

NEWS AND NOTES

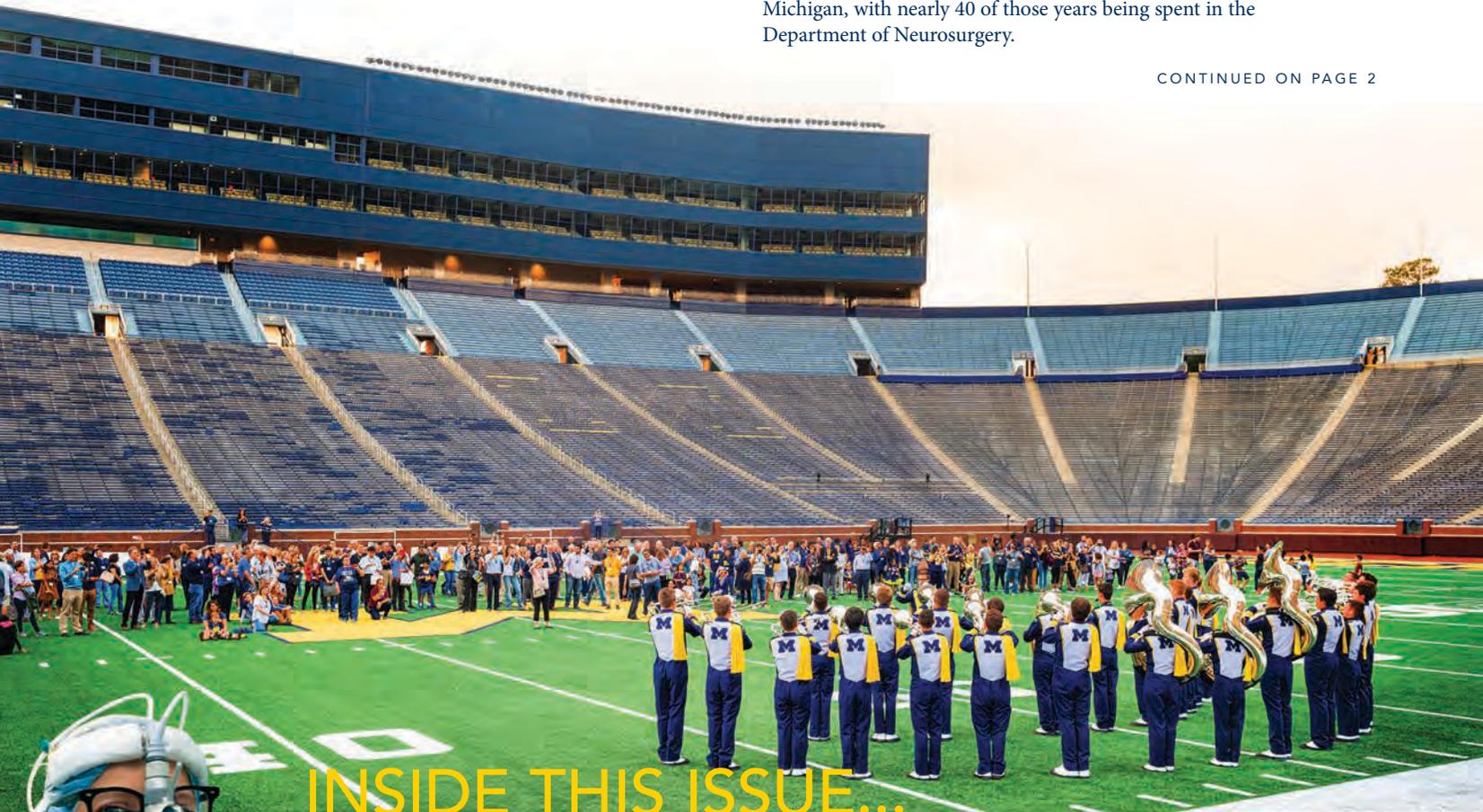
LETTER FROM THE CHAIR

A Year to Remember: Celebrating 100 Years of Neurosurgical Excellence at the University of Michigan and Looking Forward to the Next 100 Years and Beyond

The year 2018 has been a momentous one for us. As a department, we looked back and celebrated 100 years of neurosurgery here at the University of Michigan. The Centennial Celebration took place September 13-15, 2018. It was a wonderful celebration that brought together alumni from all corners of the country. It was particularly wonderful to see how each one has taken the opportunities provided by training here at the University of Michigan and used them in so many ways. Whether it was as a CNN reporter or a Chair of a Department of Neurosurgery, we saw the breadth and depth of folks who have called Michigan home.

This year has been particularly heartening as we've seen how the Department has grown and changed. Our two newest residents are good examples of the next generation of neurosurgeons that will lead us through our next 100 years of growth and development. The resident cadre this year is once again enormously talented and reminds each and every one of us that the University of Michigan Department of Neurosurgery is a living, growing, and constantly evolving department. We celebrated multiple staff service milestones this year, including Peggy Hoag's forty-five years of affiliation with the University of Michigan, with nearly 40 of those years being spent in the Department of Neurosurgery.

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We also celebrated Dee Dee (Diane) Peck and Donna Gauss, who both celebrated 30 years of service to and employment by the University of Michigan, with most of those years being spent within the Department. We have witnessed the continued growth of the Department and know that this growth is likely to continue as we embark on our next 100 years of neurosurgery.

New initiatives in diversity and equity and celebration of our roots within the community continue. We have had members of our department participate in a variety of activities including: Food Gatherers, collection of needed school supplies for school-aged children, and working to help those less fortunate with a clothing drive.

With regard to research, our research group has once again been quite successful in obtaining funding. This year, we have seen the largest number of our clinical faculty receive NIH funding. I am proud to say that we have multiple R01s, R21s, and K08s for faculty within the Department. Additionally, our researchers hold many prestigious awards including a Javits Award from NIH. Two of our faculty received special Michigan Medicine-wide recognition this year for their talents. Dr. Maria Castro was awarded the Basic Science Research Award and Dr. Dan Orringer was awarded the Innovation and Commercialization Award. For a small department, we have had a large impact on Michigan Medicine.

I am also happy to state that we have seen an increase in our clinical activity, both with respect to new patients and in our number of operations. As a health system, we have now incorporated Metro Health System into the UMHS fold, as well as strong collaborations with several smaller hospitals around the state. All of this is being

led through the Executive Committee of the hospital, which seeks to guarantee that a sub-specialty such as neurosurgery will always have an adequate patient base to train residents and sustain a large faculty. Additionally, nurses represented by the University of Michigan Professional Nurses Council (UMPNC) ratified a three-year contract with Michigan Medicine in October. The agreement reached represents a strong, continued commitment to patient safety and high-quality care for the future.

I hope you will enjoy this newsletter. It reflects the hard work of so many within the Department and will hopefully give you a chance to catch up on the happenings within the Department this year. We have also enclosed inserts of publications and grants within the Department over the course of the last year, which demonstrate the significant academic output that continues by members of the Department each and every month.

As we approach 2019, we are all excited for the future that lies before us. We were reminded at the Centennial Celebration of the deep and longstanding traditions that have been established at Michigan, and that the University of Michigan Department of Neurosurgery family will continue proud and strong through the next 100 years.

My best to you and your family as we approach the new year,



Karin Muraszko, MD
Julian T. Hoff Professor and Chair

We were reminded at the Centennial Celebration of the deep and longstanding traditions that have been established at Michigan, and that the University of Michigan Department of Neurosurgery family will continue proud and strong through the next 100 years.



MEDICAL EDUCATION NEWS

A Word from the Residency Program Director, Dr. Cormac Maher



The resident group at Michigan continues to excel clinically as well as academically. Highlights of some of their recent successes are listed in these pages. We are currently in the midst of application season, and the neurosurgery residency selection process for U-M will be as competitive as ever. This year, we will screen more than 300 applications from US medical school graduates in order to choose the three new residents in the Department.

It was gratifying seeing so many of our residency graduates at the Department's Centennial Celebration this fall. The continuing participation of our graduates in the mission of the residency program is a unique strength of this department. One of many legacies of the Centennial Celebration was the foundation of a new endowed fund to assist with residency training in perpetuity. In particular, the goal of this fund will be to cover many of the otherwise unsupported aspects to enhance the educational mission of the Department. For instance, those

of you who follow medical education issues closely will likely be aware that the ACGME has begun to emphasize program efforts to maintain resident wellness. These initiatives include visiting professor lectures and dinners, travel to courses, as well as support for team-building and networking within the resident group. Michigan has a long history of training the best and brightest individuals in our field. These initiatives and this newly created fund will position the department well as we continue to attract outstanding individuals in the future.

Finally, I would like to thank Susie Hines for her outstanding work as Program Coordinator. The coordinator role is becoming more difficult as a result of increasing regulation in graduate medical education. This year, Susie was nominated for the ACGME Coordinator Excellence Award, chosen for nomination from a pool of coordinators from all specialties nationwide. As a department, we are all very grateful for Susie's expertise and ongoing efforts on behalf of the residency program.



2018 Chief Resident Graduates



On Saturday, June 16, Neurosurgery faculty, residents, staff, friends, and family gathered at the Ann Arbor City Club for an evening of recognition and celebration honoring graduating residents Kevin Chen, MD, and Elyne Kahn, MD. It was an evening of laughter, tears, and reminiscence about Dr. Chen's and Dr. Kahn's rigorous and rewarding seven-year neurosurgical training journeys.

Since completing their residency training at the University of Michigan, both Drs. Chen and Kahn have begun one-year training fellowships – Dr. Chen in functional neurosurgery at Stanford and Dr. Kahn in spine surgery at the Cleveland Clinic. We wish them the best in their future neurosurgical careers.

2018 Medical Education Awards



Julian T. Hoff Teaching Award

The Julian T. Hoff Teaching Award is given each year to a junior faculty member within the department with an exemplary record in teaching our residents.

2018 Recipient: Aditya Pandey, MD



Max Peet Resident Teaching Award

The Max Peet Teaching Award is given annually to a resident who has distinguished him/herself in the arena of teaching other residents and medical students.

2018 Recipient: Kevin Chen, MD



Friend of Neurosurgery Award

The Friend of Neurosurgery Teaching Award is given each year to an individual outside of the department who is instrumental in teaching our neurosurgical residents.

2018 Recipient: Elvie Casper, BSN, RN, CNOR



McGillicuddy Resident Leadership Award

The McGillicuddy Resident Leadership Award recognizes a resident who exhibits exemplary leadership in maintaining the highest standards of professionalism.

2018 Recipients: Kevin Chen, MD, and Elyne Kahn, MD

New Neurosurgery Residents 2018

In 2018, we welcomed Drs. Katherine Holste and Sara Saleh to our residency training program.



Katherine Holste, MD

Medical School: Oregon Health & Science University

Undergraduate: University of Oregon

Hometown: Portland, OR

Why Neurosurgery? Growing up with an uncle with debilitating epilepsy who had undergone a total corpus callosotomy left me wanting to know more about not only that complicated-sounding surgery, but normal brain function and how it can all go wrong. After assisting in a craniotomy for the first time, I knew this was the right field for me.

Hobbies: Rowing, boating, and other water sports, trail running, and cooking – especially Thai and Indian food

Clinical Interests: Pain (Trigeminal, Glossopharyngeal & Nervus Intermedius Neuralgia), Pediatric & Epilepsy Neurosurgery



Sara Saleh, MD

Medical School: University of Wisconsin School of Medicine and Public Health

Undergraduate: Michigan State University

Hometown: Yater, Lebanon

Why Neurosurgery? The combination of the nervous system with engineering, hands-on skills, and daily personal interactions with patients and their families makes neurosurgery the most exciting field in medicine for me. I have a deep interest in cognitive/psychiatric disorders from watching my grandfather's battle with Alzheimer's disease. There is nothing more amazing nor gratifying than helping someone retain or even restore the organ that makes them who they are.

Hobbies: Martial arts, reading, music, programming, cooking, running, and being outdoors as much as possible

Clinical Interests: Functional, skull base.

2018 Fellows

The Department also welcomed two new fellows this year – Drs. Shahid Ahmad and Clay Elswick. Dr. Ahmad will be completing a two-year neurocritical care fellowship, and Dr. Elswick will be completing a one-year spine fellowship.



Dr. Shahid Ahmad

Residency Training: Florida State University

Medical School: Kasturba Medical College, India

Undergraduate: University of Arizona

"I chose to do my fellowship in Neurocritical Care at the University of Michigan due to the extensive training the Neuro ICU fellows obtain. The attendings are very involved in my education and the relationship with the neurosurgeons is not comparable to any other department I've been a part of. I'm grateful and blessed to be a part of this program and institution."



Dr. Clay Elswick

Residency Training: Wayne State University, University of Arkansas

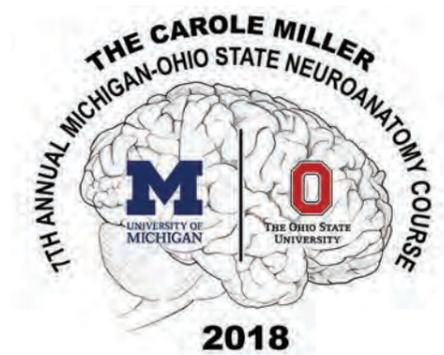
Medical School: University of Texas at Houston

Undergraduate: Baylor University

"I pursued a fellowship at the University of Michigan with Dr. Park to gain increasing expertise in the treatment of all ranges of spinal disorders including degenerative, neoplastic, and traumatic conditions. Through this fellowship, I have developed increased comfort and confidence in minimally invasive and lateral approaches to the spine. I have been impressed with the camaraderie that the faculty and residents share and am blessed to be a part of this unique and great institution."

Carole Miller 7th Annual Michigan-Ohio State Neuroanatomy Course

Each year, U-M neurosurgery residents have the opportunity to get together with neurosurgery residents from rival Ohio State University for the Carole Miller Neuroanatomy Course – a one-day intensive course that offers residents informative lectures and hands-on surgical training. The course location alternates each year between Ann Arbor and Columbus. This year, it was held on May 5 in Ann Arbor. A number of OSU faculty and residents entered “enemy-territory,” traveling to Ann Arbor to attend the course – now in its seventh year. After a day full of engaging lectures and hand-on surgical training led by Drs. Cormac Maher, Dan Orringer, and Aditya Pandey, residents from both programs enjoyed a barbecue and friendly softball scrimmage.



15th Annual Neurosurgery Charity Softball Tournament in New York City

The 15th Annual Neurosurgery Charity Softball Tournament – which benefits the Neurosurgery Research and Education Foundation (NREF) – took place in NYC’s Central Park on June 9 this year. A total of 40 teams competed in this year’s tournament.

The 2018 U-M Department of Neurosurgery’s team included several faculty members – Drs. Cormac Maher, Nick Szerlip, and Craig Williamson – as well as NICU fellow Dr. Larry Morgan and eight residents:

- PGY 6: Todd Hollon, “Coach” Brandon Smith, and Jay Nathan
- PGY 5: Yamaan Saadeh
- PGY 3: Tim Yee
- PGY 2: Sravanthi Koduri and Mike Strong



This year’s tournament raised over \$125,000 for NREF neuro-oncology research fellowships.

5th Annual U-M Resident Research Symposium

The 5th Annual Neurosurgery Resident Research Symposium was held on May 11 this year. Dr. William Couldwell from the University of Utah served as the honored guest and Julian T. Hoff Visiting Professor during the symposium.

Dr. Couldwell spent the first half of the day with the residents reviewing case presentations; residents then presented their research in the afternoon. Presentations were scored by the faculty in attendance.

Drs. Todd Hollon (PGY-6) and Luis Savastano (PGY-7) were chosen as co-winners of the Crosby Basic Science Research Award, which is awarded for the best basic science presentation(s). Dr. Drew Wilkinson (PGY-7) was chosen as the recipient of the Chandler Clinical Research Award, which is awarded for the best clinical research presentation.

The 2019 Neurosurgery Resident Research Symposium will be held on May 10, 2019. Dr. Robert Harbaugh of Penn State University will serve as our honored guest as well as the Elizabeth Crosby Visiting Professor.



Each year, the Resident Research Symposium stimulates and promotes the academic productivity of our residents, and brings together research and clinical colleagues in neurosurgery.



Resident Honors & Awards

U-M Neurosurgery residents continue to receive many prestigious awards and honors for their clinical and academic excellence; 2018 was no exception. Notable achievements from the 2018 academic year include but are not limited to those listed below.



Amy Bruzek, MD

- Making a Difference Award, 2018



Kevin Chen, MD

- University of Michigan Learning Environment Task Force recognition/honor given to those who are committed to bettering the learning environment through excellence in professionalism and teaching
- Max Peet Resident Teaching Award, 2018
- John E. McGillicuddy Resident Leadership Award, 2018
- Began fellowship in functional neurosurgery at Stanford, 2018-2019 academic year



Todd Hollon, MD

- CNS Quarterly Executive Editorial Board, Congress of Neurological Surgeons, 2015-present
- American Association of Neurological Surgeons Ronald L. Bittner Award on Brain Tumor Research, 2018
- Crosby Basic Science Research Award, Resident Research Symposium, Department of Neurosurgery, University of Michigan, 2018



Elyne Kahn, MD

- John E. McGillicuddy Resident Leadership Award, 2018
- Began fellowship in spine surgery at the Cleveland Clinic, 2018-2019 academic year



Siri Khalsa, MD

- Awarded Neurology T32 training grant, 2018-2019 academic year
- Making a Difference Award, 2018



Sravanthi Koduri, MD

- Nominated for the Arnold G. Coran Resident Teaching Award, Department of Surgery, University of Michigan
- Making a Difference Award, 2018



Jay Nathan, MD

- Charles Kuntz Scholar Award from the Joint Section on Disorders of the Spine and Peripheral Nerves, 2018
- Council of State Neurosurgical Societies Socioeconomic Fellowship, 2018-2019
- Resident Travel Award for American College of Surgeons Leadership and Advocacy Summit, 2018
- American Association of Neurological Surgeons Representative for Medicare/MACRA Episode-Based Cost Measure Development, 2018
- United States Senate, Health Policy Fellowship, August-October, 2018
- Appointed to three-year term as sole resident/associate liaison to the Health Policy and Advocacy Group (HPAG) by the Board of Governors of the American College of Surgeons Clinical Congress, October, 2018



Yamaan Saadeh, MD

- Pryor-Hale Award (first place) in the Michigan Business Challenge, University of Michigan, 2018
- Elizabeth Crosby Basic and Translational Science Award, Neurosurgery Resident Research Symposium, University of Michigan, 2018



Luis Savastano, MD

- 2017-2019 CNS Resident Fellow Leadership Program, Congress of Neurological Surgeons
- Pryor-Hale Award (first place) of the Michigan Business Challenge, University of Michigan, 2018
- Frankel CVC Cardiovascular Imaging Collaborative Funding Award, University of Michigan, 2018
- 2018 Crosby Basic Science Research Award, Resident Research Symposium, Department of Neurosurgery, University of Michigan



Brandon Smith, MD

- Outstanding Oral Presentation, AANS/CNS Spine Section Meeting, 2018
- Making a Difference Award, 2018



Drew Wilkinson, MD

- 2018 Chandler Clinical Research Award, Resident Research Symposium, Department of Neurosurgery, University of Michigan



Catherine Ziats, MD

- American Association of Neurological Surgeons First Place Pediatrics E-poster Award, 2018

Resident Oral Presentations at National & Regional Meetings: July 2017 - December 2018

Our resident trainees continue to be productive with respect to their research and scholarly activities. Over the past 18 months, the resident cadre has given an impressive 36 talks at national meetings across the country.

2017 American Academy of Neurological Surgery Annual Meeting Santa Barbara, CA

Todd Hollon, MD Deep convolutional neural networks provide rapid diagnosis of fresh brain tumor specimens imaged with stimulated Raman histology

Jay Nathan, MD Initiating chemoradiation within 4 weeks of index craniotomy is associated with shorter survival in high-grade gliomas

2017 AANS/CNS Section on Pediatric Neurological Surgery Annual Meeting Houston, TX

Jacob Joseph, MD Elevated markers of brain injury as a result of clinically asymptomatic high-acceleration head impacts in high school football athletes

Catherine Ziats, MD Abdominal reflex in syringomyelia is related to syrinx size, location and etiology

2017 Congress of Neurological Surgeons Annual Meeting Boston, MA

Jacob Joseph, MD Online resources provide inconsistent return to play instructions following concussion

Elyne Kahn, MD Variations in payments for spine surgery episodes of care: Implications for episode-based bundled payment

Siri Khalsa, MD Morphometric and volumetric comparison of symptomatic and asymptomatic Chiari Malformation Type 1

Brandon Smith, MD, MS Impact of expandable interbody cage devices on cervical sagittal alignment after corpectomy

Drew Wilkinson, MD Obstetric management and maternal outcomes of childbirth among patients with Chiari Malformation Type 1

2017 Society for NeuroOncology Annual Meeting San Francisco, CA

Todd Hollon, MD

• Rapid accurate intraoperative diagnosis of pediatric brain tumors using stimulated Raman histology

• Deep convolutional neural networks provide rapid diagnosis of fresh brain tumor specimens imaged with stimulated Raman histology

2017 World Molecular Imaging Congress Annual Meeting Philadelphia, PA

Luis Savastano, MD, PhD Imaging MMP-dependent proteolysis of carotid atherosclerotic plaques with laser-based angioscopy

2018 American Academy of Neurological Surgery Annual Meeting Palm Beach, FL

Luis Savastano, MD, PhD Imaging structural and biological markers of carotid plaque vulnerability with new high-resolution multimodal platform laser angiography

2018 American Association of Neurological Surgeons Annual Meeting New Orleans, LA

Todd Hollon, MD Convolutional neural networks provide rapid intraoperative diagnosis of neurosurgical specimens imaged with stimulated Raman histology

Jacob Joseph, MD Elevated TBI biomarkers after high acceleration head impact

Drew Wilkinson, MD Aneurysms in autosomal dominant polycystic kidney disease; high rates of de novo formation and screening failures

2018 AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting Orlando, FL

Jay Nathan, MD Early kyphoplasty is associated with reduced risk of persistent opioid prescribing for nearly 12,000 privately-insured patients with osteoporotic vertebral fractures

Yamaan Saadeh, MD Comparison of segmental lordosis and global spinopelvic alignment after single-level lateral lumbar interbody fusion or transforaminal lateral interbody fusion

Brandon Smith, MD, MS

• Lack of rhomboid muscle volume is associated with significantly decreased arm function in long-term followup of neonatal brachial plexus palsy

• Evaluation of patient-initiated spontaneous arm use in adults after nerve transfer for brachial plexus palsy

• Impact of expandable vs. static interbody cage devices on cervical sagittal alignment after corpectomy

2018 AANS/CNS Section on Neurotrauma and Critical Care Annual Meeting Toronto, ON

Yamaan Saadeh, MD Malpractice claims concerning traumatic spinal cord injury

2018 American College of Surgeons Clinical Congress Boston, MA

Jay Nathan, MD Persistent opioid prescribing in adult patients with spinal deformity undergoing operative or non-operative treatment

2018 American Society for Peripheral Nerve Annual Meeting Phoenix, AZ

Brandon Smith, MD, MS

• Poor patient understanding of expectations in peripheral nerve surgery is ameliorated by written surgical educational media

• The effect of fascicular composition on ulnar to musculocutaneous nerve transfer (Oberlin transfer) in neonatal brachial plexus palsy

2018 Congress of Neurological Surgeons Annual Meeting Houston, TX

David Althuler, MD, MS BDNF, COMT, and DRD2 Polymorphisms and ability to return to work in adult patients with low- and high-grade glioma

Todd Hollon, MD Rapid intraoperative differentiation of pseudoprogession and glioma recurrence using stimulated Raman histology

Jacob Joseph, MD Pupillary changes after nonconcussive high-acceleration head impacts on high school football athletes

Brandon Smith, MD, MS The correlation of ODI and the 4-question scales for pain and physical function from PROMIS

Yamaan Saadeh, MD Relationship of psoas muscle volume to survival in operative metastatic spine tumor patients

Drew Wilkinson, MD Increased rate of subarachnoid hemorrhage in polycystic kidney disease despite screening

2018 Michigan Association of Neurological Surgeons Annual Meeting Thompsonville, MI

Drew Wilkinson, MD Aneurysms in autosomal dominant polycystic kidney disease; high rates of de novo formation and screening failures

2018 North American Skull Base Society Annual Meeting Coronado, CA

Todd Hollon, MD

• Visual acuity outcome in patients with acute pituitary apoplexy after hyperacute transphenoidal surgery

• Predicting early postoperative outcomes after pituitary adenoma surgery using a machine learning approach

2018 Society for Minimally Invasive Spine Surgery Annual Forum Las Vegas, NV

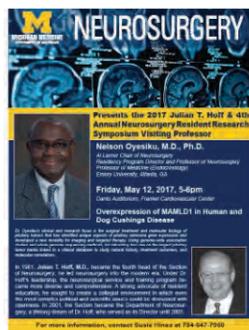
Yamaan Saadeh, MD Comparison of segmental lordosis and global spinopelvic alignment after single-level lateral lumbar interbody fusion or transforaminal lateral interbody fusion

2018 Society for NeuroOncology Annual Meeting New Orleans, LA

Todd Hollon, MD Multicenter, prospective validation of automated intraoperative neuropathology using stimulated Raman histology and convolutional neural networks

Visiting Professors 2018

Each year, the Department of Neurosurgery invites renowned guest speakers and lecturers to present on various, salient neurosurgery-specific topics. These visiting lectureships are named in honor of six U-M neurosurgeons and physicians who have helped to shape the practice of neurosurgery at the University of Michigan and beyond.



Julian T. Hoff Visiting Professor

William T. Couldwell, MD, PhD, Professor and Chair, Department of Neurosurgery, University of Utah

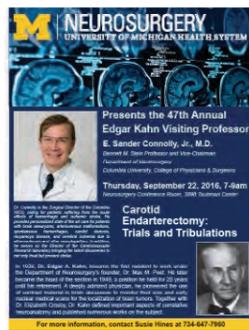
Title:
Surgery of the Paracentral Skull Base



Joan Venes Visiting Professor

Michael D. Taylor, MD, PhD, Staff Neurosurgeon, Hospital for Sick Children; Professor, Departments of Surgery and Laboratory Medicine and Pathology, University of Toronto

Title:
1) *Medulloblastoma, from Myth to Molecular*
2) *Molecular Heterogeneity as a Barrier and Opportunity in the Diagnosis and Treatment of Patients with Ependymoma*



Edgar Kahn Visiting Professor

Robert Spetzler, MD, Emeritus President and CEO; Emeritus Professor and Chair, Department of Neurosurgery, Barrow Neurological Institute

Titles:
1) *Management of Vascular Malformations*
2) *Cavernous Malformations: What Have They Taught Us?*



Saeed Farhat Visiting Professor

Shelly Timmons, MD, PhD, Professor, Vice Chair for Administration, Director of Neurotrauma

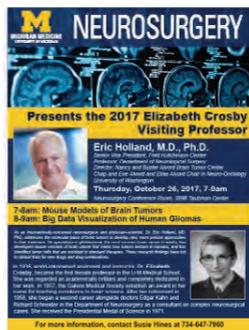
Department of Neurosurgery, Penn State University
Title: *Anti-Thrombotic Medications and Traumatic Brain Injury*



James Taren Visiting Professor

Emad N. Eskandar, MD, MBA, Jeffrey P. Bergstein Chair in Neurological Surgery, Montefiore Medical Center / Albert Einstein College of Medicine

Titles:
1) *Insights into Cognition from Intracranial Physiology*
2) *Oral Boards Style Cases*



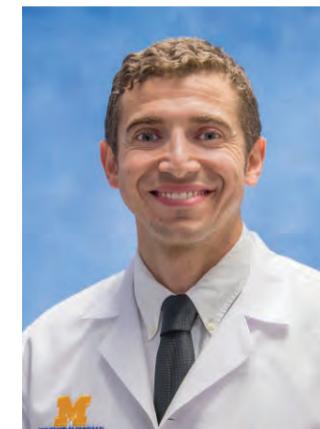
Elizabeth Crosby Visiting Professor

Robert Spinner, MD, Chair of the Department of Neurologic Surgery; Burton M. Onofrio, MD Professor of Neurologic Surgery; Professor of Orthopedics and Anatomy, The Mayo Clinic

Title: *MRI Targeted Nerve Biopsy*

FACULTY NEWS & NOTES

Promotions & Appointments



Welcome New Faculty Member, Dr. Osama Kashlan

Dr. Osama Kashlan was appointed Clinical Assistant Professor in the Department of Neurosurgery in September. Dr. Kashlan returns to the University of Michigan, where he completed his neurosurgical residency in 2017, to begin his neurosurgical career. Dr. Kashlan attended the Georgia Institute of Technology for his undergraduate studies, where he studied chemical and biomolecular engineering. He subsequently obtained his medical degree from Emory University.

He completed his residency in neurosurgery here at the University of Michigan in 2017 before returning to Emory University for further training in spine surgery. While a resident at U of M, Dr. Kashlan also obtained a master of public health degree in epidemiology. Since completing his spine fellowship earlier this year, Dr. Kashlan has returned to U of M where his practice focuses on all aspects of spinal disease with a special interest in minimally-invasive spinal surgery.

2018 Promotions

Effective Sept. 1, 2018



Anda-Alexandra Calinescu, MD, PhD, was promoted to Research Assistant Professor, Department of Neurosurgery.



Neera Chaudhary, MD, was promoted to Clinical Associate Professor, Departments of Radiology, Neurology, and Neurosurgery.



Kyle Sheehan, MD, was promoted to Clinical Assistant Professor, Departments of Neurosurgery and Neurology.

2018 Appointments



Osama Kashlan, MD, was appointed Clinical Assistant Professor, Department of Neurosurgery and Clinical Assistant Professor, Department of Orthopaedic Surgery.



Mark Oppenlander, MD, Clinical Assistant Professor of Neurosurgery, was granted a joint appointment of Clinical Assistant Professor of Orthopaedic Surgery.

Faculty Awards & Accomplishments

Maria Castro, PhD, R.C. Schneider Collegiate Professor of Neurosurgery, received the 2018 Dean's Basic Science Research Award. She was also awarded a grant from the NIH, Interactions between the tumor cells and the neuro-immune microenvironment in mutant IDH1 gliomas: implications for therapeutics, on which she is the Principal Investigator (and on which Dr. Shawn Hervey-Jumper, a former U-M faculty who is currently with UCSF, is a Co-Investigator). Dr. Castro was appointed to a 2-year term as Chair of the Clinical Neuroimmunology and Brain Tumors (CNBT) NIH Study Section, of which she has been a permanent member since 2016. She is an invited panelist for the Sunrise Session, Brain Tumor Stem Cells as Drivers of Therapeutic Resistance, at this year's SNO conference. She was appointed Chairperson of the Planning Committee and Co-Chair of the Immune Responses Symposium for 2019 ASGCT 2019 Annual Meeting, and is Chair of the annual meeting for the 2019 Translational Research Cancer Centers Consortium (TRCCC).

Emily Levin, MD, Clinical Assistant Professor of Neurosurgery, passed the oral board certification exam in November of 2017 and thus became a certified Diplomate of the American Board of Neurological Surgery (ABNS). Dr. Levin also gave a talk at the 2018 CNS Annual Meeting on data privacy in implanted neurosurgical devices.

Pedro Lowenstein, MD, PhD, Richard C. Schneider Collegiate Professor of Neurosurgery, will serve as a permanent member of the NIH Gene and Drug Delivery Systems (GDD) Study Section through 2023. He participated in the NCI Cancer Center Support Grant's Site Review of the Mayo Clinic Comprehensive Cancer Center. He was also elected to the rank of American Association for the Advancement of Science (AAAS) Fellow in 2018 for distinguished contributions to the field of gene and immunotherapies to treat malignant gliomas, particularly for translating the new knowledge into clinical trials for patients.

George Mashour, MD, PhD, Associate Dean for Clinical and Translational Research and Director of the Michigan Institute for Clinical & Health Research (MICHR), who holds a joint appointment of Professor in the Department of Neurosurgery, was elected to the National Academy of Medicine of the National Academies (formerly called the Institute of Medicine) in 2018 in recognition of his major contributions to the advancement of the medical sciences, health care and public health.

John McGillicuddy, MD, Professor of Neurosurgery, received the Meritorious Member Award – Peripheral Nerve Surgery for “dedicated service to the specialty of neurological surgery” at the 2018 meeting of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves in March.

Karin Muraszko, MD, Julian T. Hoff Professor and Chair, was voted to be the 100th President of the Society of Neurological Surgeons (SNS). She will be the first-ever female president of the SNS, which is the oldest neurosurgical society in the world. Her term will begin in 2019 and will last for one year, culminating in the 2020 SNS meeting in Philadelphia, PA.

Mark Oppenlander, MD, Clinical Assistant Professor, was accepted as a Candidate Fellow of the Scoliosis Research Society for a five-year term in October with an effective membership date of Jan. 1, 2019.

Daniel Orringer, MD, Assistant Professor of Neurosurgery, received the 2018 Dean's Award for Innovation and Commercialization.



ALUMNI NEWS

Alumni News & Notes



Nicole Bentley, MD, (2017) has been appointed Assistant Professor at the University of Alabama Birmingham and Co-Director of the Deep Brain Stimulation Program.



Robert Dempsey, MD, (1983) Manucher Javid Professor and Chairman of Neurological Surgery, University of Wisconsin School of Medicine and Public Health, was presented with the 2018 Medical Student Teaching Award in recognition of his role as an outstanding educator and mentor by the Society of Neurological Surgeons.



Arnold Etame, MD, PhD, (2012) Neurological Surgeon and Scientist, Moffitt Cancer Center, Assistant Professor of Oncology, University of South Florida, Morsani College of Medicine, passed the oral board certification exam in November of 2017 and thus became a certified Diplomate of the American Board of Neurological Surgery (ABNS).



John Feldenzer, MD, (1989), Neurosurgeon, Greenbrier Neurosurgery, Lewisburg, West Virginia, and avid fly fisherman published a paper in the Spring 2018 issue of *The American Fly Fisher: Journal of the American Museum of Fly Fishing* (Volume 44, No. 2) entitled “Bobby Doerr, Half-Pounders, the Rogue River, and a Love of Fly Fishing: Memorial to a Friend.” The piece is a memorial to Dr. Feldenzer's friend a lifelong fly fisherman, Bobby Doerr – Hall of Fame second baseman for the Boston Red Sox – who passed away in November, 2017.



Vishal Gala, MD, MPH, (2006), was appointed Chief of Neurosurgery for Kaiser Permanente of Washington in Seattle, WA in May, 2018. His department at Kaiser Permanente functions as the neurosurgical hub for the entire system throughout the state of Washington.



Steven Giannotta, MD, (1978) Chair of Neurological Surgery, Keck School of Medicine, University of Southern California, recently completed a 10-year term as Secretary/Treasurer of CAST (Committee on Advanced Subspecialty Training) under the aegis of the Society of Neurological Surgeons. Prior to stepping down permanently, he will serve CAST for one year as the delegate for Open Vascular Neurosurgery.



Shawn Hervey-Jumper, MD, (2013) Associate Professor in Residence of Neurological Surgery, University of California, San Francisco, passed the oral board certification exam in November of 2017 and thus became a certified Diplomate of the American Board of Neurological Surgery (ABNS).



David Kline, MD, (1967) Boyd Professor of Neurosurgery, Professor and Department Chairman Emeritus, Louisiana State University School of Medicine, received an award from Watauga County for his volunteer work in agriculture, sponsored by the North Carolina Agriculture Extension for Master Gardeners.



Michael Polinsky, MD, (1997) Neurosurgeon at The Brain and Spine Center at St. Luke's Hospital, was appointed Chief of Neurosurgery at Missouri Baptist Hospital in June this year.



Khoi Than, MD, (2014) Assistant Professor of Neurological Surgery, Oregon Health & Science University, received the 2018 Selby Spine Scholarship and the 2018 Scoliosis Research Society Dawson Traveling Fellowship. Dr. Than also passed the oral board certification exam in November, 2018, and thus is now a certified Diplomate of the American Board of Neurological Surgery (ABNS).



Gary VanderArk, MD, (1968) Retired Distinguished Clinical Professor of Neurosurgery, University of Colorado Health Sciences Center, was honored by Colorado Gov. John Hickenlooper for his outstanding service to the community. Gov. Hickenlooper declared May 15, 2018 to be “Dr. Gary VanderArk Day.” This honor was bestowed on the 30th anniversary of the founding of Doctors Care, an organization started by Dr. VanderArk that provides care for those living in poverty in south Denver.



William Stetler, MD, (2015), Assistant Professor of Neurosurgery, University of Alabama at Birmingham (UAB) School of Medicine, passed the oral board certification exam in November, 2018, and thus is now a certified Diplomate of the American Board of Neurological Surgery (ABNS).

U-M Neurosurgery Centennial Celebration

This year – 2018 – marked a momentous milestone for the U-M Department of Neurosurgery. This year marked our centennial anniversary and the culmination of 100 years of world-class neurosurgical services at the University of Michigan.

To commemorate the occasion, the Department hosted a three-day celebration in September, which brought together U-M Neurosurgery alumni, faculty, residents, and staff members, as well as family and friends, to remember the past, celebrate the present, and look forward to the future of U-M Neurosurgery. Alumni from all across the country and spanning the decades journeyed back to Ann Arbor to take part in the celebration.

The Centennial Celebration kicked off on Thursday, Sept. 13 with a welcome reception at the Big House and Jack Roth Stadium Club, during which guests had the opportunity to tour the locker rooms, spend time on the football field, and enjoy a performance of the Michigan Fanfare Marching Band. On Friday, Sept. 14 the U-M Neurosurgery: Past, Present, and Future Conference took place at the North Campus Research Complex. The day consisted of a series of interactive talks and presentations by alumni, faculty, and residents on the past, present, and future of the Department. We welcomed renowned neurosurgeon and New York Times bestselling author Henry Marsh, CBE, MA, FRCS, as our keynote speaker for this event.

The celebration continued on Friday evening with a gala at the U-M Museum of Art, where alumni, faculty, and residents gathered to enjoy an elegant evening with colleagues and friends. The Centennial Celebration culminated on Saturday, Sept. 15 with a tailgate at the U-M Golf Course Clubhouse, followed by a resounding Wolverines victory over Southern Methodist University on the football field.

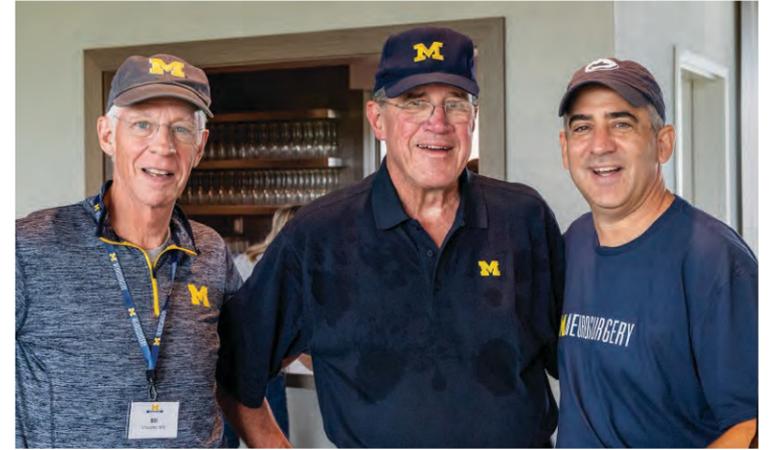
“It was an amazing opportunity to reconnect with old friends and colleagues and to show our ‘go blue’ spirit! It was fantastic to see everyone doing so well and looking hardly different from their Michigan days – perhaps a testament to the fact that neurosurgeons are a unique bunch whose lives are too busy to allow time to get old! It was fun to meet the young alumni and current residents and it is clear that they are successfully carrying the Michigan torch to even greater success and achievement! I couldn’t help but think about Dr. Hoff and how very proud he would have been to see so many of his trainees happy and healthy. There is really something special about the ongoing bonds U-M Neurosurgery alum have that I suspect are quite rare among training programs... Overall, a fantastic weekend that I will remember for a long time!”

Judy Gorelick, MD (2001)



“My wife Sue and I greatly enjoyed every aspect of the wonderful Centennial Celebration. The highlight for us was seeing all of our loyal alums making such a huge effort to return for a long weekend of celebration. It literally seemed like our past reappearing with trainees arriving from every decade of our time in Ann Arbor... There are very few neurosurgery training programs that have the privilege of celebrating 100 years and none of them have as much to be proud of as we do at Michigan.”

William Chandler, MD (1977)



Welcome to U-M Neurosurgery!

The Department of Neurosurgery welcomed a number of new staff members this year. Take a moment to get to know your new colleagues.



Jenny Bell, Clinical Research Project Manager

Jenny joined the Department as a Clinical Research Process Coordinator in October. She came with 14 years of clinical research experience at Michigan Medicine in Dermatology. Outside of work she enjoys traveling, barre class, and spending time with friends and family.



Lesley Boley, Call Center Representative

Lesley joined the Department as a Call Center Representative in May. She came to Michigan Medicine with many years of varied work experiences, including time as a dental assistant, manager of a computer store, and preschool teaching assistant. Lesley has 12-year-old twins – a boy and a girl – who keep her quite busy outside of work with extracurricular activities.



Ericka Brunson-Gillespie, DNP, NP

Ericka joined the Neurosurgery Spine staff as an inpatient nurse practitioner in April. Previously, she was a registered nurse in Interventional Radiology. She has been at Michigan Medicine for 13 years and was recently elected as the American Association of Nurse Practitioners State Representative for Michigan. She enjoys mentoring nurses while they further their education. Ericka's hobbies include traveling and volunteer work.



Amanda Gomez, Patient Services Assistant

Amanda joined the Neurosurgery Adult Clinic staff as a Patient Services Assistant in February. She came with five years of experience in the medical field, including managerial experience at Serenity Hospice in Ann Arbor. Amanda has two young sons and enjoys golfing, cooking, and reading.



Mallory Hendges, Medical Assistant

Mallory joined the Neurosurgery Adult Clinic staff as a Medical Assistant in April. Prior to joining the Department, she worked as a patient aide at Mott Children's Hospital for three years. She is expecting her first child in January and will be getting married in June, 2019. Outside of work, Mallory enjoys baking and spending time outdoors.



Carissa Miller, Patient Services Intermediate

Carissa joined the Department in March and provides administrative support to Dr. Oppenlander. Prior to Michigan Medicine, she worked in the dental field as a chairside and administrative assistant. Carissa earned her bachelor's degree in Health Administration from Eastern Michigan. She is a proud wife and "dog mom," and enjoys watching sports, completing DIY crafts, and home decorating.



Nicole Schwartz, Patient Services Assistant

Nicole joined the Department in December of 2017. In her role as Patient Services Assistant in the Adult Clinic, she manages all the patient imaging and provides occasional support to the front desk staff. Prior to joining Michigan Medicine, she worked as an ER registration clerk at Promedica. Nicole holds a bachelor's degree in Business Administration from Eastern Michigan. Outside of work, she enjoys movies, going up north, and spending time with her husband and son.



Aisha Simms, Patient Services Intermediate

Aisha joined the Department in October and provides administrative support to Dr. Pandey. Prior to joining the Department, she spent a year in Pediatric Surgery and Urology. Aisha attended the University of Detroit-Mercy and enjoys traveling. She is also a huge Michigan football fan and can often be found at the Big House cheering on the Maize and Blue.



Samantha Stevenson, Call Center Representative

Samantha Stevenson joined the Department in November as a Call Center Representative. She has several years of experience in customer service. Outside of work, Samantha enjoys spending time with her nieces and nephews, trying new restaurants, and karaoke. She is also planning her wedding, which will take place in September of 2020.



Melanie Ward, Medical Assistant

Melanie joined the Adult Clinic staff as a Medical Assistant in December of 2017. She brought with her more than 10 years of experience in various health care settings. Melanie holds an Associate's Degree from Washtenaw Community College and has completed two years of nursing school; she aims to finish her nursing degree and continue working at Michigan Medicine in the future. Melanie has a two-year-old daughter and enjoys camping and traveling.



Katherine Wood, Research Process Coordinator

Katherine joined the Department in October as a Research Process Coordinator. She brought to this role 26 years of experience in various administrative and grants management positions. She recently received her Certification in Research Administration. Prior to joining the Department, she served as Research Process Coordinator for the College of Engineering. Outside of work, Katherine enjoys traveling, fishing and spending time with her husband and two daughters.

Notable Retirements in 2018



Peggy Hoag

After 45 years of outstanding service to Michigan Medicine – 39 of which were in the Department of Neurosurgery – Peggy Hoag retired in September this year. Peggy's role as an administrative assistant in the Department of Neurosurgery spanned three department chairs (there have only been a total of five in the Department's 100-year history). During this time, Peggy provided expert support to numerous faculty members, including Dr. Chandler until his retirement and Dr. Sullivan.

A retirement luncheon was held in honor of Peggy's outstanding career in the Department of Neurosurgery in September. Additionally, an annual staff excellence award was named in Peggy's honor this year. The "Peggy Hoag Staff Excellence Award" will henceforth be given annually to a staff member for outstanding service and performance. Peggy was the inaugural recipient of this award this year and was presented with it at the U-M Neurosurgery: Past, Present, and Future Conference, which took place during the department's Centennial Celebration in September. The Department is grateful for Peggy's outstanding service these last 39 years.



Helen Bauer

Helen Bauer – the Department of Neurosurgery's first inpatient nurse practitioner – retired in March this year. Helen joined the Department of Neurosurgery in 2006 and pioneered the inpatient NP role. She enjoyed teaching and served as a mentor to many of the NPs who joined the department after her.

Outside of work, Helen enjoys traveling and spending time at her cabin in northern Michigan. She also enjoys creating glass art (mosaics and pendants), as well as orchestra and opera music; in fact, she frequently ushers at several local theaters.

After a long and successful nursing career, Helen is enjoying having more time for these hobbies in retirement, as well as more time to travel and spend time with family.



Elvie Casper

Elvie Casper, former Neurosurgery Service Lead in the Main OR, retired from Michigan Medicine in October this year. Elvie joined Michigan Medicine in February of 1998 and shortly thereafter began working with Neurosurgery in the OR. She was first a staff nurse, then Service Educator, then Service Lead – a role she held for six years leading up to her retirement.

This year, at the Chief Resident Graduation Dinner in June, Elvie was honored with the 2018 "Friend of Neurosurgery Award," which is given each year to an individual outside of the Department who has been instrumental in teaching our neurosurgical residents.

Congratulations!

DEPARTMENT FEATURES

New Children's Book & Stuffed Animal Comfort and Inspire Pediatric Patients with Neonatal Brachial Plexus Palsy

A new book entitled *Off He Goes!* and a stuffed elephant named *Wimbo* are helping reassure Michigan Medicine pediatric patients that they are not alone in their journey with NBPP.

"The journey of a thousand miles begins with one step." So began the journey to illustrate, write, and publish a children's book about Wimbo – a whimsical elephant with Neonatal Brachial Plexus Palsy – for the pediatric patients of the Michigan Medicine Brachial Plexus and Peripheral Nerve Program.

It all started with a unique holiday gift.

Dr. Susan Brown, Arthur F. Thurnau Professor and Associate Professor of Kinesiology at the U-M School of Kinesiology, had enjoyed collaborating with the faculty and staff of the Brachial Plexus and Peripheral Nerve Program throughout 2017, so a thoughtful holiday gift seemed in order. With a desire to find a memorable gift, Dr. Brown considered contributing to a charitable cause on behalf of the Brachial Plexus Program.

A friend came to mind who had recently sponsored an orphaned elephant through the **David Sheldrick Wildlife Trust**.

Dr. Brown took a chance and decided this might be the right gift for her BPP colleagues. However, after a month passed with no response from anyone in the Brachial Plexus Program, she wasn't so sure. Fortunately, the cause for delay was a lack of awareness, not interest. "The email notification had gone to our generic 'BP Clinic' email inbox and had been totally overlooked," explained Dr. Lynda Yang, Professor of Neurosurgery and Director of the Brachial Plexus and Peripheral Nerve Program.

Once Dr. Yang and her team learned that an orphaned elephant had been sponsored on their behalf, they soon began to enjoy weekly updates about the elephant's well-being, activities, and child-like antics. A month later while traveling home from a conference in February, 2018,

Dr. Yang was on a flight and found herself watching a documentary about the ongoing efforts in Africa to save orphaned elephants. She then found another way to occupy her time – sketching cartoon-like elephants using a drawing app on her phone. Somewhere between the documentary and electronic sketches, the idea for a children's book for her neonatal brachial plexus patients was born.

Dr. Yang didn't waste any time in exploring the possibility of making this idea a reality. She called Don Tomford, Chief Department Administrator, Radiation Oncology, and formerly that of Neurosurgery, on the way home from the airport to see whether his wife, Sue – a retired teacher and grandmother of seven – might be interested in writing the book. Sue was reluctant at first and turned down the offer; a night of sleep changed her mind, however.

"The next morning, I was texting Dr. Yang at 6 a.m. telling her that Sue wanted to write the book after all," Don explained. On that very day, Sue sat down to write the story of Wimbo, Swahili for "song," and within just a few hours, the first draft of *Off He Goes!* was complete. The story chronicles Wimbo's daily activities with Neonatal Brachial Plexus

Palsy. Despite having NBPP, Wimbo participates in many activities throughout his day: he gets himself dressed, eats breakfast, rides his scooter, swims, eats ice cream, dances, builds a fort, reads a book, goes to sleep, and dreams of the fun day he had.

With a completed draft of the story, Dr. Yang began working on the illustrations. She created the electronic drawings of Wimbo while Yuochyung Lin – her mother and a professional artist – painted the background watercolor illustrations.

Dr. Cormac Maher, Professor of Neurosurgery and Michigan Medicine Pediatric Neurosurgeon, suggested that Wimbo have a "Brachial Plexus arm" so that children with this same condition could relate to him that much more.

Each drawing of Wimbo shows a different deficit that children with NBPP might experience.



During the early summer months of 2018, the story and illustrations were finalized, and the publishing process began. Dr. Yang enticed Jason Colman, Director of The University of Michigan Press, and Patrick Goussy, Senior Digital Publishing Coordinator, to publish both the hard copy and electronic versions. Subsequently, Don secured funding through Loree Collett, former Associate Hospital Director of Mott Children's Hospital, to support the project.

The idea to accompany the book with a stuffed animal version of Wimbo was born at this time as well. Multiple prototypes were created until Wimbo was just right: 1,800 copies of the book were printed, and 630 stuffed animal versions of Wimbo were hand-made. The books and stuffed animals were delivered to Dr. Yang and her team in late November, at which time they began distributing them to their patients.

"The whole goal of this project has been to help our patients," Dr. Yang said. "Because Neonatal Brachial Plexus Palsy is relatively uncommon, our patients can sometimes feel like they are alone or can't do anything, but that is not the case. Wimbo is meant to show them that they can do anything that other kids can do. Wimbo is just like them."



Born from one family's passion for Kenya and its wilderness, the David Sheldrick Wildlife Trust is today the most successful orphan-elephant rescue and rehabilitation program in the world and one of the pioneering conservation organizations for wildlife and habitat protection in East Africa.

sheldrickwildlifetrust.org

Neurosurgery's Brain Tumor Support Group Celebrates 25 Years



The U-M Department of Neurosurgery's Brain Tumor Support Group celebrated its 25th anniversary this year. For 25 years, this support group has served as a lifeline to many of our brain tumor patients, providing invaluable support at a very scary time in their lives. The group was started in 1993 by Michaelyn Page (now retired), who was a clinical nurse specialist in Neuro-Oncology. The support group meets on the third Tuesday of each month and

holds an annual picnic for members and their families in June, as well as a holiday party each December. Many group members also participate in a 5K fundraising walk each May sponsored by the American Brain Tumor Association. Charlotte Gunden, NP, has been working with the group for 23 of its 25 years in existence, and Liz Walkowiak, NP, has worked with the group for the last 10 years.

Group member Tim Egan is an 8.5-year survivor of Stage-4 GBM. He was a student at Michigan State University when he was diagnosed with a brain tumor that ultimately led to blindness. Here, he shares about his experience and involvement with the Brain Tumor Support Group.

I first got involved with BTSG when I attended a holiday dinner in December of 2011. The group helped me to build a new identity that included strength and survivorship amidst a sense of belonging. I reached a point where I was starting to help others and ended up co-facilitating the group for a couple of years. This experience led to my Master of Social Work degree from U of M and a passion for Psych-Oncology. At this point, everything I do is to help patients and families whose brain tumor experiences have begun more recently. With that said, helping others assures that my own brain tumor experience will not end until I've turned it into what I want it to be... a positive rebound full of purpose and growth.

Advanced Technology Helps 19-Year-Old Recover from Massive Stroke

How a cutting-edge procedure known as endovascular thrombectomy resulted in a Michigan woman's remarkable stroke recovery.

When 19-year-old Kristen Jeffries had a massive stroke while driving, she could have died or been severely disabled. But advancements in science, coupled with her determination to persevere, ultimately led to a positive outcome.

Jeffries' ordeal began on a cold January morning as she made her way to class at her community college. Jeffries remembers feeling a bit disoriented as she drove along the highway, eventually veering off the road and hitting a mile marker as she lost consciousness. She recalls going in and out of consciousness as she tried to grasp what was happening to her. Unable to move her left leg and arm, sheer determination enabled Jeffries to drive her car to the next exit, where she parked on the shoulder.

The Howell, Michigan, resident found her cellphone and called her mother, but her words were incomprehensible. When Jeffries' father called minutes later, she was able to utter the highway exit number on a nearby sign. Fifteen minutes later, emergency responders were at her car door along with the familiar face of her father. With stroke-like symptoms, Jeffries was rushed to the nearby Michigan Medicine emergency room, where neurosurgeon Aditya S. Pandey, MD, and the stroke team were assembled. The diagnosis was a massive ischemic stroke. "Jeffries' case is remarkable and extremely rare because she is so young," says Pandey. "She was paralyzed on her left side and was unable to speak or understand due to a blood clot that was blocking the main blood vessel going to the right side of her brain."

Ischemic stroke is the most common form of stroke affecting nearly 1 million people in the U.S. annually. Symptoms often include drooping of the face, difficulty speaking and weakness or numbness of the arm or leg—all warranting a call to 911.

Removing the clot

As Jeffries would discover later, she was brought to the right place for treatment. The University of Michigan is a designated Comprehensive Stroke Center providing the most advanced medical and surgical therapies available. In her case, endovascular thrombectomy, a minimally invasive surgical method to trap and remove debilitating blood clots with technology known as a stent retriever, would prove to be a lifesaver.

Pandey's team immediately prepared Jeffries for surgery and successfully removed the clot soon after her arrival, which restored critical blood flow to the brain. "An endovascular thrombectomy was performed while she was awake, and improvement in her condition could be appreciated within minutes of the procedure," Pandey says.



The stroke's cause

Although inconclusive, the cause of Jeffries' stroke may have been a clot that originated in her heart due to a cardiomyopathy condition. As a 3-year-old, Jeffries was diagnosed with a rare form of cancer known as Ewing sarcoma in her left chest wall. She underwent chemotherapy and radiation treatments in 2003, which led to chemotherapy-induced cardiomyopathy. "Cardiomyopathy prevents the heart from pumping with force, often leading to the formation of clots that can travel to the brain blood vessels and cause devastating strokes," says Pandey.

An endovascular thrombectomy involves inserting a catheter into an artery in the leg or arm, says Pandey. "Through that, we thread another catheter up to the location of the clot. Then we pass a stent through the catheter into the clot. The stent 'traps' the clot, and the stent and clot are then pulled out together through the catheter." Jeffries remembers feeling better almost immediately after the procedure. "I could talk and move my left arm and leg again," she says.

Although she will likely remain on blood thinners for the rest of her life, Jeffries is back to a routine that includes running and strength training. She's also determined to return to college for a degree in psychology. Pandey credits scientific advancements, including endovascular thrombectomy, in helping thousands of stroke patients like Jeffries live independent lives. In the past, he says, "Such strokes would have disabled patients for the remainder of their lives."

For more patient stories, please visit michiganhealthblog.org.

Know the Symptoms and Risk Factors of Brain Aneurysm, Survivor Urges

Donna Poole considers herself fortunate after surviving a brain aneurysm. To help others learn from her experience, she's working to spread knowledge.

Six years ago, Donna Poole was diagnosed with a brain aneurysm during a follow-up exam for a stroke she had suffered three years earlier. Due to unusual symptoms, including pain behind her right eye and ocular migraines, Poole was referred by her family doctor to a specialist who discovered the aneurysm. Michigan Medicine neurosurgeon B. Gregory Thompson, MD, performed surgery to "clip" the aneurysm. During surgical clipping, small metal clips are placed around the base of the aneurysm, essentially depriving the aneurysm of its blood supply and preventing rupture. Poole was cleared to go home two days later.

Since then, the 70-year-old has remained a diligent promoter of brain aneurysm awareness—not only during Brain Aneurysm Awareness Month each September, but every chance she gets. She feels a responsibility to represent other brain aneurysm patients, especially those whose outcomes weren't as fortunate. "I speak for those whose lives ended with a ruptured aneurysm," Poole says. "I speak for those who lived but can no longer talk, read, write, walk or see. I speak for caregivers too weary to talk in any language but tears. I speak for you, because yours may be the next voice silenced."



Her message: "Know the risk factors and warning signs of a brain aneurysm."

For more patient stories, please visit michiganhealthblog.org.

Signs of a brain aneurysm

A brain, or cerebral, aneurysm is a bulging, weak area in the wall of an artery that supplies blood to the brain. In many cases, a brain aneurysm causes no symptoms and goes undetected until it ruptures.

Individuals experiencing some or all of these symptoms of a ruptured brain aneurysm should seek immediate medical attention:

- Sudden, severe headache that differs from past headaches
- Neck pain
- Nausea and vomiting
- Sensitivity to light
- Fainting or loss of consciousness
- Seizures
- Sudden pain above & behind the eye

Brain aneurysm risk factors

Several factors are known to contribute to a brain aneurysm:

- Family history of brain aneurysms
- Personal history of aneurysm
- Female gender
- Black or Hispanic race (with nearly twice the rate of rupture as whites)
- Cigarette smoking (in addition to being a cause of high blood pressure, smoking may greatly increase the chance of aneurysm rupture)

About 30,000 brain aneurysm ruptures occur each year in the U.S., according to the Brain Aneurysm Foundation. Roughly 40 percent of these cases are fatal, and 4 out of 7 survivors have disabilities.

Life after brain aneurysm

Poole feels she was one of the lucky ones. The Hillsdale, Michigan, resident is happy to talk — even joke — about her experience. "Dr. Thompson left 13 pieces of hardware in my head, including three clips," Poole says.

Still, she remains grateful. "During Brain Aneurysm Awareness Month, as I diligently put the facts on my Facebook profile - one in 50 will have a brain aneurysm - I thank God for Dr. Thompson, the big surgeon with a big heart."

Positivity & Family Inspire Post-Brain Tumor Recovery

Constant headaches brought a mother to Michigan Medicine, where a brain tumor was removed. Now, she's back on her feet.

It's a busy fall for Rebekah Cobbin. She's sending her daughter, Amilyah, off to third grade, starting a new semester of business courses, working as a vault teller for an armored car company and, as always, making plans for quality time with her family and church.

Imagine doing it all with a constant headache. That was once a reality for the 30-year-old Cobbin, who spent much of her 20s in pain and confusion. "I did everyday life with a migraine," she says. That pain was amplified by uncertainty of what could be causing the draining headaches that were harder and harder to treat with medication, and then the knowledge that Cobbin would eventually need surgery to treat the cause—a benign brain tumor.

Steadfast in her faith, the Westland, Michigan, resident refused to let her health struggles derail her college journey and her devotion to her daughter, as her Michigan Medicine care team monitored the brain tumor over time.

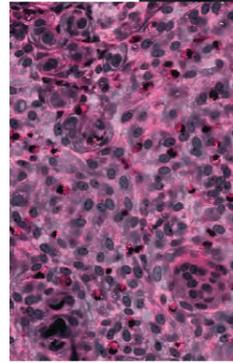
Watchful waiting

When she first came to Michigan Medicine in 2016 after being told she couldn't be operated on, Cobbin learned that her noncancerous tumor was stable. "It always looked benign to us, like a meningioma," says her neurosurgeon, Daniel Orringer, MD. "Generally, we like to wait and watch that type of tumor instead of putting a patient through surgery right away because some are really slow-growing."

Meningiomas are the most common types of brain tumors. Cobbin's was located in a difficult part of the brain to access: Fibers essential to her vision and motor function were right over the tumor, Orringer says. The patient returned to Ann Arbor every few months so Orringer could check whether the tumor had grown. By the spring of 2018, the tumor was the size of a plum, and imposing enough to warrant a conversation about surgery. "It seemed to be growing slowly but surely and earlier this year we decided, given the slow but steady growth, to take it out," Orringer says.

Moving forward with surgery

Cobbin had to drop her semester of business courses and start getting ready for surgery. Orringer was able to remove the entire tumor, using advanced imaging methods to determine the safest approach. A minimally invasive approach called a tubular retractor allowed him to access and remove Cobbin's tumor while minimizing damage to other parts of the brain.



Cobbin's tumor exhibited typical characteristics, including whorls – circles of cells that wrap around each other and ultimately calcify.

"The tumor was sitting in one of the hollow cavities of Rebekah's brain, expanding the cavity and pushing the brain around to the side. As we removed the tumor, we started to see the brain coming back into its normal shape and position." "It was a very deep-seated tumor, but she's having a good recovery and her prognosis is good," he says. "The risk of recurrence is very low, and Rebekah's brain should continue to recover. She's gone through a major operation and is now returning to a good quality of life." The morning after her 6-hour surgery in April, Cobbin says she surprised her care team when they found her walking around the halls of the hospital. "I told the doctor: 'I've got stuff to do! I've got no choice but to recuperate!'" she recalls, with a laugh.

Life without a migraine

Just months after her procedure and rehabilitation, Cobbin is getting back to living and loving her crazy schedule, with a few modifications. "Dr. Orringer told me that I might forget some things, and I also had some floaters in my right peripheral, but it's all getting better with time," she says. "It's been a challenge, but I have great people on my team, as far as the U-M staff, and my whole family was praying for me." Cobbin still has slight headaches, but not every day. What hasn't changed is the positive attitude that has gotten her through every trial along the way. Says Cobbin: "Gosh, it feels really good just to live life without a migraine!"

For more patient stories, please visit michiganhealthblog.org.

Laser Ablation Ends 12-Year Journey with Epilepsy

Rob Coleman had to sacrifice a lot while dealing with seizures, but after a successful laser ablation, the computer programmer is done planning around his epilepsy.

After 12 years, Rob Coleman is breaking up with his neurologist. The Michigan Medicine patient is also back to being his own chauffeur, letting his teenage son off the hook. Coleman, 44, hasn't had a known seizure in more than a year, since his July 2017 laser ablation for temporal lobe epilepsy. And as he tapers off his final seizure medication this winter, it's back to a full life that had been interrupted for more than a decade.

12 years of accommodations

In 2006, Coleman's wife, a nurse, realized something might be a little off. "She noticed when I was talking, all of a sudden I didn't know what to say or didn't understand an easy question," Coleman remembers. Three to four times a month, he was slipping into a state of confusion, which lasted around 30 seconds to a minute. It felt like he couldn't understand what was happening, even though he could tell someone was talking to him. "Then I'd come back, and say, 'wait a minute...'" he says.

Coleman started seeing a neurologist and tried a couple of different medications. He was told not to drive until he could count six months without a seizure, which never happened. So his eldest son, a newly-licensed driver at the time, became the second driver in the family. And Coleman's longtime employer agreed to let him start working from home. He remembers: "At first it was a little disheartening, thinking, 'I have to do all this, I have to live with this, and I'll be taking medications forever...'"

Open brain surgery for epilepsy didn't appeal to him, so the Colemans settled into this adjusted lifestyle until they learned about a newer, less invasive treatment option that's performed in an MRI suite. Laser interstitial thermal therapy, LITT for short, uses a beam of targeted heat to destroy the portion of a patient's brain causing the seizures, allowing the surgeon to remove a seizure focus with pinpoint accuracy. Preserving his memory, IQ, and other brain functions was essential.

"The cognitive outcomes after laser ablation are better compared to what we see with open brain surgery because it's restricted to the surgical site," explains Coleman's neurologist, Nusha Mihaylova, MD, PhD, Assistant Professor of Neurology at Michigan Medicine. LITT also requires less recovery time than a craniotomy, but may offer a slightly lower chance of stopping seizures completely. A traditional temporal lobectomy is still possible later if LITT isn't curative. "Our goal with any surgery for epilepsy is the best chance of stopping the seizures without a patient noticing a difference in how their brain works," explains Coleman's Michigan Medicine neurosurgeon, Emily Levin, MD.



A chance to stop the seizures

It had been a while since Coleman could drive, and he was still working from home, so he and his wife decided to see if LITT would stop his epilepsy and get him back to his former, pre-seizure lifestyle. "I thought, if the worst that could happen is the seizures are still there, I at least tried," Coleman says. "If it works, everything's great, if not, I haven't really lost anything." Levin, Assistant Professor of Neurosurgery at Michigan Medicine, started planning his LITT procedure. Because all brains are different, so are all brain surgeries.

"Rob's seizures were coming from the left temporal lobe," Levin explains. "We also had to figure out where his speech and memory functions happen." She plotted a route to the source of the seizures that wouldn't damage those normal areas of Coleman's brain. Coleman was asleep, getting MRIs throughout the day, while Levin operated on his brain for about an hour, only making an incision smaller than a quarter-inch. He was home the next day, resting for a couple of weeks, and back to work in his home office the next month.

Year One without a seizure

The epilepsy team tests patients after surgery to determine their risk for future seizures. "The tests didn't indicate Rob was at risk for seizures anymore," Mihaylova says, "so we gradually started reducing his medications. We were able to stop one, and we are now tapering the second." Along with a lack of seizures, Mihaylova says Coleman's doing great in terms of cognitive function: concentration, paying attention, problem solving, and other key tasks for a successful professional, and a husband and father, in the prime of his life.

For more patient stories, please visit michiganhealthblog.org.

New Algorithm Decodes Spine Oncology Treatment

Experts explain their approach to treating patients who are living longer with cancer that has spread to the spine, as the options for metastatic spine tumors increase.

Any kind of cancer can spread to the spine, yet two Michigan Medicine physician-scientists who treat these patients describe a scarcity of guidance for effectively providing care and minimizing pain. Daniel Spratt, MD, and U-M neurosurgeon Nicholas Szerlip, MD, co-founders of U-M's multidisciplinary spine oncology clinic, recently led a study, published in *The Lancet Oncology*, that provides a guide to the management of spinal metastases on the basis of a review of 243 existing studies on the topic.

First-author Dr. Spratt says spinal metastases are commonly managed without integrated care. A patient might see a variety of subspecialists. Recommendations could range from pain management to aggressive treatment, and referring providers don't always know whether or when a referral to spine oncology experts may be necessary. "Spine oncology is such a multidisciplinary pathology," says senior author Dr. Szerlip. "We wanted to form a transparent understanding so everyone, from the oncologists and primary care providers to fellow neurosurgeons who aren't specifically trained on this, could lean on one algorithm in language we can all understand."

Spratt describes the algorithm, a report from the researchers' new International Spine Oncology Consortium, as a step-by-step method designed to help comprehensively manage these patients, as their numbers and life expectancies increase; the goal is to help providers treat the patient and not just the tumor. "Most of the frameworks that have been available prior to this have focused on just surgery or just radiation," Spratt says. "This algorithm integrates all of the specialties together, including PM&R, radiology and medical oncology, to provide a much more personalized treatment approach."

A different approach

Cancer can spread widely through the body, but spinal metastasis throws a wrench in typical treatment plans because of the sensitivity of the spinal cord. Quality of life can worsen much faster. "A spine metastasis causes a lot of pain," Dr. Szerlip says. "People can live with metastases in other areas of the body without much discomfort, but bone pain hurts a lot, and the ability to treat a tumor near the spinal cord is less. Surgeries on other bones are much easier than surgeries on the spine, and less morbid." A popular treatment path is surgical decompression of the tumor, followed by radiation to control the cancer. Spratt is particularly excited about offering spine stereotactic body radiotherapy (SBRT), a form of high-dose radiation that requires just one to three treatments. Conventional radiation results in only about a 50 percent reduction in pain three months after treatment, and the cancer is eliminated for only a short time. Spratt says spine SBRT shows greater than 90 percent pain reduction and more effective control of tumor growth beyond one year.



Patients are living longer

"If you look back 10 or 20 years, you'd see people with spine metastasis lived in the order of months," Dr. Spratt says. "Now, with new systemic therapies, targeted therapies and immunotherapies, it may be years." That means there is more opportunity to treat the cancer in a spine oncology clinic, to manage the patient's comfort and to prevent painful and debilitating compression that can result from a tumor pressing on the spinal cord.

Szerlip says not long ago, physicians were much less likely to send a spinal metastasis patient to a neurosurgeon because of the high morbidity of surgeries. Now, he says, spine oncology clinics can offer additional options and surgical procedures with less morbidity than in the past.

A long-term project

The algorithm that leads to these treatment decisions takes the user through a series of steps starting with an assessment of life expectancy. Then, the systemic burden of the disease is considered, followed by a calculation of how controlled the disease is, and then a consideration of systemic treatment options. However, Szerlip says much more data are needed to continue to develop best practices and prove that current efforts are most effective. "Identifying which patients should get these treatments is also difficult," he says. The researchers are working with oncologists to help determine who will live long enough to benefit from these procedures.

He says basic science research will play an important role in the continued development of treatments for spine metastases, because they develop differently than other metastases.

Reference for the spinal metastases study: Spratt DE, Beeler WH, de Moraes FY, et al. An integrated multidisciplinary algorithm for the management of spinal metastases: an International Spine Oncology Consortium report. *Lancet Oncol.* 2017;18(12):e720-e730.

For more research stories, please visit
michiganhealthlab.org.

Football Head Impact Raises Biomarkers for Brain Injury

Even without symptoms of concussion, researchers studying high school football players found two elevated biomarkers that are associated with brain injury.



Jacob Joseph, MD

After a head-butting during high school football, coaches or athletic trainers talk with the athlete and determine if the player will sit out the rest of the game. But a new study shows this might not be enough. "In high school football players, there is biochemical evidence of brain injury after a single high-impact hit to the head, even when the athlete is asymptomatic," says Jacob Joseph, MD, a neurosurgery resident at Michigan Medicine and lead author of a new study in the *Journal of Neurosurgery*.

The study is the first to show an association between biomarkers for brain injury and a high-magnitude head impact that does not result in a diagnosable concussion. The finding is important because millions of kids play high school football, and prior research shows less than half reported their symptoms after a head injury. Continuing to play after an undiagnosed and untreated concussion can negatively affect academic and job performance. The study involved 11 varsity high school football players who wore helmets equipped with accelerometers. When the helmets detected a high-acceleration head impact, the information was transmitted to a computer on the sidelines. After that impact, a blood test was taken. In addition, blood tests were taken at the start and end of the football season. Researchers found a 740 percent increase in ubiquitin C-terminal hydrolase L1 (UCH-L1), a biomarker of neuronal injury, and a 500 percent increase in the tau biomarker for axonal injury. After the last game of the football season, the same markers were still increased, albeit at lower levels, among those athletes. Interestingly, the two biomarkers also increased in other players who did not have a high-acceleration head impact—UCH-L1 240 percent, and tau 160 percent.

"We don't know if the elevation was a result of participation in football or running around the field wearing helmets. In addition, we don't know how much a biomarker has to go up for it to be bad," says Steven Broglio, PhD, ATC, associate professor of kinesiology and senior author. "We're trying to understand how biomarkers work and which ones work at certain points of time—two hours post-injury or three days post-injury," Broglio says. "Plus, not everyone responds in the same way to concussion. In addition, we haven't compared the biomarkers in other athletes, such as swimmers, who don't have high-impact blows to their heads." Broglio cautions that it is too early to diagnose brain injury based on just these two biomarkers. "We don't think it will be a single biomarker or combination of five biomarkers. There may be a dozen biomarkers for brain injury."

Key takeaways

In the meantime, coaches and athletic trainers are advised to play it safe and consider sidelining the athlete who takes a big hit for the rest of the game. "We see evidence that those big hits, obvious to everyone in the crowd, may cause problems," Joseph says. Also, large-scale prospective trials are needed that look at the whole host of biomarkers, the profile for each and which can be used at which time points. Greater understanding about brain injury biomarkers could lead, for example, to a point-of-care device that could be used on the sidelines to take a blood test.

Reference for the biomarker study: Joseph JR, Swallow JS, Willsey K, et al. Elevated markers of brain injury as a result of clinically asymptomatic high-acceleration head impacts in high-school football athletes. *J Neurosurg.* 2018;1-7. PMID: 29966462. doi: 10.3171/2017.12.JNS172386.

For more research stories, please visit
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Clinical Trial Support Unit (CTSU) Update

The Department of Neurosurgery was joined with the departments of Neurology and Dermatology to create the Neurosciences and Sensory (NSS) CTSU in 2016. Our CTSU has now been up and running for two years and is fully operational. We offer pre-award support, post-award support, trial coordination, data acquisition and management, regulatory support, statistical support, and publication support. The Neurosurgery support unit consists of the following individuals: Dr. Parag Patil, CTSU Medical Co-Director; Karen Sagher, Manager and Clinical Study Coordinator; Jenny Bell, Clinical Study Coordinator; and Katherine Wood, Pre/Post award. Additionally, Donna Gauss, Research Process Senior Manager in the Crosby Lab, and Angela Collada, Research Administrative Specialist in the Castro-Lowenstein Lab, provide Pre/Post award support in certain instances. Katherine Keeley serves as the NSS-CTSU Administrator, overseeing the unit's business operations. Both Jenny Bell and Katherine Wood are new additions to the team as of 2018 and bring great knowledge and expertise to the CTSU.

Please contact Dr. Patil for additional information regarding the NSS-CTSU or visit clinicaltrials.med.umich.edu for additional information on the various CTSUs across the institution.

PHILANTHROPY & OUTREACH NEWS

Why We Give: Donor Spotlight

Dave and Kate Moore donate to the Pediatric Brain Tumor Research Fund each month in memory of their son, Jake, who passed away in 2011 at age 13 from an ependymoma. They give because they are extremely grateful for the care they received while Jake was undergoing treatment at Mott. It is their goal and life-long commitment to support research aimed at finding a cure to this devastating form of cancer, so that other children and families don't have to face the same challenges that they did. "Are there other things we could be doing with our time or money? Certainly, but this is what Jake would want. It's a way to honor and remember him, and this is absolutely what he would want us to do," says Dave.

The family consistently keeps the Department of Neurosurgery in mind when interacting with friends and family, even providing giving information at birthday parties and funerals. "If there's some small way we can help improve others' experience and care, that's what we want to do," says Dave. Kate agrees, saying, "We give knowing Jake would be proud of us, and that's important to us. He was a very logical and unselfish person, and this is what he would want. He had a deep love for the University of Michigan and we hope that with these funds, people receive the same level of care – or even better – than he received."

The Moore family supports innovative pediatric brain tumor research in the Department of Neurosurgery, which is spearheaded by department chair Karin Muraszko, MD. This research focuses on immunotoxin therapy for brain tumors, the biology of brain tumors, developing additional therapeutic strategies to target cancer stem cells in brain tumors, and technology to help surgeons visualize cancer cells and accurately distinguish between tumor and normal tissue during surgery. When reflecting on giving as part of the healing process, Dave says, "This becomes a light for you. It was definitely a guide out of a terrible time for us and showed us that there is purpose. The more money you can give, the brighter that light gets."



Centennial Celebration Campaign

The Department of Neurosurgery has pushed the boundaries of medicine to provide better treatments and produce positive outcomes for patients for 100 years. This year, as we celebrated U-M Neurosurgery's Centennial anniversary, we also launched the Centennial Celebration Campaign, which has been focused on fundraising for resident education and wellness.

As a result of our fundraising efforts, we are pleased to announce the creation of four resident sponsorship funds, which will support a specific resident's equipment, education, and research needs.

- Drs. Rodolfo & Lily UyHam Resident Education Fund
- Joseph & Irene Muraszko Resident Education Fund
- Jen & Chris Fox Family Resident Education Fund
- Prem Swarup & Vidya Vati Chawla Resident Education Fund

If you would like to learn more about these initiatives or are interested in making a gift to support the program, please contact our development officers. Thank you for celebrating this incredible milestone with us. We look forward to seeing what we can accomplish in the next 100 years as our amazing team of physicians, scientists, administrators, donors, alumni, and friends all continue working together to change the landscape of neurosurgery.

Connect with the Development Team

The Michigan Medicine Office of Development supports the fundraising priorities of faculty and staff with the goal of accelerating breakthrough discovery, transforming patient care, developing leaders, recruiting and retaining extraordinary minds, and creating innovative environments for all.



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Join us: Be a Victor!

If you would like to learn more about philanthropy, the fundraising priorities of the Department of Neurosurgery, or how you can make a gift, please contact our development team.

We are also excited to share that we have launched a new Resident Wellness Program. This program will enhance our residents' experiences in the areas of nutrition and exercise, well-being and resilience, and co-curricular learning. To date, the Centennial Celebration Campaign has raised \$249,860 from alumni, donors, and friends. We are excited to boast 100% participation from current residents as well as 16.5% from our neurosurgery resident alumni. A special thank you to each and every individual who made a donation to support our residents.

PLATINUM

- Lily UyHam, MD, and Rodolfo UyHam, MD (Residency, 1970)

GOLD

- Karin M. Muraszko, MD and Scott K. Van Sweringen
- W. Christopher Fox, MD (Residency, 2010) and Family

BLUE

- Barun Brahma, MD (Residency, 2007)
- David G. Kline, MD (Residency, 1967)
- James E. Rasis, MD (Residency, 1976)
- John A. Feldenzer, MD (Residency, 1989)
- Khoi D. Than, MD (Residency, 2014)
- Michael N. Bucci, MD (Residency, 1989)
- Saeed M. Farhat, MD (Residency, 1964)

MAIZE

- Robert E. Dicks, MD (Residency, 1979)
- Debbie K. Song, MD (Residency, 2010)
- Sanjay Gupta, MD (Residency, 2000) and Family
- William F. D'Angelo, MD (Residency, 1984)
- Michael F. Boland, MD (Residency, 1992)
- Nathan Selden, MD, PhD (Residency, 1999)
- Halla N. Jomaa-Jouney
- Luis Savastano, MD, PhD (PGY-7, Chief Resident)
- Stephen J. Napolitan
- Hank Gosch, MD (Residency, 1970)
- Kirsten A. Petriches
- Michelle A. Davis
- Allison J. Mayer
- Amy Bruzek, MD (PGY-4)
- Badih Junior Daou, MD (PGY-3)
- Brandon Smith, MD (PGY-6)
- David (Drew) Wilkinson, MD (PGY-7, Chief Resident)
- David Altshuler, MD (PGY-5)
- Jacob Joseph, MD (PGY-7, Chief Resident)
- Jay Nathan, MD (PGY-6)
- Katherine Holste, MD (PGY-1)
- Matthew Willsey, MD (PGY-5)
- Michael Strong, MD, PhD (PGY-2)
- Sara Saleh, MD (PGY-1)
- Siri Sahib Khalsa, MD (PGY-4)
- Sravanthi Koduri, MD (PGY-2)
- Timothy Yee, MD (PGY-3)
- Todd Hollon, MD (PGY-6)
- Yamaan Saadeh, MD (PGY-5)



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CENTENNIAL

This year, we celebrated 100 years of neurosurgical excellence at U-M. We look forward to continuing our tradition of excellence for the next 100 years and beyond.

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