



NEUROSURGERY

*University of Cincinnati
Department of Neurosurgery
Newsletter*



WE BEGIN AGAIN

The COVID epidemic of 2020 has brought on challenges that few could have anticipated. On March 17, in response to a surge of infections across the United States, Ohio Governor Mike DeWine announced a postponement to all elective surgeries. Soon after, hospital leadership instituted a number of measures limiting non-emergent medical care, designed both to mitigate the spread of COVID-19 and to prepare the hospital for a possible surge in critically ill patients. To date, there have been 78,742 cases of COVID-19 in the state of Ohio and 3,235 associated deaths. As in times past, in the face of adversity, the Department of Neurosurgery has moved forward with resiliency and adaptation. Our residents and advance practice providers have braved the threat of infection to deliver neurosurgical care on the front lines. Clinical and administrative members of our team have surmounted furloughs and occupational uncertainty in continuing to provide vital departmental support. Our attendings and research faculty have navigated innumerable obstacles to sustain our core missions of: (1) excellence in patient care, (2) advancement in neurosurgical research, and (3) investment in the education and training of the future leaders of American neurosurgery. While the impediments faced to date have been considerable, the remainder of 2020 is set to be historic.

On June 29, we officially launched the Tew and Dunsker care teams—designed to streamline inpatient care for patients with cranial tumors/vascular pathology and neurotrauma/spine pathology, respectively. Our academic productivity, which includes 14 grants encompassing \$9.5M and 94 publications over the previous 12 months, has never been higher. Our surgical volume, which was set to exceed 3,000 procedures over the calendar year prior to the COVID epidemic, is expected to return to record levels. These numbers are a testament to the collective efforts of so many in our department who remain steadfast in their commitment to excellence in patient care, no matter what external circumstance may arise. The future has never looked brighter at the University of Cincinnati Department of Neurosurgery. Certainly, the best is yet to come.



Jonathan Forbes
Resident Program Director

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CHAIRMAN, JOSEPH CHENG**

RAPID RESURGENCE

When Dr. Joseph Cheng took over as the chairman of the University of Cincinnati Department of Neurosurgery in July 2017 there was one neurosurgeon on staff and the Accreditation Council of Graduate Medical Education was evaluating if it needed to shut down the department's residency program. "This place was gutted," recalled Dr. Cheng.

What most people would see as an impossible challenge, Dr. Cheng saw as an immense opportunity. He said, "I had the opportunity to build an academic program from the ground up."

Three weeks after he started, the ACGME held an emergency site visit to evaluate concerns about the lack of faculty. Dr. Cheng convinced them he would have the department back at full strength within a year, and pleaded to let the department keep the residency. With that, he was able to do something most chairs only dream of.

"IT ALLOWED ME TO RECRUIT THE BEST AND BRIGHTEST"

Dr. Cheng says, "I got to choose the people I wanted to bring in. It allowed me to recruit some of the best and brightest."

Within months, Dr. Cheng assembled experts in all of the subspecialties of neurosurgery, grew the department and reevaluated the way things are done. He explains, "We're taking an opportunity to develop an academic pillar in neurosurgery."





"We're looking at it, and saying, 'How do we do it better?'" he continues. As the department continues to grow, the ACGME approved the department's request to add a second resident to the program every other year.

"We're so excited because we would not have been able to this if we didn't have enough cases and enough teaching resources," says Penny Schwab, UC Residency Program Manager. "It just shows that the ACGME is aware of our growth and supports us in our growth," Schwab says. "I think it is really just a testament to Dr. Cheng's vision for the department," explains Dr. Jonathan Forbes, UC Residency Program Director. "The degree of growth, productivity and accolades the department has received in such a small period of time is unprecedented."

"THE DEGREE OF GROWTH, PRODUCTIVITY AND ACCOLADES THE DEPARTMENT HAS RECEIVED IN SUCH A SMALL PERIOD OF TIME IS UNPRECEDENTED."

Dr. Cheng says this growth is not just literal, it is symbolic. "It means a lot that we went from a program that 3 years ago, we were on the verge of being shut down, and now we're expanding," says Dr. Cheng. "It highlights the stability that people are seeing in the program and the university, and the long-term accomplishments we can achieve."

\$1M DONATION WILL ALLOW UC NEUROSURGERY TO INVEST IN SURGICAL INNOVATIONS

The University of Cincinnati Brain Tumor Center received a \$1 million donation from the Huffman Foundation. The money will create the Anna and Harold Huffman New Hope Brain Tumor Research Fund and will specifically be used to advance surgical innovations and technologies for brain tumors.

"Exploring new and existing technologies in the field allows us to continually improve care and the patient experience," said Dr. Joseph Cheng, Chairman of the University of Cincinnati Department of Neurosurgery. The money will also provide laboratory investigators with imaging and diagnostic tools to study improved efficiencies in surgical environments.

This is the second time the Brain Tumor Center has received a large donation from the Huffman

Foundation, under the leadership of the Huffman's niece, Rev. Nancy Turner Jones, the priest in charge at St. Barnabas Episcopal Church in Montgomery.

Jones is inspired to give from the loss of her husband, Rev. Dr. Larry Paul "LP" Jones. He died from the most aggressive form of brain tumor, glioblastoma in 2016. The foundation's previous donation of \$3M created an endowed chair and dedicated research program at the UC Gardner Neuroscience Institute Brain Tumor Center, a position still held by David Plas, Ph.D.

"EXPLORING NEW
TECHNOLOGIES ALLOWS US
TO CONTINUALLY IMPROVE
CARE"

The Huffman Foundation was created in 2010, the year Harold Huffman died. Huffman served as president of the Hamilton Tool Company and held 33 patents related to the printing press. In addition to the donation to the UC Brain Tumor Center, the Huffman Foundation also donated \$1M to create the Anna and Harold Huffman Maternal and Child Health Endowment Fund, which will invest in the improvement of maternal and child health care in rural Tanzania.



PHOTO BY MARTIN R. SMITH

Pictured from left: Dr. Joseph Cheng, the University of Cincinnati College of Medicine professor who leads neurosurgery at UC Health, associate UC professor Jennifer Brown, Huffman Foundation trustees Ken Kinder and the Rev. Nancy Turner Jones, Dr. Chris Lewis and UC Foundation president Peter Landgren.

STANLEY HOANG, MD

Dr. Hoang completed a one year complex spine fellowship under Dr. Cheng. He will be joining LSU Shreveport as an attending neurosurgeon.

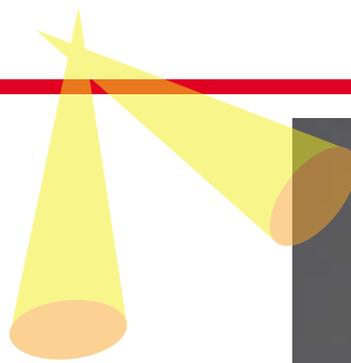
FELLOW SPOTLIGHT

AHMED E. HUSSEIN, MD

Dr. Hussein will be completing a one year Skull Base Research Fellowship in the Goodyear Microsurgical Laboratory. He graduated from medical school in Egypt.

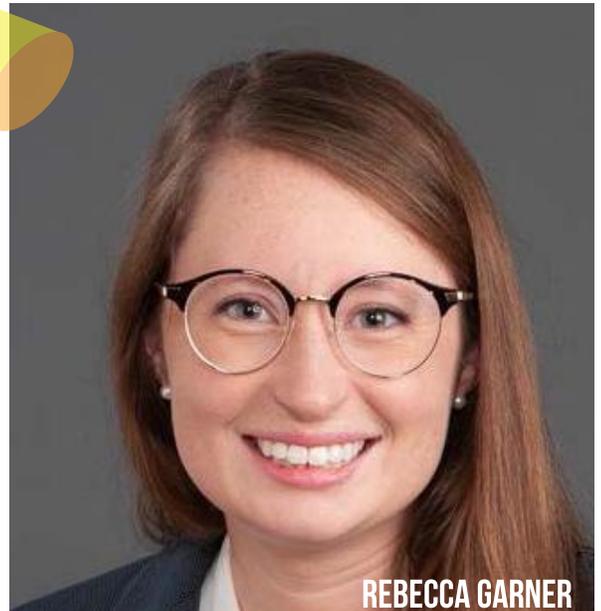


RESIDENT SPOTLIGHT



On Friday, March 20, 2020 we were thrilled to match with Dr. Rebecca Garner and Dr. Joel Kale.

Just a few weeks later, Dr. Amber Gaulden joined our department as a 1st-year resident.



DR. REBECCA GARNER

Dr. Rebecca Garner grew up in Albany, Indiana and recently graduated medical school from Wake Forest University.

She enjoys running half-marathons, hosting dinner parties and doing yoga.



DR. JOEL KAYE

Dr. Kaye grew up in Princeton, NJ and recently graduated from the Rutgers Robert Wood Johnson School of Medicine.

He enjoys working out, playing chess and traveling to new places.

DR. AMBER GAULDEN

Dr. Amber Gaulden joined the Department of Neurosurgery on April 1, 2020 as a first-year resident. Dr. Gaulden transferred to UC following the accreditation loss of Wayne State University's Department of Neurosurgery.

Dr. Gaulden grew up in Greenville, SC and graduated medical school from the University of South Carolina in 2019.

Her husband, Andrew Gaulden will be attending graduate school at UC in behavioral neuroscience. Dr. Gaulden's hobbies include vegetarian cooking, digital photography and visiting different zoos.



GRADUATION



GRADUATION: DURING A PANDEMIC

Without the usual fanfare, we graduated three of our residents on Wednesday, June 17, 2020. After 7 years of training in our department, Drs. William Jeong, Smruti Patel and Bryan Krueger completed their residencies. Parents, spouses and siblings watched the event live on a virtual forum.

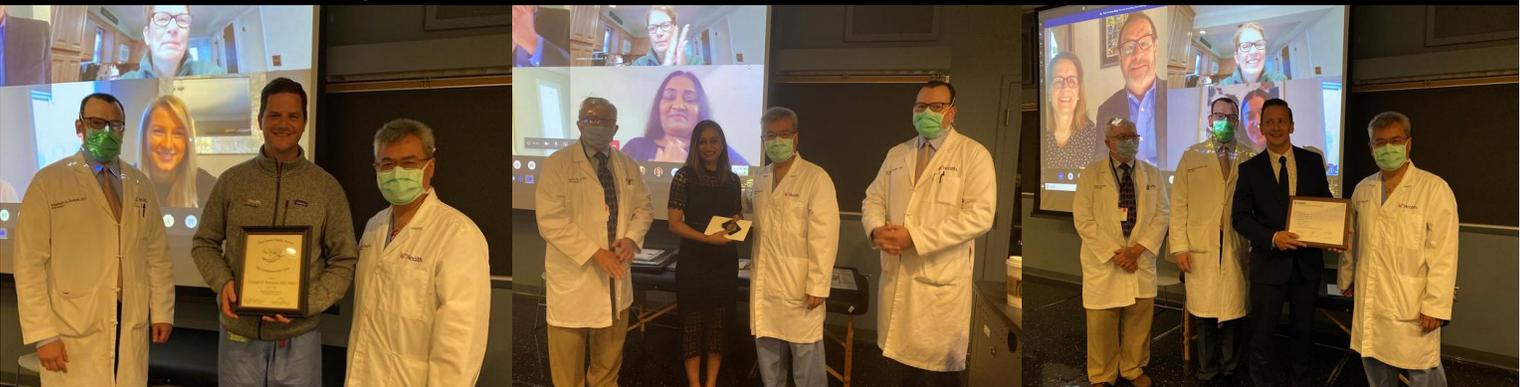
In lieu of a traditional graduation dinner, the residents each received a gift card to a restaurant of their choice to have a private celebration with friends and family. We are inviting them to return for a more formal celebration with next year's residents.

Drs. Joseph Cheng, Jonathan Forbes and Kerry Crone presented several awards (pictured below) and diplomas to the graduates.

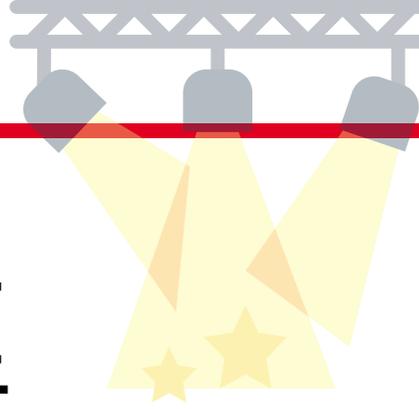
Dr. Michael Robinson accepting the Caruso Family and Justin Gibson, MD Award for patient care

Dr. Smruti Patel accepting the Ellen and Stewart Dunsker Award for clinical research

Dr. Bryan Krueger accepting the Gabriella and Mario Zuccarello Award for Skull Base research



GRADUATE SPOTLIGHT



WILLIAM JEONG, MD, MS

DR. WILLIAM JEONG WILL BE JOINING A PRIVATE PRACTICE IN LAS VEGAS, NEVADA. HIS SUB-SPECIALITY INTEREST IS IN COMPLEX SPINAL SURGERY.



BRYAN KRUEGER, MD

DR. BRYAN KRUEGER WILL BE STAYING IN CINCINNATI TO JOIN THE MAYFIELD BRAIN AND SPINE CLINIC. HE HAS A SUB-SPECIALITY INTEREST IN COMPLEX SPINAL SURGERY.



SMRUTI PATEL, MD

DR. SMRUTI PATEL WILL BE STAYING IN CINCINNATI TO COMPLETE A PEDIATRIC FELLOWSHIP AT CINCINNATI CHILDREN'S HOSPITAL WITH DR. FRANCESCO MANGANO.



PROMISING RESULTS IN STUDY OF PATIENTS WITH METASTATIC MELANOMA



Daniel Pomeranz Krummel, Ph.D. (left) Dr. Soma Sengupta (right)

Treating patients who have metastatic melanoma with a combination of immunotherapy and radiation is standard practice. But does the order in which they are given matter? According to a new study published in the *International Journal of Radiation Oncology, Biology and Physics*, the answer is yes.

Dr. Soma Sengupta, associate professor of neurology and neurosurgery at UC, and her team of researchers found that radiation before immunotherapy may prolong lives of patients with melanoma that has spread to the brain. "Melanoma brain metastases occur in more than 50% of melanoma patients," says Dr. Soma Sengupta, who is the co-director of the UC Gardner Neuroscience Institute's Brain Tumor Center. She is also the inaugural recipient of the Harold C. Schott Endowed Chair of Molecular Therapeutics in the department of neurosurgery.

Immunotherapy is a type of cancer treatment that boosts the body's natural defenses to fight cancer. It uses substances made by the body or in a laboratory to improve or restore immune system function and may work by stopping or slowing the growth of cancer cells. Immune checkpoint inhibitors work by blocking checkpoint proteins from binding with their partner proteins. This prevents the "off" signal from being sent, allowing the T-cells to kill cancer cells. In this study, the team conducted a retrospective analysis of patients with surgically removed melanoma brain metastases who underwent treatment with either radiation, immunotherapy or a combination of both between 2010 and 2018. Of 79 specimens, only 17 samples were eligible for this study.

"OUR STUDY PROVIDES INITIAL INSIGHTS INTO THE OPTIMAL SEQUENCE OF TREATMENT FOLLOWING SURGICAL REMOVAL OF MELANOMA BRAIN METASTASES"

"Among the latter, we specifically investigated the gene expression between patients who received radiation therapy first then immune checkpoint inhibitors in comparison to the reverse," says Daniel Pomeranz Krummel, research associate professor of neurology at UC and lead author of the paper. "We used a melanoma brain metastases animal model for validation experiments, as well." Pomeranz Krummel says results showed that the combination of radiation therapy and immune checkpoint inhibitors correlated to better patient survival when compared to radiation therapy alone."

"Our study provides initial insights into the optimal sequence of treatment following surgical removal of melanoma brain metastases," said Sengupta, noting that this was a small sample of patients and that follow up studies are needed. "Clinical trials examining the best sequence of these treatments are necessary."

This research was a collaboration with the Winship Cancer Institute at Emory University.

AANS Presents the Distinguished Service Award to Dr. Cheng

The American Association of Neurological Surgeons has awarded Dr. Joseph Cheng with its Distinguished Service Award. The AANS gives this award to individuals who have made outstanding contributions to the field of neurosurgery. AANS President, Dr. Christopher Shaffrey cited Dr. Cheng's exemplary service to the speciality of neurosurgery as the basis of the award. "Your statesmanship,



leadership and devotion to the speciality of neurosurgery have been particularly inspiring for me and many others who have had the opportunity to work with you," writes Dr. Shaffrey.

The Distinguished Service Award is one of the highest honors presented by the AANS. Dr. Cheng would have received the award at the association's annual conference in April which was cancelled due to COVID-19.

PEDIATRIC FELLOW SPOTLIGHT



DR. KATHLEEN KNUDSON

After completing a one-year fellowship in pediatric neurosurgery under Francesco Mangano, Dr. Knudson will be joining Vidant Health Neurosurgery/East Carolina University



DR. BAHER HANNA

Dr. Hanna is currently fulfilling a one year fellowship under Dr. Francesco Mangano. His fellowship is scheduled to end in September 2020

HUMANITARIAN MISSION TO HELP PATIENTS AROUND THE WORLD

The story of a 10-year old Afghan boy walking home from school would stick with Dr. Jonathan Forbes, a UC neurosurgeon, years after treating him. Dr. Forbes says that five years before meeting Abdul, "He was on a trail that he had walked before when he saw a shiny object." Thinking it was a toy, Abdul picked it up.

It wasn't a toy though; it was one of hundreds of thousands of landmines left by the Soviet army from the Soviet-Afghan conflict. "It was a heart-wrenching story," says Dr. Forbes, "he was just being a kid."

Following the explosion, Abdul had been taken to Craig Joint Theater Hospital in Bagram, Afghanistan for emergency surgery. US military surgeons removed Abdul's right eye and hand and performed a life-saving decompressive surgery to reduce swelling in his brain. Months later, surgeons performed an additional surgery to reconstruct Abdul's skull with titanium mesh. Five years later, Abdul's father brought him back to CJTH to see Dr. Forbes.

Forbes was there serving a six-month deployment with the United States Air Force. The reconstruction of Abdul's skull was failing and causing serious problems. The titanium mesh used to reconstruct Abdul's skull had eroded through his scalp. Cerebral spinal fluid seeped out of his infected head. The titanium mesh had to be removed and the skull reconstructed. If Dr. Forbes saw this patient in the United States, the course of action would be clear. He would send Abdul's CT scans to a third-party company that would use state-of-the-art technology to create a patient-specific cranial implant with precise fit. The cost ranges from \$5,000 to \$10,000. That kind of price tag prohibits this treatment in Afghanistan, or in any other developing country.

In these countries, it is common for surgeons to use more basic methods, including titanium mesh or malleable cement to reconstruct the skull. While there



Dr. Forbes, far right, performing a surgery at Craig Joint Amphitheater in Bagram

are cheaper methods, they are associated with poorer cosmetic outcomes and delayed complications, like those suffered by Abdul. "It's a very wide-spread problem, that I really didn't have much of an understanding about until I was deployed," says Dr. Forbes. Once home from deployment, Dr. Forbes set out to create a more effective, affordable approach for patients like Abdul by using a 3-D printer. "They are accessible even to neurosurgeons in developing countries," says Dr. Forbes. An entry-level 3-D printer is about one-fourth the cost of one patient-specific cranial implant in the United States. You can use one 3-D printer to generate thousands of patient-specific implants with near-perfect contour and cosmetic appearance, and lower risks of wound erosion."

Surgeons can use 3-D printers right now to do this exact thing, but many don't. "The knowledge and time required to get from a CT scan to a patient-specific mold generated by a 3-D printer using current software platforms is very cumbersome," explains Forbes. "Practically speaking, it is these requirements of time and knowledge—not the availability of 3D printers—that prevents the vast majority of neurosurgeons in developing countries from routinely utilizing patient-specific implants in this very common surgical procedure."

"WE THINK THIS WILL BE A RELATIVELY EASY FIX FOR A WIDESPREAD PROBLEM"

That's where Dr. Sam Anand and his team at University of Cincinnati's Center for Global Design and Manufacturing come in. "What they wanted from us is a one-stop solution that doesn't require expertise, that is also free," Dr. Anand shares. "Anybody can use it, it's like a shareware and doesn't require special skills to use. So that is a challenge we took up."

The team of researchers are creating a freeware that will use a patient's CT scans to generate an automated file ready for 3-D printing. What makes this concept so innovative is that the software uses the opposite side of each patient's skull as a template. "We think that this will be a relatively easy fix for a widespread problem," says Dr. Forbes. One that they're happy to share with the world. "I think it struck a chord with me that this is what we have to do," says Dr. Anand, "We ought to do more of it."



Abdul and his father at clinic in Afghanistan

TBI TRIALS UNDERWAY

The University of Cincinnati is participating in a new clinical trial designed to test whether doctors should measure patient's brain oxygen levels following a traumatic brain injury. Currently, UC monitors all patient's oxygen levels following traumatic brain injury, but not all hospitals do. "A lot of places in the country don't do neuromonitoring because they don't see many TBI patients," explains Dr. Natalie Kreitzer, an assistant professor in emergency medicine and neurocritical care and the study's principal investigator, "For them to build up the infrastructure and invest in neuromonitoring, a study like Boost-3 is really important to show them that this is something we should be doing. It matters."

UC will continue to monitor all patient's brain oxygen level, but half of the patient's information will be blinded to the study team. Dr. Kreitzer says, "The question the trial is asking is: if we know that number, do we manage patients in a way that is better?"

Staff will conduct intercranial monitoring for five days following the injury. Doctors will reevaluate patients six months later to assess which group had better outcomes. The Boost-3 trial went live in Cincinnati on January 29, 2020, and on its first day, UC physicians worked together to not only enroll the patient in the Boost-3 study, but also in another ongoing TBI study, SDII.

Dr. Laura Ngwenya, UC Neurosurgeon, explains that it took a handful of doctors from various



Dr. Natalie Kreitzer reviewing patient information with colleague

departments working together to make this happen. "This was a tremendous effort and showcases our ability to work together as a team," Dr. Ngwenya says. "I think it's a real success of our TBI research team," says the study's coordinator, Hilary Perez, PhD, "We have four different investigators for four different studies across three different departments, and all of us are in really close communication."

**"THIS WAS A TREMENDOUS EFFORT
AND SHOWCASES OUR ABILITY
TO WORK TOGETHER AS A TEAM"**

Patients must be enrolled within six hours of getting to the hospital and within 12 hours of the brain injury.

In addition to Boost-3 and SDII, UC currently has two additional TBI clinical trials underway. UC is one of 45 centers across the country that will participate in Boost-3.

PATIENT-FAMILY EXPERIENCE AWARD



You can see the look of surprise on pediatric neurosurgeon Dr. Charles Stevenson's face when the Chief of Staff for Cincinnati Children's Hospital, Dr. Patty Manning walked into his office. She was there to surprise him with the news that patients' families gave him the highest approval ratings of any doctor in the hospital.

Dr. Patty Manning presented the Patient-Family Experience Award to Dr. Stevenson in a surprise ceremony in January.

CCHMC collects the data in a follow-up phone call with parents two weeks after their child's treatment.

BRAIN SURGERIES AND BACK SURGERIES OR BABIES AND BOTTLES?

By Smruti Patel, M.D.



I was never going to choose between the two. A fellow medical student once asked me and my two best friends how we could consider doing surgical subspecialties (implying that we might not be good mothers if we chose a lengthy career path.) For a long time, that narrow statement stuck with me like an irritating thorn in my side. I began my neurosurgery residency knowing that I would not let myself compromise what I wanted in my personal life for my professional life and vice versa. While the number of female applicants and trainees are increasing every year, neurosurgery is still primarily a male-dominated field. In 2012, I was the only female of 6 medical students applying for neurosurgery residency from my medical school. At the time, I understood that I would be starting a family later than most of my friends. I was willing to wait.

Neurosurgery residency is demanding. It is emotionally taxing, physically strenuous, and many days, mentally daunting. The crossroads of life and death occur all too often. We are required to act fast, but precisely; be bold, but composed; be honest, but kind. Day in and day out, we make choices for others, we make suggestions to others, we focus our attention on those who are ill and need our service. Sometimes it seemed near impossible to also manage my own life. I soon learned that shifting my perspective would bring all of this clearly into view.

I moved to Cincinnati in 2013 from northern New Jersey, where I had lived for all my life. Moving to the Midwest from the melting pot of the Northeast was definitely an adjustment for me. My family, my friends, and my entire support system were now 600 miles away, and with the hours I worked, communication was limited. I was at work before the sun came up and didn't leave until it had already set. Daylight was a privilege. My co-workers and co-residents quickly became family and my new support system. These people shared my successes and failures as a new and unexperienced physician. They were my village, and they helped raise me as the neurosurgeon I am today. During my intern year, about half of the residents were married and some even had children. I asked myself how that was possible. I felt like I could barely keep up with the work. *Was there a secret that I didn't know about?* That secret was simply time. After the first two years of residency, as the junior responsibilities lightened, my knowledge increased and my operative autonomy increased, and all of the sudden, work and life were no longer opposing forces and it was up to me to keep it that way.

I left out that in June 2013, about one week into intern year, I first met my now husband. At the time, there was a great sense of turmoil in my mind about dating while starting this difficult residency, let alone doing it long distance (he had just moved about 90 minutes away for his residency). We took a leap of faith and decided that the attempt was worth it.

"WORK AND LIFE WERE NO LONGER OPPOSING FORCES"

Fast forward and we were engaged in September 2015 and married in April 2017. Navigating a relationship in neurosurgery residency is not easy. There were promises that sometimes we couldn't keep, plans that had to be cancelled, and sacrifices that we both had to make. Let's just say, this is life in neurosurgery.

In June 2017, what seemed like the steep upslope of my operative learning curve as a resident, I learned that there would be a substantial transition in our program. Traditionally, our residency program had been recognized as the Mayfield Clinic/University of Cincinnati Neurosurgery Residency Program. The two entities had separated, and residents would no longer work with any of the neurosurgeons that had trained them. This weighed heavily on me. These surgeons were my mentors and they had taught me everything I knew. They watched me ride on the neurosurgery training



wheels and instilled the confidence in me to work toward independence. For me, the whole transition was like going through the stages of grief. Leaving the only home I knew for 7 years of residency was difficult enough, and now I was going to lose my neurosurgery parents too. But I had learned not to live in the past.

"MY CO-WORKERS AND CO-RESIDENTS QUICKLY BECAME MY FAMILY AND NEW SUPPORT SYSTEM"

I had remembered reading somewhere, "change brings opportunity." And it definitely did. The transition and all of the changes that came with the leadership of a new chairman, brought the opportunity for me to learn from a whole new group of surgeons. It brought the opportunity to think differently and again, required shifting my perspective. I could use what I had learned and build on it. It didn't need to be one or the other. The teachings and traditions of neurosurgery were meant to evolve, not remain static.

As our new department of neurosurgery was growing rapidly, my husband and I received some good news of our own in the form of a tiny little heartbeat on an ultrasound. There was a sudden stream of emotions including excitement, happiness, and anxiety. I wasn't sure how the department would react.

My worry was unnecessary, as plans were made swiftly to ensure that I could go to doctors' appointments and ultrasounds, wouldn't be on my feet for countless hours and wouldn't be exposed to radiation. I don't think I could ever express enough gratitude for how graciously and willingly my co-chiefs stepped up to the challenge in my absence during maternity leave and how understanding the attendings were when I needed to take a break to pump after I returned to work. There was no shame, there was no stigma, there was no criticism; but rather, love, support, and respect.

On October 15, 2018, I received my greatest little gift, my daughter Raina. Raina is now 19 months old and truly a feisty little toddler in all her glory. She is just as opinionated and energetic as she was as a fetus, with her brisk kicks when she didn't enjoy my leaning against the OR table or if I waited too long between meals because I was operating. The department and my co-residents have continued to support me in my final chief year as my husband and I have navigated childcare while both being full-time physicians. So, brain surgeries and back surgeries or babies and bottles? For me, it wasn't one or the other, it was both. I am a mother, a wife, and a neurosurgeon. But it would not have been possible without the help and support of my neurosurgery village.

Early in residency, I constantly found myself being drawn toward pediatric neurosurgery. At first, I was attracted to pediatrics because I felt that, I could truly be a general neurosurgeon. Over time, my passion for pediatric neurosurgery grew because it truly captured my heart. I love children and caring for them. There is an unparalleled bond that forms when parents give up their trust to us as physicians. I carry that with me, especially now that I am a mother myself. And while the tragedies in pediatric neurosurgery can be heart-breaking, the success stories are truly remarkable. I feel privileged to have found my passion within neurosurgery right here at Cincinnati Children's Hospital Medical Center and am even more grateful to have the opportunity to continue my training as their rising pediatric neurosurgery fellow.

There is no major secret to a work-life balance, just time, patience, and perspective. Time is our most valuable asset. And while time is a constant, defined in the fleeting seconds, the short-lived minutes, the long hours, and the years that feel like a lifetime in residency - life in neurosurgery is always changing and evolving. Many of us have experienced this throughout our residency, but most of us have seen it firsthand in the past few months during this pandemic. We have been challenged to use our time wisely and efficiently; not just for our future, but for our present. We have learned to live in the now, and the uncertain. We have been forced to shift our perspective. Today is when we set the precedent for tomorrow, for each other, for our patients, and for those who will follow in our footsteps.





UC MEDICAL STUDENTS ATTEND UNIQUE HEAD AND NECK COURSE

FEBRUARY, 2020

The Department of Neurosurgery hosted a 2-week course teaching Advanced Anatomy of the Head and Neck. The annual course is offered to all 4th year medical students at the University of Cincinnati College of Medicine.

Led by Charles Prestigiaco, Professor of Neurosurgery, the students learn the anatomy of the head and spine. "It prepares you for truly understanding the surgical corridors that are safe, effective and highly useful in taking care of diseases of the head, neck and spine," Dr. Prestigiaco says.

Professors in the Departments of Neurosurgery, Otolaryngology, Ophthalmology and Oral and Maxillofacial Surgery each present their areas of expertise to the students.

It's a format that Dr. Prestigiaco has been conceiving since he was a 4th year medical student. "As a medical student, I always felt the gross anatomy was wasted on the 1st year medical students," explains Dr. Prestigiaco. He thought it would be more meaningful to teach in-depth lessons to 4th year students and he promised himself that if he ever had the opportunity to put together a course like this, he would. "Before they go out there as interns, they will

have a much higher level of understanding of the anatomy in a way their colleagues never had at this stage," says Dr. Prestigiaco.

Once students learn the anatomy in the classroom, they then go to the Goodyear Lab where they are able to see the anatomy first-hand on cadaveric specimens. The surgeons work alongside the medical students to show them exactly what they are seeing.

Sam Beydoun hopes to match in ENT; he signed up for the course because students who took it last year recommended it. "The chance to work with attendings one-on-one in a more intimate setting was a big

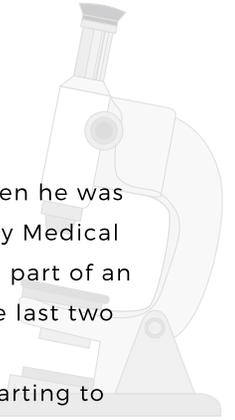
"THERE IS NOT A RESIDENT IN THE COUNTRY THAT CAN GET THAT INFORMATION IN A TWO-WEEK BLOCK THIS INTENSE."

factor in wanting to take this class," he explains.

Dr. Prestigiaco believes the medical students who take this course will be a step ahead of their counterparts. "The cross-fertilization of information that occurs here because I have experts from each field talking about the relational anatomy that they see day in and day out," he explains. "There is not a resident in the country that can get that information in a two-week block this intense."

Dr. Prestigiaco plans to hold the course again next year.

NEUROSCIENTIST PUBLISHES LARGEST PROSPECTIVE STUDY OF SPREADING DEPOLARIZATIONS



Jed Hartings, Ph.D., working in his lab

He first discovered them when he was working at Walter Reed Army Medical Center's neuroscience lab as part of an ROTC commitment. Over the last two decades, the idea has gained acceptance and is starting to appear in medical textbooks, such as the upcoming version of Youmans Neurosurgery.

Hartings is taking his research one step further, and is currently the principal investigator for a new study at 8 medical centers across the U.S. He is testing whether less-invasive methods, like putting electrodes on the scalp, can be used to detect these harmful waves. "My vision is that one day these concepts could

"ONE DAY, THESE CONCEPTS COULD BE THE CORNERSTONE IN MANAGING STROKE PATIENTS"

be the cornerstone in managing stroke and brain trauma patients, and lead to better outcomes." Dr. Hartings says his findings are just the beginning. "We need to bring it into every intensive care unit, to bring it into every clinicians' hands. Really, the field is in its infancy."

The results of the largest study ever conducted measuring spreading depolarizations following severe brain injury were published in JAMA Neurology in November 2019. The study's principal investigator, Jed Hartings, Ph.D., a University of Cincinnati Neuroscientist conducted the study through 5 level 1 trauma centers, including UC. The 3.5-year study is a follow-up to the initial study Hartings published in 2011 that surprised the medical world with its novelty. This more rigorous study further confirmed what the pilot data showed: that spreading depolarizations (known colloquially as, "brain tsunamis") have an independent, adverse impact on recovery of patients with severe brain injury.

Hartings essentially put spreading depolarizations on neurologists', neurosurgeons' and neurointensivists' radars over the past two decades.

RESEARCH RISING STAR AWARD

The University of Cincinnati College of Medicine chose Dr. Laura Ngwenya, Assistant Professor of Neurosurgery for its Research Rising Star Award. The Office of Research accepted nominations for instructors or assistant professors who demonstrate outstanding commitment to health-related research. Department of Neurosurgery Chairman, Dr. Joseph Cheng nominated Dr. Ngwenya for the award. "Since starting as junior faculty at UC over three years ago, she has shown an unwavering commitment to



neurotrauma research while still maintaining a successful neurosurgical clinical practice," says Dr. Cheng. He cited her publications, grant funding and international recognition in support of her nomination. Dr. Ngwenya co-founded Collaborative for Research and Acute Neurological Injuries (CRANI). Dr. Cheng says CRANI "has strengthened and inspired the broader UC community to collaborate and engage in neurotrauma research endeavors."



Joseph Cheng, MD, MS
 Frank H. Mayfield Chair of
 Neurological Surgery



Functional Neurosurgery



Juan Torres-Revron, MD, PhD
 Assistant Professor
 Director, Functional

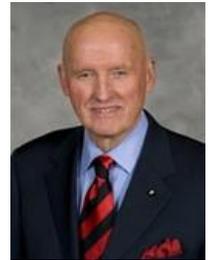


John (JP) Sheehy, MD
 Assistant Professor
 Functional

General



Kerry Crone, MD
 Associate Residency Director
 Professor



John Tew, MD
 Professor
 Faculty Emeritus

Neurovascular



Charles Prestigiacomo, MD
 Professor
 Director, Neurovascular
 and Endovascular



Aaron Grossman, MD
 Associate Professor
 Neurointerventional



Peyman Shirani, MD
 Assistant Professor
 Neurointerventional



Laura Ngwenya, MD, PhD
 Assistant Professor
 Director, Neurotrauma Center



David McGee, MD
 Associate Professor
 Peripheral Nerve

Neurotrauma

Peripheral Nerve

Pediatrics



Francesco Mangano, DO
 Mary Jane & Bob Tritsch Professor
 Director, Pediatric Neurosurgery



Karin Bierbrauer, MD
 Associate Professor
 Pediatric Neurosurgery



Jesse Skoch, MD
 Assistant Professor
 Pediatric Neurosurgery



Charles Stevenson, MD
 Associate Professor
 Pediatric Neurosurgery



Sudhakar Vadivelu, DO
 Associate Professor
 Pediatric Neurosurgery

Spine



Joseph Cheng, MD, MS
Professor
Director, Complex Spine



Rani Nasser, MD
Assistant Professor
Complex Spine



Justin Virojanapa, DO
Assistant Professor
Complex Spine



Monir Tabbosha, MD
Assistant Professor
Volunteer Spine

NeuroOncology/Skull Base



Mario Zuccarello, MD
Professor
Director, Brain Tumor
Center



Norberto Andaluz, MD
Professor
Open Vascular/Skull Base



Jonathan Forbes, MD
Assistant Professor
Skull Base/Neuro-oncology



Matthew Garrett, MD, PhD
Assistant Professor
Neuro-oncology



Soma Sengupta, MD, PhD
Associate Professor
Co-Director, Brain Tumor
Center

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JEFFREY KELLER, PHD
GHAHREMAN KHODADAD, MD

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PGY 6



ZACHARY PLUMMER, MD



MICHAEL ROBINSON, MD, PHD



BRITTANY STAARMANN, MD

PGY 5



JUAN MEJIA MUNNE, MD



GEORGE YANG, MD

PGY 4



DARYN CASS, MD



JUSTIN GIBSON, MD

PGY 3



SANJIT SHAH, MD



MARK JOHNSON, MD



AMBER GAULDEN, MD

PGY 1



REBECCA GARNER, MD



JOEL KAYE, MD





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Steven Crone, PhD
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