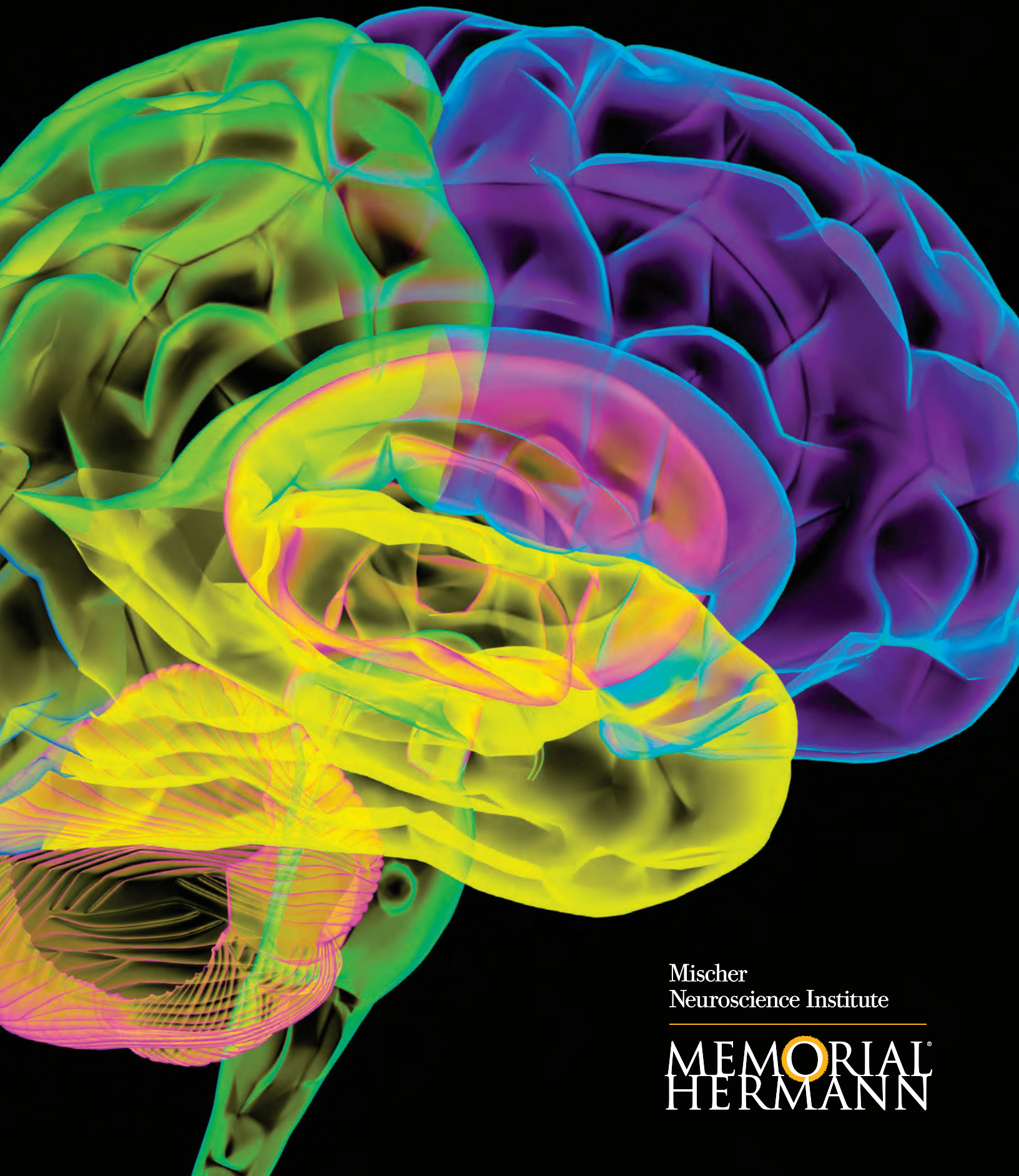


NEUROLOGICAL SURGERY TRAINING PROGRAM



Mischer
Neuroscience Institute

MEMORIAL[®]
HERMANN



Our Mission:

At UTHealth Medical School, our aim is to be the best – locally, nationally and internationally.

To achieve this goal, we focus on:

- Providing the highest quality care and achieving the best outcomes
- Providing the best service and achieving the highest patient and referring doctor satisfaction
- Innovating and testing new ideas, advancing medicine and setting new standards of care
- Teaching the next generation to be the best

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Dear prospective resident,

The Residency Program of UTHealth Medical School and the Vivian L. Smith Department of Neurosurgery is driven by extensive access to complex neurosurgical cases at the Memorial Hermann Mischer Neuroscience Institute (MNI) at the Texas Medical Center, the market leader in neurosurgery.

We are committed to providing the best neurosurgical care to the citizens of Houston, to leading the world in advancing the art and science of neurosurgery, and to producing the next generation of neurosurgical leaders. All aspects of this mission are integrated into our daily practice. Clinicians collaborate with scientists, and all are involved in teaching.

Each faculty and staff member in the department of Neurosurgery has complete commitment to the goal of being the best and training the best. Residents are individually mentored, evaluated and promoted, and are also regularly asked to evaluate the Program and participate in its continual improvement. Through this structure, UTHealth Medical School residents develop into excellent and academically oriented neurosurgeons, positioned to learn throughout their careers.

MNI has been a leader in bringing innovations to the field of neuroscience, with a long list of firsts in the treatment of stroke, multiple sclerosis, epilepsy, neurotrauma, brain aneurysms and other complex neurological conditions. We are proud of the dedication of our team of physicians and scientists and invite you to learn more about our Residency Program and our Institute.

Sincerely,

Dong H. Kim, M.D.
DIRECTOR AND CHAIRMAN

Arthur Day, M.D.
VICE CHAIR-EDUCATION & PROGRAM DIRECTOR

About the Program

Faculty

The UTHealth Medical School Residency Program is comprised of faculty in all segments of neurosurgery, including endovascular neurosurgery and Gamma Knife® radiosurgery. We also have faculty involved in critical care and neurology. This offers a complete resident education in all segments of neurosurgery cases, in and out of the OR.

Case Volume

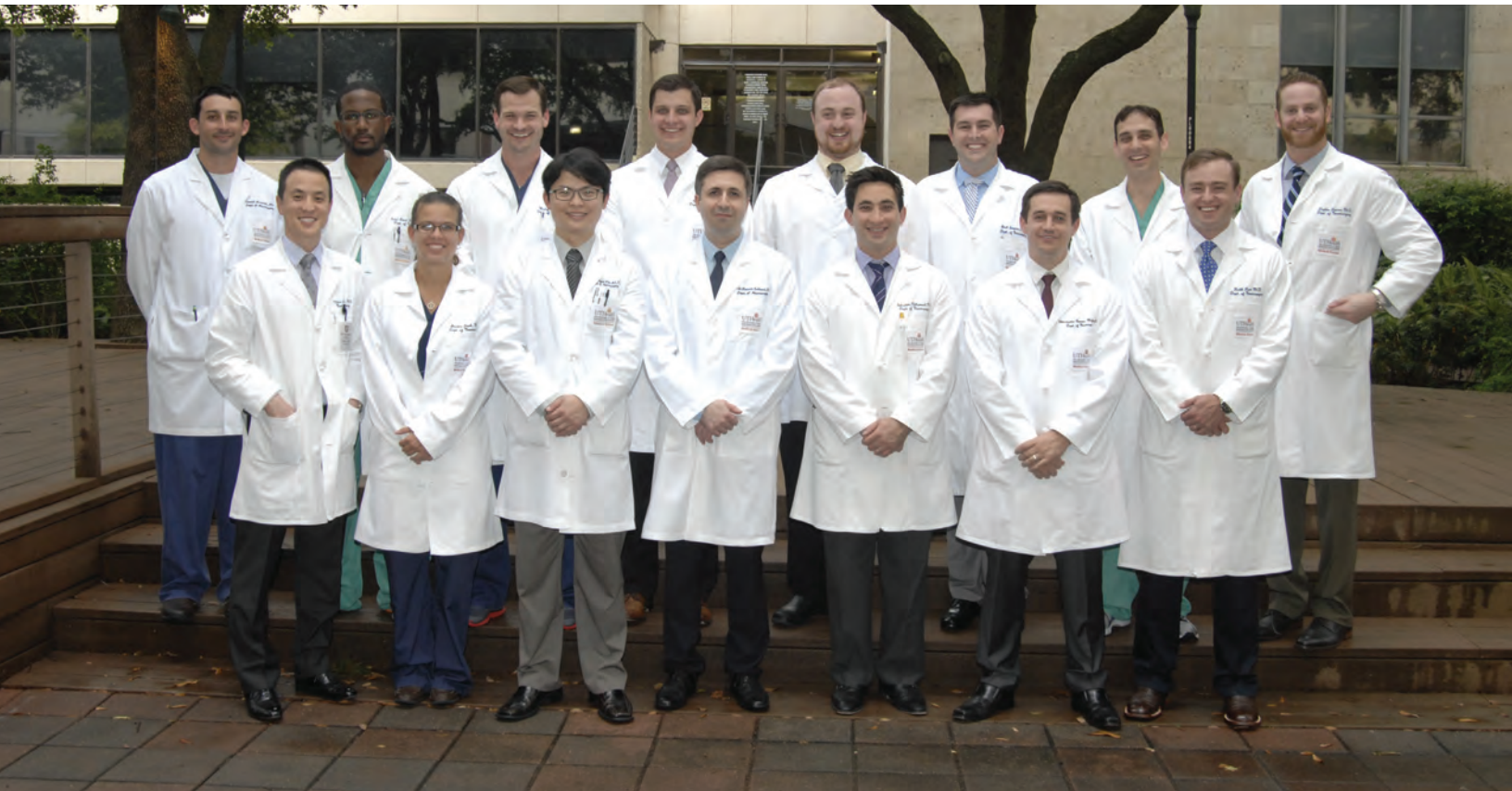
In affiliation with Mischer Neuroscience Institute, the Program offers one of the largest neurosurgical caseloads in the United States, with more than 3,800 surgical cases per year. This permits a significant resident operative experience, beginning at the PGY-2 level. Residents at all levels typically operate four days a week, with one day spent in a subspecialty clinic specific to the rotation.

Single Institution

All residency training is completed at a single institution, Memorial Hermann-Texas Medical Center. This allows for all residents to work together on a daily basis to maintain the entire neurosurgical patient population, and gives them minimal call requirements.

Technology

UTHealth Medical School is at the cutting edge of technology, with physicians and staff continuously discovering and implementing new treatments and diagnostic tools. Advances used regularly in our Program include state-of-the-art intraoperative robotics, neuroendovascular labs, interoperative CT, Gamma Knife and computer-assisted surgery, including navigation and neuroendoscopy.



The Largest and Most Comprehensive Neuroscience Program in Texas

Mischer Neuroscience Institute is a collaboration between Memorial Hermann-Texas Medical Center and UTHealth Medical School. MNI brings together a team of world-class clinicians, researchers and educators whose insights and research findings are driving innovations in neuroscience. Patients come to MNI from around the world for treatment of rare and common diseases of the brain and spinal cord.

Growth and Expertise

Through MNI, physicians affiliated with Memorial Hermann currently perform more neurosurgical procedures than any other health system in Houston. Not only is the Institute a market share leader in Houston, it is nationally recognized for leading-edge medicine and is consistently ranked among quality benchmarking organizations as a leader in clinical quality and patient safety. MNI was the first center in Texas and one of only a few institutions in the country to fully integrate neurology, neurosurgery, neuroradiology and neurorehabilitation through comprehensive, specialized treatment centers and close collaboration among all involved disciplines.

AT A GLANCE

Physician Team (includes Neurosurgery and Neurology)

Staff Physicians	97
Clinical Residents and Fellows	39
Medical Students on Rotation	285
Research Fellows	30
Advanced Practice Providers	22

Inpatient Facilities

Total Neuro Beds	172
Neuro ICU Beds	38
Neuro Step Down Beds (IMU)	12
Neuro Acute Care Beds	74
Neuro Rehabilitation Beds	23
Stroke Unit Beds	12
Dedicated Operating Rooms	8
EMU Beds - Pediatrics	6
EMU Beds - Adult	7

Research

Research Projects in Progress: More than 200
Grants Awarded \$10.7 million
(Neurology and Neurosurgery)



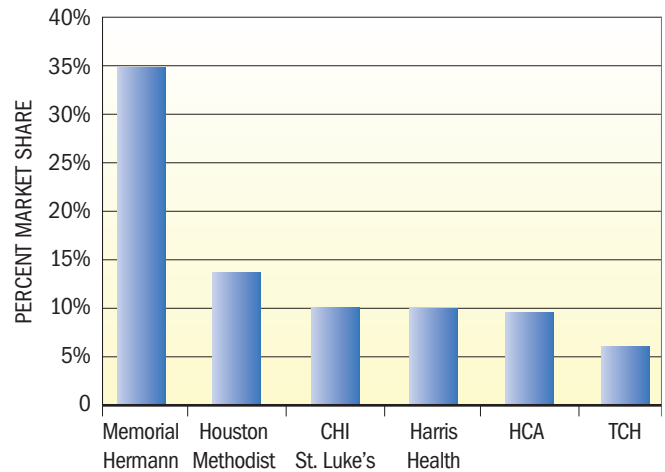
In the last three years, MNI has established a range of clinical and academic programs and has recruited nearly two dozen nationally recognized specialists and subspecialists. The Institute is now home to 10 centers of excellence, supported by a state-of-the-art neuroscience intensive care unit with 38 private rooms and several other dedicated inpatient facilities, to provide a full continuum of care for neurological patients.

The IQ Program

A major part of our mission involves innovation, both to deliver the highest quality care today, and to define new treatments for the future. Our Innovation and Quality (IQ) Program serves to facilitate these goals. Directed by Dong Kim, M.D., and Gigi Hergenroeder, RN, the IQ Program includes principal investigators, biostatisticians, research nurses and coordinators, data managers, programmers, research assistants and both hospital and clinic administrations. Included in the IQ Program is the Neuroscience Research Repository, a large bio-bank housing patient samples for research.

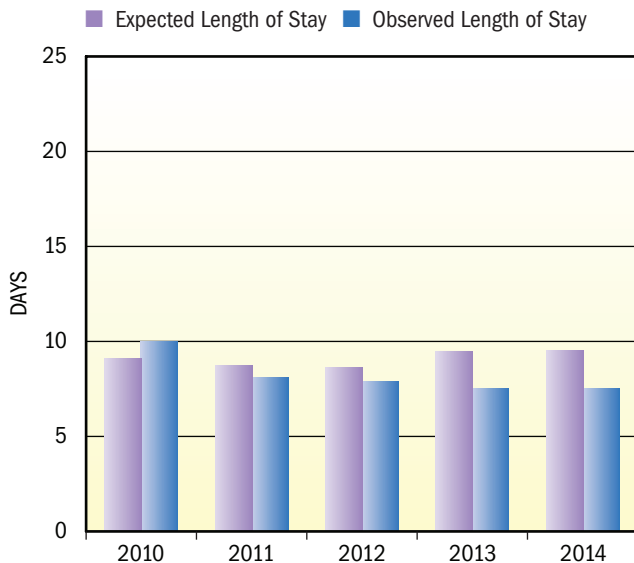
The IQ Program has two components. First, it works directly with clinicians, using data and detailed feedback to help physicians improve their performance and lead to better patient outcomes. Second, the IQ program provides a platform and support to efficiently conduct a wide range of investigational studies. The result is an active quality program that has given us results that place us among the best programs in the country. We also have a large number of active clinical studies to foster innovation.

Neurosurgery Market Share FY14



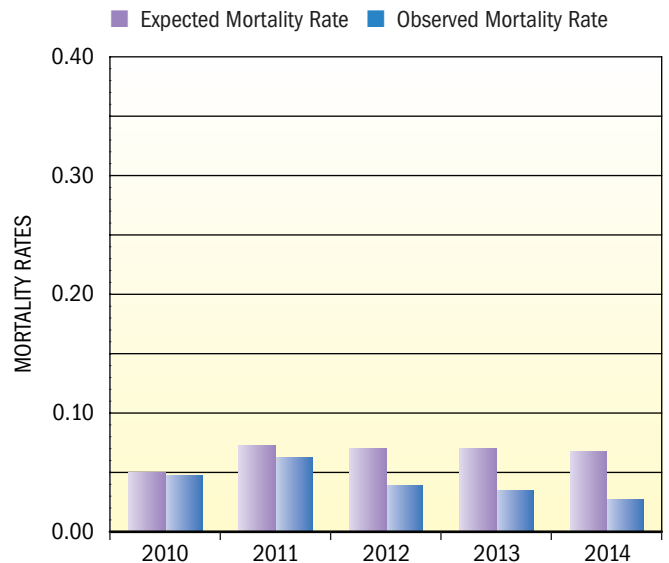
Source: Texas Hospital Association Patient Data System*

Neurosurgery Length of Stay



Source: University HealthSystem Consortium

Neurosurgery Mortality Rate



Source: University HealthSystem Consortium

* (FY2012 Q1 - FY2014 Q4) provided by Truven Health, formerly Thomson Reuters. Texas Hospital Inpatient Discharge Public Use Data File, [FY2007 Q1- FY2014 Q1] provided by Texas Department of State Health Services, Center for Health Statistics; FY2014 Q2-Q4 discharges estimated by using historical data by hospital. Excludes Normal Newborns and SNF. Expanded Greater Houston consists of 12 counties: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, San Jacinto, Walker, Waller and Wharton.

Neuroscience Services

Through its affiliation with the Memorial Hermann Mischer Neuroscience Institute at the Texas Medical Center, the Neurosurgery Residency Program at UTHealth Medical School is able to offer residents a wide range of experience at the forefront of medicine. From neuro-oncology to spine surgery, cerebrovascular and endovascular surgery and beyond, the next generation of surgeons has at its fingertips a wealth of opportunities for honing their expertise.

Brain Tumor Center

The medical team at the Brain Tumor Center provides outstanding care for patients with all types of brain tumors. The multidisciplinary group, including oncologists and radiation specialists, offers 400 primary brain tumor patients a year a full range of treatment options, including surgery, chemotherapy and radiation. Physicians at the Brain Tumor Center are all part of the neurosurgery program and are dedicated to training the next generation of residents.

MNI acquired the region's first Leksell Gamma Knife in 1993. To date, the multidisciplinary team has treated more than 3,400 patients, using the stereotactic radiosurgery instrument to resolve brain tumors and other neurological disorders. MNI and UTHealth Medical School are at the forefront of advances to prolong and improve the quality of life for patients with these complex tumors.

Cerebrovascular and Skull Base Neurosurgery

The skull base surgical team offers a comprehensive, advanced technological and multidisciplinary approach to diagnose and treat cranial base disorders. MNI is dedicated to providing the highest level of clinical care to our patients by offering the most up-to-date diagnostic and treatment modalities.



We treat more aneurysms and subarachnoid hemorrhages than any other program in the area.

For cerebrovascular diseases, MNI's multidisciplinary program involves a team of neurosurgeons, interventional neuroradiologists, neurologists and radiation specialists. The program offers a complete spectrum of therapies, including the most effective state-of-the-art surgical and endovascular techniques and technologies, such as a hybrid operating room that enables advanced imaging and multiple procedures to be performed simultaneously.

The MNI Stroke Center was recently recognized as a Comprehensive Stroke Center by The Joint Commission and the American Heart Association/American Stroke Association. Comprehensive Stroke Center Certification recognizes those hospitals that have the specialized infrastructure, staff and training to receive and treat patients with the most complex strokes. They must meet stringent standards and requirements, including advanced imaging capabilities, around-the-clock availability of specialized treatments, and staff with the unique education and competencies to care for complex stroke patients.



Endovascular Surgery

MNI is a leader in endovascular surgery, performing more than 150 endovascular aneurysm repairs annually – more than any other medical center in our area. This team of experts continually develops and tests groundbreaking endovascular surgical technologies and techniques. Our endovascular surgeons are all part of the Vivian L. Smith Department of Neurosurgery and all of them train our residents.

Pediatric Neurosurgery

The team at Children’s Memorial Hermann Hospital and UTHealth Medical School are world leaders in pediatric neurosciences. Offering minimally invasive, endoscopic brain surgery and comprehensive diagnosis, evaluation and treatment of a wide range of neurological disorders, they are at the forefront of advancing treatment for pediatric patients.

Functional and Stereotactic Neurosurgery

Specialists in functional and stereotactic neurosurgery provide comprehensive evaluation and care for patients with movement disorders, epilepsy, obsessive-compulsive disorder and certain chronic pain syndromes. Through collaboration between the Mischer Neuroscience Institute and the UT MOVE Clinic, the Movement Disorders and Neurodegenerative

Diseases Program has established a track record of outstanding care and excellent outcomes.

The Program offers minimally invasive and highly effective treatment options for many difficult neurological disorders and diseases. Patients with movement disorders refractory to medication, such as Parkinson’s disease, essential tremor and dystonia, are evaluated by a multidisciplinary team of neurosurgery, neurology and neuropsychology specialists to assess whether they are appropriate candidates for a functional intervention.

Spine Center

The highly skilled spine surgeons at the Mischer Neuroscience Institute and UTHealth Medical School perform more than 1,900 surgeries annually in new, state-of-the-art facilities equipped with advanced tools and dynamic imaging systems. The Spine Center offers outstanding care of patients suffering from traumatic spine injury, including the 10 to 20 percent of admissions through Memorial Hermann-TMC’s Level I trauma center that involve neurological damage. The Spine Center also offers innovative procedures for relief of back pain, including transforaminal lumbar interbody fusion (TLIF), minimally invasive approaches and disk replacement surgery.

Pain Management

Experts at the Institute provide patients with innovative treatment for chronic pain, such as nerve blocks for spine pain and Botox® for migraines. They are all faculty in the department of Neurosurgery and are focused on training residents in advancements and techniques in the field of pain management. These physicians work hand-in-hand with our spine and cranial surgeons to ensure that patients are treated with the least invasive procedure possible first. Once surgery is completed, pain medicine complements the surgical treatment and enhances patient outcomes.

Radiosurgery

At MNI, neurosurgeons use the Leksell Gamma Knife as an effective treatment modality for abnormalities within the brain. Patients who undergo stereotactic radiosurgery have a greatly reduced incidence of potential complications associated with craniotomy and with other forms of radiation.

The Institute is also one of the few facilities in the nation to offer stereotactic spinal radiosurgery, delivered using the Varian Trilogy® TX linear accelerator (LINAC). The department of Neurosurgery oversees both the Gamma Knife and the LINAC, offering residents access and training in the radiosurgical treatments.

Neurotrauma/Critical Care

The neurotrauma program at MNI is internationally recognized for treating the highest-acuity patients with brain and spinal cord injuries, with neurointensivists and experienced mid-level practitioners staffing a dedicated 32-bed Neuro ICU around the clock to provide ongoing intensive care to critically ill patients.



Patients with acute neurological injuries benefit from Memorial Hermann-TMC's Level I trauma center – one of only two in the area and the busiest in the nation – and from Memorial Hermann Life Flight® air ambulance service, which provides high-quality care and safe air transport for critically ill and injured patients via helicopter and fixed-wing aircraft.

All neurotrauma and critical care faculty are part of the department of Neurosurgery, offering neurosurgical residents dedicated training in these areas. The goal of this training is to prepare residents for fellowships in the future.

The Neurotrauma/Critical Care Program is an international leader in research conducted on innovative treatments following neurotrauma, including participation in several multicenter trials.



Neuroscience Research

With approximately \$5 million in research funding per year, UTHealth Medical School utilizes diverse approaches to research. Molecular, transgenic and electrophysiological techniques are coupled with state-of-the-art facilities and support services, allowing biomedical studies, translational research, clinical trials, technology development and assessment. Ongoing projects led by our nine Ph.D. researchers cover major areas of neurological diseases, including stroke, aneurysm, spinal cord injury, brain tumor, stem cells, neuroprotection, hypoxic encephalopathy, epilepsy, traumatic brain injury and Parkinson's disease. Projects are supported by the National Institutes of Health, the Vivian L. Smith Foundation for Neurologic Disease, the American Stroke Association and other granting agencies.

When a patient is admitted to our hospital, he or she is asked to participate in the Neuroscience Research Repository (NRR). With an affirmative response, we can take de-identified clinical data coupled with tissue samples (blood, cerebrospinal fluid, tumors) for research purposes. By using the NRR to collect DNA samples and obtain detailed family histories on intracranial aneurysm patients, Dr. Dong Kim, for example, was able to identify a gene mutation present in a subset of patients who develop intracranial aneurysms. The NRR is used in many subspecialty areas of neuroscience and is an invaluable resource for research.

Besides collaborative efforts within the department and institution, UTHealth Medical School strongly encourages faculty members to connect with scientists worldwide to exchange information and knowledge, to establish effective collaborations in a wide range of disciplines and to facilitate a concerted interdisciplinary and international effort in scientific explorations.

Neurosurgery Training Program

Residency by Year

Rotations

There are eight clinical services within our Residency Program, each covering specific clinical material and led by dedicated faculty:

- 1) Critical Care – Vascular and Trauma (brain and spine)
- 2) Spine – Trauma
- 3) Spine – Elective and Degenerative
- 4) Cranial
- 5) Cerebrovascular (open and endovascular)
- 6) Pediatrics/Functional
- 7) CHIEF Service
- 8) Acute Care

PGY Levels

PGY-1

The goal of year one as a neurosurgery resident at UTHHealth Medical School is to gain a comprehensive understanding of the concepts of neurocritical care. This will provide the individual neurosurgeon with

the ability to take care of the basic critical care issues related to the nervous system and all of the critical care issues that arise in patients undergoing neurosurgical treatment.

PGY-1 is comprised of an entire year learning directly from our six fully trained neurointensivists in neurosurgical critical care, with a six-month focus on cerebrovascular care and six months covering neurotrauma. Every other weekend is spent on the Neurosurgery service participating in surgical cases.

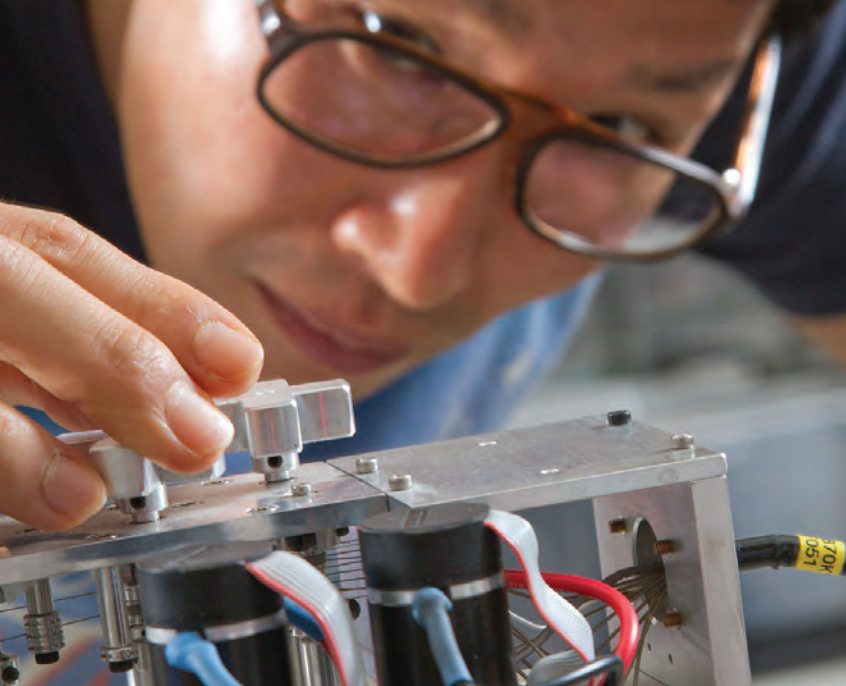
This intensive year in the Neuro ICU will allow each resident to track toward completing an infolding fellowship in neurocritical care by the end of the residency.

PGY-2

The PGY-2 year consists of three three-month blocks in the following subspecialties: Spine – Trauma, Pediatrics/Functional, and Neurology; and one three-month block as the Night Float resident.

YEAR	JULY TO DECEMBER		JANUARY TO JUNE	
PGY-1A	Neurocritical Care (CV)	Neurocritical Care (CV)	Neurocritical Care (T)	Neurocritical Care (T)
PGY-1B	Neurocritical Care (T)	Neurocritical Care (T)	Neurocritical Care (CV)	Neurocritical Care (CV)
PGY-2A	Pediatrics/Functional	Spine – Trauma	Night Float	Neurology
PGY-2B	Spine – Trauma	Pediatrics/Functional	Neurology	Night Float
PGY-3A	Night Float	Spine – Elective	Cranial	Spine – Trauma
PGY-3B	Spine – Elective	Night Float	Spine – Trauma	Cranial
PGY-4A	Cerebrovascular	Cranial	Pediatrics/Functional	Cerebrovascular
PGY-4B	Cranial	Cerebrovascular	Cerebrovascular	Pediatrics/Functional
PGY-5A	Research (clinical or basic science)			
PGY-5B	Research (clinical or basic science)			
PGY-6A*	Acute Care	CHIEF	Spine – Elective	CHIEF
PGY-6B*	CHIEF	Acute Care	CHIEF	Spine – Elective
PGY-7A	Elective			
PGY-7B	Elective			

*PGY6 - Administrative Chief Resident Year



The junior Spine - Trauma rotation provides the first of several concentrated and systematic exposures to the management of spinal disorders.

The junior Pediatrics/Functional rotation has a dual focus, combining exposure to both functional and pediatric neurosurgery. Much of the functional surgery is pediatric epilepsy.

The goal of the Neurology rotation is for the resident to develop the clinical skills, professional attitudes, and knowledge base for the practice of consultation-based neurology through exposure to neurological disorders and approach to the neurological patient. The experience prepares the resident to appreciate the full spectrum of neurological illness, especially that which is nonoperative, and the role of neurosurgery within these disorders, if any.

On Night Float, the resident will have increased responsibility in the management of the emergent neurosurgical patient presenting to the ER or in transfer and the perioperative management of in-hospital urgencies and emergencies.

PGY-3

The PGY-3 year consists of three three-month blocks rotating in Spine - Elective, Spine - Trauma, and Cranial. There is an additional three-month block on Night Float.

The Cranial rotation has a primary focus in independently performing fundamental procedures in general neurosurgery. Basic principles are taught and significant portions of surgeries in subspecialty areas are performed, including vascular, epilepsy, functional and tumor neurosurgery.

The mid-level spine resident is expected to attain competency in the performance of straightforward spinal procedures at all levels of the spine. The resident will have exposure to spinal trauma injuries and will participate in many elective spine surgeries, gaining further understanding of degenerative spine diseases.

PGY-4

The PGY-4 year consists of two three-month blocks on Cranial and Pediatrics/Functional rotations, and one six-month Cerebrovascular block.

The Cerebrovascular rotation prepares the neurosurgical trainees to be competent in the complete range of endovascular and surgical neurovascular interventions to treat tumors and vascular diseases affecting the nervous system. Elective and more focused subspecialty rotations begin after the residents have achieved core competence in neurocritical care, pediatrics, and cranial and spine surgery.

PGY-5

The research year (PGY-5) will be a dedicated basic or clinical science academic training experience chosen by the resident, to be approved on an individual basis. Residents are also encouraged to submit abstracts for oral presentations at national neurosurgical meetings; the department supports a minimum of one trip a year for each resident for oral presentations at national neurosurgical meetings.

The final two years (PGY-6, 7) will allow significant resident autonomy and the possibility of a certified infolding fellowship or additional research time.

PGY-6

PGY-6 residents will spend six months on the neurosurgical chief-of-service rotation at Memorial Hermann-TMC, emphasizing tumor, neuro-oncology, cerebrovascular and other disorders and their surgical treatments. Participants will spend this time as chief residents and are responsible, on an alternating basis (switching every other week with their service counterpart PGY-6 co-chief), for the administration of the service and the smooth functioning of the operating room schedule.

Residents will spend three months on an advanced elective spine rotation, learning management of complex degenerative spine and peripheral nerve diseases. In addition, they will rotate for three months on the Acute Care service, functioning as a junior attending, where they will have the opportunity to manage their own clinic and surgery schedule.

PGY-7

The PGY-7 year is spent exclusively pursuing focused area(s) of clinical interest or research. This year offers a broad opportunity to finely tune one's operative skills and provide oversight for the entire management of the patient population on the service. The year can be comprised of a combination of various elective rotations or can be tailored to allow the resident to pursue an infolded fellowship.

Facilities

Founded in 1925, Memorial Hermann-Texas Medical Center is a private, nonprofit, nonsectarian teaching institution. It serves as the primary teaching hospital for UTHealth Medical School. It was the first hospital to open in the world-renowned Texas Medical Center.



As one of only two certified Level I trauma centers in the Greater Houston area, the hospital provides 24-hour emergency and trauma care to more than 40,000 patients a year. Memorial Hermann Life Flight air ambulance service operates a fleet of six helicopters, providing emergency rescue and air transport services to a multicounty area.

The adult neurosurgical service at Memorial Hermann-TMC is located on the 5th and 7th floors in the Jones Pavilion of the hospital.

The 5th floor contains a 48-bed patient care unit. The 7th floor is a 32-bed neurosurgical intensive care unit, the second largest in the nation. This advanced setting allows our physicians to provide comprehensive critical care management around the clock for critically ill patients.

Pediatric neurology and neurosurgery patients are cared for at Children's Memorial Hermann Hospital, at the Children's Neuroscience Center.

Benefits

Paid Leave

- Vacation: four weeks for all PGY levels per contract year
- Sick Leave: 12 working days per contract year with a rollover cap of 30 working days
- Educational Leave: five working days per contract year

Insurance Programs at No Cost to Resident

- Comprehensive medical care plan
- Dental insurance
- Vision insurance
- \$100,000 basic life insurance
- Disability insurance
- Accidental death and dismemberment insurance
- Professional liability insurance

Other Benefits

- Dependent medical, dental and vision insurance available at group rates
- Supplemental disability insurance
- Paid and unpaid leaves of absence
- Tax-deferred annuity plans
- Uniforms and badges at no cost
- Paid membership in Harris County Medical Society and Texas Medical Association

Resources Provided by Program

- Start-up library
- Pair of surgical loupes
- Lead aprons
- Spine and skull models
- Annual book stipend (PGY 1-4: \$1,000; PGY 5-7: \$500)
- Paid conference attendance
- Other travel (as approved)

RESIDENT AND FELLOW STIPENDS 2015-2016 ACADEMIC YEAR

PROGRAM	STIPEND*
PGY-1	\$ 51,776
PGY-2	\$ 53,714
PGY-3	\$ 55,167
PGY-4	\$ 57,395
PGY-5	\$ 60,195
PGY-6	\$ 62,146
PGY-7	\$ 64,243
PGY-8	\$ 65,848

*Effective date: 06/23/15

Conferences

Grand Rounds

Neurosurgery Grand Rounds were designed with resident education as the primary focus. They are held in the Medical School Building, on Thursdays at 8 a.m. The sessions are divided into recurring topics, including neuroradiology, neurology, neuro-oncology, epilepsy, neuro-ophthalmology, neuro-endocrinology and neuropathology.

Resident Curriculum Conference

In the Resident Curriculum Conference, led by Dr. Day, residents prepare and review all aspects of neurosurgical knowledge and evidence. Also in attendance are physician assistants, medical students and nurse practitioners. Each topic is reviewed once every two years, so each resident will have completed each cycle three times by graduation.

Visiting Professor Lecture Series

Throughout the year, the department hosts prominent figures in the field of neurological surgery lecturing on their areas of interest.

Visiting professor days usually consist of a pre-dinner with residents only, highlighted by a one-hour lecture, followed by a private educational session, one-on-one with the speaker and residents.

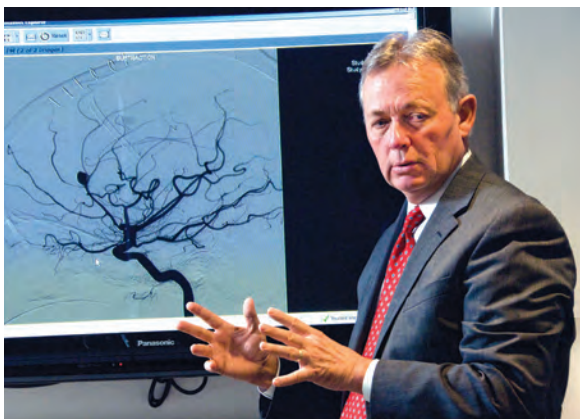
Neurosurgery Accreditation

Throughout the history of the Neurosurgery Residency Program, the department of Neurosurgery has made significant accomplishments. In 2010, after just three years as a Program, the Accreditation Council for Graduate Medical Education (ACGME) granted us the maximum accreditation and also approved an additional residency position. The Program currently accepts two residents per year for seven years of training.

Board Exam Requirements

All residents are required to take the American Board of Neurological Surgery primary written examination on an annual basis. Satisfactory progress must be shown before the resident advances to the next level of training. The examination must be passed for credit prior to the chief residency year.

The Neurosurgery Residency Program also holds “mock” oral boards to assist in examination preparation for our residents.



Recognition for the resident who achieves the highest primary exam score is given at the end-of-year ceremony. In addition, the Program offers an award for the resident who has been the biggest team player each year.



Why Houston?

As the fourth largest city in the country, Houston is filled with great diversity. Nestled among meandering bayous, towering pines and verdant parkland, Houston is a character-rich “third coast” city that roughly six million people call home.

The weather in Houston is favorable. With an average winter temperature of 55 degrees, opportunities for outdoor recreation take place all year round.

Locals and visitors also converge on the Museum District for afternoons exploring the area’s 19 art- and culture-filled institutions. Houston is one of the few U.S. cities to boast resident companies in all major performance disciplines: symphony, ballet, opera and theater. For those who enjoy dining out, Houston’s culinary scene is vibrant and nationally acclaimed, with world-class chefs preparing foods hailing from all cultures and influences.

Extracurricular

UTHealth Medical School hosts numerous resident events each year to increase camaraderie and just have fun! These events include the annual Christmas Party, Post ABNS Exam Party, End-of-Year Dinner and other planned social events to let loose outside the auspices of the Program.

Each year, the neurosurgery residents and clinical faculty come together for the Annual Texas Neurosurgery Residency Training Programs Conference, a one-day educational conference created for participants to display and discuss current research projects.



Neurosurgery Centers of Excellence

Cerebrovascular Disease and Stroke
Critical Care and Neurotrauma
Neuromuscular Disorders
Neuro-oncology
Neurorehabilitation
Pediatric Neurosurgery and Neurology
Restorative Neurosurgery and Neurology
Spine Surgery

MNI Facts

- The first neurosurgery center to offer all advanced modalities of treatment – expert microsurgery, interventional neuroradiology/endovascular surgery and Gamma Knife radiosurgery – for complex lesions.
- The first and only hospital in Texas to receive The Joint Commission designation as a Comprehensive Stroke Center.
- The first center to conduct a national, multicenter trial for hypothermia in head injury.
- The first facility in Houston and one of the first in the United States to test the clot-dissolving drug tPA for acute stroke.
- The first center in Houston to test and prove the efficacy of three disparate treatments for stroke prevention: carotid surgery; administration of antiplatelet drugs, including aspirin; and patent foramen ovale closure.
- Site of the first single-center clinical trial for recurrent medulloblastoma, ependymoma and atypical teratoid-rhabdoid tumors using the direct infusion of chemotherapy into the fourth ventricle.
- We brought the first clinical magnetoencephalography (MEG) sensor to Houston and recently updated the technology to the new Elekta Neuromag® TRIUX.

How to Apply

Residency

Applications are submitted strictly through the Electronic Residency Application System (ERAS) using the National Residency Match Program (NRMP).

Application Requirements:

- USMLE Step 1 and a minimum passing score of 200
- Three letters of recommendation (preferably from other academic neurosurgeons)
- Research experience is preferred, but not required.

UTHealth Medical School accepts International Medical Graduates (IMG) who meet the qualifications listed, in addition to completing USMLE Steps 1, 2 and 3, all with a minimum score of 200, and having a valid ECFMG Certificate.

Fellowships

UTHealth Medical School currently has fellowships in Combined Open Cerebrovascular/Endovascular Neurosurgery, Neuroendovascular Surgery, and Spinal Neurosurgery and Peripheral Nerve Surgery.

If you are interested in applying for a fellowship, you must have completed an ACGME-accredited Residency Program in Neurological Surgery to qualify.

For more information, please contact Brooke Moore, education coordinator, at Brooke.N.Moore@uth.tmc.edu or 713.704.7375.

Visit our website:

neuro.memorialhermann.org/residency

Faculty Listing

Leadership

**Dong Kim, M.D.**

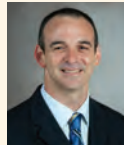
*Director, Mischer Neuroscience Institute
Professor and Chairman, Vivian L. Smith Department of Neurosurgery*
Residency: University of California, San Francisco
Fellowship: University of Florida at Gainesville – Cerebrovascular Surgery and Skull Base Tumors

**Kiwon Lee, M.D.**

*Director, Neurocritical Care
Associate Professor, Vivian L. Smith Department of Neurosurgery*
Residency: Stony Brook University, State University of New York
Fellowship: Brigham and Women's Hospital and Massachusetts General Hospital, Harvard Medical School – Neurocritical Care

**Arthur L. Day, M.D.**

*Director of Clinical Education, Mischer Neuroscience Institute
Program Director, Neurosurgery Residency*
Residency: University of Florida at Gainesville
Fellowship: University of Florida at Gainesville – Brain Tumor Immunology

**David Sandberg, M.D.**

Associate Professor and Chief, Division of Pediatric Neurosurgery
Residency: Weill Cornell Medical College
Fellowship: Children's Hospital Los Angeles – Pediatric Neurosurgery

Neurosurgery

**Paul Boone, M.D.**

Clinical Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: Vanderbilt University Medical Center
Fellowship: University of Florida College of Medicine – Reconstructive Spinal Surgery

**Ryan Kitagawa, M.D.**

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: Baylor College of Medicine
Fellowship: University of Miami, Miller School of Medicine

**Arthur L. Day, M.D.**

*Director of Clinical Education, Mischer Neuroscience Institute
Program Director, Neurosurgery Residency*
Residency: University of Florida at Gainesville
Fellowship: University of Florida at Gainesville – Brain Tumor Immunology

**Karl Schmitt, M.D.**

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: The University of Texas Medical Branch at Galveston
Fellowship: Yale University-Yale Comprehensive Spinal Fellowship

**Albert Fenoy, M.D.**

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: The University of Iowa
Fellowship: Centre Hospitalier Universitaire de Grenoble, France

**Scott Shepard, M.D.**

*Director, Gamma Knife Radiosurgery
Assistant Professor, Vivian L. Smith Department of Neurosurgery*
Residency: University of California, San Francisco
Fellowship: University of California, San Francisco, CNS Injury and Edema Center and Brain Tumor Research Center – Research Fellow; Memorial Sloan-Kettering Hospital – Surgical Neuro-oncology

**Joseph C. Hsieh, M.D.**

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: University of Chicago
Fellowship: Cedars-Sinai Medical Center in Los Angeles – Complex Spine

**Nitin Tandon, M.D.**

Professor, Vivian L. Smith Department of Neurosurgery
Residency: The University of Texas Health Science Center at San Antonio School of Medicine
Fellowship: Cleveland Clinic – Epilepsy

**Daniel H. Kim, M.D.**

*Director, Spinal Neurosurgery and Reconstructive Peripheral Nerve Surgery
Professor, Vivian L. Smith Department of Neurosurgery*
Residency: Louisiana State University
Fellowship: University of Florida – Spine Surgery

**Geoffrey Zubay, M.D.**

Clinical Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: Barrow Neurological Institute
Fellowship: Barrow Neurological Institute – Spinal Surgery; Northwestern University – Complex Reconstructive Spinal Surgery

**Dong Kim, M.D.**

*Director, Mischer Neuroscience Institute
Professor and Chairman, Vivian L. Smith Department of Neurosurgery*
Residency: University of California, San Francisco
Fellowship: University of Florida at Gainesville – Cerebrovascular Surgery and Skull Base Tumors

Endovascular



Spiros Blackburn, M.D.

Associate Professor, Vivian L. Smith Department of Neurosurgery
Residency: Washington University in St. Louis
Fellowship: Emory University - Cerebrovascular; Mallinckrodt Institute of Radiology, Washington University - Neurointerventional Endovascular



P. Roc Chen, M.D.

Associate Professor, Vivian L. Smith Department of Neurosurgery
Residency: Brigham and Women's Hospital and Children's Hospital Boston, of Harvard Medical School
Fellowship: Brigham and Women's Hospital - Neuro-Interventional Radiology; Barrow Neurological Institute - Cerebrovascular and Skull Base Surgery; Thomas Jefferson University Hospital - Neuro-Interventional Radiology and Cerebrovascular Neurosurgery



Mark Dannenbaum, M.D.

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: New York University Medical Center
Fellowship: Cleveland Clinic - Vascular; Albany Medical Center - Neuroendovascular



Nancy Edwards, M.D.

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: University of California, San Francisco
Fellowship: University of California, San Francisco - Neurocritical Care



Kiwon Lee, M.D.

Director, Neurocritical Care
Associate Professor, Vivian L. Smith Department of Neurosurgery
Residency: Stony Brook University, State University of New York
Fellowship: Brigham and Women's Hospital and Massachusetts General Hospital, Harvard Medical School - Neurocritical Care



Jeremy T. Ragland, M.D.

Columbia University, College of Physicians & Surgeons, New York, NY
Residency: Neurology - Columbia University, New York, NY



George Williams, M.D.

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: University Hospitals of Cleveland/Case Western Reserve
Fellowship: Cleveland Clinic Foundation - Critical Care

Children's Neuroscience



Stephen Fletcher, D.O.

Associate Professor, Division of Pediatric Neurosurgery
Residency: The University of Texas Health Science Center at San Antonio School of Medicine
Fellowship: Dallas Children's Hospital - Pediatric Neurosurgery



David Sandberg, M.D.

Associate Professor and Chief, Division of Pediatric Neurosurgery
Residency: Weill Cornell Medical College
Fellowship: Children's Hospital Los Angeles - Pediatric Neurosurgery



Manish Shah, M.D.

Assistant Professor, Division of Pediatric Neurosurgery
Residency: Washington University/Barnes-Jewish Hospital
Fellowship: Washington University/St. Louis Children's Hospital - Pediatric Neurosurgery

Critical Care



Wamda O. Ahmed, M.D.

Stoney Brook School of Medicine, Stony Brook, NY
Residency: Neurology - Mount Sinai Medical Center, New York, NY



Tiffany Chang, M.D.

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: Tulane University
Fellowship: Johns Hopkins University - Internal Medicine and Neurology



H. Alex Choi, M.D.

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: The Neurological Institute of New York
Fellowship: The Neurological Institute of New York - Neurocritical Care

Neuro-oncology



Sigmund Hsu, M.D.

Neuro-Oncology Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: Weill Cornell Medical College
Fellowship: The University of Texas MD Anderson Cancer Center - Neuro-oncology



Jay-Jiguang Zhu, M.D.

Neuro-Oncology Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: Tufts University School of Medicine in Boston
Fellowship: Massachusetts General Hospital; Harvard Medical School in Boston

Pain Management



Mark J. Burish, M.D.

Clinical Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: University of California at San Francisco
Fellowship: University of California at San Francisco - Interventional Pain Management



Nadya Dhanani, M.D.

Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: Massachusetts General Hospital
Fellowship: The University of Texas MD Anderson Cancer Center - Pain Medicine



Silky Patel, M.D.

Clinical Assistant Professor, Vivian L. Smith Department of Neurosurgery
Residency: Loyola University Medical Center in Chicago
Fellowship: Loma Linda University Medical Center - Pain Management

2015-2016 Residents



PGY 7
Shane Abdunnur, M.D.
Medical College of Virginia



PGY 5
Wesley Jones, M.D.
Texas Tech University Health Sciences
Center School of Medicine



PGY 3
Stephen Katzen, M.D.
Texas Tech University Health Sciences
Center School of Medicine



PGY 7
Victor Lo, M.D.
Royal College of Surgeons of Ireland



PGY 5
Saint-Aaron Morris, M.D.
UTHealth Medical School



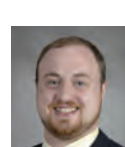
PGY 2
Brett Simpson, M.D.
Chicago Medical School at
Rosalind Franklin University



PGY 6
Sebastian Villarreal, M.D.
UTHealth Medical School



PGY 4
Jessica Stark, M.D.
Louisiana State University School
of Medicine in New Orleans



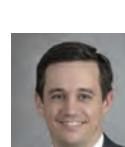
PGY 2
Anthony Divito, M.D.
University of Cincinnati College
of Medicine



PGY 6
Edward Hsu, Ph.D., M.D.
Taipei Medical University, Taiwan



PGY 4
Daniel Monsivais, M.D.
University of Texas Medical Branch at
Galveston School of Medicine



PGY 1
Christopher Conner, M.D.
UTHealth Medical School



PGY 6
Ali Hassoun Turkmani, M.D.
Damascus University, Syria



PGY 3
Keith Kerr, M.D.
UTHealth Medical School



PGY 1
Cole Lewis, M.D.
UTHealth Medical School

Fellows



Joseph Cochran, M.D.
Combined Open CV/Endovascular
Surgery Fellow, 2nd Year



Ritvij Bowry, M.D.
Neurocritical Care Fellow, 2nd Year



Leslie Kimpler, M.D.
Neurocritical Care Fellow, 1st Year



Ali Ezzo, M.D.
Neurocritical Care Fellow, 2nd Year



Khaled Eissa, M.D.
Neurocritical Care Fellow, 1st Year



Mubashir Pervez, M.D.
Neurocritical Care Fellow, 1st Year



Kevin Meier, M.D.
Neurocritical Care Fellow, 2nd Year

Not Pictured

Manon Shah, M.D.
Neurocritical Care Fellow, 1st Year

Notes



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