Looking Back/Gazing Ahead

For nearly a fifth of the world’s population, January 25, 2020, marked the New Year and is a time for celebration, reflection, and resolution. I want to wish you a Happy New Year and to share with you the accomplishments that we have achieved together this past year as well as goals for the upcoming year.

Upon reflection, one of our proudest achievements in the past year involves the Department Leadership Council. The Council consists of Dr. Daniel Guillaume (Vice-Chair of Clinical Affairs), Dr. Michael Park (Vice-Chair of Quality and Residency Director), Dr. Ramu Tummula (Vice-Chair of Professional Development), and myself. We meet regularly to review key department matters and render decisions about initiatives and governance. It is my belief that the collective wisdom of this group will best facilitate the growth of our department and address the challenges that lie ahead. A key initiative in 2020 will be to invite members of each subspecialty team (tumor, vascular, functional, pediatric, spine, and trauma) to discuss how we can best support and elevate every member of our department, in the context of our Neuroscience Service Line.

Over the past few years, we have undergone a tremendous amount of clinical growth, increasing our faculty to a total of 16. We successfully expanded our clinical services to Southdale Hospital and received approval for a deep brain stimulation program at the Veterans Medical Center in Minneapolis (see pg. 4). In 2020, we will continue to engage our colleagues in the Greater Minneapolis area to identify opportunities for leveraging our expertise and the resources uniquely available to the University and the M Health Fairview joint venture toward improving the care of our community.

As evidenced by the lists of grants and publications, beginning on pg. 6, our department continues to push the frontier of neurosurgical practice – providing hope for patients who are often failed by the standard of care. While the sheer number of academic contributions is impressive, what struck me as extraordinary is that each publication contributed toward reshaping the landscape of what we know to be neurosurgery. Moreover, notable resident contributions indicate to me that we continue to succeed in our mission of instilling the spirit of discovery within the next generation of neurosurgical practitioners. In addition, we were recently notified that the department received its first Blue Ridge ranking since 2006 (how medical school departments are ranked in terms of National Institutes of Health funding). We are 46th in the nation, which is just phenomenal and a testimony to the hard work being done by our neurosurgical scientists.

Looking ahead, I am optimistic and excited about the opportunities for our department to make a difference in our community, our country, and our world. Imbedded within these opportunities are uncertainties and challenges that we will overcome together. We will continue to strive toward cultivating all aspects of neurosurgery for all members of our department.

Warmly,

Clark
State-of-the-art surgical suite a “giant leap forward”

The new T-suite at M Health Fairview University of Minnesota Medical Center is equipped with a powerful mobile magnetic resonance imaging (MRI) scanner that will guide neurosurgeons’ delicate work in real time.

Named for its shape, this new surgical suite at M Health Fairview University of Minnesota Medical Center will help redefine what’s possible in neurosurgery and brain cancer treatment.

That’s because the four-room T-suite is home to a powerful mobile MRI scanner, which can travel to each of the three operating theaters in the suite. Neurosurgeons and other experts will use it to view real-time images of the brain during surgery.

This capability will revolutionize outcomes for people under our care, according to Dr. Chen. “To see the real-time results of our surgery is a dream come true for surgeons and a giant leap forward in our ability to personalize surgery to meet the specific needs of the person,” he said.

The ability to conduct an MRI scan during surgery allows neurosurgeons to check their work immediately. For example, neurosurgeons removing a brain tumor can now use real-time imaging to see whether they have successfully eliminated all the cancerous tissue. If they spot additional tumor tissue left in the brain, they can take it out during the same procedure without the need for a second surgery.

“*To see the real-time results of our surgery is a dream come true for surgeons*”

Two marathons, $7K for brain aneurysm research. Whew!

Dr. Andy Grande (pictured with his kids in New York City) had quite a fall last year. First, he completed the Twin Cities Marathon in October and then the New York City Marathon in November. But that wasn’t all.

He was asked by his NYC Marathon team to commit to two objectives:
1. Run the marathon in under six hours
2. Raise $3,000 for the Brain Aneurysm Foundation.

He ended up raising almost $7,000!

Dr. Grande doesn’t credit himself for that, though. About 80 people donated to the cause,” he said. “One of my patients donated $1,000, another person I didn’t even know donated $500. It was amazing how many people let me know that brain aneurysms had touched their lives in some way. A few of these people I’d known since high school and had no idea.”
Service Line Lead/Vice Chair of Clinical Affairs Update: Dr. Daniel Guillaume

2020 is going to be a busy year for the Neuroscience Service Line. As you might recall, the Service Line is structured into 15 programs. For now, I lead the Pediatrics Program and am joined by:

- Ramu Tummala (Endovascular)
- Andrew Venteicher (co-lead, Skull Base/Pituitary)
- Ann Parr (Neurotrauma)
- Tony Bottini (Community Neurosurgery).

We expect further engagement from faculty as teams develop. One charge of the program teams is to standardize quality across the M Health Fairview system. We want to manage patients according to the same evidence-based standards of care. We are also responsible for Service Line growth and customer satisfaction.

Neuromodulation will be one of the biggest growth areas and we’ve identified several areas for improving efficiency. Our strategy is to significantly increase the number of DBS procedures for movement disorders. That effort is being led by Dr. Park and Dr. McGovern.

Over the next three years, the Service Line will roll out care maps (clinical protocols) to:
1. Improve quality of care delivery (achieve better outcomes)
2. Decrease length of stay, re-admissions, mortality
3. Reduce waste.

The first two roadmaps rolled out in 2020 will be in spine and stroke. From there, we will create two to four care pathways each year of the three years.

We are also striving to make Clinical documentation more efficient and to streamline the care we deliver. We’re working with IT and the U’s Quality Team to solve these problems.

Clinical Affairs Update
My role as Vice Chair for Clinical Affairs is concerned with how we deliver care in the department – how our advanced practice practitioners and neurosurgeons work, the structure within which they work, and to help find solutions to problems. It fits in well with helping implement Service Line goals.

For example, we’re creating ways for practitioners who are UMP employees working in the community (e.g., Drs Hunt and Bottini) to be more associated with the department. With Adjunct Faculty appointments, they will be able to come here to teach, attend conferences, and be more a part of the team.

I’m also concerned about new hires and helping solve HR problems. We just hired two new APPs: Therese Maas recently joined us, and Mia Pham comes in March.

Saying goodbye

We lost a beloved colleague on January 9. Following are excerpts from Dr. Chen’s email about her:

Molly was loved by all of us who knew her, her presence a Blessing. She was selfless and dedicated, an Atlas shouldering the world’s weight with a smirk and a smile. Technically gifted and adorned with judgment beyond her years, she was masterful in her surgery and prudent in her deliberations. She was tireless in her pursuit of excellence, with research and clinical work that pushed the forefront of neurosurgery … she was known to us for her kindness and scrupulous insistence on her mantra of “always doing the right thing.”

We were fortunate to have her as part of our Residency team between 2012-2019. Her stellar trajectory led her to a Pediatric Neurosurgery Fellowship at Oregon Health & Science University. She so impressed the leadership there that she was offered a coveted faculty position that was reserved for the most exceptional.

Molly is someone who lived her life to the fullest, with quirky detours that defined her. Whenever help was needed, she was the first to offer, regardless of the strain. She had an indelible impact on our patients, program, our community, and all those whose lives she touched. The world has lost the great light of a beautiful soul, and we mourn in the gray shadow of her absence.

A memorial is being planned for Molly. More information will be shared soon.
Welcome, Therese and Emma!

We added two new advanced practice practitioners to our staff.

Therese Maas, holds a Doctorate of Nursing Practice degree from the University of Minnesota and earned a Master of Arts in Nursing with an Adult Nurse Practitioner focus at what is now St. Catherine University in St. Paul. She also earned a BS in Nursing at Augsburg College in Minneapolis.

Therese’s primary focus is on spinal conditions. “I enjoy interpreting and reviewing spine MRI imaging for patients to help them decipher the medical terms and language so they can develop a better understanding of their condition and determine the cause of their symptoms,” she said.

Emma Venteicher joined the Pediatric Neurosurgery team late last year. Venteicher earned her MS as a Family Nurse Practitioner from Georgetown University in Washington, DC, which enables her to see adult patients.

Venteicher’s energetic approach to her work extends beyond patient care. “I love education and providing quality, compassionate care for our patients and families,” she said. “I also hope to get involved in clinical research to help continuously improve patient care and outcomes.”

Think her last name sounds familiar? You’re right! Emma is married to Dr. Andrew Venteicher.

**Minnesota veterans wanting DBS for movement disorders get some good news**

Imagine that you’re a veteran living in Minnesota. You have Parkinson’s Disease and are a good candidate for deep brain stimulation (DBS), which will help you combat your symptoms. But you must fly to San Francisco – twice. Once for the pre-surgical exam and another time for the procedure. “The VA pays for them and a family member to do this, but it’s not easy for Parkinson’s patients to go on these flights,” said neurosurgeon Robert McGovern, MD (pictured at left). “Their mobility is limited, making getting on and off the flight an ordeal. It’s a testament to these patients – and to deep brain stimulation’s ability to help them – that they are willing to do that.”

On November 6, 2019, Minnesota veterans got some good news. The Department of Veterans Affairs approved a clinical restructuring request to implement a deep brain stimulation program at the Minneapolis VA Health Care System. McGovern, who joined the Neurosurgery Department in July of 2018, is specially trained to perform deep brain stimulation procedures. He splits his time between the U of M and the VA and was a key reason why the VA approved this change.

“The Department of Veterans Affairs sent a panel of experts to our VA hospital to examine resources and expertise,” noted Neurosurgery Department Head Clark C. Chen, MD, PhD. “The process was rigorous and challenging. The fact that we were able to demonstrate our capacity for doing DBS and Dr. McGovern’s expertise is something to be celebrated.”

Chief Neurosurgeon for the Minneapolis VA Health Care System, Cornelius Lam, MD, PhD (pictured at right), noted, “It’s good for the VA because deep brain stimulation is no longer such an esoteric operation that it needs to be done at just a few centers in the nation. We do it frequently enough at the U that if we have the patient volume, we should set up a center here.”

McGovern will work collaboratively with University and VA neurologists to ensure that these patients receive the best possible care. In addition to Parkinson’s, the VA team will use DBS to treat other movement disorders, such as essential tremor and dystonia.

**New OR hats help improve safety**

Resident Youssef Hamade brought an idea he learned about from another university to the U of M and introduced branded hats to the OR team. He said it helped them identify each other and patients could use them to easily recognize neurosurgery team members.
Mother’s determination leads to the U of M and her daughter’s remarkable recovery

Thanks to determination and persistence, Autumn Lyons of Sturgis, SD, got the medical help that her nine-year-old daughter, Mallory, needed — and met Dr. Sandoval-Garcia and the pediatric neurosurgery team in the process.

After having Mallory’s symptoms dismissed or trivialized by her current provider, Autumn took her to see another pediatrician. The MRI he ordered showed a large mass in Mallory’s brain and she was sent to the emergency room immediately.

“The ER doctor said we needed to get her to a facility that could handle her condition,” said Autumn. “I looked at her and said, ‘If this was your daughter, what would you do?’ She said she’d take her to the University of Minnesota.” Autumn and Mallory were air lifted to Minneapolis and into the care of Dr. Sandoval.

Clot in a challenging area
Dr. Sandoval determined that Mallory had had an intracranial bleed after a cavernous mass—a tangle of small blood vessels—ruptured. The resulting clot was in a challenging area.

“It was deep in the middle of Mallory’s brainstem on an area called the pons,” Dr. Sandoval said. “It’s a small, narrow region with several nucleus for vital functions. It’s also where many fibers from the upper brain converge to go down to the lower brainstem and spinal cord. Numerous functions are controlled from there, which makes it a challenging area upon which to operate and as a result, the area cannot tolerate the sudden impact of a blood clot.”

This condition is rare in adults and even more so for a pediatric patient.

Consulting with a colleague
“To make sure we did the right thing,” Dr. Sandoval consulted with Dr. Grande, who observed the procedure. “We went in through the back of the skull via a sub-occipital bony opening and performed a hemorrhage evacuation,” Dr. Sandoval explained.

The April 4, 2019, surgery took five hours and went well.

After a stay in the ICU and intensive rehab, Mallory’s improvement from day to day was amazing, according to Autumn. They returned home on May 1. “The last time I saw her, she was ambulating, had a great attitude and had participated actively in her therapies,” said Dr. Sandoval. “She made an incredible recovery, given the location and size of her hemorrhage.”

Mallory continued with both physical and occupational therapy up until the start of school in September. While fourth grade has been challenging for her, she is still making progress.
Research Grants Awarded in 2019

Congratulations to department scientists whose work was recognized in 2019 as inherently valuable by numerous funding organizations, both local and national.

- Chen, Clark C., NIH 1R01 CA240953-01, “Development of Quantitative Deuterium MRS Imaging for Human Brain Tumor Application at Ultra-high Field,” 2019-24
- Chen, Clark C., Ferris Foundation Research Fund, “Natural Killer (NK) cells as a platform for glioblastoma therapy,” 2019-22
- Grande, Andrew, Minnesota Office of Higher Education, “Neuroinflammation associated with sequential TBI in a rodent model,” 2019-21
- Low, Walter, NIH STTR 1R42NS112070-01, “Stem cells for treating acute stroke,” 2019-20
- Low, Walter, NIH 5U01NS103569-03, “High density multielectrode arrays with spatially selective unidirectional and rotating fields for investigation of neuronal networks,” 2019-20
- Ning, Jianfang, Humor To Fight the Tumor Foundation, “Providing proof of principle for virus peptide-based glioblastoma therapy,” 2020-21
- Park, Michael, NIH 1R21NS111214-01, “Evaluating and Understanding the Effects of Deep Brain Stimulation Using Novel Electrophysiology Technique and Device in Parkinson’s Disease,” 2019-20
- Venteicher, Andrew, 6K12NS080223-07, Neurosurgeon Research Career Development Program (NRCDP), 2019-2021
Papers published in 2019


8. Blacklurn Spiros; Swisher Christa B; Grande Andrew W; Rubi Alba; Verbricle Laura Zitella; McCabe Aaron; Lad Shivanand P. Filtration of SAH via Spinal Catheter. Operative Neurosurgery. 2019 (in press) Cited: 0; Impact Factor: 1.47. Role: Data acquisition, experimental studies, manuscript, editing, review.


40. McDowell MM, Venteicher AS, Goldschmidt E, Nunez M, Okonkwo DO, Gardner PA. Vertebral artery mobilization for C1-C2 reduction and fixation. Accepted, Neurosurgical Focus 2019
Papers published in 2019, cont.


Papers published in 2019, cont.


63. Sverak, Pavlina; Adams, Meredith E.; Haines, Stephen J.; Levine SC; Nascence D; Sommer K; Dusenberg K; Huang TC; Moertel C. Bevacizumab for Hearing Preservation in Neurofibromatosis Type 2: Emphasis on Patient-Reported Outcomes and Toxicities. Otolaryngology-Head and Neck Surgery 2019; 160:526-532

64. Toman, N, Grande AW, and Low WC. Neural repair in stroke, Cell Transplantation


69. Venteicher AS, Goldschmidt E, Gardner PA. Far lateral approach (transcondylar, transstubercular) for bypass and trapping of a ruptured dissecting PICA aneurysm. Accepted, Skull Base 2019

