

Treating a teenager's seizures.....2  
 Global health efforts .....2  
 QI Vice Chair update.....3  
 2021 Chou Award winners .....3  
 2021 Top Docs.....3  
 Skull Base Program Update .....4  
 Global health efforts, cont. ....4  
 Sam Cramer Profile .....5  
 2021 Rising Stars .....5  
 Message from Larry.....5

# Message from the Chair



Like Andy (the character played by Tim Robbins) in the “The Shawshank Redemption,” our community was snared in circumstances beyond our control during the COVID pandemic. Together, we crawled through the metaphorical 500 yards of unimaginably foul sewage. As we race toward the threshold of vaccination for immunity, we look to our emergence, to be reborn of water and spirit.

As is often the case, life imitates art. Several memorable expressions from this cinematic tale of human spirit and camaraderie are apropos to this moment.

*“Geology is the study of pressure and time. That’s all it takes really, pressure and time.”*

The geologic pressure that compressed decades of discoveries into highly effective forms of COVID vaccines was the “rock hammer” that allowed our escape from this pandemic. Many of these discoveries were not made with vaccines in mind but were nevertheless essential for their development. To prepare for the next health crises, we need to continue to support such discoveries across all disciplines...discoveries that Drs. Bob McGovern and Carolina Sandoval Garcia are making in innovating new treatments for epilepsy (see p. 2).

*“These walls are funny...you get used to ‘em. Enough time passes, you get so you depend on them.”*

The pandemic has made visible the “walls” that we depend on – the daily routines that we count on for comfort. Driving to and from work, for example. As we emerge from the pandemic, we have an opportunity to reshape these walls – to the betterment of our community. Living through the containment has shown us that everyday presence is not always a prerequisite for work to be fulfilling or effective. Remote work, when thoughtfully incorporated, can optimize work satisfaction. Moreover, minimizing our daily travels can attenuate the accumulation of greenhouse gases. In this context, Larry Gunderson will lead an effort to redefine departmental policies for remote work (see p. 5).

*“I hope to see my friend and shake his hand. I hope the Pacific is as blue as it has been in my dreams.”*

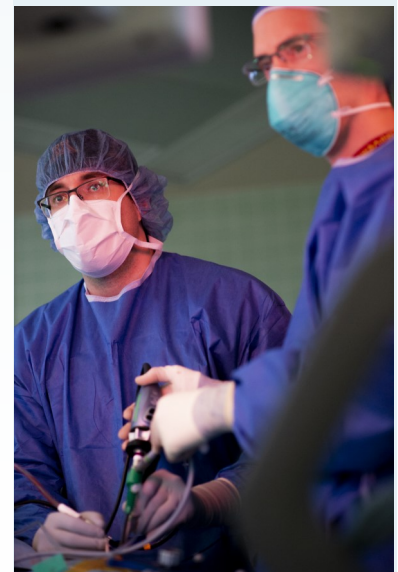
In the journey to our own “blue Pacific,” we should remember the friends who continue to suffer in countries where variants of COVID continue to ravage. Further, this pandemic has served as a keen reminder that poor sanitation or health conditions in remote regions of developing countries are no longer abstractions for philanthropy. They are potential sources for our next pandemic. Thus, we need to better invest in and support global health infrastructures. Led by Dr. Stefan Kim (see p. 2), our department remains steadfast in our dedication to this mission.

In the last scene, we see Red, played by Morgan Freeman, walking barefoot across a sandy beach toward Andy as he strips the varnish off an old boat...by the blue Pacific. They walk toward each other...and hug. And the camera pans out... In that moment is everything we can hope for in a lifetime.

We have that moment ahead of us.

With admiration,

Clark



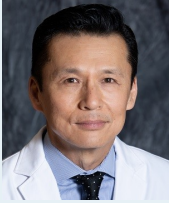
Chief Resident Jack Leschke performing a recent surgical procedure. (Photo by Chris Anderson and Sean Moen)



A member of the Venteicher Lab working on genomic studies (see page 2 for more information)

## Serving a global need

**Dr. Stefan Kim** took an unusual path to his medical career. Before he became a spinal neurosurgeon, he worked for six years at a tech compa-



ny, which gave him the opportunity to travel to different parts of the world. He spent two of

those years in Japan where he connected with a couple of doctors who were helping underserved populations in developing countries.

That exposure made a huge impact on Dr. Kim and inspired his decision to become a physician and continue the work he saw these doctors do. "I served in multiple countries in Central America and Africa throughout my medical career journey," he said.

Dr. Kim decided to focus on Kenya, where there are about 25 neurosurgeons for a population of 50 million. A tremendous number of people die in Africa each year from untreated neurosurgical conditions.

"When you visit these countries and see their desperate needs, it's hard not to be moved and want to get involved," said Dr. Kim. "It is not enough to just go for a few weeks if you want to make a lasting impact."

Dr. Kim decided that one way to create sustainable change in Kenya was to set up a neurosurgery residency program. During the two years he spent there, he experienced the joy of seeing many of his patients heal and significantly improve. He also ran into innumerable barriers, from being unable to accredit a residency program because it only had one available surgeon, to having to import

*continued on page 4*

## Teenager gets life-changing surgery to relieve his seizures

When 17-year-old Cody Waterhouse (pictured at right) was 5 and on a family vacation to the Grand Canyon, he had his first grand mal seizure. It was then that he was diagnosed with epilepsy, a condition that would shape his days – and his family's days – from then on.

At first, Cody's seizures were rare. As he got older, however, they became more frequent – and erratic. "I felt that we couldn't leave him alone for more than 20 minutes at a time," said Cody's dad, Wayne. "There were times when he had two to three seizures a week and then he would go a week without having one."

### Referred to neurosurgery

About a year ago, the seizure frequency became unmanageable and his epileptologist referred him to Drs. Robert McGovern and Carolina Sandoval-Garcia (pictured below). They put Cody through several imaging studies, which showed evidence of scarring known as mesial temporal sclerosis in the hippocampus on his brain's left side. That was where Cody's seizures were occurring.



"In right-handed people, their language function is typically centered in the left side of the brain," said Dr. McGovern.

"When you want to remove some of the left temporal lobe to reduce or eliminate seizures, you must think carefully about whether that will affect the patient's speech and comprehension. Taking out a portion of the hippocampus can also affect a person's memory."

### Opted for laser ablation

The surgical team decided to use laser ablation for Cody's procedure. "It's a newer, minimally invasive technique," said Dr. McGovern. During the procedure, a small hole is drilled through the skull and a fiber optic probe is inserted into the tar-



geted area. The probe heats up and destroys (ablates) tissue that needs to be removed. "Often, epilepsy can arise from abnormal tissue in the brain, which can cause seizures," said McGovern. "Laser ablation is perfect for those cases because you can use the laser probe to precisely ablate just that tissue."

### U is the best place

The University is an ideal place to get laser ablation for several reasons. "We have an entire team of people who know how to take care of these patients," said Dr. McGovern. "We also have the technology needed to do these cases."

In July 2020, Drs. McGovern and Sandoval-Garcia performed the procedure. The surgical team used the ROSA robotic system to plan the trajectory of the probe and to place it in Cody's brain. "We used almost real-time intraoperative MRI to guide the probe," said McGovern. "The system also generates a continuous set of images that shows us what's happening with the tissue as we heat it up, millimeter by millimeter."

### Quick recovery

Cody came through the surgery like a trooper and has only had one seizure since. "It's been incredible," said Wayne. "His reading and math skills were low before and now he's picking things up so fast ... like a giant sponge. I didn't think that would happen so quickly."

When Cody is asked what advice he would give someone in the same situation, he says, "Do it. Have the surgery. It helped me a lot and made my life much better and safer."

## Vice Chair Spotlight – Quality Improvement

Dr. Michael Park is the department’s Vice Chair of Quality Improvement (QI). His role is to ensure that the quality and safety of our clinical performance meets or exceeds expectations. Within his purview are things like department morbidity and mortality (M&M) reviews and safety and quality improvement initiatives. He also represents the department during M Health Fairview quality improvement efforts and weekly mortality reviews at the hospital level.



### Focus on mortality rates

One of the steps he’s taken regarding mortality rates, for instance, is to look into unexpected vs. expected deaths – an important measurement of the department’s performance. “We need to carefully document each patient’s history to include any comorbidities that might affect their outcome,” Dr. Park said. “I analyze every death with the hospital coder to determine whether it was expected or unexpected and if there was any missing documentation. It helps us understand what we need to do to fix any issues or to correctly code patients who come to us already sick.”

Even though the department is doing well in unexpected vs. expected deaths, Dr. Park revitalized an older prompt in the electronic healthcare record system that reminds everyone to carefully document patients as they come into the emergency room. This work had been spearheaded by Drs. Daniel Guillaume and Huy Do.

### Reducing fall risk, infections

“Other quality and safety initiatives we’ve undertaken include reducing fall risks and post-operative urinary track and line infection rates,” said Dr. Park.

In the future, he wants to get the department’s nurse practitioners and physician assistants more involved in quality improvement. This is in addition to the residents, who are required to have one QI project during their time with us. “If you think about it, residents typically rotate through different areas on a three or six-month basis,” said Dr. Park. “If they institute a protocol, it might not take long for it to be forgotten. In addition, with the 80-hour work week, we need to take some things off their plates. If our advanced practice practitioners are continuously responsible for quality and safety, they can ensure that all these processes keep going.”

Quality Improvement is definitely an ongoing process, according to Dr. Park, who noted, “There can never be a time when we say, ‘Okay, we’re all done.’”

## 2021 Top Docs



L-R, top-bottom: Drs. Anthony Bottini, Clark Chen, Andy Grande, Dan Guillaume, Matt Hunt, Michael Park, and Ramu Tummala

## 2021 Chou Nursing Award winners

Congratulations to **Sarah Heine**, APRN, CNP; and **Jordan Marr**, RN, who won the 30th annual Jolene and Shelley Chou Excellence in Neuroscience Nursing Award in May. It was the first year in which two winners were named.

Both University of Minnesota Physicians (UMP) team members were thrilled to receive the award. “I’ve watched nurses that I look up to professionally get this award in the past and it made me feel very honored and supported,” said Jordan. Sarah agreed, adding, “I work with so many awesome and fantastic nurses. For them to nominate me was a very big honor and I really appreciate it.”

Receiving this award is also validating. “We’re very busy and don’t always have time to appreciate one another,” Jordan said. “This award demonstrates the support of my colleagues.”

Being part of the Neuroscience Unit (6A) at the University of Minnesota Medical Center means being part of an effective, collegial team, according to Jordan and Sarah. “I love collaborating with the nurses, occupational, physical, and speech therapists, and the social workers,” said Sarah. “It’s a great group of people who provides excellent patient care. It makes my job so much easier.”

“Sarah and Jordan exemplify the essence of the Chou Nursing Award,” said Department Head Dr. Clark Chen. “While offering them my sincerest congratulations, I also want to acknowledge and thank all of our nurses for their grace and dedication in this trying pandemic. We are fortunate to have such a wonderful nursing staff.”

## Serving a global need, cont. from page 2

almost everything that his department and its patients would need, to rampant government corruption. He was also on call 24/7 with minimal support. In time, the barriers became too big for him to overcome, and he returned to the United States.

Daunted but not defeated, Dr. Kim is now working with Dr. Stephen Swanson of the Department of Pediatrics to help support the Arusha Lutheran Medical Centre in Tanzania. "We have a young African neurosurgeon who is already



working there," he said. "I hope to visit her in the next several months to learn more about her work to know how best we can support her. We're hoping she can come to the U and we can send some of our faculty or residents to Arusha to share our knowledge and experience with her and her team."

One of the many advantages of participating in global healthcare work is the opportunity it presents to expand your own neurosurgical skills. "In Africa, you have to be flexible enough to take on a wide range of patients of all ages who have challenging conditions," said Dr. Kim. "More significantly, it is deeply gratifying and a humbling privilege to help the most vulnerable."

## Skull base surgery program update



The skull base surgery program is co-led by neurosurgeon Dr. Andrew Venteicher (pictured at left) and

neuro-otologist Dr. Meredith Adams. The area's focus is on the care and treatment of patients with tumors and other diseases that are in and around the brain stem and the base of the skull. Optimal treatment requires an interdisciplinary team of physicians.

The U of M team includes neurosurgeons, otolaryngologists, endocrinologists, radiation oncologists, radiologists, critical care physicians, and APPs. There are two combined clinics for patients with pathology involving the skull base and ear led by Drs. Adams/Venteicher and Drs. Tina Huang/Ramu Tummala.

For endonasal skull base procedures, Dr. Venteicher works with Dr. Daniel Guillaume and Dr. Tummala together with their Ear, Nose and Throat (ENT) rhinology colleagues, Drs. Emiro Caicedo, Matt Tyler, Holly Boyer, and David Hamler to treat adults and kids.

### High-priced real estate

It is a challenging specialty because of the high-priced real estate involved, according to Dr. Venteicher. "We work around the neural tissue of the brain stem and base of the brain, the nerves that branch out from the brain stem that control vision, hearing, sensation, movement, and the major blood vessels that feed our brain," he said. "Tumors in this area lie in and around those vessels requiring us to navigate the structures carefully during surgery."

### Unique offering

The U of M is an exceptional place for skull base surgery. "We have multiple faculty members with advanced training and experience," said Dr. Venteicher. "We do a lot of minimally invasive procedures such as endonasal approaches to address areas of the skull base that were challenging to get to 10 to 20 years

ago. Not all centers offer this."

### ENT partnership

About 15 years ago, the University of Pittsburgh developed a new endonasal technique that became the standard for managing skull base tumors, according to Dr. Caicedo. "The new standard created a partnership between neurosurgery and ENT to give patients the best care," he said. "ENT brings the knowledge of the endonasal anatomy and neurosurgery handles the intracranial work."

### Skull base research

Dr. Venteicher's lab is focused on skull base tumors. "We're trying to understand the molecular structure of each tumor in the hope of identifying biomarkers for new treatment options," he said. "We're using genomic technologies and biochemical approaches to understand what makes tumors different from one another and which treatment options might be available."

Certain subgroups of tumors, for example, are more susceptible to treatment than others. "That might give us an opportunity to create a new test to understand which patients respond better to which treatments, and then to develop a new therapy," said Dr. Venteicher. "Ultimately, we want to use our knowledge about the molecular structure of skull base tumors to set up a clinical trial designed to create tailored treatment options for study participants and ultimately, for our patients."

### Chordoma Foundation grant

The Venteicher Lab recently won a Chordoma Foundation research grant that will help enable the team to design prognostic testing and new treatment strategies for patients with chordoma, a rare form of skull base tumor. A significant issue with chordoma is that the recurrence rate is unacceptably high. "A subset of patients will see their cancer metastasize," said Dr. Venteicher. "We are actively working on identifying clues in patients' tumors that predict which may be more aggressive or metastasize."



## Resident Spotlight: Sam Cramer, MD, PhD

Now in his sixth year of residency, Minnesota native Sam Cramer isn't leaning toward any subspecialty ... yet. "I'm exploring different options and am not sure I will pursue a formal fellowship," he said. "Neurotrauma would be my area of interest but I enjoy all aspects of neurosurgery and would like to be a good general neurosurgeon."



His interest in neurotrauma inspired him to help write a letter to the editor that was recently published in the *New England Journal of Medicine*. It's been attracting a lot of media attention. "I got involved with it by taking care of an adolescent patient injured by the nonlethal weapons the police used during the George Floyd protests," he said. "It really bothered me. When David Darrow approached a group of us with the idea of determining how many people were affected by this type of weapon, I thought it was a great idea." Sam was taken by the opportunity to bring this issue to the attention of the medical community and to society as a whole. "To have a conversation about what is and what isn't appropriate crowd control in this country," he noted. "Hopefully, it will result in changes, but the jury is still out on that."

In addition to building his clinical and surgical skills, Sam's other area of interest is in neuroscience. "The bulk of my research has dealt with the use of a transgenic mouse line that expresses a calcium indicator in their brains, which enables us to use optical microscopes to monitor their brain activity," he said. "We've been looking at how the functional connectivity of that activity is altered by things like brain injury or brain tumor."



So far, his residency has been a little surprising. "I expected most of the emphasis to be on operating," he said. "There is, of course, a big emphasis on that but it can't be at the expense of building good critical thinking skills and providing compassionate care to patients and families during what is often one of the most difficult times in their lives."

Sam and his wife, Julie, and two kids (Scarlett and Theo — pictured at left) live in Blaine,

MN, and enjoy all the outdoor activities that the state has to offer. They also have a pet ... a Venus flytrap. No name was given. And no, you do NOT hear the soundtrack of "Little Shop of Horrors," in the background.

## 2021 Rising Stars



Congratulations to our faculty members who were part of *MplsStPaul Magazine's* 2021 "Top Doctors: Rising Stars" list. They include (from left to right): Drs. Kristen Jones, Carolina Sandoval-Garcia (this is the second consecutive year for Dr. Sandoval!), and Andrew Venteicher.

## Returning to the office post-COVID

By Larry Gunderson

I am very proud of how well we transitioned to working remotely. Thank you to everyone for your flexibility and devotion to making this work. We all scrambled to get reliable connections and good places to work.



It was interesting to see how we all started working at the dinner table and quickly created quiet work areas in our homes.

I am excited to soon see people back in the office and to have more in-person hallway chats. I miss those. That said, we'll continue to work as much remotely as possible. I've read of companies doing "5-minute Zooms" to accommodate hallway chats from home. We might try that.

Let me know if you've heard of other ideas for the new flexible workplace. We will all continue adapting and changing to make this a great place to work.

Thanks again for all you've done this past year.

## Newest family member

Welcome to Dr. Tomoyuki Koga's baby, Satoki!

