant and interact with host cells in order to identify effective adjuvant therapies. Without the support of awards such as this, we cannot do this important work."**



Stephen J. Korn, MD



Russell R. Lonser, MD

# The Neurosurgeon Research Career Development Program (NRCDP) and the Impact of the NINDS/CNSF Getch K12 Scholar Award

Neurosurgeons have an important role to play in research towards understanding and treating neurological diseases and disorders. They have a unique ability to directly access the brain, use technologies in their clinical specialty that are unique to their specialty, and have clinical insight derived from patients and diseases for whom they are responsible. Although by no means the only source of research funding, the NIH R01 represents the fundamental, peer-reviewed grant mechanism by which clinicians in the U.S. conduct hypothesis-driven, cutting-edge research into brain function and dysfunction.

For a variety of reasons, including the evolution of neurosurgeon training paradigms and financial issues, the last 20 years has seen a dearth of neurosurgeon-led R01s. In 2009, just 34 neurosurgeons held NIH R01s, and the number appeared to be headed lower. In consultation with Department Chairs and research leaders in neurosurgery, The National Institute on Neurological Disorders and Stroke (NINDS) launched a new program, the Neurosurgeon Research Career Development Award (NRCDP)(K12) as part of a comprehensive approach to increasing the number of neurosurgeons conducting hypothesis-driven research supported by the NIH.

The NRCDP is focused on the transition point from residency to faculty, a critical point of vulnerability for the development of neurosurgeon-researchers. Most neurosurgery residents accept a faculty position at an institution other than their residency institution. Even with significant research experience, and a desire for

a dual career as clinician and scientist, newly transitioned neurosurgeons face large obstacles to successfully launching a scientific program. Most importantly, neurosurgeons have generally been away from research for three or more years prior to starting their faculty position, and upon moving to a new institution, must quickly get up and running with a new research project, in a new environment and with new scientific mentors (of which there are few in neurosurgery departments with which to make immediate contact). This daunting task coincides with the need to start a new clinical practice from scratch in a new environment, and the pressure to fit into a department that is almost entirely composed of purely clinical physicians.

Consequently, the premise of the NRCDP was three-fold: 1) to provide initial research support to outstanding neurosurgeons who had great promise for conducting important, high-quality research, 2) to incentivize the Chairs of their faculty departments to provide real protected time for research for a prolonged period of time, and 3) to create a nationwide community of neurosurgeon-scientists in which the small cohort of neurosurgeon-researchers could grow, mentor and support each other towards success.

The immediate goal of the NRCDP was simple: get supported researchers to individual NIH-level funding with which they could pursue their research. The NRCDP was set up as a national program, headed by a principal investigator and a national advisory committee, which would both run the program and be held accountable for its success. Neurosurgeons in their first faculty year who are practicing at an institution other than their residency institution are

eligible to apply for support from the program. Candidates present a plan, both written and through interviews, by which they would launch an independent research program to investigate a problem of outstanding clinical importance for patients typically of relevance to neurosurgeons.

Candidates, in addition to being guided by one or more mentors, must have strong support from their Chairs. As part of the eligibility criteria, Chairs must commit to providing the candidate with 60 months of support for 50% of full-time professional effort towards research. Community building among all participants in the program, as well as oversight, occurs through an annual retreat that all attend for five or more years, as well as site visits to the home institutions of the awardees. Initially, the program was designed to support two new neurosurgeons each year for a total of two years each. The expectation was that those supported would obtain major individual funding by the third year or shortly thereafter.

The NRCDP program has funded 19 outstanding scholars since 2012. Remarkably, 50 neurosurgery departments have submitted applications to support new faculty, notwithstanding the requirement that Chairs must commit to 50% protected time for research for five years with just two years of support provided by the NRCDP.

**Table 1** illustrates results for the 13 scholars who have completed their two years of program support. Thus far, 85% have obtained major individual research awards. Ten of the first 13 scholars supported have received an individual Career Development Award (K), R01 or Cooperative Agreement award (UH3). One additional scholar received a major, R01-like grant.



In light of the early, great success of the program, the Congress of Neurological Surgeons (CNS) and the CNS Foundation in 2015 initiated a yearly contribution to the Foundation for the National Institutes of Health (FNIH), which, with matching NINDS funding, provides two years of support biennially for an additional scholar – called the NINDS/CNSF Getch K12 Scholar Award. This CNS contribution to the program plays an important, unique role. Along with supporting an additional, outstanding junior neurosurgeon researcher, the Getch Scholar award can be used to support an individual who stays at his/her residency institution as well as one who leaves for a different institution. Indeed, the first two scholars chosen for the Getch Scholar award have been individuals who obtained faculty positions at their home institutions.

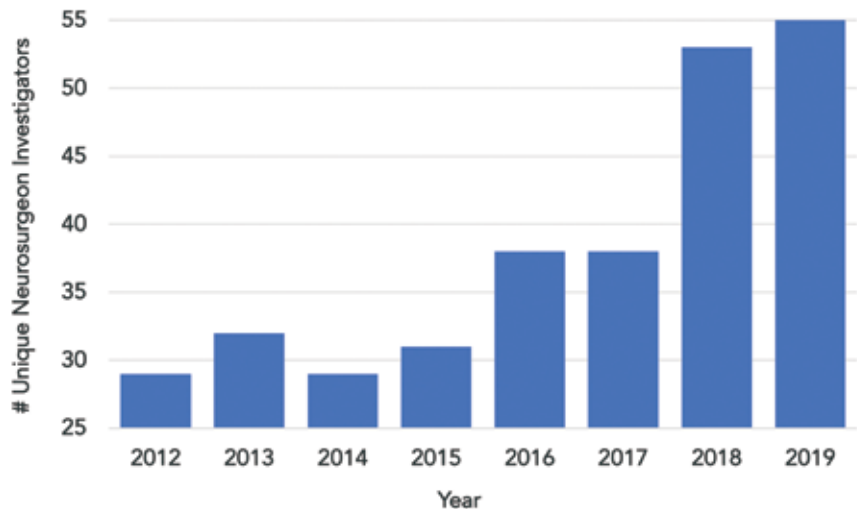
To date, six individuals from the NRCDP program have obtained NIH R01 or equivalent awards. However, this cooperative endeavor between NINDS and much of the neurosurgeon community may be having an even broader influence on the future of neurosurgeon-driven research. **Figure 1** illustrates the change in number of neurosurgeons holding a major, individual NIH research grant since inception of the NRCDP program. The number of unique neurosurgeons holding a major individual NIH award (R01 or DP-series research grant) increased by 90% between 2012 and May, 2019.

The NRCDP, through collaboration with academic departments and the broad neurosurgical community, has successfully led to the development of early career neurosurgeon-scientists into independent investigators. Moreover, the number of independent neurosurgeon-investigators has grown significantly since the inception of the program. The growth in neurosurgeon-led research will undoubtedly contribute to a better understanding of neurological function and dysfunction and ultimately to a better understanding and treatment of patients with neurological disease. ■

**Table 1. Major funding of scholars supported by the NRCDP between 2012 and 2016 (N-13)**

<b>Applied for a major NIH Award</b>	<b>100% (13/13)</b>
<b>Applied for NIH K08 or K23</b>	<b>62% (8/13)</b>
<b>K success rate (award/applicant)</b>	<b>50% (4/8)</b>
<b>NIH R01 or equiv. success rate (award/applicant)</b>	<b>75% (6/8)</b>
<b>Success rate for NIH K, R, or U Grant</b>	<b>83% (10/12)</b>
<b>Received major funding</b>	<b>85% (11/13)</b>

**Figure 1: Funded R01 or DP-series grant**






## Neurosurgeons on the Ground: Profiles of International Medical Missions



### PHILANTHROPY,

from the Greek philanthropos, means the love of humanity. Over time, it has come to refer specifically to private initiatives for the public good—often with a focus on quality of life. By that definition, there is perhaps no greater example of philanthropy in neurosurgery than the work of medical missions.

Throughout the world, neurosurgeons give generously of their time and experience to deliver lifesaving care and provide critical surgical training to communities in need. The following are profiles of just three such medical missions where CNS Members on the ground are changing lives. Often, the impact of these medical missions reaches far beyond those being treated, to impact families and communities for years to come. 



Jeremy Hosein, MD



Katherine Kunigelis, MD

## A Collaboration of Equals: Partnership in Dar es Salaam, Tanzania

Since 2016, the University of Colorado Department of Neurosurgery (CU) has partnered with the Muhimbili Orthopedic Institute (MOI) in Dar es Salaam, Tanzania. Why Tanzania? “There are 11 neurosurgeons in a country of 57 million people,” answers Ryan Ormond, MD, a CU Neurosurgeon and faculty for the CU-MOI partnership. Recent publication of articles in global neurosurgery highlight a transition from personal mission trips to international collaboration for sustainable development of neurosurgical care in low- and middle-income countries (LMIC). This has been the experience at CU, which has developed an institutional collaboration focused on individualized professional development, residency training, and the establishment of formal educational exchanges.

Faculty neurosurgeons at MOI have trained all over the world – including Japan, Germany and Australia- and have made personal sacrifices to return home and establish neurosurgical care in their country. As part of a collaborative partnership, they have the experience and knowledge to direct an international educational exchange based on the needs of the local population. In this setting, Dr. Ormond noted, “A few weeks a year, if focused appropriately, and driven by the local partners, we can make a real difference in the lives of patients.”

CU Neurosurgery faculty and residents travel as a team to Tanzania for two weeks each year. Since assisting with the development of MOI’s neurosurgery training program, they work with the local faculty and residents to understand infrastructure and resources, provide focused educational content both in and out of the OR, and collaborate on research. Dr. Kevin Lillehei, Chair of CU Neurosurgery and principal faculty of the CU-MOI partnership, believes the international rotation for residents is

important. “The exposure is eye-opening for what medicine is like in the rest of the world. That type of exposure invariably makes an impact that there’s more to neurosurgery than what we’re able to teach in our program.” Yearly, a neurosurgical faculty member or resident from MOI is also hosted for a four to six week observership in Colorado with an emphasis on surgical techniques and access to a cadaver lab for hands-on practice.

An example of the educational collaboration is the intraoperative ultrasound course at MOI. The course focuses on adapting existing ultrasound units already available at MOI for use intraoperatively to improve real-time estimation of extent of resection, surgical planning, and navigation for both cranial and spine tumor surgeries. In fact, the first time intraoperative ultrasound was used at MOI was to tailor the enlargement of a craniotomy before dural opening to allow for better resection of a brain tumor. This technology can also be applied to aid in evacuation of traumatic hematomas or pediatric pathologies. The use of intraoperative ultrasound is making surgery safer and more efficacious for MOI’s patients in a place where surgical navigation software is not available, intraoperative MRI is not accessible, and many patients cannot afford postoperative imaging.

Another emphasis of global neurosurgery is the need for multidisciplinary teams and training to support the neurosurgical mission. CU has partnered with the Departments of Pathology and Neuro-Oncology as part of this collaborative effort. The CU Neuropathology group reviews specimens from surgical resections at MOI (where specimens are reviewed with general pathologists without subspecialty training in neurological disease) and is in the process of arranging a one-month educational opportunity for a pathologist from MOI to travel to Denver. Additionally, this year will be the first annual



*PGY5 CU Neurosurgery Resident Katherine Kunigelis learns to do a trauma craniotomy with Hudson brace and Gigli saw while on an exchange trip to MOI in Spring 2018.*

Photo courtesy of D. Ryan Ormond, MD.

Neuro-Oncology international conference hosted in Dar es Salaam.

As a global community, we continue to have significant work to address disparities in neurosurgical care, but partnerships like these create enduring and sustainable solutions. Focusing efforts on a collaboration between teams allows for continued development of the LMIC program. Supplementing residency education with observerships and exchanges allows for the continued growth of a neurosurgical network within a country. Notably, the development of an institutional partnership has bidirectional benefits. “Every time I do this, it puts everything back into perspective,” reflects Dr. Lillehei. “All you have to do is spend time there and you realize what’s really important in Neurosurgery.”

### Reference

- Ormond, D. MD, Kahamba, J. MD, Lillehei, K. O. MD, & Rutabasibwa, N. MD. (2018). Overcoming barriers to neurosurgical training in Tanzania: international exchange, curriculum development, and novel methods of resource utilization and subspecialty development, *Neurosurgical Focus FOC*, 45(4), E6. Retrieved May 28, 2019, from <https://thejns.org/view/journals/neurosurg-focus/45/4/article-pE6.xml>



Rimal H. Dossani, MD



Gene Bolles, MD



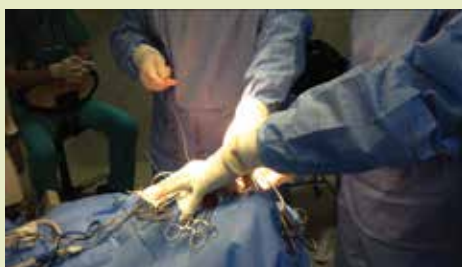
Bharat Guthikonda, MD

# Neurosurgery Capacity Building in Iraqi Kurdistan

Kurdistan is located amid the mountains of Ararat, a biblical location in ancient Mesopotamia where Noah's Ark rested after the great flood. Kurdistan is not a sovereign nation but is composed of a large area overlapping four countries: Turkey, Iran, Iraq and Syria. Dr. Gazi Zibari, an American-trained transplant surgeon who hails from Duhok, a city in Iraqi Kurdistan, has led medical mission trips to Duhok for over two decades. In May 2012, Zibari introduced neurosurgeons to a multidisciplinary team of medical professionals. Over the years, our neurosurgical team has evaluated and operated on patients at Duhok Emergency Hospital, the local trauma center where most of the region's emergent and elective neurosurgical procedures are performed. As volunteer neurosurgeons, we have delivered lectures on key neurosurgical topics and mentored local neurosurgeons in performing complex neurosurgical procedures.

## Existing neurosurgical facilities and challenges to neurosurgical practice in Duhok

As part of Iraqi Kurdistan, Duhok has a bustling economy owing largely to the export of crude oil. Duhok's infrastructure appears modern with well-developed roads, buildings and bridges. The basic amenities of shelter, water and electricity are available and affordable. However, unlike the industrial infrastructure, the medical facilities are underdeveloped. The hospitals are often in disrepair, medical equipment is sparse, and training programs are meager. Duhok Emergency Hospital is a 122-bed facility with 7 operating rooms and 8 ICU beds. It lacks a formal neurosurgical training programs but provides neurosurgical training in a year-long rotation to two senior residents from other Iraqi training programs. The Emergency Hospital is prone to electrical outages and the hospital generator often powers the surgical



**Figure 1:** A Gigli wire saw in use to cut the bone in between the burr holes to elevate a cranial bone flap.

wards and operating rooms. The neurosurgical operating microscope is an outdated model but is surprisingly functional. Basic neurosurgical equipment such as stereotactic navigation and high-speed drills are lacking. Neurosurgical instruments such as the Hudson brace and the Gigli saw, which have long become antiquated in the developed world, are still used to perform cranial surgery (**Figure 1**). The local culture does not tolerate surgical complications, which are misperceived as surgical inexperience and incompetence, and patients often travel to Iran, Turkey, India or Jordan to undergo surgical procedures. As a result, Duhok neurosurgeons suffer from a lack of surgical volume to develop technical mastery because patients go to neighboring countries to seek neurosurgical care.

## Case examples and future directions

A necessary goal of international medical missions should be to work with the local surgeons and health administrators to expand available and sustainable care. Over the last 8 years, we have seen hundreds of patients in consultation and performed more than 100 complex cranial and spinal operations jointly with local neurosurgeons (**Figure 2**). We have noticed a marked improvement in the local neurosurgeons' surgical abilities. For example, Duhok neurosurgeons are now proficient in



**Figure 2:** Examples of cases performed at Duhok Emergency Hospital jointly with local neurosurgeons: (A) large pediatric craniopharyngioma, (B) thoracolumbar fusion for L2 burst fracture, (C) large acoustic neuroma, and (D) anterior skull base meningioma.

performing transsphenoidal approaches and in stabilizing the spine following trauma. However, they still need more technical training to handle the surgical management of large craniopharyngiomas and acoustic neuromas. We have formed an alliance with the Ministry of Health in Duhok and are in close contact with local neurosurgeons who update us on upcoming cases and ask for advice on challenging cases. Since 2012, the neurosurgical service in Kurdistan of Iraq has steadily grown as indicated by the increasing neurosurgical volume and the reduction in cases outsourced to Turkey, Iran, and India. The local neurosurgeons' greatest accomplishment is in earning the trust of their patients, and we hope that in the coming years, they will sustain an independent neurosurgical service with little help from us. ❏

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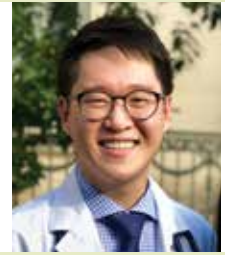
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## Mission: BRAIN: Bridging Resources and Advancing International Neurosurgery

Neurosurgical missions stir the humanitarian spirit in all of us, especially those fortunate enough to practice in hospitals flush with high technology, sleek devices, and robust resources. These missions offer opportunities to give back to patients in need and promote human welfare globally. However, there are undeniable gaps in the global neurosurgery community that extend far beyond the unmet patient need. These gaps include deficiencies in educational resources for residents and trainees, in the latest biomedical technologies and surgical instruments, and in hospital infrastructure for nursing, critical care, and anesthesiology. Due to these disparities, over 5 million individuals with treatable neurosurgical conditions go without surgery annually worldwide, according to a recent study by the Global Neurosurgery Initiative.<sup>1</sup> How can we bridge this disparity and advance global neurosurgery?

In 2011, Dr. Alfredo Quiñones and I came together and founded Mission:BRAIN (Bridging Resources and Advancing International Neurosurgery) with this question in mind. He was a trainee of mine at the University of California – San Francisco who subsequently launched his career in neurosurgical oncology at Johns Hopkins Hospital and was attracting attention for his dramatic life story as a poor immigrant from Mexico succeeding in American neurosurgery. Not only did Alfredo have a genuine desire to improve the lot of his native people, but his notoriety would illuminate health care disparities in Mexico and help stimulate reform. With a team of volunteer nurses and surgical technicians, we ventured to Hospital Civil de Guadalajara in Guadalajara, Mexico. Since this inaugural mission, Mission:BRAIN has grown to work at six different sites in three countries – Mexico, Haiti, and the Philippines. We recruited leading neurosurgeons to join our organization, including George Jallo, Ted Schwartz, Mitch Berger, and Praveen Mummaneni, to name a few. We have performed over 100 surgeries to date. Our mission is to provide patients in need with access to advanced neurosurgical procedures, to educate providers on advancements in neurosurgical technique and care, and to empower local partners to create sustainable health systems.

### Providing complex neurosurgical care to underserved populations

One of the primary objectives of Mission:BRAIN is to provide the highest level of neurosurgical care to underserved populations at no cost to the patient. Those with complex neurosurgical issues who would otherwise forego treatment due to cost are chosen as surgical candidates. From a mother traveling over 20 hours by bus

to get surgery while her neighbors watch her young son, to a farmer who works tirelessly in the rice field everyday despite his gait and balance issues to support his family, we are continuously inspired by the incredible strength and perseverance of patients and their families that we meet.

Unlike other organizations that have focused on “bread and butter” neurosurgery like pediatric hydrocephalus or single-level spinal fusions, our organization focuses on complex vascular and neoplastic lesions. Notably, we performed the first bypass procedure for a giant internal carotid artery aneurysm in Guadalajara and the first clipping of a large basilar bifurcation aneurysm in Manila. Many of the modern endovascular treatment options are not feasible in low- and middle-income countries due to prohibitive costs of stents and coils, which makes our open techniques so invaluable. Additionally, our team led by Dr. Mitch Berger performed the first awake speech and motor mapping for a brain tumor resection in the Philippines. We are grateful and humbled by the trust patients bestow on our team to be their healers in their vulnerable and trying times.

### Providing educational opportunities and inspiring the next generation of neurosurgeons

Each of our mission trips emphasizes educational opportunities for neurosurgeons and other medical professionals. For neurosurgical residents, we conduct teaching rounds and case conferences to discuss technical aspects and impart clinical pearls. Additionally, we provide residents opportunities to scrub in and operate side-by-side with the Mission:BRAIN surgeons. The residents in the operating room are able to learn through direct observation and gain valuable hands-on experience by operating under close supervision. When circumstances allow, cases are broadcasted to a conference room to accommodate a larger audience of neurosurgeons and trainees, similarly to a live surgery demonstration course.

For many trainees, witnessing these procedures being performed at their own institutions convinces them that these complex cases can be done in their environment without vast resources, inspiring them to further pursue technical excellence. As the proverb says, “if you see it happen, it must be possible.” Through connections built with our organization, several trainees from host institutions have completed observerships and research fellowships at Barrow Neurological Institute, UCSF, and Mayo Clinic.

Surgeons alone cannot take care of neurosurgical patients: care for these complex patients requires a multidisciplinary team of nurses, intensivists, operating room personnel, and anesthesiologists. At Mission:BRAIN, we aim to create this system of care. One such example is our nursing care symposiums led by



Lisa Hannigan, ACNP, and April Sabangan, RN. Additionally, we have collaborated with a neurocritical care specialist Dr. Romer Geocadin who led workshops with a team of anesthesiologists and intensivists at Philippine General Hospital to develop standardized post-operative protocols for neurosurgical patients. Our goal is to provide patients with high-level and holistic care, from surgery to recovery, and to encourage collaboration among all parties involved.

### Empowering the local partners to elevate the level of care in their own communities

“Give a man a fish and you feed him for a day; teach a man to fish and you feed him for a lifetime.” As the adage goes, Mission:BRAIN strives to create impact that lasts far beyond our short stay. One week is hardly enough time or throughput to impact case backlog, but that week aims to empower local neurosurgeons to integrate new knowledge and techniques into their daily practice and improve care for their patients. One of the ways we accomplish this is by bringing donated medical supplies from device manufacturers and suppliers. Our industry partners have generously donated needed surgical instruments, aneurysm clips, and an intraoperative EEG machine to be used by local surgeons. In one of our earlier trips to Mexico, one of our Mission:BRAIN volunteer technicians repaired the operating microscope that had been out of commission for several months due to high repair costs, as well as a broken operating chair.

Working at different sites with different cultures, we have learned that “one size does not fit all.” What worked in Guadalajara may not work in Mexico City or Monterrey. Differing needs must be identified and solutions must be tailored to the local environment. Successful solutions come only with open dialogue with the host institution. Before a week-long mission trip, our team spends many weeks in preparation to fully understand the needs of our hosts and to make contributions that respect their traditions. We view our role as catalysts who shine the spotlight onto issues, encourage the local community to get engaged, and facilitate sustainable solutions.

### Looking ahead to the future of global neurosurgery

Important lessons have emerged from our international efforts. One major shortcoming of the U.S. health system is its monumental healthcare costs. In fact, our system is the most expensive in the world and price transparency is lost in layers of complex jargon and insurance plans. At the public hospital in Guadalajara, a board displays the prices of each surgical supply needed for an operation, which minimizes surgical waste and encourages cost containment. In fact, surgical instrument sets are often a third of the size of those back at our home institutions and there is little waste at the end of each case. Inspired by the transparency and efficiency in these low resource settings, our team conducted the first study quantifying operating room waste upon return to our home institution. We found approximately \$968 of operating room waste per neurosurgical case and subsequently led educational and preference card review initiatives to reduce the amount of waste.<sup>2</sup> Additionally, we have



recently characterized patient out-of-pocket costs for various neurosurgical procedures in an effort to increase price transparency.<sup>3</sup>

Advancing sophisticated neurosurgery globally is a major challenge. However, the heartfelt gratitude of patients, the curiosity and interest of trainees, and the enthusiasm and commitment of collaborators remind us of global neurosurgery's importance. Our trips to Mexico began with Alfredo's desire to give back to his native country, and our trips to Philippines began with April's desire to give back to hers. Do you have a connection to some part of the world that tugs at your humanitarianism? The goal of global neurosurgery should be that treatable neurosurgical conditions get operated, and that patients all over the world have access to high-quality neurosurgical care, no matter where they live. We all entered this profession with the common goal of increasing the welfare of our patients. We urge you to collaborate with your international colleagues or with us, share your knowledge and expertise, and mentor the future leaders of neurosurgery. As we spread the message of hope and social responsibility, we hope that you will join us in reaching beyond our borders and raising standards of care for millions in need. ❏

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Martina Stippler, MD

# Lessons Learned: Interviews with Neurosurgery's Great Philanthropists

There are a great many neurosurgeons dedicating their time and talents around the globe to treat patients and train local surgeons. Our editor, Dr. Martina Stippler, sat down with three CNS Members to learn about their experiences over decades in this work.



## Dr. Barth Green

*Professor of Neurological Surgery  
University of Miami School of Medicine*

### How did you get interested in humanitarian efforts in neurosurgery?

I was raised in a family that was very involved in philanthropy. My father, who was a family practitioner, took care of a lot of underserved patients in his rural practice and my mother was also very devoted to social justice. She, for example, marched with Martin Luther King. Often she brought home people who needed a place to stay and food. She was a very generous person and you could say that this mission stayed with me from the time I grew up. Later, my early medical school experience working with paralyzed Vietnam veterans showed me how courageous they were. I gained such respect for them that I decided right then and there that in my neurosurgical career I would cure paralysis. The commitment started in the 60s and evolved into the Miami Project to Cure Paralysis—the largest neuroscience center of its type in the world focused on this mission. Can you call this humanitarian work: to improve the quality of life of people who suffer catastrophic injuries of the spinal cord and or brain? I don't know, but it's been a large part of my life.

During medical school I opened up the first clinics for unfunded patients run by medical students. After becoming a neurosurgeon, I realized that there were gross health care disparities between America and other countries. I started working with underserved patients in South America—initially in Ecuador. I would fly to these cities and bring my own tools, medications, and gowns. We operated late at night because there was no air conditioning and it was too hot during the day. Later, I went to Colombia and did the same thing. I actually got kidnapped by a drug cartel when their leader got shot in the back in a gun fight.



### Tell us about one experience you had because of your humanitarian work that stayed with you.

I took a short trip to Haiti, joining a medical mission group in the cities and I went to a little area. There was one building. It was the church, and the school, and the County Hall. There were dozens of people waiting to get medical care and I just fell in love with people there and have committed myself and my philanthropic work to Haiti and its people. In 1994, I cofounded a group called Project Medishare for Haiti (<https://projectmedishare.org/team/>). Now 30 years later, we treat more than 200,000 people a year.

Today we employ several hundred community health workers, birthing agents, midwives, and physicians who actually provide community health to a population over 100,000 people in this rural area, from birth to death. We have two maternal health centers, the only two in the country. Haiti had the highest infant and maternal mortality rate anywhere in the Western hemisphere; in the past 2 years we haven't lost one baby!

### Where should future humanitarian efforts in neurosurgery be directed?

To me the biggest to epidemic in the world now is head trauma, and if you look at developing countries TBI is major cause of death—more than cancer, malaria, or TB. In these developing nations the main means of transportation are bicycles and motorbikes; these vehicles have no defense and many catastrophic accidents happen.

So, for me, the biggest responsibility right now in the world is for neurosurgeons to do what we're doing in Haiti. To initiate building trauma centers that can save lives and focus on the 5 major treatable cause of death: trauma, heart attack, stroke, maternal emergencies, or severe burns. Those people all die in developing nations because there are no resources to save their lives. How do you do that? Through capacity building in the health care sector. That is setting up residency programs like we've done in Haiti and my colleagues have done in Africa. With these residency programs in developing nations, you can teach these young physicians to take care of trauma and save lives. And we can do it remotely. I can be teaching somebody how to do a spinal tumor operation in Uganda right now and it's as if I'm in the same room because this technology exists.

Neurosurgery is so committed to education and research and creating new knowledge. We should also be sharing this knowledge. I think this would be a very important mission that should be adopted and could be making a contribution toward this global effort to reduce TBI mortality.





## Gail Rosseau, MD

*Clinical Professor of Neurosurgery  
George Washington University School of Medicine and Health  
Sciences Washington, DC*



*Dr. Rosseau with Somaliland  
colleagues, Mubarak Mohamed  
and Edna Omer, both anesthetists.*

### **Tell us about one experience you had because of your humanitarian work that stayed with you.**

I was very moved by a trip to Somaliland earlier this year. There are no local neurosurgeons for a population of nearly 4 million. Of course, that doesn't mean there are no neurosurgical cases...just that there is no one specifically trained in neurosurgery to deal with the many cases that exist. I worked with General Surgeons who had been trained by volunteer, missionary surgeons from Kenya. They are prudent, skilled and very eager for education and training by neurosurgeons.

As in all of Africa, there are many children with post-infectious hydrocephalus, and the local surgeons are experienced and skilled in placing shunts in children. I was amazed however, when we saw a young adult with hydrocephalus from aqueductal stenosis who needed a shunt, and learned that there are no cranial perforators in the entire country. Cranial access for infants and toddlers by rotating a scalpel in thin, cartilaginous skull is not difficult, but becomes more challenging in an adult skull. I was able to remedy the problem as soon as I returned to the States...did you know that one can buy a brand-new Hudson-Brace on e-Bay for less than \$50? I just wish all equipment problems in the developing world were that easy to solve!

### **Tell us about a change you catalyzed.**

In Somaliland, all neurosurgical cases are transferred to the capital, Hargeisa. Of course, this means many patients never get to the attention of someone with enough neurosurgical knowledge or skill to help them. But it did make it fairly straightforward to conduct a survey of all facilities that treat neurosurgical patients (Rosseau G et al.,

Neurosurgery in Somaliland; in press). Three local young physicians who wish to train in neurosurgery identified themselves and we are working to facilitate their training in Africa, with a goal of returning to Somaliland for their careers. At that point, we can provide them with equipment and ongoing educational opportunities from the WFNS Foundation ([fiens.org](http://fiens.org)) and partnerships with Foundation for International Education in Neurosurgery (FIENS; [www.fiens.org](http://www.fiens.org)) and InterSurgeon ([www.intersurgeon.org](http://www.intersurgeon.org)). The many educational resources provided by the CNS and fellowships listed on the CNS website ([www.cns.org](http://www.cns.org)) are extremely valuable in low and middle income countries and I recommend them all the time.

### **What would you want to tell other neurosurgeons wanting to follow in your footsteps?**

I don't know that anyone needs or wants to "follow in my footsteps" but I do know that there are many kind, competent and cosmopolitan neurosurgeons in high income countries (HIC) who want to do what they can to be of service to fellow neurosurgeons in low and middle income countries (LMIC) and their patients. We just developed a course, Global Neurosurgical Practice, that prepares neurosurgeons to be effective volunteers in LMIC. (Rosseau G, et. al, "Training the Trainers: A Neurosurgical Course for Preparing Neurosurgeon Volunteers", Accepted abstract, EANS Annual Meeting, Sept 24-29, 2019, Dublin, Ireland.) While neurosurgeons at every stage of career are welcome, most participants are equally divided between two main groups: (1) Chief residents/1st-2nd year in practice and (2) those in practice 30 years or more. The CNS traditionally attracts neurosurgeons very early in their careers and I welcome the opportunity to discuss opportunities with any readers who may be interested ([gailrosseau@gmail.com](mailto:gailrosseau@gmail.com)). The European Association of Neurosurgical Societies (EANS, [www.eans.org](http://www.eans.org)) and WFNS are working with us to sponsor future courses. FIENS is a great resource for those who wish to become involved in Global Neurosurgery, as is the G4 Alliance ([www.theg4alliance.org](http://www.theg4alliance.org)). ThinkFirst has chapters in over 30 countries and global neurosurgeons are actively involved in prevention of neurotrauma, which is a serious and increasing problem in LMIC. ([www.thinkfirst.org](http://www.thinkfirst.org))

### **What surprises you most about the people you work with?**

There are 5 billion people: 2/3 of the world's population who do not have access to even emergency and essential surgery. We have a global deficit of 23,000 neurosurgeons, and it is estimated that over 10 million necessary neurosurgical operations are left undone every year due to shortages of manpower and other resources. The good will and optimism of neurosurgeons, despite the incredible needs we face, is surprising...and inspiring.



## Robert Dempsey, MD

*Chair, Department of Neurological Surgery*

*Faculty, University of Wisconsin School of Medicine and Public Health*



### **Tell us about one experience you had because of your humanitarian work that stayed with you.**

Early on, I was like most people doing humanitarian medical service in that I had a desire to take care of, or in my case, operate on every single person in need in an entire country. I was working in Guatemala during their civil war and had opportunity after caring for hundreds of patients to see a child who was not sick. This beautiful child was selling fruit outside the clinic. I asked and received permission to photograph the child, and her picture stays in my office to this day, because I asked myself, "Who would care for her when she got sick and I was not there?" That was the day I became a teacher of doctors because it became clear to me that I could care for thousands of people, but my students and their students could care for millions and actually change patient care worldwide. So that was a very telling experience that made me think that my service should be through education, as a lasting way to change neurosurgical care to become self-sustaining in areas of need. This is what happens when the people you train are able to practice in their home area and train their students in a self-sustaining fashion.

### **Tell us about a change you catalyzed.**

One of the things I am most proud of is the Foundation for International Education in Neurosurgery (FIENS) and its adoption of this concept of service through education. This organization, now in its 50<sup>th</sup> year has developed or supported over 20 neurosurgical training sites in areas of greatest need on 4 continents. That catalyst has been able to facilitate so many neurosurgical humanitarians to have an impact beyond that of their own service. The organization itself primarily serves to facilitate and channel the wonderful philanthropic energy

of neurosurgeons throughout the world by identifying the barriers to self-sustaining care and working slowly and gradually over the years to break them down until self-sustaining training programs can exist. This further allows a productive channel for people with such humanitarian interests to allow us to maximize the benefit possible from the energy, skill and intellect of the remarkable men and women that make up this world of neurosurgery.


### **What would you want to tell other neurosurgeons wanting to follow in your footsteps?**

The most important thing for a young neurosurgeon with an interest in humanitarian neurosurgery to understand is that this is something you can do. If you are in neurosurgery, you have special talents and skills to bring to humanitarian efforts, but it is important to know you need not be alone, nor do you need repeat the mistakes that so many of us made along the way. I do think that someone who is considering making this part of their career already realizes that this is the sort of thing that helps them to remember why they wished to become a doctor and a surgeon in the first place. If you never lose track of that, you have assured yourself of a career of fulfillment and satisfaction.

### **What surprises you most about the people you work with?**

I never cease to be amazed at the remarkable talents and kindness of people worldwide. Even in areas of great conflict, the individual people are kind, hardworking and share the common goals for family, safety and culture that we all do. I learn so much from our colleagues in areas of need by watching and listening to their remarkable skills at problem solving, innovation and persistence. I am amazed each day to work with people that dedicated.

### **Where should future humanitarian efforts in neurosurgery be directed?**

I strongly believe that education is the way we change our future. We do that by providing education to the best and brightest in the world's areas of need and we adapt our neurosurgical specialty to focus on where the patient need is. This may be geographically, regions of the world or the United States that we have a mal distribution of neurosurgical care, but it is also within our specialty of neurosurgery where we need to emphasize not simply fascinating surgical procedures, but also direct our efforts to the disorders and conditions that most affect our patients worldwide. 



Katherine Cobb

# Barrow Neurological Foundation: The Change Paradox

I have the honor and privilege of being the President of Barrow Neurological Foundation (BNF), which was established in 1960 to raise awareness and funding for patient care, medical education and research performed at Barrow Neurological Institute (BNI) in the fields of neurology, neurosurgery and neuroscience. With an endowment in excess of \$150 million dollars, BNF grants funding towards research programs that seek to treat patients with a wide range of conditions, including brain and spinal tumors, concussions, neuromuscular diseases, stroke, and cerebrovascular disorders. With a staff of 20, we have raised over \$75 million in the past three years to aid the physicians and researchers at BNI.

Just recently, I was awarded an opportunity through the generosity of Virginia G. Piper Charitable Trust to attend Stanford University's Executive Program for Nonprofit leaders. One session focused on Professor William P. Barnett's theory called "The Change Paradox."



Katherine Cobb with CEO, Michael Lawton and Chief Medical Officer, F. David Barranco

Barnett postulates that we (and our successors) change what can be changed, each undoing the work of the predecessor.

In essence, his theory argues that it is "better to set one thing right forever than to set many easy things right temporarily."

Without really being aware of the Change Paradox Theory, I realized that this approach is what I had intuitively taken when I first arrived at Barrow Neurological Foundation (BNF) nearly three years ago. I set out to change what was most difficult at BNF, after repeated attempts from previous regimes to change what could easily be changed. As a result, we have been successful in achieving a phased approach to our mission. Most important, we have created a successful partnership with our clinicians at Barrow Neurological Institute (BNI) to enable them to do what they do best. Save lives.

When I arrived at Barrow I adopted a "Listen, Learn and Lead" approach to my onboarding. Part of that process was to prepare a SWOT analysis that could lead to a framework for a strategic plan moving forward. This SWOT analysis led to three key pillars of our strategic plan: (1) The need to capitalize on existing and new revenue opportunities. (2) The need to build an effective organization to meet these opportunities. (3) And the need to drive brand demand towards these opportunities. All of this would have to be executed under the umbrella of our new CEO, Dr. Michael Lawton's Barrow 3.0 strategic plan. This contemplated new centers of excellence in brain tumor, aneurysm and AVM research, AI and deep learning innovation, and a new Neuroplex building to serve as the heart of Barrow, centralizing and integrating clinical research, neurology, and neurosurgery for enhanced patient care. As I would soon find out, these needs represented a degree of change within the Foundation that was the most difficult. In effect, my very own "Change Paradox."

In my due diligence and planning, I was fortunate to discover that I had a secret weapon; the Barrow Women's Board who had, for over fifty years, raised a majority of the contributed revenue for BNI. It was clear to me that these amazing volunteers were doing all of the heavy lifting. I also discovered a study that had been conducted a decade prior that outlined the opportunity for revenue growth and opportunity for BNF. However, the organization had not followed the recommendations contained within the study. In fact, it had retrenched by ceasing to invest where the ROI was advantageous, had trouble executing effectively against key revenue streams, and most importantly, had misaligned with the research needs of the clinicians at BNI. It was clear that we needed to realign our efforts paralleling the priority research areas of Dr. Lawton and his Barrow 3.0 strategic plan. We needed to dedicate ourselves to working with the physicians and clinicians at BNI and create compelling case statements for each of these research and clinical care areas. In

addition, we introduced a level of data driven decision making to the foundation and required all staff members to utilize and follow a series of KPI's to measure our performance. Finally, we rebooted our approach to all of our traditional revenue streams including major gifts, events, employee giving, grateful patient programs, planned giving, and our board organizational goals.

Next, I tackled our organizational effectiveness in order to build a team that could meet the needs of our new alignment with the physicians at BNI. We had to match the BNF organizational structure to the key research and revenue needs identified by our physicians. We needed the proper resources to reach these revenue goals. This required an investment in staff and additional head count at a time when the system was attempting to control costs. We then had to train staff to embrace the data that is available from our system resources to create levels of accountability and to manage performance accordingly. Of course, all of this change was difficult and it required understandable goals and working towards a common buy in from all constituencies. It also required that I identify and cultivate team leaders and quickly address any level of underperformance along with making sure that we were aligning our culture with BNI senior management including Dr. Lawton's vision.

Critically important to achieving our fundraising goals was to be able to motivate existing and potential donors in compelling ways. BNF had traditionally aligned with BNI communication, which often had objectives that were not geared towards fund raising per se. We needed to explore and unlock an alternate way to communicate with our donors and motivate them to contribute at ever-increasing levels and frequency. We needed to light a fire of brand demand and illuminate the incredible work being conducted at BNI.

I initiated a research project to explore the best positioning and communication to donors. This included interviews with our senior leadership and physicians to understand, not only their work, but their intuitive sense of why Barrow was special and unique in its benefit to patients. In addition to the rational arguments that offered credible data around treatment, research and education, we knew that emotions are central to the decision-making process for donors. In discussions with our physicians, we discovered critical emotional and dramatic outcomes proving that the impossible was actually possible at BNI. We realized that these physicians and clinicians are heroes, accepting the challenges of patients previously deemed "inoperable" and tackling conditions labeled "untreatable." Every day they reject the norms of common practice by developing techniques that change the existing treatment paradigm. They push boundaries by aggressively focusing on treatments that cure and save lives. And we learned that our patients are more than heroes. They are survivors. They are filled with life and stories that deserve to be heard. Particularly by our donors.

With a new communication positioning strategy in hand, something that didn't exist before at BNF, our team added strong emotional narratives to everything we did, on top of the rational data driven results that BNI can proudly claim. This change was difficult but hopefully will have maximum impact over the long run.

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> THIS LEVEL OF CHANGE FOR OUR FOUNDATION CANNOT HAPPEN WITHOUT THE SUPPORT AND GUIDANCE OF AND PARTNERSHIP WITH, THE TRUE HEROES OF BARROW. OUR PHYSICIANS, CLINICIANS AND MEDICAL STAFF WHO, DAY IN AND DAY OUT, FACE THE MOST DIFFICULT CHALLENGES IN THEIR FIELDS <

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This fundamental, difficult change across revenue opportunities, organizational effectiveness, and brand demand was truly the "Change Paradox" for Barrow Neurological Foundation. As a result, we are seeing dramatic growth in our fundraising efforts including a \$25 million gift to establish the Ivy Brain Tumor Center, the largest brain tumor gift in the nation and the largest in Dignity Health's history. Matched by BNF, this gift enables Dr. Nader Sanai to aggressively drive his Phase 0/I clinical trials, seeking to discover a cure for brain cancer.

Yet, it's time to face the Change Paradox again. Change Paradox 2.0. I need to take our foundation to the next level and continue to align with Dr. Lawton's vision of Barrow Neurological Foundation as the world's leading neuroscience foundation. As such, we have defined what that foundation will look like and are currently working with the board of trustees to craft our next evolution. This next step of change will also be difficult, but true to the Change Paradox, it should be lasting.

But I have learned that this level of change for our foundation cannot happen without the support and guidance of and partnership with, the true heroes of Barrow. Our physicians, clinicians and medical staff who, day in and day out, face the most difficult challenges in their fields along with our patients and their families who are fighting for hope and survival, all provide the strength, courage and determination that inspire me to be part of this noble cause. Our foundation will continue to rise to the occasion and address the change we need to make so that we can "set one thing right forever." Cures that save lives. ■



Debby Gerhardstein

## ThinkFirst: Philanthropy in Action



The ThinkFirst National Injury Prevention Foundation is a philanthropic organization, using donations and grants to develop preventative programs that are provided as free community outreach programs. ThinkFirst's mission is to prevent brain, spinal cord, and other traumatic injuries through education, research, and advocacy. They provide a way for all of us to be involved in teaching people – children through older adults – how to lower their risk for traumatic injury, one of the leading causes of death worldwide.

It is estimated that more than 1.7 million people experience a traumatic brain injury every year in the U.S. and thousands suffer spinal cord injuries. In fact, injury is the leading cause of death among people between the ages of 1 and 44.

ThinkFirst's name is derived from a simple message that thinking first to take simple actions, such as wearing a seat belt, driving sober and without distractions, wearing bike and sports helmets, and other safety precautions, can significantly reduce the chances of injury from vehicle crashes, violence, falls, and sports.


Supported by grants, donations, and member dues, ThinkFirst seeks to get at the root of the high incidence of injuries and has established a global presence. It has 140 chapters in the United States as well as 36 chapters in other countries. It got its start in 1986 when The American Association of Neurological Surgeons (AANS) and the Congress of Neurological Surgeons (CNS) directed two neurosurgeons, E. Fletcher Eyster, MD, of Pensacola, Florida and Clark Watts, MD, JD, of Columbia, Missouri to develop a national injury prevention program based on their previous prevention efforts in their respective communities.

Working closely with its chapters and injury prevention professionals based in hospitals and other health centers, ThinkFirst offers a range of educational programs aimed at helping people, especially those most at risk—children, teens, young adults, and older adults—learn to reduce their risk for life-altering injuries or death.

For young children, Street Smart, the Safety Hero, teaches them in a fun way about the basics of preventing injuries. As with all ThinkFirst programs, they learn about the brain and spinal cord, but with age-appropriate tools such as a gelatin brain and helmet fittings.

Because traumatic injuries are the leading cause of death among teens, ThinkFirst has a big focus on reaching the vulnerable populations of middle and high school students. Through its VIP speakers, Voices for Injury Prevention, it brings compelling first-person presentations into classroom. Speakers who've had an injury share their personal stories, explaining how an unsafe decision could change your life forever.

ThinkFirst also offers several programs that can be offered at hospitals or clinics. Protecting infants from injuries caused by SIDS, acquired head trauma, improper car seat use and household hazards is a program for expectant parents called ThinkFirst For Your Baby. ThinkFirst To Prevent Falls is an introductory class for older adults and ThinkFirst About Concussion is presented to athletic groups and other audiences.

ThinkFirst is continually expanding and perfecting programs to encourage everyone to support injury prevention . . . by making safe choices, teaching injury prevention or supporting ThinkFirst through your own philanthropic giving. Learn how at [www.thinkfirst.org](http://www.thinkfirst.org). 





Renee Reynolds, MD

# Partnering to Prevent Head Injury: The Program For Understanding Childhood Concussion and Stroke (PUCCS)

The Center for Disease Control (CDC) estimates that in the United States, 3 million sports and recreation related traumatic brain injuries occur annually. In spite of this considerable problem and substantial research into this “hot topic” there remain many unanswered questions regarding diagnosis and proper management. The ineffable nature of this condition lends itself to interpretation, controversy, and confusion surrounding the diagnosis and treatment algorithms to address it. Despite these controversies, most professionals agree that the best management of recreationally related concussion begins prior to participation, highlighting the importance of injury prevention education. This includes safe play with the promotion of proper technique such as tackling as well as ensuring proper helmet and equipment fit and use during all high risk activities.

The substantial impact of head injury on patients and families and the lack of unanimity bring awareness to the large community need to educate youth athletes and create safe atmospheres of play as well as to advance our understanding of the condition. In Buffalo, NY, The Program For Understanding Childhood Concussion and Stroke (PUCCS) was developed to help address these needs. PUCCS is a 501(c)3 non-for profit organization founded in 2011 whose mission is to provide the tools necessary to understand and prevent concussions as an injury in all sports. As a primarily volunteer organization, PUCCS established strategic partnerships to help get this job done. This includes partnerships with our local Children's Hospital, Medical School, professional sports organizations, and county legislators to further spread the message of the importance of brain health and a safe play.

PUCCS works year round to support our mission through health fairs, large youth sporting events such as soccer, hockey and football tournaments and community programs to educate students, parents, coaches and health care professionals that “it's ok not to be ok!” Through these venues participants are provided live demonstrations of the ways in which the brain is affected by head injuries and the protective effect of helmets on major injuries, and they also have the opportunity to wear concussion goggles to experience what a concussion may feel like. We distribute concussion cards, highlighting possible symptoms a patient may experience in the setting of a head injury and local resources a patient may contact if they are concerned about experiencing

these symptoms in the future. PUCCS also organizes several helmet campaign giveaways and free helmet checks across a spectrum of environments from inner city health fairs to local ski clubs. Additionally, PUCCS was involved with local legislators to launch a new public awareness campaign that is designed to spread information about the newly passed law that requires the coaching staff of youth impact sports to take a concussion certification course every two years. Lastly, through fundraising efforts we have been able to support local research efforts in mild traumatic brain injury models including the establishment of a rat model of post-traumatic epilepsy induced by repeated mild head injury. Since establishment, PUCCS has distributed over 40,000 concussion cards and thousands of helmets, and has had exposure to over 100,000 people in the community and, through our website educational material, conceivably even more.

These efforts hope to bring awareness to sports related concussion, the importance of prevention and the potential long-term impacts to make student athletes more comfortable understanding and reporting their symptoms. Despite prevention, traumatic brain injuries still happen. When they do, the impact to the patient and family can be life changing both functionally and financially. Recognizing these hardships PUCCS has also developed a direct patient support line. Through fundraising efforts those families affected by these injuries can receive support through gift cards for gas and food. For more information about sports related concussion, the local organizations involved in community outreach or how to get involved yourself visit <http://puccs.org>. ■



Ganesh Rao, MD



Martina Stippler, MD

# Give the Gift of your Time: Volunteering with the CNS

The Congress of Neurological Surgeons was founded on principles of community, collaboration and volunteerism. Sixty-eight years later, volunteers continue to be the lifeblood of this organization with hundreds of neurosurgeon volunteers dedicating their time each year to CNS courses, educational products and standing committees. These individuals develop educational content, teach live and online courses, review journal articles, develop practice guidelines, write and vet SANS questions, build cases for Nexus, and impact the CNS in so many other ways. Their passion and enthusiasm ensures that the CNS remains vibrant, innovative and relevant across all neurosurgical practice settings.

In return for their generous contributions, volunteers gain valuable opportunities to connect with colleagues and mentors, hone their leadership skills, and contribute to projects that align with their passions. If you have not yet volunteered with the CNS, we encourage you to consider whether any of these opportunities align with your talents and interests.

## CNS Standing Committees –

Though many standing committees require assignment by the CNS President, some of our most valuable committees welcome CNS Member volunteers.

### Education Division

Volunteers on the CNS Education Division plan, build and review educational content, ranging from webinars and online courses to Neurosurgery Watch and the Case of the Month. Two special committees also fall under the umbrella of the Education Division:

- **SANS** — CNS' Self Assessment in Neurosurgery (SANS) exam has evolved from a broad general exam to a modular series of subspecialty exams, offering 70 hours of CME. With 25% of questions being refreshed annually, volunteer members of the SANS Committee dedicate hours to writing and vetting exam questions and supporting materials.
- **Nexus** — Nexus, CNS' online case-based repository of neurosurgical operative techniques and approaches, features more than 300 cases across subspecialties. Each case efficiently highlights the approach and alternatives, walks through the procedure step by step, and covers the outcomes, pearls and pitfalls. More than 220 volunteer neurosurgeons have submitted cases to Nexus, all of which are vetted by our 16-member Editorial Board.

### CNS Annual Meeting, Scientific Program Committee

Each year, the CNS Annual Meeting offers more than 45 hours of CME content, including clinical presentations in the General

Scientific Sessions, morning and afternoon breakout sessions, and ticketed courses like Subspecialty Symposia, Luncheon Seminars and Dinner Seminars. The content is planned by the Scientific Program Committee, featuring surgeons from each subspecialty area, and taught by more than 500 volunteer neurosurgeon faculty.

### Congress Quarterly Editorial Board

The volunteer editorial board for Congress Quarterly is responsible for planning and gathering articles for four issues per year. Editorial board members also conduct interviews, draft articles and write up cases for our Images in Neurosurgery feature.

### Neurosurgery and Operative Neurosurgery Editorial Review Board

Volunteer members of the journals' editorial review boards are selected by Editor-in-Chief, Nelson Oyesiku, and serve a three year term. Although there are not any positions currently open on either editorial review board, those interested in participating in the future are encouraged to reach out to the CNS Editorial office for details. Members may also register as an ad hoc reviewer and will be assigned articles to review.


## Opportunities for Residents –

### CNS Resident Fellows

The CNS recognizes that the future of neurosurgery depends on the development of neurosurgical leaders. The CNS Resident Fellows program offers neurosurgeons-in-training an extensive array of volunteer opportunities. Residents serving as CNS Resident Fellows engage fully in the CNS leadership structure, are exposed to committee processes, and gain a deeper understanding of all roles in the organization. Residents serve for a two-year term and are assigned to a CNS Standing Committee. Applications for the 2020 cohort are due by September 2, 2019.

### Sergeant at Arms

One of our longest standing volunteer programs, the Sergeant at Arms program offers a great first foray into volunteering at the CNS Annual Meeting. Sergeants at Arms are each assigned to a Subspecialty Symposium or Luncheon Seminar, where they help scan attendee badges and welcome attendees to the course. These volunteers also receive a complimentary ticket to the course. Residents can express their interest in the Sergeant at Arms program during Annual Meeting registration.

To learn more about volunteering with the CNS or to express your interest in participating on CNS Standing Committees in 2020, contact the CNS at [info@cns.org](mailto:info@cns.org) 

# Neurosurgeons Speak

## We asked our members... "Why do you give to the organizations you support?"

"As a recipient of a research opportunity early in my career, I believe supporting the CNS Foundation's collaboration with the NIH and the FNIH to fund the **K12 Getch Scholar Award** is one of the best ways for me to contribute to the advancement of neurosurgery."

– **John A. Lopez, MD**  
Spine Care Specialists of Alaska, LLC

I give because giving increases what you have. I give to **Project Downtown** (free meals for homeless), **St. Francis House** (homeless shelter), **Radiant hands** (support for women), **Pen of Mercy** (support for women in Pakistan), **Institute for Social Policy and Understanding**, **RAHMA Mercy Clinic** (safety net clinic in town), **CNS**, **AANS** and **Honor Your Mentor Funds**.

– **Maryam Rahman MD, MS**  
University of Florida

The **CNS**, through the **Foundation**, has been the main driving force for the Education and enculturation of young Neurosurgeons worldwide and thereby structuring the future of Neurosurgery. Supporting this effort is the least any of us can do, and I am proud to be part of it!

– **Charles B Agbi, MB,BS, FRCSEd(SN), FRCSC, FACS**  
University of Ottawa

I give to three different types of organizations: My first goal is to reduce the incidence of brain and spinal cord injury. I donate to **ThinkFirst** for this reason. My second goal is to help the environment and protect the earth for our future. I donate to both local and national environmental groups. Finally, I donate to schools, because I want to make education more accessible to everyone.

– **Uzma Samadani, MD, PhD**  
University of Minnesota

I am always inspired by my patients, so have long given to patient advocacy groups including the **Epilepsy Foundation and Dystonia Medical Research Foundation**, which support research and empower patients to live their best lives.

– **Ellen Air, MD, PhD**  
Henry Ford Health System

"A large reason I support the **CNS Foundation** is because of its New CNS Guidelines initiative. The upcoming "Guidelines for Perioperative Spine Care" was supported by a generous grant from the AANS-CNS Spine Section as well as individual donations to the CNS Foundation. The CNS Foundation supports groundbreaking guidelines work on dilemmas such as "the osteoporotic spine" which affect our everyday practice.

– **Praveen V. Mummaneni, MD / University of California, San Francisco**

## From social media

One of my favorites is @GoodmanCampbell's very own **@BrainBolt5K**. I donate my time and \$ to benefit our #TBI programs. Our community helped raise over \$100k last year! Mark your calendar 10/5/19! [brainbolt5k.com](http://brainbolt5k.com)

– **Richard B. Rodgers, MD**  
Goodman Campbell Brain & Spine

"I give to be a part of something that evolves into something greater than myself and to be able to watch it grow. I give to **NeoRestoration Foundation** because I support the advancement of neuroscience, technology and cross collaboration to take us to the next great scientific era. #cns#nrf #nsgy #clinpsych #mdphd#philanthropy"

– **Ellizzette Duvall McDonald**  
NeoRestoration Foundation

I donated to '**Rex Marco Family Recovery Fund**' - [gf.me/u/uks2yt](https://gf.me/u/uks2yt) via @gofundme. Dr. Marco is a #spine surgeon and educator active with @AOSpineNA who suffered a cervical spinal cord injury 2 weeks ago. #sci

– **Suzanne Therin, MD, PhD**  
Stanford University

## SECTION NEWS



# AANS/CNS Joint Section on Pain: Advocating and Educating



Jason Schwalb, MD

It has been a pleasure serving as Chair of the Joint Section on Pain for the past two years and working with our wonderful Executive Committee. When I was elected to this position, I did not expect that it would be at a time of increased focus on Neurosurgical procedures for pain due to the onslaught of the opioid crisis and subsequent legislation. As a result, the section has played an increased role in advocacy for the neurosurgical community and our patients.

With the help of the Pain Section leadership, the Washington Committee has advocated that there should not be any federal legislation limiting the size of opioid prescriptions after surgery. I wrote an OpEd piece, published in the Detroit Free Press<sup>1</sup> last summer, delineating the complexities of opioid prescribing for acute pain in patients with underlying chronic pain. The new Draft Report on Pain Management Best Practices: Updates, Gaps, Inconsistencies, and Recommendations from HHS<sup>2</sup> suggests that they are listening to our suggestions. Drs. Rosenow, Winfree and I




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> IN ADDITION TO OUR WORK ADVOCATING FOR OUR COLLEAGUES AND PATIENTS, WE ARE ADDRESSING NEW CHALLENGES THAT HAVE NOT GAINED MUCH ATTENTION... YET. RECENT DEVELOPMENTS IN TRACKING SOFTWARE IN DEVICES HOLD PROMISE IN IMPROVING PROGRAMMING AND OUTCOMES. HOWEVER, THERE ARE ALSO SIGNIFICANT PRIVACY ISSUES. <

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worked with the Washington Committee and the AMA) to submit our formal comments on this promising document. We were subsequently invited to participate in a roundtable discussion with Dr. Vanila Singh, Chief Medical Officer of the Department of Health and Human Services about this report.

Although we are a small specialty, it has been heartening to see that our input is considered valuable. Currently, there is neurosurgical representation on the following committees:

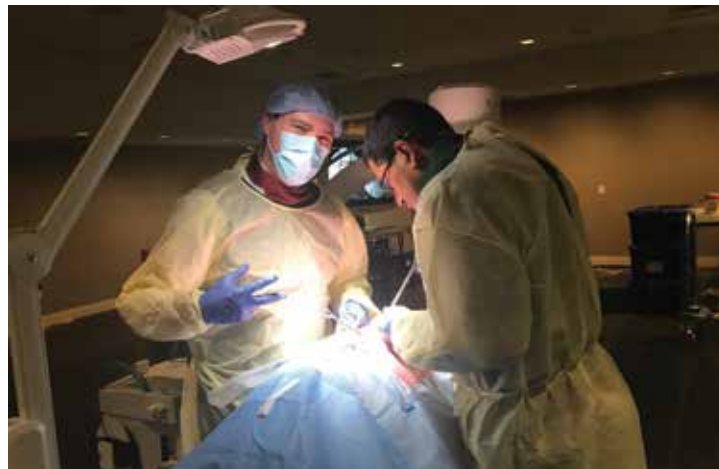
- i. AMA Pain Care Task Force
- ii. Medicare Evidence Development & Coverage Advisory Committee (MEDCAC)
- iii. National Academies of Science, Engineering, and Medicine's (National Academies) new study committee titled "Evidence-based Clinical Practice Guidelines for Prescribing Opioids for Acute Pain"
- iv. AMA Opioid Task Force

In addition to our work advocating for our colleagues and patients, we are addressing new challenges that have not gained much attention... yet. Recent developments in tracking software in devices hold promise in improving programming and outcomes. However, there are also significant privacy issues. A recent case of a murderer being caught on the basis of data from a Fitbit3 out the utility in the data, but there are also potential issues of data being subpoenaed in cases of disability, or determination of fault in auto accidents or adultery. We are currently not adequately warning patients about these issues before implanting them with such devices. Emily Levin, MD and Erika Petersen, MD will be taking the lead in developing a policy, OpEds, information brochures and, potentially, a separate consent, with the help of CSNS and ASSFN that we hope can be endorsed by the AANS and CNS.

However, the Pain Section is not just an advocacy group. We play an important role in education as well. A Google group for "Pain Neurosurgery" is being administered by Zaman Mirzadeh. This has allowed members of the Pain Section to post deidentified cases for advice from other members of the group, with significant interest. It is only open to members of the Pain Section. We have had several posts a month with broad responses from the membership outside of the Executive Committee.

Our biennial meeting took place in March, immediately before the Spine Summit, entitled "Expanding Your Toolbox: The Treatment of Spine and Peripheral Nerve Disorders". Our closing reception was the opening reception for the Spine Summit. We had increased attendance and industry support compared to prior meetings. We will be moving to an annual meeting schedule in coordination with the Section on Disorders of the Spine and Peripheral Nerves. We expect this will further disseminate neuromodulation and ablative techniques to spine and peripheral nerve surgeons.

Given the number of issues we are addressing, we welcome increased involvement in the Pain Section from our neurosurgical community. Please join the section to support these efforts, obtain the benefits of membership and volunteer your energy and ideas. ■



## References

- 1 Schwalb, Jason. New 7-day opioid law will burden Michigan's patients, doctors: Opinion. *Detroit Free Press*, June 8, 2018.
- 2 Draft Report on Pain Management Best Practices: Updates, Gaps, Inconsistencies, and Recommendations (2019). Accessed from [www.hhs.gov/ash/advisory-committees/pain/reports/2018-12-draft-report-on-updates-gaps-inconsistencies-recommendations/index.html](http://www.hhs.gov/ash/advisory-committees/pain/reports/2018-12-draft-report-on-updates-gaps-inconsistencies-recommendations/index.html), 7.23.19
- 3 Hauser, Christine. Police Use Fitbit Data to Charge 90-Year-Old Man in Stepdaughter's Killing. *New York Times*, October 3, 2018.

# Section Update: Section on Disorders of the Spine & Peripheral Nerves



Juan Uribe, MD

The 35<sup>th</sup> annual meeting of the Section on Disorders of the Spine and Peripheral Nerves (DSPN) took place on March 14 – 17th 2019 in Miami, Florida with a record number of 600+ surgeons in attendance and more than 50 exhibiting companies. The iconic Fountains of Miami Beach was packed with top spine faculty leaders from around the world, provocative debates and great social activities. Together, we celebrated the meeting theme of Technical Innovation for Restoring Patient Function.

The program began Thursday in the afternoon with special courses including Deformity, Robotics, Navigation, Oral boards preparation and a Hands on cadaveric workshop. The day finished outdoors with the opening reception bringing spectacular ocean views while enjoying a lavish array of food and beverages as all participants networked with friends and colleagues.

On Friday, the scientific program started early with presentations of challenging cases followed by motivational speeches by Meritorious Members Awards recipients Drs. Ian Kalfas, Robert Heary and Rolando Garcia. Dr Michael Wang, the Society president, closed the session with the chairman's address.

Later in the morning controversial topics were presented by key opinion leaders with an emphasis on the opioid epidemic and sports trauma. The afternoon was filled with the innovative Technology Special session that described and discussed the impact of technological advances in improving patient care and outcomes.

Fridays's activities concluded with a special general session featuring light-hearted debates over refreshments. Prominent spinal luminaries such as Drs. Charles L. Branch, Joseph S. Cheng, Jeffrey Goldstein, James S. Harrop, Roger Hartl, Matthew J. McGirt, Pierce D. Nunley, Daniel K. Resnick, Gerald E. Rodts, Daniel M. Sciubba, Justin S. Smith, Vincent C. Traynelis, Luis M. Tumialan, Christopher E. Wolfla gave competing arguments (both compelling and entertaining) on controversial topics such as minimally invasive trauma surgery, robotic spine surgery and spinal surgery on ambulatory surgery centers. This year's meeting was enhanced by the addition of audience participation. Through the meeting's mobile phone app, general attendees were able to vote in real time with the debate winners displayed on the overhead screen.

More than 200 abstracts were delivered throughout the meeting as both young and established speakers commanded the podium

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> MORE THAN 200 ABSTRACTS WERE DELIVERED THROUGHOUT THE MEETING AS BOTH YOUNG AND ESTABLISHED SPEAKERS COMMANDED THE PODIUM IN FOCUSED SPECIALTY BREAKOUT SESSIONS INCLUDING DEFORMITY, TUMOR, TRAUMA, MIS, AND PERIPHERAL NERVE GROUPS. <

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in focused specialty breakout sessions including deformity, tumor, trauma, MIS, and peripheral nerve groups. Mentors in DSPN history were memorialized by the presentation of the JANE Award, Mayfield Award and Kuntz Scholars Awards, which were created in honor of the lifelong contributions made to the section and the field by Dr. John Jane Sr. and Dr. Charlie Kuntz IV, and delivered to more than 30 young neurosurgeons. Lunch symposia tackled the management of the Sacro-iliac joint, advances on spinal implants and the latest in spinal navigation/robotics.

Saturday kicked-off with the plenary session in an exciting interbody (death) cage match with Drs. Sigurd Berven, Michael W. Groff, James S. Harrop, Paul K. Kim, Frank M. Phillips, Paul J. Slosar, Michael P. Steinmetz, closed with the Meritorious members awards on spine to Dr. John A. Wilson and Peripheral Nerves to Dr. Rajiv Midha. In the afternoon the APRN and PA's enjoyed a complementary dedicated spinal seminary with special emphasis on team work, communication and use of order sets.

Saturday Afternoon provided the opportunity to go golfing or deep sea fishing with colleagues and friends for a lifetime experience.

The Spine Summit concluded on Sunday with the David Cahill Memorial Controversies. Historically, this session features back-and-forth discussion by esteemed panelists over controversial clinical scenarios. The session included debates covering MIS procedures, tumor surgery, management of scoliosis, spinal navigation and sacral-iliac fixation.



Overall, the 2019 Spine Summit - Annual Meeting of the DSPN was a great success. It was truly a celebration of Spinal Technical Innovations and established procedures for Restoring Patient Function. Further details of the meeting can be found at the DSPN website: [www.spinesection.org](http://www.spinesection.org).

Planning for next year's meeting is already underway. Mark your calendar for Spine Summit 2020 at the Cosmopolitan Hotel Las Vegas, Nevada March 5-8. 📅

# INSIDE THE CNS



## Washington Committee Report



Katie O. Orrico

## MAKING PROGRESS IN THE NATION'S CAPITAL

### LEGISLATIVE AFFAIRS

#### Prior Authorization Legislation Introduced in the House

On June 5, [H.R. 3107](#), the Improving Seniors' Timely Access to Care Act was introduced. Sponsored by Reps. **Suzan DelBene** (D-Wash.), **Mike Kelly** (R-Pa.), **Roger Marshall**, MD, (R-Kan.) and **Ami Bera**, MD, (D-Calif.), this legislation would protect patients in Medicare Advantage from unnecessary prior authorization practices that limit their timely access to medically necessary care. The bill is based on a neurosurgery-supported [consensus statement](#) on prior authorization, which

was developed by leading national organizations representing physicians, hospitals, and health plans. The CNS and the AANS issued a [press release](#) in support of the legislation, at which time we simultaneously released the results of our [prior authorization survey](#).

#### House Energy and Commerce Committee Advances Surprise Billing Legislation

On July 17, the House Energy and Commerce Committee favorably reported [H.R. 3630](#), the No Surprises Act, which would protect patients from unanticipated medical bills in emergency cases and when medical services are rendered by an out-of-network provider at an in-network hospital. Prior to the full committee mark-up, on May 28, the CNS and the AANS [submitted comments](#) to committee leaders offering suggestions on how to improve this bill.

Under the latest version of the legislation, which was incorporated into [H.R. 2328](#), when a billing dispute arises between a provider and insurer, the payment rate would be based on the median in-network rate for the area in which the service occurred. The initial payments in 2021 would be based on rates in place in 2019. Rates would be adjusted for inflation each subsequent year. The committee adopted an amendment from Reps. **Raul Ruiz**, MD, (D-Calif.) and **Larry Bucshon**, MD, (R-Ind.), allowing providers to appeal the payment rate to an independent dispute resolution (IDR) process for claims over \$1,250. The CNS and the AANS supported this amendment and issued a [press release](#) expressing our support. [Click here](#) to watch the committee mark-up.

#### Protecting People From Surprise Medical Bills Act Introduced

On June 26, [H.R. 3502](#), the Protecting People From Surprise Medical Bills Act, was introduced. Sponsored by **Raul Ruiz**, MD, (D-Calif.) and **Phil Roe**, MD, (R-Tenn.), this legislation, [endorsed](#) by the CNS and the AANS, is modeled after New York's out-of-network law and, would among other things, establish an independent dispute resolution (IDR) process to resolve billing disputes between insurers and providers. Proponents of H.R. 3502 have pointed to the New York law as an example of a successful approach to surprise billing, which has reduced out-of-network billing by 34 percent compared to neighboring states. Efforts to gain support for H.R. 3502, the preferred solution for surprise medical bills, are ongoing and action in the House Education and Labor and Ways and Means Committees is expected in the fall.

#### Comprehensive Medical Liability Reform Legislation Introduced

On July 9, [H.R. 3656](#), the Accessible Care by Curbing Excessive lawSuitS (ACCESS) Act, was introduced by Reps. **Richard Hudson** (R-N.C.), **Roger Marshall**, MD (R-Kan.) and **Larry Bucshon**, MD (R-Ind.). Endorsed by the CNS and the AANS, this comprehensive reform legislation is modeled in part on the laws in California and Texas, which include reasonable limits on noneconomic damages. The bill also includes the following provisions:

- Defines who qualifies as an expert witness;
- Requires an affidavit of merit before bringing a lawsuit;
- Allows a physician to apologize to a patient for an unintended outcome without having the apology count against them in the court of law; and



- Requires a 90-day cooling-off period before lawsuits can be filed to facilitate voluntary settlements.

The Congressional Budget Office (CBO) and the staff of the Joint Committee on Taxation (JCT) [estimate](#) that the provisions included in the bill would reduce federal spending by about \$14 billion over five years, and almost \$50 billion over 10 years.

## Emergency Preparedness Legislation Signed Into Law

On June 24, President **Donald J. Trump** signed into law [S. 1372](#), the Pandemic and All-Hazards Preparedness and Advancing Innovation Act (PAHPAI). This bill will reauthorize programs within the Department of Health and Human Services (HHS) relating to health emergencies. Championed by the CNS and the AANS, this legislation also addresses medical liability protections for volunteer physicians and other health professionals who have pre-registered with Emergency System for Advance Registration of Volunteer Health Professionals (ESAR-VHP) or the Medical Reserve Corps. Finally, the bill includes [H.R. 880](#), the MISSION Zero Act, which would assist U.S. military health care providers in maintaining a state of readiness by embedding military trauma teams and providers in civilian trauma centers. As part of the Trauma Coalition, the CNS, and the AANS sent out a [press release](#) applauding passage of this crucial legislation.

## Neurosurgery Endorses Legislation to Repeal the Medical Device Excise Tax

On June 17, the CNS and the AANS sent a [letter](#) to Sens. **Patrick Toomey** (R-Pa.) and **Amy Klobuchar** (D-Minn.), endorsing [S. 692](#), the Protect Medical Innovation Act of 2019, legislation to permanently repeal the medical device tax. The CNS and the AANS also sent a [letter](#) to Reps. **Ron Kind** (D-Wis.), **Scott Peters** (D-Calif.), **Jackie Walorski** (R-Ind.) and **Richard Hudson** (R-N.C.) in support of the House version of the bill, [H.R. 2207](#). Senate Finance Committee chair **Chuck Grassley** (R-Iowa) and ranking member **Ron Wyden** (D-Ore.) [created a health tax task force](#) to examine the impact of the 2.3 percent medical device excise tax. The CNS and the AANS submitted a [letter](#) to health task force chairs, Sens. **Patrick Toomey** (R-Pa.) and **Robert Casey** (D-Pa.), and participated in a task force roundtable where we reiterated our support for repealing the

tax. Since 2015, Congress has twice enacted two-year moratoria to delay implementation of the tax, which will take effect on Jan. 1, 2020, if Congress does not act.

## Concussion Awareness Act Reintroduced

Earlier this year, Rep. **Joyce Beatty** (D-Ohio) introduced [H.R. 280](#), the Concussion Awareness and Education Act. [Endorsed](#) by the CNS and the AANS, this legislation would provide for systemic research, treatment, prevention, awareness, and dissemination of information concerning sports-related and other concussions. The bill directs the National Institutes of Health (NIH) to conduct specific research on youth concussions, directs the Centers for Disease Control and Prevention (CDC) to develop and disseminate information to the public, and establishes a Concussion Research Commission to formulate systemic recommendations based on research developed from the legislative directives.

## Neurosurgery Endorses the Cerebral Cavernous Malformations Clinical Awareness, Research and Education Act

On June 27, the Cerebral Cavernous Malformations Clinical Awareness, Research and Education Act ([H.R. 3573](#)/ [S. 2010](#)), was introduced. Sponsored by Rep. **Ben Ray Lujan** (D-N.M.) in the House, and Sen. **Tom Udall** (D-N.M.) in the Senate, this legislation would provide crucial insights into cerebral cavernous malformation (CCM) by expanding research at the NIH, CDC, and the U.S. Food and Drug Administration (FDA), to increase awareness, treatment and prevention of CCM. The CNS and the AANS endorsed both the [House](#) and [Senate](#) bills.

## Health Care Safety Net Enhancement Act Reintroduced

On July 29, [H.R. 3984](#), the Health Care Safety Net Enhancement Act of 2019 was introduced. Sponsored by Reps. **Bill Flores** (R-Texas), **Roger Marshall**, MD, (R-Kan.), and **Brian Babin**, DDS, (R-Texas), this legislation will help ensure that patients have access to emergency care by extending liability protections to on-call and emergency physicians through the Federal Tort Claims Act. Specifically, the bill would ensure that emergency department and on-call physicians who are providing

medical services under the Emergency Medical Treatment and Labor Act (EMTALA) receive the same liability coverage currently extended to employees of Community Health Centers and health professionals who provide Medicaid services at free clinics. The CNS and the AANS have [endorsed](#) this bill.

## GRASSROOTS ALERT

### Contact Congress to Cosponsor H.R. 3107, the Improving Seniors' Timely Access to Care Act: Tell Your Representative About the Need for Prior Authorization Reform

To bring needed transparency and oversight to the Medicare Advantage (MA) program, the CNS and the AANS are urging Congress to adopt H.R. 3107, the Improving Seniors' Timely Access to Care Act. If passed, this legislation would reduce the hassles of prior authorization and help curb unnecessary delays for patients covered by MA plans. [Click here](#) to send an email message urging your member of Congress to co-sponsor H.R. 3107. A sample message, which you can personalized, is provided for your use.

## CODING AND REIMBURSEMENT

### Neurosurgery Comments on Proposed Coverage for Vertebral Augmentation

On July 19, the CNS, the AANS, and the Section on Disorders of the Spine and Peripheral Nerves sent a [letter](#) to Noridian, the Medicare Administrative Contractor (MAC) for 12 western states, regarding a proposed [Local Coverage Determination](#) (LCD) for Percutaneous Vertebral Augmentation (PVA) for Osteoporotic Vertebral Compression Fracture. In addition to Noridian, three other MACs — [Wisconsin Physician Services](#) (WPS), [National Government Services](#) (NGS) and [Celerian Group Company](#) (CGS) — have issued the same LCD and neurosurgery has also sent letters to those payers. The LCDs resulted from a March 20, multi-jurisdictional MAC Carrier Advisory Committee (CAC) conference call on the issue. **Renee Chambers, MD served as a subject matter expert on the call, and John K. Ratliff, MD and Philipp M. Lippe, MD participated as voting CAC members. More information on the CAC meeting is available [here](#).**

## Neurosurgery Supports Coverage for MRI Guided Focused Ultrasound (MRgFUS)

On June 3, the CNS, the AANS, and the American Society for Stereotactic and Functional Neurosurgery (ASSFN) sent a [letter](#) to Novitas, the MAC for Region JL that includes several Mid-Atlantic States. The letter expressed support for a request by the University of Pennsylvania Medical Center for reconsideration of the Novitas negative Local Coverage Determination (LCD) for MRI Guided Focused Ultrasound (MRgFUS) for Essential Tremor (ET). The letter included a position paper developed by ASSFN entitled "MR-guided Focused Ultrasound for the Management of Essential Tremor," incorporating a robust review of the literature for the procedure. In addition to the letter to Novitas, on July 30, the CNS, the AANS, and the ASSFN sent a similar [letter](#) to First Coast Service Options, Inc. urging coverage for MRgFUS.

## QUALITY IMPROVEMENT

### CMS Releases 2018 MIPS Performance Feedback and 2020 Payment Adjustment Amounts

In early July, CMS made available to physicians and authorized practice administrators 2019 [MIPS](#) performance feedback, final scores and 2020 payment adjustment information. For 2020, physicians face a maximum 5.0% Medicare payment penalty or up to a 1.68% positive payment adjustment based on 2018 MIPS performance. Additional information about these reports and how to access them is available for download [here](#).

### Neurosurgery Submit Comments to CMS on EHR Data Blocking

On June 3, neurosurgery joined Physician Clinical Registry Coalition ([PCRC](#)), which includes more than 20 physician organizations that have clinical data registries, in submitting [comments](#) on CMS' Interoperability and Patient Access and the Office of the National Coordinator for HIT's (ONC) 21st Century Cures Act: Interoperability, Information Blocking, and the ONC Health IT Certification Program proposed rules. In addition, the CNS and the AANS joined the [Alliance of Specialty Medicine](#) in sending a separate comment [letter](#) to CMS on the same topic. Improving the interoperability of electronic health records (EHRs) is a top CNS/AANS advocacy priority.

## DRUGS AND DEVICES 2018 Open Payment Data Released

On June 28, CMS published the 2018 Open Payments program data, along with newly submitted and updated payment records for previous program years. The Open Payments program collects and publicly reports information annually about payments that drug and device companies make to physicians and teaching hospitals for items such as travel, research, gifts, speaking fees and meals. For 2018, device and drug companies reported \$3.00 billion in general (i.e., non-research related) payments, \$4.93 billion in research payments and \$1.42 billion of ownership or investment interests held by physicians or their immediate family members. CMS will refresh the data in January 2020, updating records to reflect the status of disputed payments. [Click here](#) to access the data.

### Class I Recall for Brainlab Spine and Trauma 3D Navigation System

The FDA has identified a recall of Brainlab's Spine & Trauma 3D Navigation Software as Class I, the most serious. The manufacturer recalled the software because of the potential for incorrect information to display during surgery, which may prevent the surgeon from accurately navigating surgical tools inside the patient. More information is available on the FDA website by clicking [here](#). The FDA reviews manufacturers' responses to reported problems with their devices and can assign one of three classifications of risk to the identified problem:

- Class 1, referring to a reasonable chance of serious health threats or death;
- Class II, when a temporary health condition can result, or when there is a small risk of serious injury or death; or
- Class III, when no health problem or injury is likely.

## COMMUNICATIONS

### Dr. Alex Valadka Pens Op-ed on Graduate Medical Education

On June 11, **Alex B. Valadka**, MD authored an [opinion piece](#) for [The Hill](#) about the need to expand Medicare's support for residency training to ensure all Americans have access to the care they deserve now and into the future. In the piece, Dr. Valadka wrote, "An

appropriate supply of well-educated and trained physicians is essential to ensure timely access to quality health care services for all Americans. America's specialty physicians challenge Congress to meet these needs by adopting legislation to increase the number of Medicare-supported residency positions."


### Neurosurgery Joins 'Out of the Middle' Coalition to Address Surprise Medical Bills

Joining several other specialty medicine colleagues, the CNS and the AANS have joined forces to support a public outreach and grassroots campaign on the issue of surprise medical bills. Out of the Middle is a coalition of leading health care provider groups, who are advocating on behalf of the millions of patients they care for every day. In addition to a [web-based platform](#), the group has deployed web-ads on key websites frequented by policymakers. Thus far, the effort has generated thousands of messages to Congress in support of [H.R. 3502](#), the Protecting People From Surprise Medical Bills Act.

### Neurosurgery Blog Participates in Neurosurgery Awareness Month

Please visit [NeurosurgeryBlog](#) and subscribe to it, as well as connect with us on our various social media platforms. This will allow you to keep up with the many health-policy activities happening in the nation's capital and beyond the Beltway.

- [Neurosurgery Blog: More Than Just Brain Surgery](#)
- [Neurosurgery's Twitter Feed: @Neurosurgery](#)
- [Neurosurgery's Facebook Page](#)
- [Neurosurgery's Instagram Page](#)
- [Neurosurgery's LinkedIn Group](#)
- [Neurosurgery's YouTube Channel](#)
- [Neurosurgery's Tumblr Page](#)

For more information on these or other health policy issues, please contact **Katie O. Orrico, director of the CNS/AANS Washington Office** at [korrigo@neurosurgery.org](mailto:korrigo@neurosurgery.org). 

# IMAGES IN NEUROSURGERY

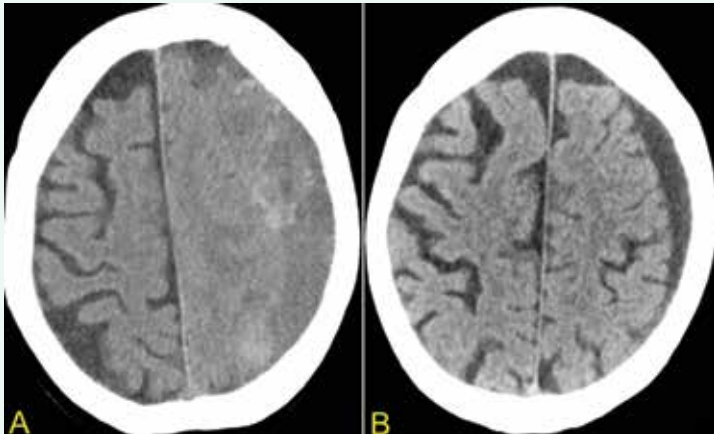



Figure 1

## Embolization of middle meningeal artery (MMA) for chronic subdural hematoma – a new treatment for an old disease – two case illustrations.

The first patient is a 74 year old female who presented with a left sided chronic subdural hematoma (SDH), secondary to a fall about a month prior to the presentation. She had experienced right sided weakness and difficulty with gait. Her exam was notable for memory impairment of recent events, a pronator drift and gait instability (**Figure 1a**). On CT imaging, she had a mixed density left convexity chronic subdural hematoma with 3 mm of midline shift. She underwent cerebral angiography and embolization. The internal carotid arteriogram shows the mass effect of the SDH (**Figure 1a**). Middle meningeal arteriogram AP and Lateral view (**Figures 2b, c**) demonstrated a robust supply to subdural membranes from the left MMA. Embolization was performed with a combination technique of distal penetration with polyvinyl alcohol (PVA) particles (150-250 microns) followed by coil- embolization for permanent proximal trunk occlusion of the MMA. She improved clinically within a few days and on follow up at 3 months had a normal neurologic examination. CT scan at 3 months shows near total resolution of the hematoma (**Figure 1b**).

The second patient is 94 y/o male who presented to the ED in a similar manner and had a chronic SDH as seen on **Figures 3a, b**. He underwent embolization of his left MMA using particles and coils. He returned to his clinical baseline over a 4-week period and his CT scan at 3 months showed complete resolution of hematoma (**Figures 3 c, d**). 

Submitted by:

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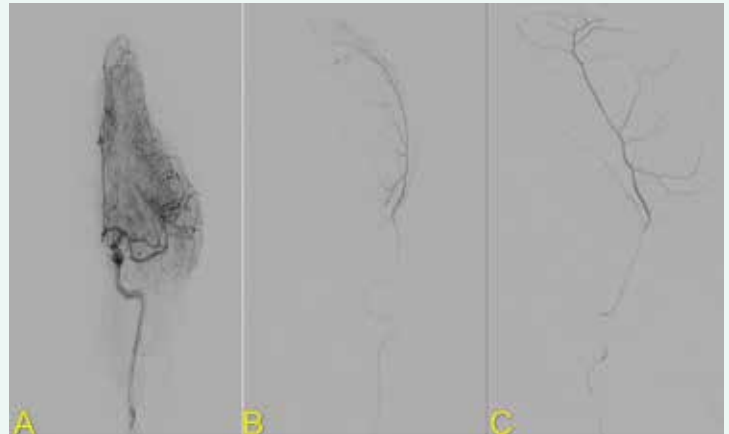


Figure 2

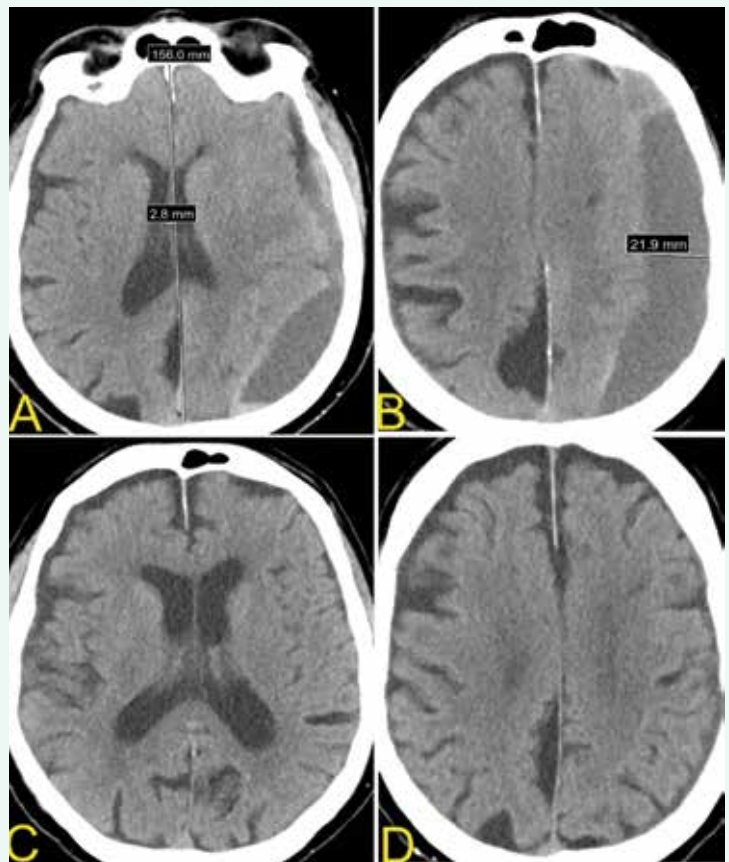


Figure 3



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# Bring Your Family to the 2019 CNS Annual Meeting

San Francisco, California, October 19–23, 2019



Think the 2019 Annual Meeting is just for neurosurgeons?

## THINK AGAIN

### Bring your family to San Francisco to enjoy the meeting and the Bay Area!

- Join us for the General Scientific Sessions and hear our Featured Speakers, including Doris Kearns Goodwin, Shankar Vedantam, Lucy Kalanithi, Rebecca Skloot, and more!
- Enjoy food, beverages, and entertainment at the CNS Xperience Lounge during the day and the Opening Reception on Sunday evening
- Start your day with breakfast in the Spouse Hospitality Suite at the San Francisco Marriott Marquis on Monday, Tuesday, and Wednesday

### Enjoy Everything The City by the Bay has to offer:

- Visit amazing icons like the Golden Gate Bridge, the Painted Ladies, and Fisherman's Wharf
- Enjoy the most restaurants per capita in the country
- Ride on the only historic landmark that can move:  
The famous San Francisco Cable Cars



Spouse registration is complimentary if registered before September 18  
**[cns.org/2019](http://cns.org/2019)**