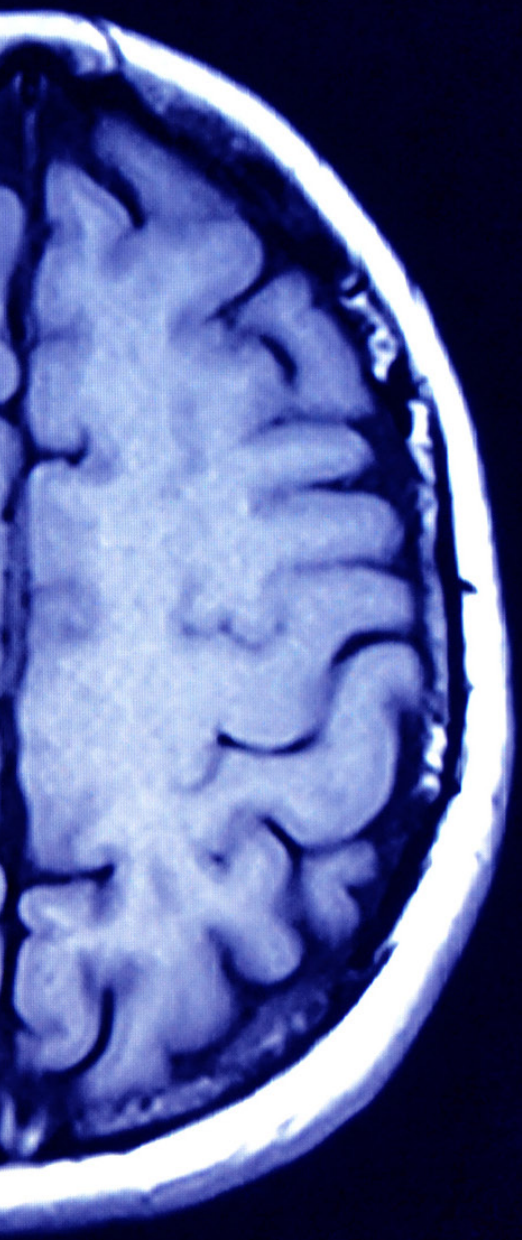


MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

DEPARTMENT OF NEUROSURGERY

Residency Training Program

The Department of Neurosurgery is built on a strong foundation of excellence—a tradition that we are proud to uphold today. It is our goal to pass this legacy of excellence along to future generations of neurosurgeons by instilling it in each and every resident who trains at the University of Michigan.

Welcome to the University of Michigan Department of Neurosurgery.

We continually work to ensure that our neurosurgical residency training program offers the best environment for developing the careers of future leaders of neurosurgical practice and science. We aim to prepare our residents not only for a robust clinical practice, but also for successful careers as leaders in academic neurosurgery.

Our educational missions:

- To train highly skilled neurosurgeons with strong backgrounds in clinical neurosurgery and research
- To equip our neurosurgical residents with excellent clinical skills
- To stimulate their interest in teaching and research
- To demonstrate the relevance and enjoyment of continuing education
- To provide the skills and judgment necessary for the practice of safe, effective, and competent neurosurgery

Clinical Programs

Our Department's clinical faculty is notable for its depth and breadth. There are busy clinical programs in:

- Brachial Plexus/Peripheral Nerve Surgery
- Cranial Skull Base/Pituitary Surgery
- Functional Neurosurgery
- Neurocritical Care
- Neurovascular Surgery
- Neuro-Oncology
- Pediatric Neurosurgery
- Spine Surgery

BRACHIAL PLEXUS/PERIPHERAL NERVE SURGERY

Our Brachial Plexus/Peripheral Nerve Program provides comprehensive interdisciplinary treatment for both adult and pediatric patients with peripheral nerve trauma (including brachial plexus injuries and neonatal brachial plexus palsy), nerve entrapment syndromes, nerve tumors, and peripheral nerve pain disorders. We offer "one-stop" consultation for surgical and non-surgical evaluation by nationally and internationally recognized and published providers in a single clinic through a single point of entry, including the following specialties:

- Neurosurgery
- Neurology
- Peripheral Nerve Pain Anesthesiology
- Physiatry
- Plastic surgery/Hand surgery
- Ancillary studies
  - Electrodiagnostics
  - Ultrasound
- Nursing
- Occupational therapy
- Orthotics
- Research

Through innovation and collaboration, we offer the most current surgical and interventional treatments, as well as neurological and rehabilitation management for the functional consequences of brachial plexus and peripheral nerve disorders. These disorders can result in limb weakness, sensory disturbances, and peripheral nerve pain. We remain at the forefront of advancing knowledge via interdisciplinary research and education efforts through publication of textbooks, research reports, and multimedia patient education materials - to achieve the best functional outcomes for patients with brachial plexus and peripheral nerve dysfunction.

In addition, our faculty focus upon clinical training of medical students, residents, and visiting faculty in one of the largest specialty referral centers with clinics that comprise entirely of peripheral nerve patients. Visitors/students can work with any/all of the expert clinicians within the program and experience surgical and non-surgical management of brachial plexus and peripheral nerve disorders (e.g. nerve graft reconstruction, nerve transfers for brachial plexus and spinal cord injuries). We aim to provide a supportive and collaborative environment for clinical/surgical training and research experience -- so that the residents can thrive and excel as leaders in the field.

To learn more about our Brachial Plexus/Peripheral Nerve Program, please visit **michmed.org/YlRR5**.

CRANIAL SKULL BASE/PITUITARY SURGERY

Our Cranial Skull Base Program diagnoses and treats benign and malignant tumors involving the cranial base region, cerebrospinal fluid leaks and encephaloceles, and traumatic injuries to the face and skull.

Some of the conditions treated include:

- Nasal/sinus tumors and cancers, including carcinoma, melanoma, esthesioneuroblastoma and sinonasal undifferentiated carcinoma (SNUC)
- Pituitary tumors
- Cerebrospinal fluid leaks
- Meningiomas
- Acoustic neuromas
- Paraganglioma

Our techniques and approaches include:

- Endoscopic skull base surgery: This minimally invasive approach involves removing tumors through the nose without facial incisions. Computer image guidance (like a GPS) is often used.
- Open approaches, which involve incisions, opening the skull, removing the tumor and reconstructive techniques to preserve cosmetic and functional outcomes.
- Endoscopic-assisted open approaches.

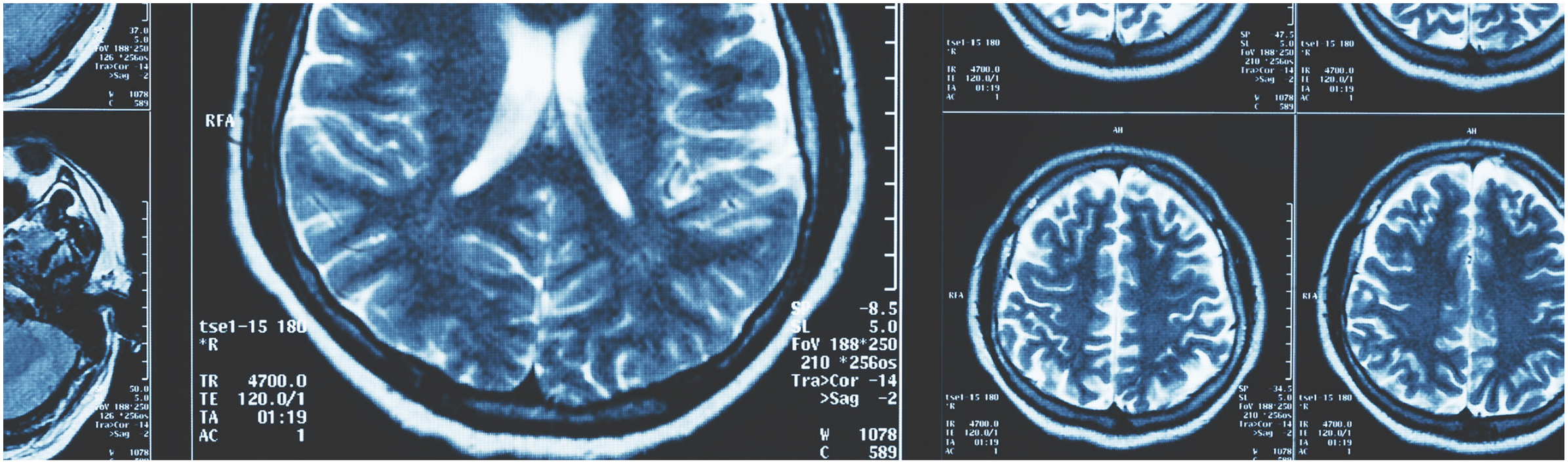
To learn more about our Cranial Skull Base Surgery Program, please visit **michmed.org/R10dz**.

U-M Pituitary and Neuroendocrinology Center

The U-M Pituitary and Neuroendocrine Center is one of the first dedicated comprehensive pituitary programs in the country. For more than 20 years, this Center has provided timely evaluation and treatment of patients with disorders of the pituitary gland and surrounding area of the brain.

Patients are offered options including surgical tumor resection (trans-sphenoidal endoscopic and skull base surgery), radiosurgery, radiation therapy and every type of medical management. The Center sees 300 new patients with pituitary lesions and performs between 120 and 150 pituitary surgeries each year, making U-M's one of the largest pituitary practices in the country, with among the best surgical outcomes.

To learn more about the U-M Pituitary and Neuroendocrinology Center, please visit **michmed.org/9a99K**.



FUNCTIONAL NEUROSURGERY

Our functional neurosurgeons use precision surgery and novel technologies to treat neural network disorders, such as tremor, epilepsy, depression, and central pain, to restore neurological health. Procedures may involve intraoperative testing to define the function of nervous system regions (functional mapping), knocking out small groups of nerve cells that produce or transmit abnormal signals (neuroablation), and placing brain or spinal pacemakers to tune nerve signaling (neuromodulation).

With world-recognized expertise in clinical neuroscience, basic neuroscience, neuroimaging, and neuroengineering, the University of Michigan is a leader in clinical functional neurosurgery and restorative neuroengineering. Clinical program areas in Functional Neurosurgery include:

- Brain tumor mapping
- Cancer pain
- Epilepsy
- Pain neuromodulation
- Spasticity
- Surgical therapies to improve movement (STIM)/deep brain stimulation (DBS)
- Trigeminal neuralgia and facial pain

To learn more about our Functional Neurosurgery Program, please visit **michmed.org/Wn994**.

NEUROCRITICAL CARE

Our Adult Neurocritical Care Program focuses on the treatment of critically ill patients in the Neurological Intensive Care Unit. Our 15-bed Neuro-ICU is staffed by four neurology-trained neurointensivists (certified by the United Council of Neurological Subspecialties, UCNS), as well as faculty from the Department of Anesthesiology. The program is supported by an interdisciplinary team of nurses, respiratory therapists, and physical therapists, and receives consultative support of departments throughout the University. Clinical coverage is provided by residents from neurosurgery, neurology, anesthesiology, and otolaryngology, and by dedicated mid-level providers.

Multiple research opportunities exist in neurocritical care, including the availability of disease-specific registries such as the U-M Subarachnoid Hemorrhage Outcomes Database. In addition, residents have co-authored articles on topics such as noninvasive assessment of intracranial pressure and intracranial bleeding in patients with left ventricular assist devices.

Additionally, the Department of Neurosurgery offers an enfolded neurocritical care fellowship, which is accredited by the Society of Neurological Surgeons' Committee on Advanced Subspecialty Training and is designed specifically for current neurosurgery residents.

NEURO-ONCOLOGY

Our Neuro-Oncology Program specializes in treating malignant tumors, such as glioblastomas, and non-malignant tumors of the brain in both adults and children. We also specialize in cancers that have directly or indirectly affected the nervous system. Our nationally recognized team uses advanced neurosurgical and radiation approaches, chemotherapy, anti-angiogenic therapy, and evidence-based therapies, including clinical trials.

The U-M Neuro-Oncology Program is home to the largest number of neuro-oncology specialists in Michigan. Our multidisciplinary team includes not only neurosurgeons but also more than 30 physicians and scientists with expertise in brain, spinal cord, and ocular tumors, including:

- Neuro-oncologists
- Neuro-ophthalmologists
- Neuropathologists
- Neuroradiologists
- Radiation oncologists

To learn more about our Neuro-Oncology Program, please visit **michmed.org/R1ppO**.

Spine Oncology

The University of Michigan Rogel Cancer Center is one of the few healthcare institutions in the country to offer a dedicated, multidisciplinary team of experts focused on treating only tumors of the spine. This includes tumors that originate in the spine, and cancers that have spread or metastasized to the spine.

Our spine oncology clinic brings together the expertise of leaders in the field of spine oncology who have developed and implemented a unique multidisciplinary clinical approach to managing spinal cancer. We are focused on advanced treatments, including targeted radiation therapies and minimally invasive surgeries that reduce side effects and maximize quality of life and tumor control.

To learn more about our Spine Oncology Program, please visit **michmed.org/XrWWN**.

NEUROVASCULAR SURGERY

Our Neurovascular Program evaluates and treats patients with vascular diseases of the brain, neck, and spinal cord. These include cerebral and carotid aneurysms, arteriovenous malformations of the brain and spinal cord, cavernous malformations of the central nervous system, and venous malformations. The program also provides state-of-the-art treatment to patients with cerebrovascular occlusive diseases, including carotid stenosis, vertebrobasilar insufficiency, and other forms of cerebral vascular insufficiency.

The program offers both open surgical and endovascular treatment. Neurosurgeons in the program have been nationally recognized for their expertise in endovascular and open surgical approaches to neurovascular disease.

Complex patient cases are presented at a weekly Neurovascular Conference, where clinical issues and plans for treatment are reviewed by a panel of specialists in neurosurgery, interventional neuroradiology, and neurology. This review assures that patients receive the optimal multidisciplinary therapeutic approach.

The Department of Neurosurgery also offers additional clinical training through an endovascular fellowship that is accredited through the Society of Neurological Surgeons' Committee on Advanced Subspecialty Training. This fellowship can be enfolded within the residency.

To learn about the U-M Comprehensive Stroke Center, please visit **michmed.org/9a905**.

PEDIATRIC NEUROSURGERY

Our Pediatric Neurosurgery Program is one of the nation's leading treatment programs for infants, children, and adolescents with brain, spine, and nervous system disorders. Our faculty have expertise in a broad range of structural and functional disorders of the pediatric brain, spinal cord, skull, and spinal column. We offer advanced surgical treatments, including open, endovascular, stereotactic, image-guided, minimally invasive, and endoscopic/ventriculoscopic surgery, as well as radiosurgery.

Specialty areas within our Pediatric Neurosurgery Program include:

- Congenital anomalies of the brain and spinal cord
- Tumors of the brain and spinal cord
- Hydrocephalus
- Myelomeningocele (including *in utero* closure)
- Craniofacial anomalies
- Vascular anomalies of the brain and spinal cord
- Medically refractory epilepsy
- Chiari malformations
- Surgical therapy for spasticity
- Pediatric head and spinal cord injury
- Tethered spinal cord

To learn more about the Pediatric Neurosurgery Program, please visit **michmed.org/axqqA**.

SPINE SURGERY PROGRAM

Our Spine Surgery Program provides state-of-the-art, comprehensive services to individuals affected by spinal disorders that may require surgical intervention. Patients referred to the Spine Surgery Program may suffer from significant pain, weakness, numbness, and tingling due to degenerative disc disease, disc herniation, stenosis, spondylolisthesis, scoliosis, spinal tumor, or traumatic injury.

We offer a broad spectrum of advanced therapeutic options. Surgical treatments may range from minimally invasive outpatient procedures such as discectomy, laminotomy, and kyphoplasty/vertebroplasty to minimally invasive fusion and artificial spinal disk surgery, and to more complex surgeries, including multi-level instrumentation and fusion for traumatic fracture stabilization, spinal deformity correction, and resection of tumors.

To learn more about our Spine Surgery Program, please visit **michmed.org/AOjd0**.

RESEARCH

Research and discovery are part of our mission as a Department at Michigan Medicine. Our research program encompasses basic, translational, and clinical investigations. Our clinical faculty perform diverse research within their specialties and are complemented by a large group of dedicated research faculty, positioning the Department among the leaders in the nation for federal and extramural research funding.

We are committed to the academic development of our residents, and maintain a two-year period during the fourth and fifth years of training that is largely free from call or clinical responsibilities. Many residents have chosen to pursue research in laboratories within the Department or around campus, while some have pursued master's or doctoral degrees during their research time.

> With $1.62 billion in annual research expenditures and the top research volume among U.S. public universities according to the National Science Foundation, the environment at Michigan Medicine can support research at the highest level.

Within the Department, the Neurosurgery Clinical-Translational Research Office (NCTRO) provides administrative support and oversight for both clinical trials and clinical research, allowing faculty and residents to be more productive researchers, despite ongoing clinical demands. NCTRO supports all phases (I-IV) of clinical and therapeutic research trials for pharmaceutical and device companies, and is engaged in research studies supported by the National Institutes of Health, Department of Defense, industry and foundations and other internal programs.

Our physicians and researchers have expertise across a wide range of areas, including aneurysm, stroke, neuro-oncology, and spine. The clinical research and basic science teams strive to translate findings seamlessly into new or improved therapies. Our clinical research staff provides support for the life of a project, including assistance in preparing grants, creating budgets, IRB applications, data collection, and study coordination.

Department research is conducted primarily by investigators in the Crosby Neurosurgical Research Laboratories, the Translational Neuro-Oncology Laboratories, the Restorative Neuroengineering Group, and the laboratories of individual investigators in various clinical areas.

Annual Resident Publications

- 2014-15: **54**
- 2015-16: **61**
- 2016-17: **53**
- 2017-18: **67**
- 2018-19: **69**

The **Translational Neuro-Oncology Laboratory** aims to discover the cellular, molecular, and mathematical basis underlying the growth patterns of malignant brain tumors (glioma, GBM), and the interactions between cancer cells and the tumor microenvironment. Investigators in the Translational Neuro-Oncology Laboratory are also developing new immunotherapies for primary and metastatic brain cancer. Research efforts range from basic immunobiologic mechanisms to translational immune-therapeutics.

Pioneering work from the Translational Neuro-Oncology Laboratory has led to an FDA-approved Phase I clinical trial for malignant brain cancer that is ongoing within the U-M Department of Neurosurgery. Learn more about this clinical trial at **michmed.org/zBLLq**.

The **Crosby Neurosurgical Laboratories** have two main areas of research focus: cerebrovascular disease and central nervous system (CNS) tumors. Cerebrovascular studies focus on understanding mechanisms of brain injury in hemorrhagic and ischemic stroke, and the effects of neurological disease on the blood-brain barrier. CNS tumor research centers on the role of cancer stems cells in glioblastoma and medulloblastoma, the stem cell vascular niche, developing new therapies for spine metastatic cancers, and engineering stem cells as inflammatory sensors and vehicles for delivering therapeutics for glioblastoma.

The **Restorative Neuroengineering Group** brings together clinicians, scientists, and engineers who are committed to the restoration of nervous system function in patients with major neurological diseases such as Parkinson's, Alzheimer's, epilepsy, and central pain—all of which stem from neural network dysregulation. Understanding and repairing neural networks, as well as modulating neural signals to alleviate symptoms is the work of the Restorative Neuroengineering Group. The Group's research offers exciting and novel treatment possibilities for conditions that impact the function of the brain, spinal cord, and peripheral nervous system.

RESEARCH *(CONTINUED)*

Additionally, individual investigators within the Department continue to carry out groundbreaking research in a multitude of clinical, translational, and outcomes-related areas including but not limited to:

- Brachial plexus and peripheral nerve surgical reconstruction strategies and outcome assessments
- Interdisciplinary collaboration on brachial plexus and peripheral nerve research with Physical Medicine and Rehabilitation, Neurology, Plastic Surgery, Anesthesiology, Obstetrics, and Movement Science
- Role of iron toxicity in causing brain injury post intracerebral and subarachnoid hemorrhage
- Subarachnoid hemorrhage risk factors and clinical outcomes
- Acute brain injury and brain-tissue oxygen guided management of patients with severe Traumatic Brain Injury, as well as a variety of noninvasive tools for the assessment of intracranial physiology in acute brain injury
- Volume outcome relationship for hemorrhagic and ischemic stroke
- Surgical treatment of and functional mapping for resection of brain metastases, as well as effects of radiation therapy on metastases and the surrounding brain
- Spine metastases, including the growth of metastatic tumor in the spine, different aspects of the bone microenvironment that may play a role in spine metastases, as well as current treatment paradigms and codification of patients who benefit from different treatment modalities
- Spine surgery clinical outcomes through spine registry data analysis
- Spinal deformity and interbody fusion techniques (lateral interbody fusion) through prospective multi-center studies
- Retrospective analysis on spinal topics including degenerative conditions, trauma, oncology, deformity, minimally invasive techniques, and novel spinal technologies
- Collaboration with Biomedical Engineering to develop innovative treatments, such as:
    - Histotripsy (ultrasound-based technique) for intracerebral hemorrhage, brain tumors, and hydrocephalus
    - Development of a thrombectomy tool
    - Development of an automated drill for burr hole and intracranial pressure monitoring
    - Development of techniques for brain cooling
- Resident procedural learning: using different feedback systems to examine how residents best learn surgery

LIFE AS A RESIDENT

Resident Curriculum

Residents' clinical rotations are done at three hospitals: University Hospital, C. S. Mott Children's Hospital, and the VA Ann Arbor Healthcare System. University Hospital and Mott Children's Hospital are physically connected on the main U-M Medical Campus, while the VA is one mile away. To learn more about each of these hospitals, please visit **michmed.org/o4AA6.**

Neurosurgery Training Progression

PGY-1:

- 3 months Neurology
- 1 month Surgical Critical Care
- 7 months Neurocritical Care and Neurosurgery
- 1 month Anesthesiology

PGY-2:

- 12 months Adult Neurosurgery Service

PGY-3:

- 4 months VA Hospital
- 8 months Adult Neurosurgery Service

PGY-4 and PGY-5:

- 24 months Academic Development Time/Research

PGY-6:

- 6 months Chief Resident, Mott Children's Hospital
- 6 months Adult Neurosurgery Service

PGY-7:

- 12 months Chief Resident

Resident Awards & Honors

Our residents continue to win awards from many national organizations and have been successful in securing grants and research funding for their two years of dedicated research time.

Some notable awards and honors from recent years include:

- Cancer Biology Training Grant
- Cloward Fellowship from the AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves
- The CNS Basic/Translational Resident Research Fellowship
- The CNS Galbraith Award
- The CNS Innovation Fellowship Award
- The CNS Resident Research Award
- The CNS Spine Fellowship
- The CNS Wilder Penfield Award
- Codman Fellowship in Trauma and Critical Care
- Cone Pevehouse Award
- Coulter Translational Research Partnership Grant
- CSNS Socioeconomic Fellowship
- Neurosurgery Research and Education Foundation/ American Academy of Neurological Surgery Research Fellowship
- The NINDS/Surgical Neurology Clinical Fellowship (NIH)
- The NINDS R25 Training Grant: University of Michigan Clinical Neuroscientist Training Program
- Preuss Research Award from the AANS/CNS Joint Section on Tumors
- Research Update in Neuroscience for Neurosurgeons Award
- Robert J. Dempsey, MD, Cerebrovascular Research Award of the Section on Cerebrovascular Surgery of the AANS/CNS
- Robert Wood Johnson Health and Society Scholar Program
- Ruth L. Kirschstein National Research Service Award Fellowship (NRSA F32) from the National Cancer Institute
- T32 National Institute of Neurological Disorders and Stroke Post-Doctoral Training Grant
- The University of Florida Endovascular Neurosurgery Fellowship
- The University of Toronto Brain Tumor Research Training Grant

Resident Wellness

To provide residents with strategies to prevent burnout and increase self-care, the Neurosurgery Resident Wellness Initiative was launched in 2018. Through this effort, we aim to ensure that we are continuously fostering an engaged and resilient physician workforce.

Because self-care is a vital component of resilience and professionalism, the Department is committed to supporting the physical and mental health of residents. The Resident Wellness Initiative supports activities and endeavors that help boost the physical, mental, and emotional well-being of our residents, especially in the following areas:

- Nutrition and Exercise: We provide healthy snack and meal options, fitness opportunities such as gym memberships, and incentive programming for healthy lifestyles.
- Well-being and Resilience: We offer tools to identify and manage symptoms of stress and burnout, opportunities for team building and camaraderie (such as the annual neurosurgery softball tournament in New York City and Michigan sporting events for residents and their families), and mindfulness training.
- Co-curricular Learning: We provide opportunities for supplemental skills such as financial planning, business, leadership, and networking to help our residents feel prepared and confident as they take on the next stage of their professional lives.

> "Our residents are our most precious commodity. They provide our patients with outstanding care while contributing new and groundbreaking knowledge to the field. This work is incredibly demanding from a psychological and physical standpoint – further underscoring how vital it is that we support the newest members of our community. They are our future and nurturing them now will allow them to flourish into the future."
>
> *– Dr. Karin Muraszko, Department Chair*

The Department's commitment to resident wellness goes well beyond activities. Our department chair, faculty, and mentors model integrity and dedication every single day, creating a culture of wellness for all. The Resident Wellness Initiative enables us to build upon this culture and ensure an enriched resident experience for the next generation of neurosurgeons.

Educational Activities

Residents have the opportunity to participate in multiple educational activities throughout the course of their time in our program including annual events and activities such as our Neurosurgery Resident Research Symposium, Neuroscience Day, Michigan-Ohio State Neuroanatomy Course, mobile surgical lab experiences, as well as many visiting lectureships throughout the year.

The Department also provides full support for residents to attend many meetings/courses each year, including but not limited to the Congress of Neurological Surgeons and American Association of Neurological Surgeons annual meetings, Research Update in Neuroscience for Neurosurgeons Course, a Board Review Course, and various other courses of their choosing that pertain to their specific interests within neurosurgery.

To learn more about these and other resident educational activities, please visit **michmed.org/Zba97**.

Life Outside the Hospital

U-M Neurosurgery residents develop a strong sense of camaraderie and form lifelong bonds with their resident colleagues. They often enjoy getting together outside the hospital for events such as the annual welcome party honoring new interns and fellows, an annual holiday party in December, the Neurosurgery Charity Softball Tournament in NYC's Central Park in June of each year, and an end-of-year chief resident graduation banquet.

Life in Ann Arbor

There is no better backdrop for residency than the city of Ann Arbor. Come discover all that our vibrant, dynamic, and friendly city has to offer. With a unique blend of city sophistication and small-town charm, as well as a distinctive blend of culture, sports, and cuisine, it truly has something for everyone. Spend a little time here and you'll find that our city will come to have a special place in your heart.

Things to Do

Whether you are a lifelong resident or newly arrived transplant, Ann Arbor is stocked with culture, dining, entertainment and sporting events in an accessible, urban environment. People from all over the world come to Ann Arbor and make it their home.

Arts & Culture

Historically, Ann Arbor and the University of Michigan have been magnets for artists of every genre, enriching the lives of all who reside and visit. Halls, theaters, libraries and galleries of international renown attract performers from our own backyard and around the world. The University's Museum of Art is home to the state's second largest collection of art and regularly features traveling exhibitions.

- Sign up for a class at the Ann Arbor Art Center.
- Meet more than 1,000 artists at the Ann Arbor Art Fairs.
- Visit the Gerald Ford Presidential Library.
- Catch a show at the Michigan Theater.
- Listen to live music 300 nights a year at The Ark.
- Step back in time to the dinosaur era at the U-M Museum of Natural History.

Outdoor Recreation

One of the most pedestrian-friendly cities in the country, Ann Arbor offers abundant options for those who love the outdoors. From downtown to Kerrytown, or any one of the many beautiful gardens, trails and parks along the banks of the Huron River, there is a great deal to see and explore. Ann Arbor gives many good reasons to be outside in all four seasons.

- Check out the conservatory at Matthaei Botanical Gardens.
- Explore the Nichols Arboretum — known locally as the Arb and a popular place to visit in late spring, when hundreds of peonies bloom.
- Go hiking and biking on the Ann Arbor Area Trails, Border-to-Border Trail and wheelchair-accessible trails. You can also find more options compiled by the Hiking Project.
- Sail or float down the Huron River Water Trail after a stop at one of the local canoe liveries.

Winter Wonders

Winter in Ann Arbor offers plenty of fun activities to keep you busy, indoors or out.

- Stay warm inside with plenty of cozy spots to choose from, including bookstores, shops, cafés, museums, theaters and restaurants.
- Find Ice skating and ice hockey games at Yost Ice Arena.
- Ann Arbor Restaurant Week takes place two times per year, one week in January and one week in June, where participating restaurants offer special menus and discounts.

Fall Favorites

Autumn in Ann Arbor is a popular time of year, which is no surprise for a place nicknamed “Tree Town.” Not to mention a certain event that attracts 100,000+ people to the Big House a few Saturdays during this season.

- Hike a trail in any of the splendid parks nearby. In addition to the Arb and other local parks, hikers enjoy convenient access to the 36-mile Waterloo Pinckney Trail just west of the city.
- Browse the Ann Arbor Farmers Market in Kerrytown where you’ll find an abundance of locally grown (and made) goodies.

Spring Specials

From first thaw to full bloom, this season brings some of the most anticipated events of the year.

- Ann Arbor Film Festival brings a world of cinema to the screens of the Michigan Theater every March.
- Ann Arbor Marathon starts at The Big House, then runs along the Huron River, and crosses the finish line on Main Street.
- Festifools is an Ann Arbor original creation. This event kicks off the city's outdoor festival season with a parade of larger-than-life, community-constructed puppets.
- Earth Day Festival. Free annual event coordinated by local environmental groups and held at Leslie Science & Nature Center.
- Dance for Mother Earth Powwow. Presented every March and hosted by the University of Michigan Native American Student Association (NASA) with assistance from the Office of Academic Multicultural Initiatives (OAMI) and the EMU Native American Student Organization (NASO).
- Ann Arbor Antiques Market. Open select weekends starting in April, this popular market features over 300 dealers.

Summer Fun

The pace of life slows in summer in Ann Arbor as days grow long and the city empties out. It's a time to enjoy ice cream downtown or experience one of the annual festivals that bring art and vibrancy to the season.

- Ann Arbor Summer Festival begins in June every year and is an exhilarating celebration of performing arts, outdoor entertainment and community spirit.
- Ann Arbor Art Fair happens in July and the streets of downtown Ann Arbor fill with artists and visitors from across the country to attend this nationally recognized event.
- Outdoor fun. Golfing, hiking, horseback riding, swimming in lakes or neighborhood pools, fishing, or playing at the park — it's all here!
- Sonic Lunch. Sponsored by Bank of Ann Arbor, this free summer outdoor concert series takes place at the corner of Liberty and Division in downtown Ann Arbor every Thursday at lunchtime.
- Ann Arbor Pride. Formerly OUTFest, this weekend event is hosted by the Jim Toy Community Center.
- African American Downtown Festival. Celebrated annually in Ann Arbor's Historic Black Business District, this family-friendly event features live music and a variety of food.

To learn more about life in Ann Arbor, please visit **goblueguide.medicine.umich.edu.**

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Department of Neurosurgery

Advancing Neurosurgical Excellence and Training the Leaders and Best.

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