

NEUROLOGY TRAINING PROGRAMS 2018 - 2019

UT Southwestern
O'Donnell Brain Institute





Table of Contents

- 3** Welcome to UT Southwestern Neurology
- 4** Campus and Facilities
- 7** Adult Neurology 4-Year Program
- 10** Child Neurology Program
- 13** Neurodevelopmental Disabilities Program
- 14** Fellowships
- 20** UT Southwestern by the Numbers
- 21** Living in Dallas
- 24** Neurology Faculty
- 25** Current Residents and Fellows
- 27** Campus Map

For more information

www.utsouthwestern.edu/neurologyresidency

neurologyresidency@utsouthwestern.edu

neurofellowship@utsouthwestern.edu

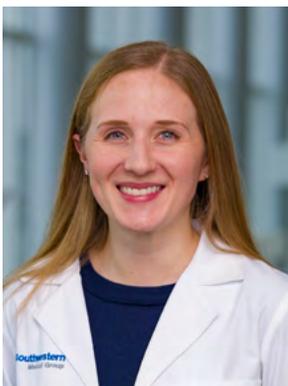
Welcome to UT Southwestern Neurology and Neurotherapeutics

We are excited to share some information about post-graduate training opportunities in the Department of Neurology and Neurotherapeutics at UT Southwestern Medical Center at Dallas. The University is a leader in patient care, biomedical research, and medical education. Our neurology faculty is nationally recognized for outstanding clinical care, teaching, and research in the neurosciences.

We provide the highest quality training in general neurology and the major neurological subspecialties with a focus on neurotherapeutics. Trainees receive extensive clinical experience through inpatient and outpatient settings supervised by an active and energetic faculty with a wide range of clinical and research interests. Teaching conferences and electives supplement the basic curriculum and provide residents with a strong foundation in neuroscience and evidence-based neurology.

Our adult neurology residency program is a categorical 4-year residency program that provides innovative and outstanding clinical training plus opportunities for research. The Division of Child Neurology offers categorical residency programs in child neurology (5-year) or neurodevelopmental disorders (6-year) based at Children's Health in Dallas. In collaboration with the Department of Psychiatry, we also offer a 6-year combined neuro-psychiatry residency program. A research track is available to residents planning clinician-scientist careers. Fellowship programs are available in 13 neurological subspecialties and all of our training programs are fully accredited.

As directors of the neurology training programs, we maintain an absolute commitment to quality and integrity while encouraging innovation and flexibility. We aim to keep UT Southwestern at the forefront of neurology education and continue to train future leaders in neurology and cutting-edge neurotherapeutics.



Lauren Phillips, MD
Adult Neurology
Residency Program
Director



Rana Said, MD
Child Neurology
Residency Program
Director



Patricia Evans, MD, PhD
Neurodevelopmental
Disabilities Residency
Program Director



Steven Vernino, MD, PhD
Academic Vice-Chair,
Department of Neurology
and Neurotherapeutics

Campus and Facilities

The University of Texas Southwestern Medical Center campus is located a few minutes north of downtown Dallas and includes UT Southwestern Medical School, Graduate School of Biomedical Sciences, UT Southwestern School of Health Professions, four hospitals, numerous outpatient clinics, and a large research complex. UT Southwestern is the major tertiary referral center for neurological disorders in the region and the premier neurology training program in Texas.

Parkland Hospital, one of the busiest public hospitals in the nation, offers 862 private patient rooms and logs 1 million patient visits annually. The 2.8 million-square-foot campus opened in August 2015 and was designed to meet the needs of Dallas County, one of the largest, fastest growing regions in the country.

Since its founding in 1894, Parkland has earned a national reputation for excellent patient care as well as medical education and training. It is the primary teaching facility at UT Southwestern and our neurology residents maintain their own outpatient continuity clinics where they gain experience with a large and diverse patient population. Parkland is certified by the Joint Commission as a Comprehensive Stroke Center, and the Epilepsy Program is accredited as a Level 4 Epilepsy Center by the National Association of Epilepsy Centers.



Zale-Lipshy University Hospital is one of the world's premier neurological diagnostic and treatment centers. The 152-bed, tertiary referral teaching hospital is home to the **Peter O'Donnell Jr. Brain Institute**, established in 2015 to advance patient care and research for neurological disorders. Patients benefit from the latest advances in neurovascular surgery, interventional neuroradiology, and neurological intensive care. The Joint Commission certified Zale Lipshy as an Advanced Comprehensive Stroke Center in 2014.

William P. Clements Jr. University Hospital, a 1.3-million-square-foot facility that houses 460 single-patient rooms, opened in December 2014. A separate neuroscience wing is scheduled to open in January of 2020.

The hospital's W-shaped design is distinctive and functional. Dispersed workstations place nurses in close proximity to their patients, while research areas on each patient floor integrate clinicians and scientists into patient care teams. Designated teaching spaces provide areas for health care teams to collaborate.



Children's Health has more than 600 beds and is the 8th largest pediatric healthcare provider in the nation. U.S. News & World Report ranked Children's in all 10 specialties for 2018-2019, the only North Texas hospital to achieve this honor.

The Pediatric Neurology Division at Children's sees patients with conditions across the neurological and developmental spectrum, from birth to early adulthood.

The Dallas Veterans Affairs Medical Center (VAMC) is a 289-bed hospital located south of downtown Dallas. The Dallas VAMC serves a 30-county area with approximately 430,000 veterans. The hospital includes a 30-bed spinal cord injury unit and long-term care facilities. Neurology residents provide inpatient neurology consultation and outpatient clinics for neuromuscular/autonomic disorders, MS, epilepsy, sleep disorders and general neurology.

Texas Scottish Rite Hospital for Children (TSRH), located 1 mile south of UT Southwestern, is recognized internationally for clinical care and research in chronic neurological and orthopedic disorders. Neurology residents rotate at TSRH for a unique experience with rare chronic neurological problems. Each year, the Carrell-Krusen neuromuscular symposium provides a forum for residents to present and to learn from national experts.

Welcome from the Chief Residents



Rahul Abhyankar, MD



Ryan Cheung, DO



Lauren Tardo, MD

On behalf of our residents, we want to welcome you to UT Southwestern! We are thrilled you have come to learn more about our program. As the only neurology residency program in North Texas, we provide unparalleled clinical exposure with a wealth of learning opportunities.

We have two new teaching hospitals, and in 2020, we will welcome the new neuroscience tower to our university hospital. Our large faculty, diverse patient population, and five clinical sites provide innumerable opportunities to develop skills as a clinician, educator, and researcher.

The spirit of our program is continued improvement based on resident feedback. This year, we made several changes to the didactic curriculum and to the structure of the inpatient and outpatient rotations. The new changes allow more elective opportunities and provide more balanced resident allotment to especially busy rotations. The number of overnight calls are reduced given the growth in our program, and the didactic curriculum focuses more on interdisciplinary education and personal well-being.

We hope you will make the most of your visit and enjoy your interview day. We would love to have you spend the next 4 years of your training with us here in Dallas. If there is anything we can do to make your decision easier, please do not hesitate to reach out to us.

Chief Residents 2018-2019

Lauren, Rahul, and Ryan

Adult Neurology 4-Year Program

1 1st Year - Internship

Residents spend their first year as an integrated member of the UT Southwestern Internal Medicine program. The year includes 9 months on various inpatient services: general medicine wards, Medical Intensive Care Unit (MICU), Cardiac Care Unit (CCU), and General Cardiology. One block (4 weeks) is spent in emergency medicine/Neuro ICU (2 weeks each) and headache medicine. After completion of each inpatient block, one week is spent in outpatient clinics including neurology clinics at Parkland (continuity) and the VA, as well as subspecialty clinics such as rheumatology and brain rehabilitation.

The final block of the PGY-1 year serves as a dedicated transition from Internal Medicine to Neurology with an “Introduction to Neurology” series. These weeks are devoted to education as the residents enter the neurology aspect of their training without the burden of clinical responsibilities.

Residents receive a focused review of neuroscience, neuroanatomy, neuropathology and neuroradiology and special instruction on presentation of common neurological diseases. Simulation training prepares residents for acute neurologic emergencies. The neurological examination is also taught and skills are reinforced during rotation through outpatient subspecialty clinics.

2 2nd Year - Intro to Neurology

The focus of the PGY-2 year is direct care of hospitalized patients with acute neurologic disease. Residents spend approximately 9 months on the neurology inpatient and consult services at the teaching hospitals. During these rotations, residents will develop diagnostic skills and become familiar with management of acute neurological issues under direct supervision of senior residents and attending faculty. Additional rotations completed in the PGY-2 year include rotations in the Neurosciences Intensive Care Unit (NCC), Epilepsy Monitoring Unit (EMU), Behavioral Neurology and Neuro-Oncology.

Integrated with the training is a Neurology Continuity Clinic where residents follow patients longitudinally. Residents will be exposed to a variety of common and uncommon neurologic disorders. Unique scheduling of continuity clinic ensures that this important activity does not conflict with inpatient duties.

(on right) Residents in several UTSW Neuroscience programs met to discuss new collaborations.



3

3rd Year - Mastering Skills

The third year of training provides a more diverse experience. Three months are spent with Child Neurology with time divided into 2 months on the inpatient neurology consult service at Children's and 1 month in outpatient clinics at Texas Scottish Rite Hospital and Children's. PGY-3 residents also rotate on the psychiatry consult service.

Residents have scheduled rotations within subspecialty clinics including Neuromuscular, Movement Disorders, and Epilepsy. Additional time is available for electives such as:

- Neuro-Immunology/Multiple Sclerosis
- Sleep Medicine
- Neuro-Ophthalmology
- Behavioral Neurology/Dementia
- Neuroradiology
- Headache
- Neuro-Oncology
- Research
- Neuro-otology

PGY-3 residents present at clinicopathological case (CPC) conference, one of the educational milestones of the training program.

4

4th Year - Becoming a Neurologist

PGY-4 residents advance to a more supervisory role building on skills accumulated over their training. On both inpatient and consult services, PGY-4 residents assume the major teaching duties and lead teams consisting of medical students, rotating residents from other services, and junior neurology residents.

Residents also have more autonomy while providing emergency room consultations and in outpatient clinics where they also learn about management, billing, and outpatient consultation.

Similar to the PGY-3 year, elective time is built into this final year of training and is designed to be flexible to meet the individual needs of the resident in preparation for fellowship training, research, or a career in private practice.

On Research Day, held each spring, PGY-4 residents present a topic of particular research or clinical interest. Research Day is attended by the entire department with a keynote address by a prominent alumni involved in clinical or basic science research.

The competition is lively between faculty and residents at the annual Neurobowl -- a game similar to Jeopardy and focused on neurology knowledge.



Research Track

The research track is available to child or adult neurology residents with strong potential for a career as a clinician-scientist. The modified residency schedule includes 6 months of dedicated research time during the PGY-4 year as well as the expectation of completing a year of post-residency research. The goal of the research track is to prepare the neurology resident for a career in academic neurology. In addition to research time, the program provides mentorship, workshops on manuscript and grant-writing, and training in research methodology. Research track residents are expected to produce and submit an initial K grant application. This program is supported by an R25 grant from NINDS (led by Dr. Marc Diamond) and the O'Donnell Brain Institute. Prospective residents can match directly to our research track in the NRMP match. Additionally, qualified residents in the categorical neurology program can apply during their PGY-2 year to enter the research track.

Teaching Conferences

Core teaching conferences

- Attending rounds (7 days per week) are conducted on all inpatient neurology services.
- Afternoon report – case discussions focused on diagnosis, management, and review of neurophysiology and imaging.
- Professor rounds – on most Fridays, residents challenge Dr. Roger Rosenberg with a complex case.
- Didactic teaching conferences are held each Thursday afternoon. The comprehensive lecture series covers the breadth of clinical neurology, related topics and subspecialty conferences (stroke, autoimmune neurology, neuroimaging rounds, and journal club).
- Neurology Grand Rounds features visiting lecturers or clinical pathological conferences presented by PGY-3 residents.
- Monthly neurology Quality and Safety conference – a focus on quality improvement and innovation

Additional conferences available to residents

- Monthly subspecialty journal clubs in Neuromuscular, Behavioral Neurology, Neurocritical Care, and Child Neurology.
- Weekly subspecialty conferences in Neuromuscular (EMG), Neuro-Oncology, Epilepsy, Dementia, Neuromodulation, Headache, Autonomic Disorders and Movement Disorders.
- Neuropathology (brain cutting, nerve/muscle pathology).
- Clinical neurophysiology didactic series.

Multidisciplinary Clinics

Residents and fellows have the opportunity to train in a number of multidisciplinary clinic settings: Multiple System Atrophy, ALS, Headache, Sleep, and MS. These programs provide interaction with a team of specialists caring for the patient in the outpatient setting. Residents also participate in a Chemodenervation Clinic for treatment of movement disorders and spasticity and a Headache Procedure Clinic that includes Botox for migraine and nerve blocks.

Child Neurology 5-Year Program

Our categorical program includes 2 years of pediatrics training with our rigorous, ACGME-accredited Pediatrics Residency at Children's Medical Center of Dallas. After completion of these 2 years, our residents start their 3 years of child neurology training.

1-2 **Pediatric Training**

Residents spend their first 2 years as integrated members of the Pediatrics Residency program at UT Southwestern – Children's Health. During this time, requirements are met to fulfill the American Board of Pediatrics' specialty pathway training; this makes residents eligible to sit for the American Board of Pediatrics at the completion of the 5-year training.

3 **Adult Neurology & Intro to Child Neurology**

The first block of this year is dedicated to "An Introduction to Neurology" and "Management of Acute Neurologic Emergencies." This focused review of neuroscience, neuroanatomy, neuropathology, and neuroradiology occurs without the burden of primary clinical responsibilities. The neurologic exam in both pediatrics and adults is also taught and demonstrated.

Residents complete 6 months of adult inpatient neurology with the focus on direct care of patients with acute neurologic disease on the neurology inpatient and consult services, including the Neurosciences Intensive Care Unit (ICU) and Epilepsy Monitoring Unit (EMU), while under the direct supervision of adult neurology senior residents and attending faculty. They also complete one block of adult outpatient specialty clinics (OPD) and one block of adult neurology elective. Neuropathology is also completed this year.

Integrated throughout training is a weekly Child Neurology Continuity Clinic where residents follow patients longitudinally and assess disease progression and management, especially as it pertains to a developing child. Residents will be exposed to common and uncommon neurologic disorders providing the opportunity to follow patients over the duration of their training.



4

Mastering Skills in Child Neurology

During their fourth year, residents will complete their adult neurology training requirements including Adult OPD (2 blocks) and adult neurology elective (2 blocks). Residents spend more time developing and mastering their skills in child neurology. They develop diagnostic skills and become familiar with the management of acute and chronic child neurologic issues under direct supervision of senior residents and attendings in a variety of settings. These include the Pediatric ICUs, the neuroscience floor, the Cardiac ICU, the Neonatal ICUs, several general and subspecialty pediatrics floors, the Emergency room, and outpatient clinic rotations. Residents can also complete a rotation in the Pediatric Epilepsy Monitoring Unit (EMU) at Children's and in Pediatric Neuroradiology.

5

Becoming a Child Neurologist

Senior residents spend year five in a more supervisory role. On the Supratentorial Team (consultation services to the PICUs and Neuroscience floor) and the Basal Ganglia Team (consultation services to the rest of the primary teaching hospital – Neonatal ICUs, ER, pediatrics beds, Cardiac ICU), senior residents assume the major teaching duties and lead teams consisting of medical students, junior child neurology residents, and rotating residents from other services. Residents also complete scheduled rotations within general and subspecialty pediatric neurology clinics including stroke, epilepsy, neurodevelopmental disabilities, neuromuscular, headache, concussion, neurogenetics, rare disorders, neuroimmunology, neuro-oncology and more.



Child Neurology Residents 2018

Child Psychiatry rotation is also completed during this year. Residents have six blocks of electives (although one is typically completed during year 4). This is designed to be flexible to meet the needs of the resident in preparation for fellowship or a career in practice.

In the fall, residents will also present at clinicopathologic case (CPC) conference, an educational milestone of the training program. In the spring of their final year, they present a topic of their particular research or clinical interest at Research Day. This is attended by the entire Division of Child Neurology and the Department of Neurology with a keynote address by a prominent alumni involved in research. This past year, the Division of Child Neurology initiated an independent research day - Dr. Susan Iannaccone Research Day - in which all child neurology residents are expected to present.

Child Neurology Core Teaching Conferences

Our program offers a variety of educational opportunities for residents including the adult neurology core teaching conferences, didactics, and Grand Rounds. In addition, child neurology residents attend and present at the following conferences:

- Adult Neurology Core Didactics are Thursdays weekly 3-6 PM.
- Pediatric Neurology Journal Club – one Wednesday per month, 10 AM-11 AM
- Pediatric Neurology Morbidity and Mortality – one Wednesday per month, 10 AM-11 AM
- Pediatric Neurology Case Study Conference – one Wednesday per month, 10 AM-11 AM
- Pediatric EEG rounds – daily Monday-Friday, 4 PM
- Pediatric Neurology Medical Jeopardy



Child Neurology Residents and Faculty at Graduation 2018

Neurodevelopmental Disabilities Residency Program

The **Neurodevelopmental Disorders (NDD) Residency**, under the direction of Dr. Patricia Evans, is an independent, 4-year, ACGME-accredited program. NDD is a relatively new neurological subspecialty that allows the candidate to be eligible for three boards: Pediatrics (American Board of Pediatrics); Neurology with Special Certification in Child Neurology (American Board of Psychiatry & Neurology) and Neurodevelopmental Disabilities (ABPN). NDD physicians are highly sought after in private and academic settings and pursue a wide range of professional interests. The NDD program focuses on the diagnosis and treatment of a wide range of conditions in children, adolescents, and adults:

- Cognitive developmental disabilities: autism, intellectual disability, ADHD, developmental delay, and learning disabilities
- Metabolic and genetic conditions: chromosomal abnormalities, Trisomy 21, Fragile X, and mitochondrial diseases
- CNS conditions: epilepsy, cerebral palsy, traumatic brain injury
- Nerve and muscle disorders: muscular dystrophy, neuropathies

An NDD physician is required to complete 2 years of an ACGME-approved categorical pediatrics program; 4 years of NDD residency including 18 months of clinical child neurology and neurodevelopmental disabilities; and 18 months of clinical and basic science education.

Our program offers training in a world-class, multidisciplinary setting - the Center for Autism and Developmental Disabilities (CADD). NDD residents can also undertake 15 classroom hours for a Masters in Science degree at UT Southwestern for formal training in reading, critiquing, and designing their own research projects. They will enjoy fully integrated training with pediatric neurology faculty and residents that greatly enriches the NDD experience. Some residents can also be part of a research team investigating a range of important translational projects.

Neurology-Psychiatry Combined Residency

We offer an ACGME-accredited, 6-year combined residency program conferring board eligibility in both neurology and psychiatry upon completion of the program. One or two combined residents are selected in the match each year. Furthermore, internal candidates from either residency are able to apply as late as their PGY-3 year. This training enables the resident to work at the interface of the brain and mind, preparing graduates to practice within the full scope of both fields. From there, graduating residents are encouraged to carve out their own niche in this exciting and cutting-edge dual-specialty.

Residents start with an integrated medicine intern year similar to categorical neurology residents. They then spend the next 5 years combining core neurology, core psychiatry, elective, and research rotations with all the opportunities, collegiality, and mentorship of these two strong clinical departments at UT Southwestern. Neuro/Psych residents are also eligible to participate in an integrated research track with research funding available through the NIH R25 mechanism for up to 2 years of 50% research (in PGY-5 and 6).

Fellowships

Nearly all of our graduating residents pursue additional training either at UT Southwestern or other institutions. UT Southwestern offers fellowship training in many clinical subspecialties and lab-based research fellowships are available for those pursuing clinician-scientist careers. Many of the fellowship programs provide tracks for adult or pediatric-focused training, and most offer an additional year of research or advanced clinical training to prepare for academic careers.

Behavioral Neurology and Dementia. With the increasing prevalence of dementia and the aging of the U.S. population, this fellowship, accredited by the United Council for Neurological Specialties, prepares the trainee to understand the links between neuroscience and behavior. The fellow will gain experience in diagnosing and caring for individuals with neurologically-based behavioral disturbances and neurodegenerative diseases such as Alzheimer's disease.

Fellowship didactic curriculum includes regularly scheduled journal clubs and case presentations, such as clinicopathological cases from our Alzheimer's Disease Center (ADC) cohort. The fellow will have an opportunity to attend and present abstracts at national meetings, such as the ADC meetings, CTAD-Clinical Trials on Alzheimer's Disease meetings, and the AAIC-Alzheimer's Association International Conference.

Clinical Neurophysiology. The Clinical Neurophysiology Fellowship is an ACGME-accredited, 1-year program with an optional second year focused on Epilepsy, Autonomic Disorders or Neuromuscular medicine. The fellowship offers specialized training in the diagnosis and management of central, peripheral, and autonomic nervous system disorders using combined clinical evaluation and electrophysiologic testing such as electroencephalography (EEG), electromyography (EMG), and nerve conduction studies (NCS). Additional training in autonomic testing, polysomnography, and intraoperative monitoring is incorporated.

Fellows can select between an adult or pediatric-focused track. Regardless of track, exposure is offered to patients and expert faculty from both disciplines. The education program includes a comprehensive neurophysiology lecture series. There are also weekly clinical conferences for epilepsy surgery, EMG, and muscle biopsy review. The fellowship provides hands-on experience and intensive individual training by faculty in a variety of procedures and clinical activities including basic electronic and principles of neurophysiology, pharmacology of antiepileptic drugs, outpatient epilepsy clinics, and EMG and nerve conduction studies.



Parkland Hospital Epilepsy Monitoring Unit (EMU)

Epilepsy. The Epilepsy Fellowship is an ACGME-accredited, 1-year program and offers specialized training in neonatal, pediatric and adult epilepsy and neurophysiology with an emphasis on the management of intractable epilepsy and epilepsy surgery evaluation. Fellows can select between an adult or pediatric-focused track. Regardless of track, exposure is offered to both adult and pediatric patients and expert faculty.

All fellows attend a combined weekly epilepsy surgery conference, and a comprehensive lecture series throughout the year covering pediatric and adult topics, plus journal club and EEG review sessions. Fellows will become knowledgeable of the various imaging modalities involved in the evaluation of intractable epilepsy, including MRI, interictal/ictal SPECT, PET, and fMRI. Additionally, the fellowship provides hands-on experience and intensive individual training by faculty in a broad range of procedures and clinical activities including pharmacology of antiepileptic drugs, outpatient subspecialty epilepsy clinic and video EEG monitoring in an epilepsy monitoring unit.

Headache Medicine . The Headache and Facial Pain Fellowship Program is accredited by the United Council for Neurologic Subspecialties (UCNS). The 1-year program is multidisciplinary with partners in Sleep Medicine, Pain Management, Pediatric Neurology, Oromaxillofacial Surgery, Physical Therapy, Psychology, Obstetrics and Gynecology, and Plastic Surgery. Fellows can select between an adult or pediatric-focused track.

We have established our program as a regional leader in headache medicine with referrals from throughout the southwestern United States. Fellows will receive a comprehensive experience in outpatient, infusion center, inpatient headache and facial pain management, and will become proficient in procedures used in the treatment of headache patients (i.e., chemodenervation, peripheral nerve blocks).

Headache Medicine fellows are involved in clinical research and receive support to attend at least one national headache medicine meeting annually. There is a weekly teaching conference and the fellow accompanies the attending to supervise the resident neurology clinic at Parkland Hospital where many patients have headache disorders. The fellow will also see neuro-ophthalmology patients a half-day weekly to become familiar with examination techniques and learn about disorders that overlap the two disciplines.

Movement Disorders. The Clinical Center for Movement Disorders at UT Southwestern offers a 1 or 2-year comprehensive fellowship. The fellow gains experience with the diagnosis and management of a wide spectrum of movement disorders including Parkinson's disease, essential tremor, atypical parkinsonian syndromes, dystonia, ataxias, and Huntington's disease.

The fellow has an active role in the neuromodulation program including performing evaluations for patients considering surgery, presenting cases at interdisciplinary meetings, participating in intraoperative stereotactic planning and microelectrode recordings and programming DBS devices and assessing outcomes. The fellow gets hands-on training in EMG-guided botulinum toxin treatment of hyperkinetic movement disorders and spasticity. Didactic curriculum includes video rounds of complex phenomenology of movements and their management, journal clubs, and case presentations.



Adult neurology residents and faculty at Graduation 2018

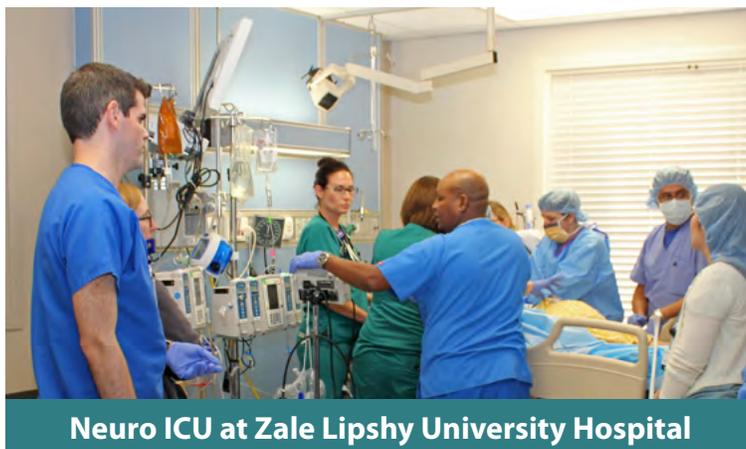
Neuroimmunology/MS. The Multiple Sclerosis Center at UT Southwestern emphasizes a comprehensive approach to patient care, research, and teaching. Fellows receive training in the clinical evaluation and management of the MS patient and related disorders (e.g. neuromyelitis optica, neurosarcoid, CNS vasculitis, Susac's, transverse myelitis). The complete range of immune-modulating therapies is employed allowing the fellow to participate in varied treatment approaches. Training also emphasizes neuro-ophthalmologic and neuro-vestibular examination techniques; innovative symptom management of fatigue, spasticity, bowel and bladder dysfunction, sexual difficulties, mood disorders, pain, osteoporosis, and assistive device utilization.

Autoimmune Neurology. The fellowship provides clinical and research training in neuroimmunological disorders beyond multiple sclerosis. The conditions include transverse myelitis, neuromyelitis optica, paraneoplastic disorders, myasthenic syndromes and autoimmune encephalitis. Participants can choose to have a focus on CNS disorders, PNS disorders or both. Participants will spend time in the multidisciplinary clinics for both pediatric and adult patients. They will master both inpatient and outpatient management of these complex patient populations, develop expertise in the use of immunomodulatory therapies, and embark on investigator-initiated research projects.

Neuro-Critical Care. The fellowship is a 2-year program accredited by the United Council for Neurologic Subspecialties and based on UCNS Training Requirements and Curriculum. The fellow will spend 12-14 months in the Neuro ICU, 4 months in the MICU, SICU, Trauma and CCU; 1 month in anesthesia, 1 month in neurosonology and 4-6 months electives. Some of the available electives include Neurosurgery, Epilepsy/EEG, and stroke.

Fellows have weekly didactic conferences attended by faculty, fellows, residents and NP/PAs which include journal article exchange, lectures on neurological and general critical care, interesting case presentations, and M&M. Procedural skills are developed first with simulation for central venous cannulation, arterial cannulation, noninvasive ventilation, endotracheal intubation, and bedside critical care ultrasound. Training in EVD and intracranial monitor placement is supported by the Neurosurgery Department.

The Neurocritical Care Division is involved in several clinical trials and holds a weekly Neurocritical Care/ Neurotrauma research meeting to propose new research ideas, discuss ongoing progress of current research, and hear from invited presenters from other departments. There is also opportunity for involvement in translational research with neural engineering and cortical plasticity.



Neuromuscular Medicine. The fellowship is a collaborative 1-year, ACGME-accredited program with UT Southwestern Medical School and Children's Medical Center Dallas. The adult NM fellows see patients in the clinics and treat a wide variety of diseases such as myasthenia gravis, muscular dystrophy, inflammatory myopathies, peripheral neuropathy, amyotrophic lateral sclerosis, autonomic disorders, paraneoplastic disorders, and muscle channelopathies. Several clinics are sponsored by the Muscular Dystrophy Association. The fellows work in the EMG laboratory each afternoon and have an opportunity to train in autonomic studies and single fiber EMG.

Pediatric NM fellows interact with a wide variety of patients with NM diseases such as muscular dystrophy, spinal muscular atrophy, rare congenital myopathies, Charcot-Marie-Tooth disease, and myasthenia gravis. The patient population totals about 650 unique patients aged 0-21 years. Besides clinics, there are 5-6 pediatric EMGs and 2 pediatric muscle biopsies done per week.

Fellows also receive instruction on the interpretation of nerve and muscle biopsies at the weekly NM Biopsy Conference. Other conferences include the monthly NM Journal Club, weekly NM and Neurophysiology didactic lecture series, weekly multidisciplinary ALS conference, and weekly EMG Review conference. At the end of 1 year of training, fellows will be competent in the diagnosis and treatment of patients with NM disease, the performance and interpretation of EMGs, and basic reading of muscle and nerve biopsies.

Autonomic Disorders. The 1-year clinical fellowship, accredited by the United Council for Neurological Specialties, provides training in the diagnosis and management of disorders of the autonomic nervous system emphasizing a comprehensive approach to multidisciplinary patient care and clinical/translational research. Fellows will become proficient in using neurophysiological autonomic testing. Curriculum includes regularly scheduled teaching conferences and case presentations. Fellows will work in several different autonomic laboratories with program faculty from both Neurology and Cardiology who are international experts in the field. At the completion of training, it is expected that the fellow will have a strong understanding of the interplay between neuroanatomy, cardiovascular physiology and pharmacology.

Neuro-Oncology. The fellowship is accredited by the United Council for Neurologic Specialties (UCNS) and provides advanced training in the diagnosis and management of primary brain tumors and the neurological complications of cancer. UT Southwestern neuro-oncology patients are seen in the Harold C. Simmons Cancer Center, the only NCI-Designated Cancer Center in North Texas.

Fellows receive a comprehensive clinical experience as part of a large multidisciplinary brain tumor team. Fellows work closely with colleagues in neuroradiology, neuropathology, neurosurgery, and radiation oncology. Training centers on the management of gliomas but includes exposure to the entire spectrum of primary and metastatic intracranial and intraspinal tumors. Fellows are expected to be closely involved with investigator-initiated and consortium clinical trials involving cutting-edge experimental treatments for brain tumors. The second (optional) year of fellowship is devoted to basic and translational neuro-oncology research.



American Academy of Neurology President Dr. Terry Cascino delivers Neurology Grand Rounds at UT Southwestern.

Sleep Medicine. The Clinical Center for Sleep and Breathing Disorders (CCSBD) at UT Southwestern and the Sleep Disorders Center (SDC) at Children’s Medical Center in Dallas offer a one-year, comprehensive, ACGME-accredited fellowship in sleep medicine. The fellow will be actively involved in the diagnosis and management of outpatient adults and children as well as inpatient care of adults at University Hospitals.

The fellow sees a wide spectrum of sleep disorders including sleep-related breathing disorders, hypersomnia and narcolepsy, insomnia and circadian rhythm disorders. Trainees receive expert supervision and hands-on training from a multi-disciplinary group of faculty who are board-certified in sleep medicine including neurologists, pulmonologists, clinical psychologists, pediatric pulmonologists, and a sleep pediatrician. Weekly didactics cover a spectrum of sleep disorders and sleep physiology. Case presentations, journal clubs, and neuroscience conferences will provide interaction with faculty and exposure to campus-wide research.

Vascular Neurology/Stroke. The fellowship offers a one-year, ACGME-accredited, comprehensive program in the management of cerebrovascular diseases. Training includes experience in acute and chronic research protocols and experience in the management of complicated cerebrovascular disorders requiring experimental therapies. Vascular neurologists, vascular neurosurgeons, neurointerventionalists, and neurointensivists participate in the fellowship program.

Fellows will gain inpatient clinical experience at Parkland Hospital as well as the University Hospitals. The outpatient clinical experience is provided in the Cerebrovascular and Stroke clinic at Aston. Patients are offered participation in acute and chronic research protocols and experimental, cutting-edge therapies.

The fellowship follows the curriculum proposed by the American Academy of Neurology Section on Stroke and Vascular Neurology. Core knowledge includes: mechanisms of brain ischemia and hemorrhage, pathophysiology, clinical manifestations of the spectrum of stroke syndromes, diagnostic and therapeutic considerations, neuroimaging modalities (including CT, MRI, MRA neck and intracranial, MRP, conventional digital subtraction angiography and rotational angiography, SPECT, helical-CT angiography, CTP transcranial Doppler ultrasonography, and carotid ultrasonography and Duplex imaging), and others.

By the Numbers



UT Southwestern Neurology

- 89** full-time clinical faculty (70 adult, 19 child neurology)
- #1** adult neurology residency program in Texas*
- #1** clinical neurology program in Texas*
- 52** adult neurology residents and fellows
- 17** child neurology residents and fellows



Hospital Neurology Services

- 2014** opening of new 460-bed William P. Clements Jr. University Hospital
- 2015** opening of new Parkland Hospital
- 2** acute stroke neurocritical care units
- 3** epilepsy monitoring units (more than 40 epilepsy surgeries per year)



UTSW Medical Center

- 6** Nobel laureates
- 23** faculty who are members of National Academy of Sciences
- 425** million dollars in research funding
- Top 20** medical school in research and primary care*



Dallas, Texas

- 4th** largest city in the United States
- 3%** below national average for cost of living
- 76°/55°** average high and low temperature in Dallas
- 125** miles of running and biking trails and 17 lakes
- 20** Fortune 500 companies
- 0%** state income tax

*Data from Doximity and U.S. News

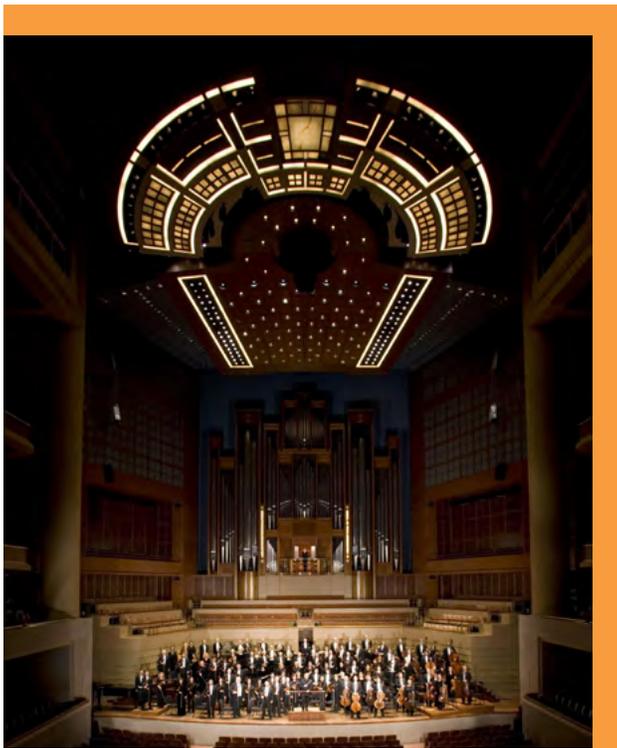
Living in BIG D



Dallas is many things — an affordable place to live, a convenient place to learn, a thriving business community and a great place to have fun. The Dallas-Fort Worth metro area offers a varied selection of places to call home, strong schools - both public and private - and plenty of choices for entertainment.

Getting Around Town.

Dallas Area Rapid Transit (DART) and Texas Rail Express (TRE) operate trains, busses and light rail which makes commuting within the metro area affordable and convenient. Two major airports serve the area - Dallas-Fort Worth International (DFW) and Dallas Love Field. Located within minutes of UT Southwestern, Love Field airport offers a quick, convenient option for weekend getaways with direct flights to nearly all cities in the continental U.S.



Winspear Opera House in the Dallas Arts District

Arts and Culture.

Dallas-Fort Worth is noted for numerous museums and galleries including the Dallas Museum of Art, Nasher Sculpture Center, Kimbell Art Gallery and the Perot Museum of Nature and Science. The Dallas Arboretum and Botanical Garden located on scenic White Rock Lake is one of the more beautiful spots in Dallas.

The metroplex is also home to world-class performing arts venues including the Meyerson Symphony Center, Bass Performance Hall and the Winspear Opera House. Those who are fans of theatre will appreciate “Broadway in Dallas” where top shows from the Great White Way are performed on stages throughout the arts district.

Lifestyle.

Whether you are single or married with children, the DFW area has plenty to do. The Dallas Zoo, Dallas Arboretum and Six Flags Over Texas are fun options for a day trip with family. Each fall, the Texas State Fair comes to town complete with amusement park rides, tasty treats, creative arts competitions and a big auto show.

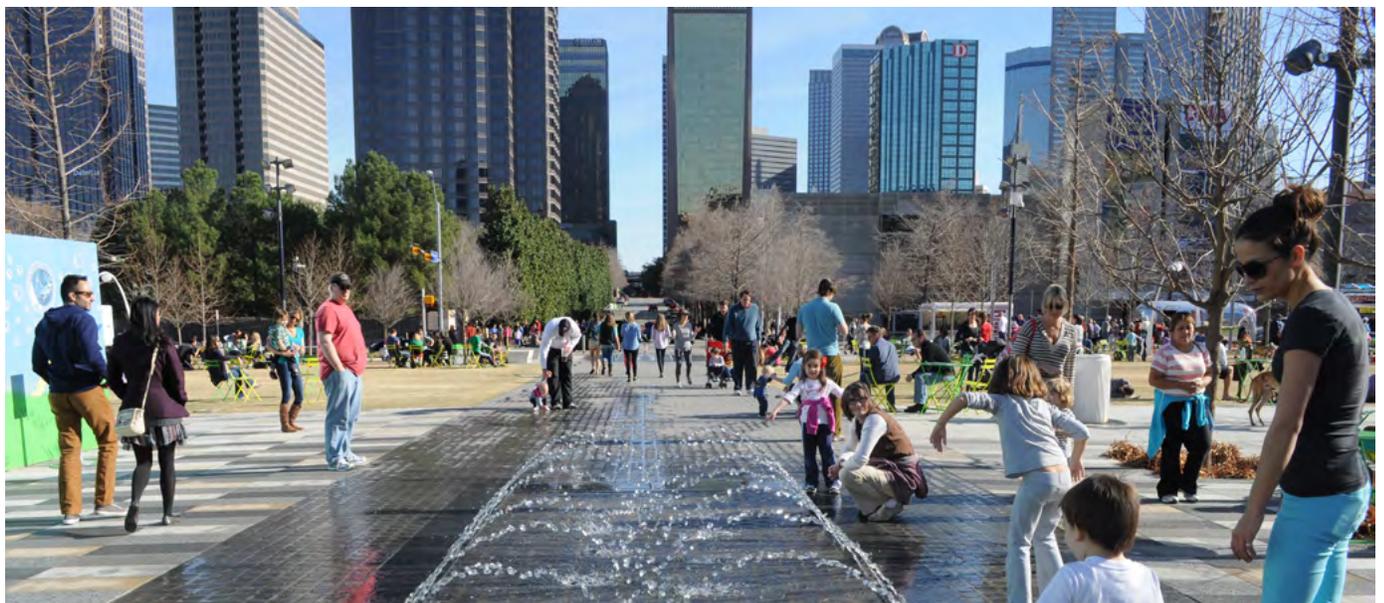


Dr. Roger Rosenberg takes residents sailing on Lake Grapevine.



The Dallas area abounds with parks, tennis courts, golf courses, jogging and cycling trails, and lakes for water sports and sailing. Some of the most popular outdoor spaces are Klyde Warren Park, a 5.2-acre green space in the heart of Downtown Dallas, the Katy Trail and the White Rock Lake area.

For fans of professional sports, Dallas has a team for you. Dallas is home to the Dallas Cowboys, Dallas Mavericks, Texas Rangers, Dallas Stars, and FC Dallas.

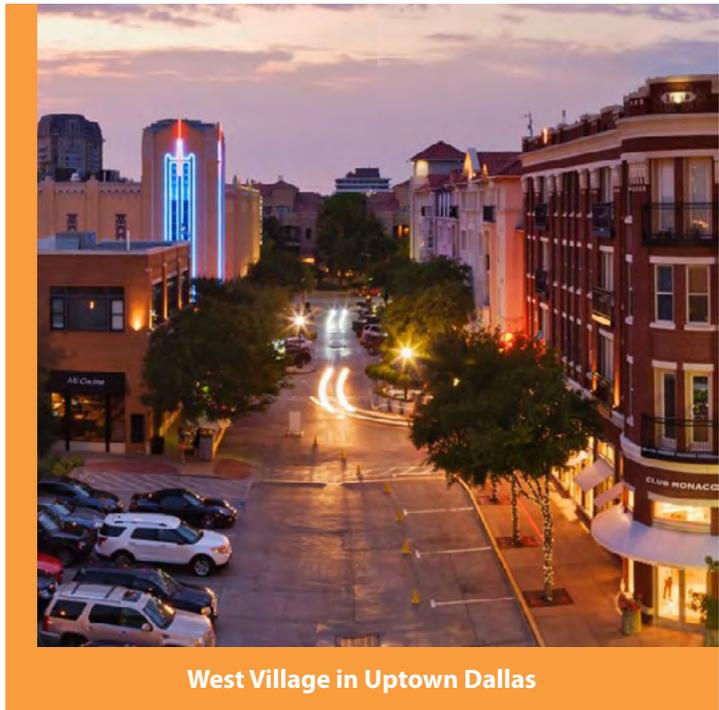




Making Dallas Home. The Dallas-Fort Worth region offers a wide variety of neighborhoods, from downtown lofts to a large selection of suburbs. Within two miles of the medical center is Uptown Dallas featuring apartments and condominiums occupied by the city's many young professionals. Uptown boasts outstanding restaurants, shops, parks, and bustling nightlife.

There are many options for those wanting to live within walking distance of the Medical Center. A construction boom in the area has created a variety of condominiums and apartments.

Some trainees prefer to purchase affordable homes in nearby suburbs including Irving, Las Colinas, Coppell, Plano, and Richardson. These are excellent areas to raise a family with outstanding public education and safe environments. Best of all, these communities are within a reasonable commute of UT Southwestern.



West Village in Uptown Dallas



Dallas skyline at night

2018 Neurology Faculty



Chair

Mark Goldberg, MD

Vice-Chairs

Steven Vernino, MD, PhD*
Brendan Kelley, MD, MBA*
Benjamin Greenberg, MD*

Cognitive & Memory Disorders

Roger Rosenberg, MD
John Hart, Jr, MD
Brendan Kelley, MD*
Trung Nguyen, MD, PhD
Kyle Womack, MD

Critical Care Neurology

Venkatesh Aiyagari, MBBS, DM
Stephen Figueroa, MD*
Christiana Hall, MD
David McDonagh, MD
Robin Novakovic, MD
DaiWai Olson, RN, PhD
Michael Rubin, MD

Epilepsy

Sasha Alick, MD
Mark Agostini, MD
Rohit Das, MD
Hina Dave, MD
Kan Ding, MD
Marisara Dieppa, MD**
Jay Harvey, MD
Ryan Hays, MD*
Brad Lega, MD
Ghazala Perven, MD
Rodrigo Zepeda, MD

General Neurology

Worthy Warnack, MD
Mehari Gebreyohanns, MD
Paul Hurd, MD
Alison Leston, MD, PhD
Shanan Munoz, MD

Headache Medicine

Deborah Friedman, MD*
Shin Beh, MD
Paul Hurd, MD
Shamin Masrour, DO
Tonia Sabo, MD
Bert Vargas, MD*

Movement Disorders

Richard Dewey, MD
Shilpa Chitnis, MD, PhD*
Padraig O'Suilleabhain, MD
Meagan Salinas, MD

Multiple Sclerosis

Angela Flores, MD
Benjamin Greenberg, MD*
Nancy Monson, PhD
Shanan Munoz, MD
Darin Okuda, MD
Olaf Stuve, MD, PhD
Cynthia Wang, MD

Neuromuscular

Meredith Bryarly, MD
Diana Castro, MD
Jeffrey Elliott, MD
Ronald Haller, MD
Susan Iannacconne, MD
Shaida Khan, DO
Sharon Nations, MD
Lauren Phillips, MD**
Jaya Trivedi, MD*
Steven Vernino, MD, PhD*
Lan Zhou, MD

Neuro-Oncology

Bruce Mickey, MD
Robert Bachoo, MD, PhD
Amyr Habib, MD
Elizabeth Maher, MD, PhD
Ed Pan, MD*
Torral Patel, MD

Neurobehavioral Child Neurology

Patricia Evans, MD**
Sailaja Golla, MD

Pediatric Neurology

Susan Arnold, MD
Diana Castro, MD
Mauricio Delgado-Ayala, MD
Lauren Dengle, MD
Alison Dolce, MD
Michael Dowling, MD, PhD
Patricia Evans, MD, PhD**
Kimberly Goodspeed, MD
Susan Iannaccone, MD
Saima Kayani, MD
Andrea Lowden, MD
Juan Pascual, MD, PhD
Tonia Sabo, MD
Rana Said, MD**
Deepa Sirsi, MD
Steve Sparagana, MD
Drew Thodeson, MD
Jennifer Thomas, MD
Peter Tsai, MD, PhD
Jeff Waugh, MD

Sleep Medicine

Greg Carter, MD, PhD*
Ryan Hays, MD
Safia Khan, MBBS
Imran Khawaja, MD

Stroke/Vascular Neurology

Mark Johnson, MD
Mehari Gebreyohanns, MD
Mark Goldberg, MD
Alejandro Magadan, MD
Ty Shang, MD, PhD*

TBI/Sports Neurology

Marisara Dieppa, MD**
John Hart, MD
Tonia Sabo, MD
Bert Vargas, MD

Interventional Neuroradiology

Robin Novakovic, MD
Lee Pride, MD*
Babu Welch, MD
Jonathan White, MD

Current Residents and Fellows

Class of 2019

Rahul Abhyankar, MD
Wilmot Bonnet, MD*
Luis Rendon Cantu, MD*
Ryan Cheung, DO
Brittney Pryor Craig, MD*
Kate Heaton, MD
Darrah Haffner, MD**
Travis Ho, DO
Alka Khera, MD
Niyatee Samudra MD
Lauren Tardo, MD
Tresa Zacharias, MD
Nannan Zhang, MD

Class of 2020

Kaitlin Batley, MD
Hsueh-Sheng Chiang, MD, PhD
Hanan El-Shakankiry, MD, PhD
Adrian Hadiono, MD
Jafar Hashem, MD
Tuba Khan, MD
Brian Ku, MD
Jordan “Scott” Loeb, DO
Ali Saherwala, MD
Spencer Septien, DO
Mohamed Shabana, MD
Kishan Tarpara, DO
Robert Weir, MD***
Kendra Williams, MD

Class of 2021

Christopher Bryant, MD
Richard Dewey, MD
Lorena Do Val, MD*
Jonathan Lauritsen, DO
Andrew Lin, MD
Masoud Majed, MD
Aaron McLaughlin, MD**
Shazia Mirza, MBBS
Brittney Rhem, MD*
Jenny Riecke, MD, MD
Christine Tran, MD*
Divya Shah, MBBS
Adam Sheffield, MD

Class of 2022

Yoo-Jin “Michelle” Baik, MD
Doris Deng, MD
Natalia Gonzalez-Caldito, MD
Morgan Heinzemann, MD
Siegfried Hirczy, MD
Denise Li, MD
Matthew Remz, MD
Victor Salinas, MD, PhD
Mishu Sharma, MD
Alex Rollo, MD***

Fellows 2018-2019

Kristen Arredondo, MD*
Kyle Blackburn, MD
Diego Martinez, MD
Alex Doyle, MD
Jordana Fox, DO*
Lisa Golden, MD
Brian Hitt, MD, PhD
Michelle Machie, MD*
Emmanuel Mantilla, DO

Abha Patel, DO
Dustin Paul, DO*
Irina Podkorytova, MD
Peter Sguigna, MD
Mathew Stokes, MD*
Laura Surillo, MD
Vismay Thakkar, MBBS
Leon Tung, MD

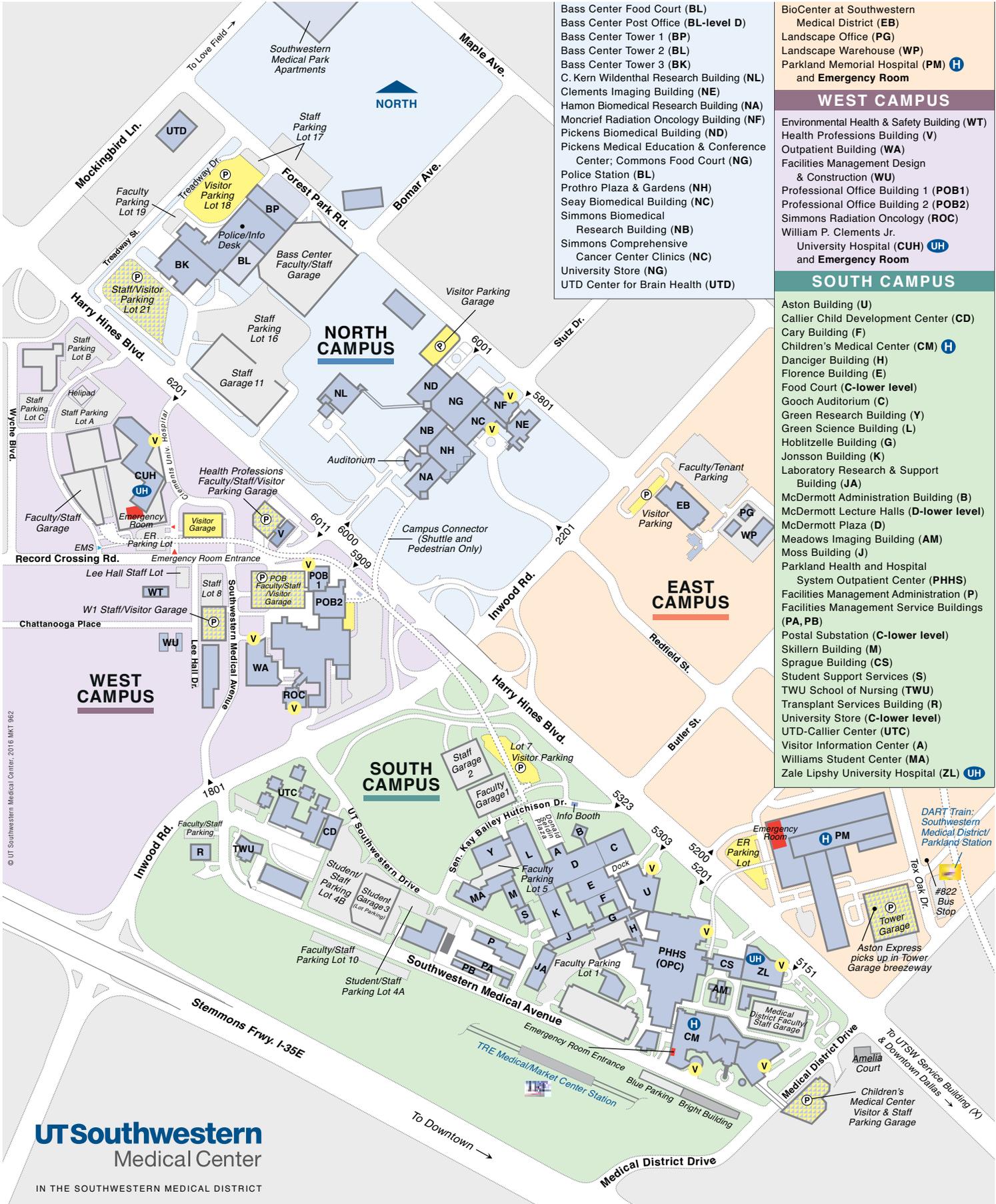


Team building at Neurology Resident Retreat 2017

* Child neurology program ** Neurodevelopmental Disabilities resident ***Neuro-psychiatry resident

Notes

Campus Map



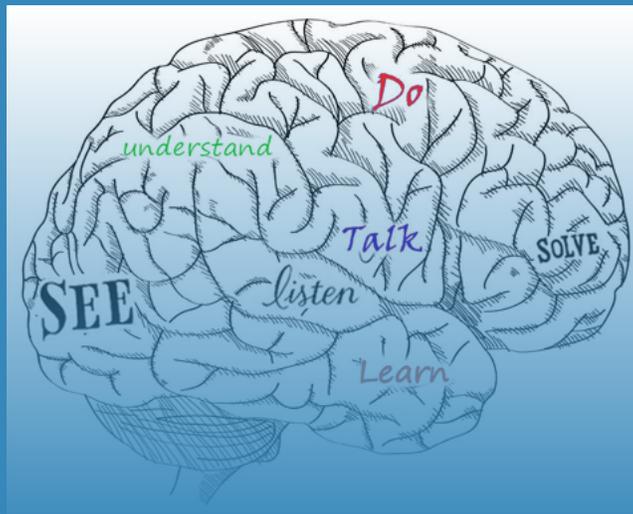
- Bass Center Food Court (BL)
- Bass Center Post Office (BL-level D)
- Bass Center Tower 1 (BP)
- Bass Center Tower 2 (BL)
- Bass Center Tower 3 (BK)
- C. Kern Wildenthal Research Building (NL)
- Clements Imaging Building (NE)
- Hamon Biomedical Research Building (NA)
- Moncrief Radiation Oncology Building (NF)
- Pickens Biomedical Building (ND)
- Pickens Medical Education & Conference Center; Commons Food Court (NG)
- Police Station (BL)
- Prothro Plaza & Gardens (NH)
- Seay Biomedical Building (NC)
- Simmons Biomedical Research Building (NB)
- Simmons Comprehensive Cancer Center Clinics (NC)
- University Store (NG)
- UTD Center for Brain Health (UTD)

- BioCenter at Southwestern
- Medical District (EB)
- Landscape Office (PG)
- Landscape Warehouse (WP)
- Parkland Memorial Hospital (PM) **H**
- and Emergency Room

- ### WEST CAMPUS
- Environmental Health & Safety Building (WT)
 - Health Professions Building (V)
 - Outpatient Building (WA)
 - Facilities Management Design & Construction (WU)
 - Professional Office Building 1 (POB1)
 - Professional Office Building 2 (POB2)
 - Simmons Radiation Oncology (ROC)
 - William P. Clements Jr. University Hospital (CUH) **UH**
 - and Emergency Room

- ### SOUTH CAMPUS
- Aston Building (U)
 - Callier Child Development Center (CD)
 - Cary Building (F)
 - Children's Medical Center (CM) **H**
 - Danciger Building (H)
 - Florence Building (E)
 - Food Court (C-lower level)
 - Gooch Auditorium (C)
 - Green Research Building (Y)
 - Green Science Building (L)
 - Hoblitzelle Building (G)
 - Jonsson Building (K)
 - Laboratory Research & Support Building (JA)
 - McDermott Administration Building (B)
 - McDermott Lecture Halls (D-lower level)
 - McDermott Plaza (D)
 - Meadows Imaging Building (AM)
 - Moss Building (J)
 - Parkland Health and Hospital System Outpatient Center (PHHS)
 - Facilities Management Administration (P)
 - Facilities Management Service Buildings (PA, PB)
 - Postal Substation (C-lower level)
 - Skilern Building (M)
 - Sprague Building (CS)
 - Student Support Services (S)
 - TWU School of Nursing (TWU)
 - Transplant Services Building (R)
 - University Store (C-lower level)
 - UTD-Callier Center (UTC)
 - Visitor Information Center (A)
 - Williams Student Center (MA)
 - Zale Lipshy University Hospital (ZL) **UH**

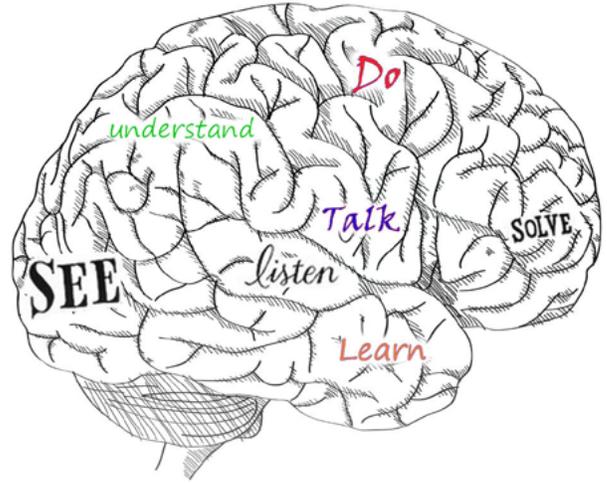
© UT Southwestern Medical Center, 2016. MKT 982Z



UT Southwestern
Medical Center

Neurology Training Programs

2018 - 2019



NEUROLOGY TRAINING PROGRAMS 2018 - 2019

UT Southwestern
O'Donnell Brain Institute

