

**VASCULAR NEUROLOGY FELLOWSHIP**  
**Neurology Department**  
**University of Texas Southwestern Medical School**  
**5323 Harry Hines Blvd., Dallas, TX 75390-8897**

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**Introduction, educational objectives and duration of training:**

The Vascular Neurology (Stroke) Fellowship is a one-year, ACGME accredited training program through the department of neurology at the University of Texas Southwestern Medical Center at Dallas. It offers comprehensive training in the management of cerebrovascular diseases, including experience in acute stroke treatment, diagnostic evaluation, and the management of complicated cerebrovascular disorders.

Fellows will gain in-patient clinical experience at two major hospitals (Parkland Memorial and University Hospital-Zale Lipshy). The clinical experience is provided through the Aston Ambulatory Care Center through the Mobility Foundation Center Stroke Program. Patients are offered participation in acute and chronic research protocols and experimental, cutting-edge therapies.

The Vascular Neurology Fellowship at UT follows the curriculum proposed by the American Academy of Neurology Section on Stroke and Vascular Neurology. This includes the clinical experiences of the outpatient stroke clinic, inpatient stroke service and acute stroke unit, neuro-ICU, neurosonology laboratory, didactic lectures, departmental stroke conferences, reading assignments, journal clubs, symposia, courses, skills workshops and personal mentoring. Specific areas of targeted interest and research will be available as fellows demonstrate mastery of the general subject matter of the curriculum. Fellows meet regularly with faculty and the program director to provide feedback about performance and to advise the trainees. Fellows are encouraged to maintain a clinical log of patients seen which is evaluated with regard to diagnosis and management to assure that the diversity of stroke and vascular neurology cases have been seen and that an understanding of the material has been achieved. Core knowledge (evidence-based when possible) that will be provided 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, conventional digital subtraction angiography and rotational angiography, SPECT, PET, Xenon quantitative CBF, helical-CT angiography, transcranial Doppler ultrasonography, and carotid ultrasonography and Duplex imaging), key issues in neuro-critical care, neurorehabilitation, stroke scales (including certification on

the NIH Stroke Scale), neurobehavioral and language/speech disorders, epidemiology, clinical trials, ethics, and research methodology.

**Facilities and workload:**

The University of Texas Southwestern Medical Center at Dallas campus is located a few minutes north of downtown Dallas and includes Southwestern Medical School, Southwestern Graduate School of Biomedical Sciences, and Southwestern Allied Health Sciences School. A Howard Hughes Medical Institute research center also is located on campus. UT Southwestern has earned an international reputation in basic and clinical research and is the only medical school in the world with four active Nobel laureates and eighteen members of the National Academy of Sciences. UT Southwestern provides outstanding patient care to over 97,000 inpatients and more than 1.7 million outpatients each year through Parkland Memorial Hospital, University Hospital-Zale Lipshy, St. Paul University Hospital, Children's Medical Center of Dallas, the Dallas Department of Veterans Affairs Medical Center, the James W. Aston Ambulatory Care Center, Texas, Scottish Rite Hospital for Children, and a number of other affiliated hospitals in Dallas and Fort Worth. With an annual operating budget exceeding \$1.4 billion dollars and more than 10,000 employees, the medical center has a major economic impact on the Dallas-Fort Worth Metroplex.

Parkland Memorial Hospital is the primary teaching hospital of The University of Texas Southwestern Medical Center, one of the nation's premier medical centers. Parkland is a 983-bed public, tax-supported institution located in Dallas, Texas, and is operated by the Dallas County Hospital District. It was established in 1894 and initially served only the area's indigent patients. Parkland is perhaps best known among the medical community as an outstanding training center for physicians. The relationship between Parkland and UT Southwestern is mutually beneficial for patients and advancement in medicine.

The Parkland stroke service is located on the eighth floor and includes 20 neurology beds. A three-bed Acute Stroke Unit is also located on the same floor and is also designed to intensively treat and manage acute ischemic and hemorrhagic strokes to prevent more widespread tissue damage and manage complicated medical issues in stroke patients. Parkland Memorial Hospital admits an average of 40 stroke patients per month. There is an active stroke team, and it is intended that patients presenting with acute stroke or recent transient ischemic attacks be admitted through the Acute Stroke Unit (ASU), spending as little time in the Emergency Department as possible. Based on clinical pathways and protocols, the appropriate investigations and interventions will be planned as early as possible in the admission, including appropriate medium and long term plans, and rehabilitation.

University Hospital-Zale Lipshy serves as a private, referral, teaching and research hospital for faculty physicians of The University of Texas Southwestern Medical Center at Dallas. The 160-bed University Hospital occupies a nine-floor building located adjacent to Parkland Memorial Hospital and Southwestern

Medical School at 5151 Harry Hines Blvd. A private non-profit corporation, University Medical Center, Inc., manages the hospital in a consortium with UT Southwestern and the Dallas County Hospital District.

At University Hospital-Zale Lipshy approximately 300 aneurysm and 45 arterio-venous malformation cases are treated each year, more than any other facility in North America. Over 1,000 diagnostic angiograms are performed in two state of the art digital subtraction angiography suites. Complex interventional endovascular therapies are also performed at the Zale Lipshy facility. A 20-bed NeuroIntensive Care Unit is staffed by faculty sub-specialty trained in Vascular Neurology and Neurocritical Care. The stroke team has primary admitting privileges to this unit and also provides consultative services in the unit for patients admitted to Neurosurgery and other medical specialties.

Patients at the Southwestern Medical School teaching hospitals benefit from a close relationship between clinical medicine and basic science. A collaborative process exists between faculty physicians, doctoral and post-doctoral students and basic science researchers, fostering a dynamic approach to complicated problem solving. Patients experience true state-of-the-art medical care with research results brought rapidly to the bedside. Clinical stroke research studies and protocols are offered to patients at both Parkland and Zale-Lipshy hospitals. Independent clinical or basic science research projects by fellows are encouraged.

The James W. Aston Ambulatory Care Center was built on the UT Southwestern campus as an outpatient facility where the faculty physicians could see their privately referred patients. Its mission is to deliver medical care at a level necessary to support the consultative and referral needs of the physician community. This excellence in medical care is to be matched with a quality of service that equals or exceeds the expectations of the patients, visitors, referring physicians, and co-workers. The Mobility Foundation Center Stroke Clinic is located at this facility.

**Duties:**

Fellows will be busy mastering in-hospital clinical duties starting with emergency room urgent evaluation (quick examination and imaging interpretation, plus clot dissolving agent administration “rTPA” according to national protocols), triage (admission to regular vs. intensive care units), in-house follow up evaluation and stabilization of critical patients, and then determination of future prognosis. As part of the daily routine, the fellows will be familiar with sophisticated laboratory testing and advanced neuroimaging including arteriography and trans-esophageal echocardiogram. Fellows will be required to formulate urgent and long term treatment plans based on each case. In addition, they will have outpatient duties such as following up patients after discharge from hospital in stroke clinic. They will also help provide daily consultation service in the

hospital and in the outpatient setting for numerous patients referred from Dallas-Fort Worth and North Texas clinics and primary and secondary health care centers. The responsibilities of the stroke fellow will also include teaching neurology residents and medical students.

### **Curriculum:**

The fellow will spend up to six months of in-patient service, three months training in neurosonology, one month of specialized neuro-radiology, one month in the NeuroIntensive Care Unit, and a minimum of one month dedicated to research participation and development. Electives in basic and clinical sciences research can be arranged. The elective clinical time during the first year is designed to give flexible training opportunities for stroke fellows. Specialty training is available in all areas of stroke care including: neurointensive care, advanced neuroimaging, non-invasive neurovascular procedures, neurorehabilitation, neurobehavioral and language/speech disorders, epidemiology, ethics, research methodology and clinical research. Didactic teaching is emphasized throughout the fellowship:

**A. Conferences.** Weekly one and one-half hour duration Cerebrovascular conferences, bi-monthly didactic stroke conference meetings, and weekly departmental grand rounds occur, at which the fellow's attendance is generally expected. The Cerebrovascular case conference in particular affords the opportunity to interact with our neurosurgical, neurovascular surgical, neuroradiology, interventional radiology, and neurocritical care colleagues who are an integral part of the cerebrovascular team at UT Southwestern. This weekly Cerebrovascular Conference, in conjunction with the Department of Neurological Surgery, explores the treatment, management, and diagnostic options for patients with complicated cerebrovascular disease. An additional clinical and basic science resident lecture series is offered by departmental and UT faculty during the academic year. A Stroke Conference is held where fellows and stroke faculty present the latest information on stroke diagnosis, evaluation, and treatment.

**B. Neurosonology Laboratory.** Full training in the interpretation of both carotid artery duplex sonography and transcranial Doppler studies will be provided. The neurosonology period will be spent using and learning multiple clinical and research applications of transcranial Doppler on a wide variety of patients. Based on the training provided, fellows will be eligible (and expected to take) the certification examination for the American Society of Neuroimaging (ASNI). During that time, the fellow will also actively participate in the out-patient clinic service up to two full days per week.

**C. Inpatient stroke service.** The acute stroke team draws from a broad metropolitan area of over 3 million people. At our center stroke care can include but is not limited to:

1. Intravenous rt-PA for the treatment of acute stroke

2. Intra-arterial thrombolysis and other endovascular interventions for the treatment of acute stroke
3. Extracranial and intracranial artery stenting, angioplasty, and other endovascular/neurointerventional procedures
4. Investigational treatment of acute cerebral infarction with neuroprotective drugs, novel thrombolytics, and thrombin inhibitors
5. Investigational treatment of small vessel disease, patent foramen ovale with intracardiac closure devices, and secondary stroke prevention.

The in-patient daily schedule starts with the sign-out rounds at 7:00 AM followed by in-patient rounds including new admissions and established in-hospital patients including caring for patients in the acute stroke unit. The fellow works closely with a dedicated team including attendings, neurology residents, interns, nurse coordinators, social workers, dietitians, physical medicine residents, and physical, speech, and occupational therapists. The rest of the day will be spent seeing new consults and evaluating and admitting patients from the emergency department.

The fellow is expected to make daily rounds with the attending physician, the stroke nurse practitioner, and residents on the stroke service. In addition, the fellow is entered into the acute stroke call rotation along with the other stroke attending physicians, allowing the opportunity for independent decision making and enrollment of patients into clinical research trials, with designated attending physician backup available at all times.

**D. Outpatient Stroke Clinic.** Held every Monday morning, Tuesday morning and afternoon, and Thursday morning, the Mobility Foundation Center Stroke Clinic provides an opportunity to see hospital discharge follow-ups, new outpatient stroke consultations, and provides an opportunity for independent decision making with staff backup.

**Supervision:**

The fellows will be assigned a faculty supervisor on each rotation or clinical experience (inpatient or outpatient). The fellow will be supervised directly at all times by one of the faculty members on the stroke service.

**Evaluation:**

Each month, the faculty evaluator will fill out an evaluation form on each fellow. At the end of the 6 months and at the end of the year, the program director will review these with each fellow and give them an overall performance evaluation. In addition, every three months, the fellows will be sent an evaluation form to fill out on the rotation they just completed and an evaluation of the faculty with which they worked.

**Research:**

Supervised, independent or joint research is encouraged during the year of fellowship training. Several experimental treatment and investigational modalities for cerebrovascular diseases are currently ongoing in the department.

**A. Manuscript preparation and publications.** The fellow will be offered the opportunity to assist in the preparation and submission of articles for publication in peer-reviewed journals. Authorship will be commensurate to the proportion of involvement in both the intellectual planning of the study/paper and work done in gathering and entering data. It is our goal to have each fellow first author at least one published manuscript by the end of the year, and to include the fellow as a co-author in any project or manuscript in which s/he was directly involved, including all abstract submissions and publications occurring after completing the fellowship. It is our intent to produce clinically and academically well-rounded individuals who will go on to make a meaningful contribution to advancing the state of knowledge of cerebrovascular diseases, and to continue supporting our trainees academically, politically, and personally as they begin their careers as staff physicians after leaving our institution.

**B. Participation in national meetings.** The department will fund the fellow's attendance at the annual AHA International Stroke Conference, and additionally fund attendance at any other national meeting at which the fellow presents an abstract or poster.

**Salaries:**

An annual salary commensurate with the fellow's postgraduate training experience for PGY-5, will be provided. A competitive stipend for fellows will be assessed based on their level of training and will be included in the contract.

**Hours of Work:**

Generally day time business hours, with night call. The individual must be flexible and provide for neurologic care of acute stroke patients 24 hours a day, 7 days a week.

**Benefits:**

Health insurance is provided through the Parkland Employee-Physician Office (EPO) system at substantially underwritten costs. Monthly premiums are currently \$29.77 for single individuals and \$145.49 for families. Dental insurance is also available at inexpensive premiums. Long-term disability insurance and a supplemental retirement program are provided through Parkland Memorial Hospital.

**Library Access:**

The UT Southwestern Medical Library is located inside the medical school and is one of the finest in the country. It is a modern, fully computerized facility with

multimedia capabilities and serves as a resource library in the National Network of Libraries of Medicine. Each fellow is provided with a free photocopying card for use in the library. Fellows also have access to the department's own Rosenberg Neurology Library, which houses a collection of neurology and neuroscience journals, numerous text materials, and a computer with on-line databases for literature searches. Computers also are available on the Parkland inpatient ward for literature searches.

**Conferences:**

Fellows are required to attend at least one educational conference during their one year of training. Attendance at the AHA International Stroke Conference will be reimbursed, up to allowable institutional maximums. There are yearly national and regional stroke conferences that offer an outstanding opportunity for the fellows to interact with large numbers of world recognized cerebrovascular experts.

**Vacations:**

Fellows usually receive three weeks of vacation per year. Fellows generally prefer to take one week off at a time, but longer vacation periods can be arranged. Schedules also are adjusted around the winter holidays to provide for a few extra days of vacation. Family leave is allowed under the Family Medical Leave Act, but the fellow must at all times remain in good academic standing.

**Sick Leave:**

Ten days of sick leave for the year's service is allowed.

**Disability Benefits:**

Fellows are covered by the DCHD Long Term Disability Insurance.

**Hospitalization Insurance:**

Group hospitalization insurance is provided at a nominal cost to employees with the remainder of the cost paid by DCHD. Enrollment of the spouse and/or dependents in the group plan is available at his/her expense.

**Counseling Services:**

Fellows may access counseling services through the Employee Assistance Program.

**Malpractice Insurance:**

DCHD, does not provide malpractice insurance. However, as a political subdivision of the State of Texas, DCHD can pay claims in accordance with the Texas Tort Claims Act up to \$100,000 per individual and \$300,000 per occurrence. This applies to situations that occur while in the course and scope of employment, performing only those tasks assigned by authority of officers of DCHD. Coverage includes act of ordinary negligence, but does not include intentional acts (such as assault) or gross negligence.

**Prerequisites:**

The department provides for two white coats and a laundry service. Convenient parking is provided at a cost of approximately \$20 a month. The department hosts a welcome party, holiday party, and graduation banquet for house staff and their families.

**Requirements for Applicant Eligibility:**

For the cerebrovascular disease fellowship includes:

**A. Education:** The applicants for fellowship must have completed three years of an accredited neurology residency and be Board-certified or board-eligible in neurology.

**B. Licensure:** Successful applicants must be able to obtain a Physician-in-Training permit or hold a permanent medical license in Texas.

**C. Citizenship:** Applicants must be US citizens or hold an appropriate J-1 visa.