

Young Neurosurgeons NEWS



Fall 2015

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

Editor: Edjah Nduom, MD

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In Memoriam:

Andrew T. Parsa, MD, PhD

Chairman's Message



Honoring our Past; Preparing for our Future.

The aptly-selected theme for this edition of the Young Neurosurgeons Committee (YNC) newsletter truly embodies the concept and mission

of the YNC. In 2000, YNC members held just under 20 liaison positions, interfacing with various levels of AANS leadership. Now, in 2015, we hold over 40. Comprised of residents-in-training as well as young faculty at the beginning of our careers, we aim to combine our clinical roles with leadership in organized neurosurgery at all facets. Through the years, have sought mentors in our subspecialties, worked to further neurosurgical research, participated in specialty guidelines and engaged in the ongoing evolution of the American Association of Neurological Surgeons (AANS).

Prior members of the YNC have gone on to chair their respective sections, serve on the AANS Board of Directors and the CSNS Executive Committee, represent the AANS to other organizations such as the American Medical Association and American College of Surgeons and sit on the Washington Committee. They represent a diverse group that continually strives

to improve the reach of the AANS and further our mission. Our past members are role models for us all, and we thank them for paving this road for us.

For the past two years, the YNC was tasked with developing and implementing medical student chapters at universities with neurosurgical residency programs. Thirty-four chapters have already been created with several more pending. We will be collecting annual reports from these chapters to develop additional resources, allowing us to evaluate the success of the chapters over time. Our hope is to evolve this process to continue to attract the best and brightest into the field. We have created opportunities to attract medical students to YNC leadership and committee roles and will continue to do so to carry on the mission of the YNC.

I am thrilled and honored to serve as the new YNC Chair and hope that, throughout my two-year term, I will continue to uphold the strong tradition of our past while engaging the rising generation to ensure our continued success in the future.

Sincerely,

Krystal Tomei, MD, MPH

Assistant Professor of Neurological Surgery
Rainbow Babies and Children's Hospital
University Hospitals Case Medical Center

Handbook of Bleeding and Coagulation for Neurosurgery

Mark G. Hamilton, MD, FAANS; John G. Golfinos, MD, FAANS; Graham F. Pineo; William T. Couldwell, MD, PhD, FAANS

The management of bleeding disorders and other derangements of the hematologic system in the body is something that impacts every phase of neurosurgical treatment — pre-operative, intra-operative and post-operative. That said, many neurosurgeons do not seek out formal education on this topic beyond literature searches when confronted with a problem. This excellent reference text has information on the hematological pitfalls of every phase of neurosurgical treatment, from the workup of a patient for a potential bleeding disorder to the treatment of venous sinus thrombosis in the post-operative patient. With chapter summaries, numerous useful tables and questions to answer at the end of each chapter, this text makes the vast information on bleeding and coagulation accessible for the neurosurgeon in training or practice. This would be an excellent addition to the reference library of any program or practice.

3D Atlas of Neurologic Disorders

Wieslaw L. Nowinski; Beng Choon Chua; Su Hnin Wut Yi

This ambitious electronic reference system is housed on a small USB drive and can be installed natively on up to two computers. This virtual atlas shows various aspects of head and brain anatomy, from the superficial to the deep; covering the skin, muscles, glands, cranial nerves and neurovascular system. The 3D illustrations are highlighted in bright colors for ease of identification regarding the distinct structures. Hovering over each vessel, nerve or gyrus with the mouse brings up the anatomic name of each structure. There is also a menu which allows you to choose various disorders, such as the various stroke syndromes, which will bring up a 3D image of the diseased structure(s) and briefly describe the symptoms and signs seen from this lesion. This is not meant to be a replacement for a detailed comprehensive neuroanatomical atlas, but instead acts as a supplementary tool to help to better conceptualize how various intracranial structures fit in 3D space.

Surgical Management of Pain; 2nd Edition

Kim Burchiel, MD, FAANS

In this text, Dr. Burchiel has collected a veritable “Who’s Who” of neurosurgical pain treatment to compile the second edition of a text that comprehensively covers pain management for neurosurgeons. The textbook is divided into five main sections. While the text is written primarily for neurosurgeons, this volume is meant to be a definitive text on pain management, and as such, only one of the sections is dedicated solely to surgical pain procedures. The rest of the textbook educates the reader on the physiology behind pain, the approach to the pain patient and non-surgical management of pain syndromes. Purchase of the volume also provides access to supplementary videos which help illustrate some of these neurosurgical procedures. For the novice or expert neurosurgeon who intends to treat pain patients, this

presents a definitive textbook for the proper management of these issues. For the general neurosurgeon, discussions on post-operative pain management for other neurosurgical procedures and ways to appropriately diagnose many of the more complicated pain syndromes make this text extremely useful as a shared reference material.

Top 3 Differentials in Neuroradiology — A Case Review

William T. O'Brien Sr.

This volume presents a broad, case-based review of brain, spine, head and neck radiology for board preparation or general knowledge. There are over 700 high-quality images — separated into brain, spine, head and neck — and are also indexed by key findings and differential diagnosis by case. Each case provides a short presenting history with images, followed by the top-three differentials for each case, with a brief description of the differentiating characteristics of each diagnosis. This is an excellent board-review text or reference text from which to obtain a quick second opinion on diagnostic possibilities for a lesion referred to one’s practice. While this is not intended to be a primary comprehensive neuroradiology text, this nevertheless provides excellent review material for medical students, neurosurgery residents and neurosurgeons in practice who are interested in a case-based approach to neuroradiology.

Imaging of Traumatic Brain Injury

Yoshimi Anzai; Kathleen R. Fink

Every neurosurgical resident gets a crash course on the imaging of traumatic brain injury (TBI) at some point during his or her intern year or junior residency. The ability to quickly pick out the difference between a subdural hematoma and an epidural hematoma is a point of great pride of the junior trainee. However, it takes much longer to be able to recognize the finer points of skull base fractures, maxillofacial trauma and other more subtle findings. This text provides a one-stop reference for all that is needed in order to make a thorough evaluation of imaging at presentation for TBI patients, as well as what to look for in their ongoing care. It also describes the pathophysiology of trauma and how this pathology is translated to imaging. Of particular interest, the text also describes advanced imaging techniques being used to investigate concussion and mild traumatic brain injury, an area that will continue to be of heightened interest in the neurosurgical community and in the general public.

Principles and Practice of Keyhole Brain Surgery

Charles Teo, MD; Michael E. Sughrue, MD, FAANS

It is in some ways difficult to appropriately describe the thought-provoking text that Drs. Teo and Sughrue have compiled on the concept of “keyhole” brain surgery. They make it a point to note that there are few, if any, references throughout the book, as this is not meant to be an evidence-based discussion of surgical approaches for the novice surgeon. Rather, they intend

Book Reviews (continued)

to introduce the experienced neurosurgeon to their philosophy of keyhole surgery — using the smallest appropriate opening for intracranial approaches. An experienced neurosurgeon aiming to be at the top of the field must know not only how he or she would approach a given lesion, but should also aim to understand the full scope of options that others might present for the same pathology. This text provides an important resource for achieving

that goal, as it explains how this group applies keyhole principles to various lesions. They provide a large number of videos, fantastic illustrations and color photographs to help demonstrate these techniques in detail. Whether or not one intends to add these keyhole techniques to one's practice, this provocative text will be of interest to any neurosurgeon who would like to further understand how other colleagues are pushing the envelope.

Secretary's Message

by Edjah Nduom, MD



To our readers,

Thank you for taking the time to review the latest issue of *Young Neurosurgeons News*, and the first in my position as secretary of the Young Neurosurgeons Committee (YNC) through the American Association of Neurological Surgeons (AANS) and editor of this newsletter.

The 2015 AANS Annual Scientific Meeting's theme was *Neurosurgery's*

Founding Principles. For the Spring 2015 Newsletter, I conducted an interview with the first chairman of the YNC, Roberto Heros, MD, FAANS, to showcase how the committee was founded 25 years ago. As we continue to celebrate 25 years of the YNC, our theme for this newsletter is *Honoring our Past, Preparing for our Future*. In each of our upcoming newsletters, we will continue to present interviews with YNC chairmen and chairwomen from the past 25 years to give you an idea of how the YNC has evolved over time.

As we honor our past, we thought it was important to pay tribute to two of our own who recently passed away prematurely. Andrew Parsa, MD, PhD, FAANS, a former member of this committee, will be honored by members of his junior faculty at Northwestern University. He was a neurosurgeon who gave a great deal to both our specialty and to young neurosurgeons through his service and mentorship. Paul Kalanithi, MD, a recent graduate of the Stanford Neurosurgery program and the posthumous recipient of our Public

Service Award, will be honored through an interview with his wife, Lucy Kalanithi, MD.

Looking toward the future, this is an exciting time to be a young neurosurgeon, but it can be a confusing time as well. The changing landscape of neurosurgical education and neurosurgical practice makes even recent advice on how to find a job, or how to prepare for one, quickly outdated. We are debuting a new section of the newsletter, *Career Corner*, where we will highlight advice from other young neurosurgeons on ways to find a job and resources that can be used to help navigate this evolving environment.

Finally, because this is your newsletter, I welcome your input on it. Any issue that you find interesting will likely be interesting to others in our group, so feel free to email me with your suggestions, comments or article ideas, and we will do our best to incorporate them. If you have an idea for a column, we would love to have you on board. The last four years on the YNC have been great, largely due to a group of fantastic colleagues on the committee. I look forward to continuing to serve you in my position as secretary and to receiving feedback on how we can continue to give you the news that you need.

Sincerely,

Edjah Nduom, MD
Staff Clinician
Surgical Neurology Branch
National Institutes of Health

The Career Column is making its debut in this issue of Young Neurosurgeons News. In each issue, we will try to provide some tips and strategies on how other young neurosurgeons have found their current jobs, whether in academics or private practice. This will include interviews with recently hired young neurosurgeons and resources that can be utilized to help you get started in your job search.

For this issue, we will provide a quick overview of available resources that residents can use as they begin thinking about their job search. Do you have a question on how to go about finding a job in neurosurgery? Let us know, and we will help you find the answers.

AANS Annual Scientific Meeting

Some might think that attendance at the annual meetings is only helpful for those interested in a career in academic neurosurgery, but recruiters for private and “privademic” groups are always present at these meetings, and they can help lead you to positions that meet your needs. Additionally, there are practical clinics and breakfast seminars specifically designed for residents in order to provide information on how to go about starting a career in neurosurgery. These meetings also give you an opportunity to re-establish relationships from the interview trail, sub-internships or medical school that can help lead you to job opportunities. A colleague from another part of the country may know of a job opportunity in his or her region that you may not have otherwise been aware of. Other meetings, such as the Society for Neuro-Oncology’s annual meeting, section meetings and meetings of the various state societies can also serve the same purpose from a networking standpoint.

AANS Career Center

The AANS maintains a constantly updated [database](#) of neurosurgical jobs that are publicly available. Jobs can be actively searched for by location or narrowed down by relevant keywords. The option to post your resume for review by potential employers is also available.

AANS Mentoring Program

The [AANS Resident Mentoring program](#) is an under-utilized resource that is available to all resident members of the AANS. Based on a resident-mentoring questionnaire, each resident is matched up with an experienced neurosurgeon who keeps in contact with the resident and provides advice on relevant issues. Such mentorship is invaluable, as it can be difficult to ask and receive unbiased answers from mentors at your institution to questions like, “Should I take a job from my home institution without doing a fellowship?”

Social Media

Social media, when referring to Facebook or Twitter, can often be a dirty word for many neurosurgeons, given the various pitfalls that can be encountered for one’s reputation and brand. That said, creating connections on sites such as [LinkedIn](#), [ResearchGate](#) and [Doximity](#) can help break the ice when sending a message to someone regarding a job, as the target then has some baseline information on your professional background to use when evaluating you for a potential hire. Keeping your CV and profile current on these sites is important, as potential employers will often do a quick search to see what you have been up to. In the same vein, as a general rule, keeping your social media profiles “clean” and well protected is important, as many potential hires have had their character questioned after unflattering information on social media was reviewed.

Publication misrepresentation among neurosurgery residency applicants: an increasing problem.

In the July 24, 2015, issue of the *Journal of Neurological Surgery*, Kistka et al. published an article describing their experience with applicants to the Department of Neurological Surgery at Vanderbilt University who misrepresented the number and nature of their publications. The authors found a significant increase in applications that contained erroneous publication information from 2006 to 2012. The most common error was listing a publication as being in a peer-reviewed, published journal when it was really in an online-only publication, followed by articles and abstracts whose existence could not be verified using an online search. The authors also found several abstracts that were listed as publications when they were only presented as abstracts at meetings. The relatively recent proliferation of online-only journals could certainly be one reason that this particular type of fraud was more prevalent in 2012 than in 2006. Nevertheless, this is certainly a disturbing trend. While resumes are typically taken at face value on an honor system, this article will certainly increase the scrutiny of CVs and résumés going forward. Even when such errors are inadvertent, questions of an applicant’s integrity can be a death knell for one’s career. Take heed of this article and scrutinize your own CV. A slight boost in the perception of academic potential is not worth the label of an academician who cannot be trusted.

An Interview with Ian McCutcheon, MD, FAANS

Why did you join the YNC?

In 1989, when I was a medical staff fellow at the National Institutes of Health, I attended the American Association of Neurological Surgeons (AANS) Annual Scientific Meeting to present my research from the Surgical Neurology Branch. At the time, I was trying to decide how I would get involved with organized neurosurgery and I was drawn to the AANS, as it was the spokes-organization for all of neurosurgery. At around this time, they presented the Young Neurosurgeons Committee as a new initiative, and so I joined. Since then, it's become much bigger. The elections that you have now are a much more strenuous process. After a few years of service, I got in line to become the chairman of the committee. Paul Camarata, MD, FAANS, was the chair before me, and David Jimenez, MD, FAANS, was the chair immediately after me. The whole thing was very cool, because being the chair of the committee gave you a seat at the board of directors of the AANS, which usually would take an entire career to achieve. So here I was, having been in neurosurgery as faculty for only four or five years, and all of a sudden, I was at the table with the board. I viewed it as an avenue to both introduce myself to the organization and to get on the path to recognition and leadership.

What were your roles in the AANS beyond the YNC itself?

I spent several years on the publications committee, and I had very meaningful involvement with them. At the time, the AANS had a series called "Neurosurgical Topics" where it periodically published comprehensive texts on various issues in neurosurgery. People would come to the committee with book proposals to become part of the series: I have a bunch of them on my shelf from my time on the committee. Every two years, they would publish a few of them. That was cool, because you got an idea of the process of publishing and what books got made. A book of my own got published in 1999, *Infections in Neurosurgery*.

How did your time on the committee affect your career in neurosurgery?

It made me a lot of friends that I retain to this day. For example, the two chairmen before and after me, Dr. Camarata and Dr. Jimenez, we all sort of knew each other because of our involvement on this committee. These are people I probably wouldn't have gotten to know. Each person that you meet has some downstream effects that you can't predict. I am a past president of the Texas Association of Neurological Surgeons (TANS), and one reason this happened is because I knew Dr. Jimenez. He was a former president of TANS, and he was very supportive of me becoming president. You don't become friends with people to get favors, but it works out that way sometimes. After being part of the YNC, I started to become part of the network of physicians in organized neurosurgery. As a result, I participated in seminars, and I got involved as a visiting professor through many of these relationships. It becomes a scaffold on which to hang your career in neurosurgery. It is probably even a better place now, because the committee is bigger.

At the time I joined, the committee roughly had about 10 people. Now, it has grown tremendously [Editor's note: there are currently 40 members of the YNC, with members elected annually in a staggered fashion for four-year terms]. I remember a junior faculty member at MD Anderson applied for a position on the YNC, and I had to write a letter for him, and I remarked "Wow, I have to write a letter now?" I didn't realize that the process had become so much more formalized. This makes sense, because, over the years, the YNC has become a much more significant factor in the structure of the AANS. I think people have realized that you're the future of the organization, and the committee is given that appropriate respect.

Are you able to follow the activities of the YNC today?

I am aware of some of the initiatives that they have. The Top Gun competition certainly has a high profile and is very well known, and the Young Neurosurgeons Luncheon is also another event that is well known and well regarded. I attended the luncheon even after I was off the committee, because they often have great speakers.

What issues do you see facing young neurosurgeons today?

The most significant thing, probably, relates to the structure of how medicine is changing in the U.S. in a way such that even those of us who are really into politics and economics have trouble understanding. The Affordable Care Act is the latest thing that is changing the landscape, but there are even more changes coming in the next few years. There will likely be increasing economic squeezes on those who are perceived as highly paid, beyond what's happened in the past on an individual basis. If you look at the ophthalmologists, for example, who were paid a tremendous amount of money doing 10 cataracts a day and making \$10-15 million a year: that has all stopped. The government reviewed the reimbursement patterns and clamped down. The same thing could happen with many of our shorter, more lucrative neurosurgical procedures, so I look at us as being a little bit vulnerable to the various payment forces. We will be facing these challenges consistently over time, so the fight to maintain appropriate income levels will affect the lives of the young neurosurgeons a great deal. There are ways to present evidence to prove the value of what you do, but it's an ongoing fight that we have to take seriously.

There's also a greying of the neurosurgical community. A high percentage of practicing neurosurgeons are over the age of 55, and many could be retiring soon. Given that the population is aging and many of our procedures are related to the older population, the load of patients that the remaining young neurosurgeons face may increase. It will be important to monitor this and keep pace with our training to ensure that the number of neurosurgeons being trained is appropriate.

Thanks for taking the time to speak with us, Dr. McCutcheon.

Thanks for the invitation, and I look forward to seeing what the committee continues to accomplish in the future!

YNC Division Reports

YNC Subcommittees

Marshals: The Marshals program remains very popular, and all of the available slots were filled at the AANS 2015 Annual Scientific Meeting. The program remains a great way for residents and medical students to attend breakfast seminars and practical courses for free.

Medical Student: The AANS Medical Student Chapters membership has soared in growth this past year. Since medical student membership and medical school chapters were established in August 2014, there are now 22 approved chapters and over 800 medical student members of AANS.

MISSION Fellowship: The MISSION Fellowship now has two medical students serving staggered two-year terms with the YNC. They will be assisting the medical-student task force when reports from the Chapters are requested this summer. A survey is being developed to collect data over time and help determine the impact of chapters on the application rate of medical students applying for neurosurgical residency.

Neurosurgical Top Gun: The team competition at the 2014 and 2015 meetings was very successful and helped drive interest to the booth. For the 2015 edition, a medical student competition was added, and the AANS staff used a GoPro to film parts of the competition.

Young Neurosurgeons Luncheon: Nelson Oyesiku, MD, PhD, FAANS, presented to a packed house, and his lecture on creating a successful neurosurgical career was well received. Gary Steinberg, MD, PhD, FAANS, accepted the public service award citation on behalf of our posthumous recipient, Paul Kalanithi, MD.

Information Technology: The YNC Twitter account was approved and has been quite successful. In addition, the AANS Information Technology Committee is in discussions to see if it can develop an app for the Greenberg Handbook of Neurosurgery.

Affiliated organizations

ThinkFirst: The 2015 ThinkFirst Conference on Injury Prevention was held at the Hyatt Regency Washington on Capitol Hill, May 1-4. In recognition of March as Brain Injury Awareness Month, a new Fast Facts on Traumatic Brain Injury has been completed. This and other Fast Facts are available for anyone to access at www.thinkfirst.org under the Facts and Publications tab. ThinkFirst's 30th anniversary will be honored at next year's 84th AANS Annual Scientific Meeting in Chicago.

Joint Guidelines Committee: New guidelines rolled out in 2014 include Pediatric Hydrocephalus, DBS for OCD, Lumbar Fusion and Progressive GBM. These can be found at <https://www.cns.org/guidelines>

Washington Committee: Due, in part, to persistent efforts of our Washington Committee, the sustainable growth rate was repealed. Please visit the AANS website to view the ongoing legislative agenda.

CSNS: The CSNS, as the grassroots organization for neurosurgery, has many opportunities for young neurosurgeons to get involved. Residents should look for applications for CSNS fellowship positions, and all Young Neurosurgeons (within 10 years of beginning practice or younger than 40 years) are welcome to the Young Neurosurgeons Representative Section at the CSNS. There is a survey on burnout in residency coming soon, so watch your inboxes.

Communications

AANS Neurosurgeon: This is the socioeconomic publication of the AANS. Contributions from young neurosurgeons are welcomed. If you are interested in participating please contact Kris Kimmell, MD, at kkimmell@gmail.com.

Information Technology: At the recent ITC meeting there was debate about how to frame (look and functionality) and fund an AANS website overhaul. Vendors will be contacted regarding cost, and the committees will work on examples of websites they would like to use as models for the redesign. There is an ITC Med Student / Resident / Fellow Technology Research grant. The YNC and ITC will work together to make criteria and funding amount recommendations. Lastly, there is an interest among the committee in developing an app where a patient's label is scanned / photographed and basic patient information is imported into an app, which would allow a surgeon to easily fill in patient-pertinent info etc for personal database collection or research purposes. The Young Neurosurgeons Twitter feed is live and all members of the YNC are encouraged to participate.

Development: The structure of the Development Committee has recently changed significantly. New initiatives, such as "Honor Your Mentor," have resulted in significant contributions. The organization is financially healthy and supports all the resident education activities and courses. Any contributions (however small) are encouraged for all Young Neurosurgeons.

Education

SPC: Meeting statistics won't be available until June, but the meeting was well attended with good reviews on the practical courses, handbook and app. If anyone from the YNC has thoughts on what worked and did not work, please let me know.

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YNC Division Reports (continued)

Education and Practice Management (EPM) Committee: It continues to provide an abundance of educational opportunities for young neurosurgeons. These include resident courses, coding courses, oral boards review courses and online courses. One project in development is an oral boards course specifically for residents, to be offered at the AANS Annual Scientific Meeting.

N²QOD: This project has expanded significantly in the last few months. The lumbar and cervical spine modules are now entering their third year of data collection, whereas the cerebrovascular module is newly active, with 39 patients already enrolled. The pilot for the deformity module is ready and will appear in some centers soon. Recent developments, with the repeal of Medicare's SGR, have demonstrated the central role that N²QOD and registries in general will play in quality reporting and outcome benchmarking.

Sections

Cerebrovascular: The section is very interested in establishing further educational materials on stroke. They want to establish the neurosurgeon as the leader of the stroke team.

History: The History section produced videos on the Founding Principles of Neurosurgery that were featured at the 2015 AANS Annual Scientific Meeting. These are available on the AANS website. The group is working on a genealogy database for neurosurgeons, similar to the popular Ancestry.com.

Pain: The Pain Section provides great opportunities for young neurosurgeons to get involved, and they are pleased with their first published set of guidelines. They will fund 15 resident registrations for their course at each AANS meeting.

Pediatrics: The "fast abstract" concept debuted in the Pediatrics Section at its annual meeting, which allowed residents to provide two-minute talks on approved abstracts. The session went well and the Spine Section is considering a similar session.

Spine: The section is considering allowing DOs to become full members of the section. The section is supporting an NREF fund in memory of Charles Kuntz, MD, FAANS. The section is discussing the SNS/CAST accreditation issue of not allowing PGY6 residents to serve as chief that allows their PGY7 to serve as an infolded fellowship.

Trauma: The section is currently working on a set of guidelines. They are discussing the need to develop a practical course on emergency neurosurgical training.

Tumor: The Biennial Joint AANS/CNS Tumor Symposium went very well. The section also held the joint Young Neurosurgeons/Tumor Section Symposium, looking at the benefits and drawbacks of going into fellowship after graduating from residency.

WINS: All neurosurgeons were invited to attend the WINS reception which featured a presentation on the first ABNS-certified female neurosurgeon.

An Interview with Lucy Kalanithi

Paul Kalanithi, M.D., was a neurosurgeon and a writer. He was diagnosed with stage IV lung cancer in 2013, and his writings have been published in The New York Times, The Washington Post and The Paris Review Daily. Paul died in March, 2015, and was awarded the YNC's 2015 Public Service Citation posthumously. Here, we present an interview with his wife, Lucy, on how his illness touched so many both in and outside of medicine.

As you know, Paul's condition really struck me and many others in our profession. As a young neurosurgeon, he was right in his prime, and really, that timing is part of what makes his story so relevant to us. How did Paul's illness become a national phenomenon?

After being diagnosed with stage IV lung cancer (due to an EGFR mutation), Paul published two major essays. The first was in the *New York Times*, "How Long Have I Got Left?" about prognosis. He had a real understanding of the fact that his lung cancer was metastatic and terminal, but he was initially on Tarceva, and some people on that drug live for a long time. At that point, he figured maybe he had several years or more, so he went back to neurosurgery residency. He graduated residency just after Tarceva failed and, at that point, he shifted his activities based on what was going on with his health: he began chemotherapy and began writing instead of operating. To an extent, he followed what he wrote in that *New York Times* essay: "Tell me one year [to live], I'd have a plan (write that book)." He adjusted his goals based on his understanding of his prognosis. Paul had a Master's in English Literature, and writing was always very important to him. By the time his health started to decline, he had a literary agent and was working seriously on a proposal for a book based on his experiences as a physician and a patient. (The book, *When Breath Becomes Air*, will be published in January 2016, by Random House.)

The second essay, "Before I Go," came about when *Stanford Medicine* magazine asked Paul to write about time and how it felt having a terminal illness. They also made an eight-minute video, interviewing him and filming his family. The video matches the theme of the article. After Paul died, "Before I Go" was published around the world, including the *Washington Post* website, where it had more than 4 million views within days. Paul saw the initial, positive response to the essay: it was meaningful to him to see people respond to his writing. As a neurosurgeon, he was becoming an expert in treating patients, but his illness took that away. He was gratified that, in writing about his illness, he got to be an expert in something else, and he realized, "I can help people by doing this." There was a purpose.

Do you think there's something in particular about Paul that has resonated with so many people?

There is something that's crazy, but relatable about being so young and so ill. You could see yourself there and think, "Why not me?"

How would I handle that?" Empathy and curiosity made people interested. Paul was compelled to describe what he was going through very honestly, and people respond to his authenticity. He was a very good writer, and it was a pleasure to read what he was writing. Reading about someone who is going through that process, whose vanities have been stripped away, helps people reflect on their own lives. Paul's story is a mix of all those things, I think.

How did you feel about sharing Paul with the world?

Overall, it feels really good for two reasons: One, it's really nice for me to see other people get to know him, especially after he's gone. Other people are falling in love with him. Two, it's nice to still have him in the world. I'll search him on Twitter, and people are tweeting about him. I can't wait to see how the book is received. It feels good to feel connected to him still. I want him to be around, to be successful and to have a legacy. He always dreamed of being a writer, and he always thought he would return to writing. Even though he didn't have the neurosurgical career he wanted, it is wonderful to see him become the writer he wanted to become.

Can you tell us something about Paul that doesn't show up in his writing?

Paul did a great deal of comedy and improv work both during and after college. You get a sense of his humor in his writing, but he was truly the funniest person I've ever known. His sense of humor was legendary.

Do you have any of his comedy material?

There is a compilation video that one of his friends made: it gives a sense.

How does he want Cady to remember him?

We talked a lot about this. He really loved her: he was the type of person who found having a child transformative. It was sustaining for him. He wrote about it; we took hundreds of pictures together. He felt that one of the defining characteristics of being alive is "striving" – as humans, to be better, to be good – and that was a huge trait of his: constantly striving, as a person and physician, and then striving to understand the state of his illness, striving to grapple with what was going on in his body and in his mind. And in his book, he tries to answer the big questions: What makes a meaningful life? What makes life worth living? "He wanted Cady to know that she was loved and to know that trying hard – trying to do the right thing, trying to do a good job – is important.

What was his proudest accomplishment in neurosurgery?

He was really, really proud to be a neurosurgeon, and he was most proud of patient care and the role of shepherding patients through a difficult time. These people are some of the sickest people, and it is their brains—their whole identities—at risk, so he was super

An Interview with Lucy Kalanithi (*continued*)

compelled by the work. He was proud to be doing a difficult thing and to be able to do it well, and he valued the relationships with patients. He also loved the technical skill and liked striving for excellence in everything he did. At one point, he did have a rough time during residency, and he writes in the book about burning out and finding meaning again. Academically, he won the Academy Award from the American Academy of Neurological Surgeons in Scottsdale, Ariz, and he was very proud of that. He was doing neural prosthetic and optogenetics research at the time with Drs. Shenoy and Deisseroth at Stanford.

You sent me an informal interview Paul did with a friend, as an intern, well before his illness, which is amazing in many ways.

Yes, it has an element of prophecy. Paul had a confluence of skills and understanding that made him suited to really process and share his experience of having a terminal illness. It wasn't so much

that everything in his life prepared him for that, but he did have to draw on everything he had to get through it. And he didn't look away from it, but really faced death, and he was at peace in an intellectual and emotional way. Facing his illness and writing about it helped him find meaning and make sense of it all. This is the life that he got, and this is what he did with it. I love him and I am very proud of him.

Thank you to the AANS Young Neurosurgeons Committee for this award, on behalf of the whole Kalanithi family.

The family has asked that those interested in honoring Paul's memory direct donations to the Dr. Paul Kalanithi [Memorial Fund](#) at Stanford University to help provide scholarships to students from underprivileged rural areas. For more information on Paul's forthcoming book, *When Breath Becomes Air*, available for pre-order now, please visit his [website](#).

In Memoriam: Andrew T. Parsa, MD, PhD

Amanda M. Saratsis, MD

Mentor (n): An experienced and trusted advisor.

Synonyms: adviser, guide, counselor, consultant, confidant(e).

Mentor (v): Advise or train (someone, especially a younger colleague).

This year, the neurosurgical community lost an extraordinary colleague, leader and friend. Andrew Parsa, MD, PhD, passed away suddenly on April 13, 2015. He was 48 years old.

Dr. Parsa was the Michael J. Marchese Professor and Chair of the departments of Neurological Surgery at Feinberg and Northwestern Memorial Hospital, and a well-respected leader in our field. Dr. Parsa's love for neurosurgery was unmistakable and his professional accomplishments innumerable. He was highly regarded for his surgical skill and specialization in complex tumors of the brain and spine, and his dedication to his patients was inspiring. His research identifying a novel link between oncogenesis and immune-resistance in brain tumors was ground-breaking, and this, in part, led to the development of the largest randomized brain tumor vaccine trial funded by the National Cancer Institute. He published more than 300 peer-reviewed articles, reviews and book chapters during his career. His impact as a clinician, educator, researcher and leader is far-reaching, and his loss is deeply felt.

Dr. Parsa earned his undergraduate degree in molecular biophysics and biochemistry at Yale University, his medical and graduate degrees at Downstate Medical Center in Brooklyn, and his residency training in neurological surgery at Columbia University. He was a member of the Young Neurosurgeons Committee from 2003-2007, serving as the liaison to the Joint Section on Tumors, where he ascended to the role of Secretary-Treasurer and was to assume leadership as Section Chair this past spring. He served on the Board of Directors of the Society for Neuro-Oncology and the Editorial Boards of Neuro-oncology, Neurosurgery and the Journal of Neurosurgery. He was the recipient of significant NIH funding, as well as the Preuss Resident Research Award, the Mahaley Clinical Research Award, the American Brain Tumor Association Young Investigator Award and Clinical Research Award and the Integra Foundation Award for his research. At Northwestern, Dr. Parsa was also a professor in the Ken and Ruth Davee Department of Neurology and co-Leader of the Translational Research in Solid Tumors Program at the Robert H. Lurie Comprehensive Cancer Center. Prior to joining faculty at Northwestern in 2013, Dr. Parsa

was professor and vice chairman of the Department of Neurological Surgery at the University of California at San Francisco, where he was recognized with multiple awards for surgical education, including the Medical School Mentor of the Year.

For all of Dr. Parsa's talents and achievements as an academic neurosurgeon, perhaps his greatest gift was his ability to bring out the best in others. To his students, trainees and colleagues, Dr. Parsa was a mentor in the truest sense of the word: an experienced and trusted advisor who cultivated personal strengths and guided professional growth in others. "I had the true privilege to work with Dr. Parsa for over a decade as his resident, fellow and faculty colleague," said Orin Bloch, MD, PhD, assistant professor of Neurological Surgery at Northwestern University. "He was my teacher, my mentor and my friend. I can honestly say that I would not be the physician or the person I am today without his guidance, and I'm far from the only person he impacted in this way. Trainees from all over the country sought out his guidance after hearing about his record as an advisor. Over the years I observed Dr. Parsa mentor and guide the careers of countless medical students, residents and junior faculty. This is the epitome of Andy Parsa: always putting others' interests above his own."

Whether teaching at academic conferences, operating on a difficult case well into the night or enjoying cherished time with his family and friends, Dr. Parsa was known to remark that he was simply "living the dream." Helping others live out their dreams was one of the true joys in his life, and this is evident in the great many lives he deeply affected during his own. As Dr. Bloch noted, "While Dr. Parsa's passing was a shock that came far too soon, his legacy will live on for many years in the accomplishments of those whose lives he touched. I will personally carry on his legacy by always remembering to be good to my patients, remain invested in my students and to continue 'living the dream.'" Indeed, Dr. Parsa's lasting influence on a generation of young neurosurgeons is an important part of his legacy. His vision for the field lives on through the works of those of us who were lucky enough to have been made better by knowing him.

Dr. Parsa is survived by his wife Charlotte Shum, MD, and their three children, Julia, Micheline and Ismail. A fund has been established in his honor to support the education of his children. For more information, please contact amanda.saratsis@northwestern.edu.