

MEDICAL CURRICULUM

• anesthesiology and pain management • biochemistry •

cardiovascular and thoracic surgery • cell biology • clinical sciences • dermatology • developmental biology •

family and community medicine • immunology • internal medicine • microbiology • molecular biology •

molecular genetics • neurological surgery • neurology and neurotherapeutics • neuroscience • obstetrics

and gynecology • ophthalmology • orthopaedic surgery • otolaryngology - head and neck surgery • pathology

• pediatrics • pharmacology • physical medicine and rehabilitation • physiology • plastic surgery • psychiatry

• radiation oncology • radiology • surgery • urology



DEGREE OF DOCTOR OF MEDICINE

The degree of Doctor of Medicine is granted by UT Southwestern Medical School upon satisfactory completion of the instructional courses and licensing detailed in this catalog. The completion of these courses is ordinarily accomplished in four academic years ranging in length from 32 to 44 weeks each.

Candidates must 1) be at least 21 years of age at the time the degree is awarded, 2) be of good moral character, 3) fulfill all academic requirements, and 4) comply with all necessary legal and financial requirements.

■ CURRICULUM

UT Southwestern Medical School has a four-year curriculum based on departmental as well as interdisciplinary teaching. The first two years offer the student an opportunity to develop a strong background in the basic sciences and to receive an introduction to clinical medicine.

The first-year curriculum begins with a study of the normal human body and its processes at the molecular and cellular levels. Biochemistry, genetics, anatomy and embryology are presented concurrently for the first portion of the year, building together the concepts of macromolecular and cellular interactions within tissues. The spring term is composed of interdisciplinary courses in neuroscience and physiology as well as courses in cell biology and human behavior and psychopathology. Fundamentals of Immunology completes the first year.

The second year offers the student an opportunity to begin a study of disease processes and the way physicians may approach those processes therapeutically. The material is organized as blocks of integrated material focused on the body's many organ systems. The year begins with the core principles from each of the major disciplines: clinical medicine, microbiology, pathology and pharmacology. Certification in advanced cardiac life support is also a requirement for graduation. Contact with patients begins early in the second year with history taking, physical examination, and visits to the hospital wards and various outpatient clinics.

Students usually will take the U.S. Medical Licensing Examination Step 1 at the conclusion of the second year. The details of the USMLE Step 1, as it pertains to meeting academic requirements, are discussed later in this section of the catalog.

The third and fourth years offer intense clinical experiences involving the student in direct patient care. The third year is a 12-month year. It offers rotations of eight weeks each in surgery and pediatrics, six weeks each in psychiatry and obstetrics and gynecology, four weeks each in family medicine and neurology, and 12 weeks in internal medicine.

The fourth year consists of four-week clinical rotations in ambulatory medicine and acute care and a subinternship in internal medicine, pediatrics, or obstetrics and gynecology. Four four-week electives are chosen from an extensive list of options to fulfill the remaining course requirements.

The curriculum is dynamic and responds to the changing requirements of medical education. Faculty and students review the curriculum regularly, and changes are introduced almost every year. For an updated list of courses and credits, students should contact the Office of the Registrar.

■ SUMMER OPPORTUNITIES

Students have a 10-week summer break at the end of their first year. For those who wish, this time can be used for research experiences or for sponsored clinical exposure in a variety of specialties. Student research opportunities abound among the faculty in both basic and clinical departments. The results are presented at a universitywide forum in the spring semester. Community preceptorships are offered in internal medicine, family medicine and psychiatry, and also are available in more specialized settings such as anesthesia.

■ MEDICAL STUDIES IN OTHER SCHOOLS

Students are permitted to pursue some parts of their studies at other medical schools in the form of senior-year courses. Approval must be obtained from the equivalent UT Southwestern department

in which the course is based and then from an associate dean for student affairs. The following conditions must be met: 1) that the student enroll and pay fees at UT Southwestern Medical School and 2) that proof of satisfactory completion of studies in the institution is submitted to the UT Southwestern Office of the Registrar.

■ **VISITING STUDENTS**

UT Southwestern’s capacity to accommodate students from other institutions who wish to undertake an elective rotation is very limited. UT Southwestern cannot reserve positions in advance for any students other than those enrolled in UT Southwestern’s M.D. degree program. The burden placed on UT Southwestern’s faculty in providing adequate supervision to UT Southwestern students leaves scant room even for students from schools accredited by the Liaison Committee on Medical Education, with whom UT Southwestern reciprocates on exchanging students for elective rotations. In the unlikely event that UT Southwestern has excess capacity on its clinical teaching services for well-trained elective students from non-LCME-accredited medical schools, UT Southwestern will consider an application from those students.

Core clerkships in the third year and courses provided in the first two years are available only to students enrolled at UT Southwestern. Approval of visiting students rests with the appropriate clinical department. All students must be covered by malpractice insurance. Information concerning electives may be obtained from the Office of the Registrar or from the appropriate clinical department.

MEDICAL SCHOOL CALENDAR

The calendar for UT Southwestern Medical School varies in detail from year to year. Classes for freshmen and sophomores begin in mid-August and are completed in May. The various clinical disciplines are in session throughout the calendar year for both juniors and seniors. Graduation is held on the first Saturday in June. There is a winter break as well as a spring break for all classes.



FIRST-YEAR CURRICULUM

COURSE	CREDITS
Academic Colleges at UT Southwestern	1.0
Biology of Cells and Tissues	2.0
Fundamentals of Immunology	1.0
Human Anatomy	4.0
Human Behavior and Psychopathology	2.5
Medical Biochemistry	3.5
Medical Embryology	0.5
Medical Genetics	1.5
Medical Neuroscience	3.0
Medical Physiology	4.0

■ **ACADEMIC COLLEGES AT UT SOUTHWESTERN**

Academic Colleges create an informal environment where faculty mentors and students share the experience of being a physician. Weekly meetings are held throughout the first two years. Topics assigned for weekly meetings are coordinated with topics discussed in the basic science curriculum. In addition, mentors instruct students on clinical topics, such as history taking, physical examination, diagnosis, ethics and professionalism.

■ BIOLOGY OF CELLS AND TISSUES

This lecture and laboratory course introduces the study of cells, organized tissues and organ systems at levels of the light and electron microscopes. Emphasis is on structure-function interrelationships between specific cell types in organized tissue systems. The first part of the course covers the functional morphology of cells and their organelles, chemical composition of cellular components and products, cell surfaces and movement, and a histological and ultrastructural survey of cells and the basic tissue types. The bulk of the course is devoted to the systematic survey of the histology of the organ systems of the body. Approximately 50 laboratory hours are devoted to studies in ultrastructure and histology.

■ FUNDAMENTALS OF IMMUNOLOGY

The Fundamentals of Immunology course covers the molecules, cells and tissues that mediate innate and acquired immune function in humans and selected model organisms, as well as the mechanisms underlying cellular interactions, cell activation, differentiation and proliferation, cell trafficking, tolerance, and immune dysregulation in selected human diseases.

■ HUMAN ANATOMY

This course offers a basic understanding of the structure and function of the human body as it relates to the practice of medicine. By using surface, radiological and cadaver anatomy, students may acquire a three-dimensional understanding of structural relationships in the living body. Students, working in groups of four, dissect the major structures of the body. Prosections and demonstration specimens are provided for amplification and clarification of adult anatomy. The laboratory work is further supplemented by sessions in which radiological techniques are used to illustrate parts of the bony skeleton, as well as the thoracic and abdominopelvic viscera. Videos that illustrate the anatomy of selected regions of the body are available for repetitive viewing by students. Lectures by faculty stress the more important

aspects of anatomy, especially as they relate to the practice of medicine.

■ HUMAN BEHAVIOR AND PSYCHOPATHOLOGY

The Human Behavior component of the course examines a broad range of topics, including human psychosocial development, family development, sexuality and culture. This information serves as a background against which abnormal human development and behavior can be understood. Small-group teaching is used to complement the lecture content.

The Psychopathology component provides an introduction to the pathogenesis, clinical features and treatment of mental disorders. Videos are used to demonstrate various psychiatric illness. Small-group patient interviews allow the students to practice their interviewing and examination skills while solidifying their understanding of various mental illnesses.

■ MEDICAL BIOCHEMISTRY

This course introduces the fundamentals of modern biochemistry as applied to medicine. The course covers topics such as the nature and properties of enzymes; bioenergetics and the metabolism of carbohydrates and nitrogen compounds; lipids and hormones; and storage, transmission and expression of genetic information. Particular emphasis is placed on those aspects of biochemistry relevant to medical problems.

■ MEDICAL EMBRYOLOGY

This course is organized primarily by organ system, covering embryologic development from ovulation through birth. There is an introductory summary lecture. The remainder of the course is given in a self-study format. The course materials include a complete syllabus with self-study questions, the companion Web curriculum website, a CD-ROM with animations of embryologic development and supplementary textbooks on reserve in the library. The course is graded on a pass/fail basis after a multiple-choice examination.

■ **MEDICAL GENETICS**

This course introduces the basic principles of human genetics and their application to clinical medicine — chromosome abnormalities, genetic patterns of inheritance, inborn errors of metabolism, multifactorial inheritance, population genetics, gene mapping and identification, genetic screening, cancer genetics, pharmacogenetics, gene therapy, genetic counseling, and ethical issues and decision making in medical genetics.

■ **MEDICAL NEUROSCIENCE**

This course consists of lectures and small-group laboratory sessions. It is offered by Neurology and Neuropathology with assistance from the departments and/or divisions of Cell Biology, Physiology, Psychiatry, Neuroradiology, and Basic Neuroscience. Basic concepts in anatomy, cellular physiology and neural-systems physiology are covered in the course. Emphasis is given to the practical application of these basic anatomical and physiological principles to human neuroscience and neuropathology.

■ **MEDICAL PHYSIOLOGY**

This course examines the physiological function and regulation of major organ systems of the human body and their components. Topics include membranes and transport mechanisms; skeletal, cardiac and smooth muscle; and the cardiovascular, respiratory, renal and gastrointestinal systems. Instruction consists of lectures, problem-solving and case-study sessions, and clinical correlations. The course not only emphasizes mechanistic and integrative functions of normal physiology but also introduces abnormal function that occurs in many human diseases.

SECOND-YEAR CURRICULUM

COURSE	CREDITS
Clinical Medicine: Principles and Practices	6.0
Academic Colleges at UT Southwestern	1.0
Medical Microbiology	5.0
Medical Pharmacology	3.0
Pathology	7.0

Advanced Cardiac Life Support 0.0

The topics of the second-year curriculum are organized as blocks of integrated material focused on the body's many organ systems.

■ **CLINICAL MEDICINE: PRINCIPLES AND PRACTICES**

The course serves as a transition from the basic science courses to the clinical clerkship year. The goal is to help the student acquire the knowledge, skills and attitudes necessary to participate in the active care of patients in the context of a health care team.

The course helps students become knowledgeable in the clinical presentation of common diseases (history and physical content); the pertinent laboratory and radiological abnormalities associated with common diseases; the pathophysiology causing the symptoms, signs and laboratory results seen in common diseases; and the management principles as they relate to the pathophysiologic basis of symptoms, signs and laboratory results. Instruction includes lectures and clinical reviews using case discussions as examples, giving students the opportunity to synthesize patient information that eventually leads to diagnoses.

■ **MEDICAL MICROBIOLOGY**

The medical microbiology course familiarizes medical students with the fundamental characteristics of microorganisms of medical importance and the diseases they cause. Initially, there is an introduction to microbiology as a basic science with discussion concerning microbial genetics, physiology and structure, and phylogeny. As the course proceeds (in integration with pathology, clinical medicine and pharmacology courses), host-parasite interrelationships for specific groups of disease-producing agents in organ systems are discussed. Throughout the course, concepts and basic information on medical microbiology are accompanied by clinical correlates. Instruction includes lectures, laboratory exercises, and case- or clinical-based small-group discussions facilitated by the faculty.

■ **MEDICAL PHARMACOLOGY**

The course in medical pharmacology offers students a sound background in pharmacology as a basic biomedical science; students thereby have the opportunity to prepare for further study of therapeutics and clinical pharmacology. After a thorough introduction to the general principles of pharmacodynamics and pharmacokinetics, the pharmacological and toxicological properties of the major classes of drugs are discussed. Emphasis is placed on understanding the mechanisms of drug-induced modifications of physiological functions in humans. Lectures are supplemented with clinical correlations on the rational use of drugs in the management of disease.

■ **PATHOLOGY**

The year-long pathology course explores how the etiology, pathogenesis and pathophysiology of disease processes give rise to the clinical consequences of disease in humans. In the first part of the course, general pathology covers mechanisms of disease (e.g., inflammation, autoimmunity, neoplasia) common to multiple organ systems, whereas later in the course, diseases that are unique to each system are integrated with material from the other three courses on a system-by-system basis. Using comprehensive learning objectives as a guide, students may acquire information from several sources, including lecture and associated handouts, textbooks, small-group discussions led by faculty and resident facilitators, hands-on examination of gross and microscopic specimens, computer-based case tutorials, and attendance at autopsies. Self-study time is incorporated into the course schedule.

■ **ADVANCED CARDIAC LIFE SUPPORT**

ACLS includes didactic information about the management of cardiac arrest, including rhythm recognition, drugs and protocols. Students practice skills for airway management, including intubation; management of bradycardia, tachycardias, ventricular fibrillation, asystole, pulseless electrical activity, and shock and heart failure; and use of defibrillators and automated

external defibrillators. Students must master techniques for basic life support for health professionals, such as one- and two-rescuer cardiopulmonary resuscitation, infant CPR, child CPR, and management of obstructed airway for all ages, before practicing skills for advanced techniques. Examinations include a written examination and demonstration of proper technique for intubation and ability to serve as team captain for a cardiac-arrest scenario. The student must pass each section for certification.

■ **USMLE STEP 1**

UT Southwestern medical students are counseled to take the U.S. Medical Licensing Examination Step 1 in June following the second year. Students must take the examination prior to beginning the third year. Students must obtain a passing score on the USMLE Step 1 to progress through the fourth year.

THIRD-YEAR CURRICULUM

CLERKSHIPS	CREDITS
Family Medicine	4.0
Internal Medicine	8.0
Internal Medicine Subspecialty	4.0
Neurology	4.0
Obstetrics and Gynecology	6.0
Pediatrics	8.0
Psychiatry	6.0
Surgery	8.0

■ **FAMILY MEDICINE CLERKSHIP**

The third-year clerkship in family medicine exposes students to primary-care role models and ambulatory clinical experiences in contemporary health care delivery away from the tertiary-care setting. This four-week clerkship has both didactic and clinical portions.

The clinical portion of the clerkship is based primarily at family medicine residency programs affiliated with UT Southwestern and the family medicine residency program located at UT Tyler, Baylor Medical Center at Garland and John Peter Smith Hospital. Some students also are based at private practitioner offices in Arlington, Colleyville and Bedford that are designated clerkship sites. The UT Southwestern-affiliated

sites include Charlton Methodist Hospital, Dallas; UT Southwestern University Hospitals, Dallas; McLennan County Family Practice Center, Waco; and UT Southwestern-Parkland Family Medicine Residency Program, Dallas. Each of these sites is staffed by UT Southwestern faculty. Students see patients at the family medicine centers and in a variety of other practice sites, including private offices, under the supervision of adjunct clinical faculty.

The didactic portion of the clerkship consists of lectures and small-group activities that focus on clinical topics and patient and family issues commonly encountered in a family medicine environment. Clerks prepare and present a patient study to faculty at each site and participate in conferences.

■ INTERNAL MEDICINE AND INTERNAL MEDICINE SUBSPECIALTY CLERKSHIP

The internal medicine clerkship consists of two parts, an eight-week general medicine inpatient portion and a four-week subspecialty in medicine portion. For the eight-week general medicine rotation, each student spends four weeks at Parkland Memorial Hospital and four weeks at either the Dallas Veterans Affairs Medical Center or the Baylor University Medical Center. The student is assigned patients under the supervision of house staff and attending physicians. The clinical clerk is responsible for written admission work-ups, progress notes and oral presentations, as well as participation in the ongoing care of patients.

During the four-week subspecialty portion, students have the opportunity to explore a subspecialty of internal medicine, based at Parkland, UT Southwestern University Hospitals or the Dallas VA Medical Center. Most rotations are inpatient or inpatient consultations with varying amounts of outpatient exposure, based on the specialty.

The objectives of the clerkship are to develop proficiency in approaching the diagnosis and therapy of serious medical illness, to foster an appreciation of disease as the expression of deranged physiology, to inculcate habits of critical inquiry and self-education, and to

enhance an appreciation of the physician's responsibility to the patient.

Teaching is carried out on rounds with house staff and attending physicians and at conferences and lectures specifically organized for the clerks. Each student must undertake a systematic program of daily reading in standard texts and journals. Attendance at departmental events such as Grand Rounds, Clinical-Pathological Conference, the case presentations at noontime Potpourri and Residents' Conference completes this educational experience.

■ NEUROLOGY CLERKSHIP

A comprehensive and intensive neurology clerkship offers instruction in the diagnosis and management of neurologically ill patients. The students participate actively in the evaluation and care of inpatients on neurology services at Parkland Memorial Hospital, Dallas VA Medical Center and Children's Medical Center Dallas. Clinical conferences, tutorial seminars and didactic teaching sessions are important parts of the clerkship. The clerkship prepares the student to evaluate neurological disease and to apply knowledge of anatomy, physiology and pathology to the formulation of an appropriate differential diagnosis.

■ OBSTETRICS AND GYNECOLOGY CLERKSHIP

Each third-year medical student spends six weeks on the obstetrics and gynecology service. The time is evenly divided between obstetrics and gynecology. Students are divided into small groups, and their clinical activities are supervised by house staff and faculty.

During obstetrics, students rotate through postpartum and antepartum care of medical complications of pregnancy. Students also provide care in the labor and delivery area and the triage area of Parkland and the prenatal clinic at Maple Plaza. Under supervision of house staff or certified nurse midwives, students deliver babies of uncomplicated pregnancies. Students also assist in the management of complicated pregnancies during the labor and delivery process and follow patients postpartum.



During gynecology, the students are divided into small groups and rotate through gynecology clinic and surgeries at Parkland and other hospitals. One afternoon is spent in the UT Southwestern Center for Minimally Invasive Surgery learning laparoscopic techniques.

In addition to ward and clinical activities, each student spends four to five hours each week in formal conferences with faculty. These conferences are devoted to discussion of patients or clarification of information that the student has encountered elsewhere. Faculty members give lectures on the principles of obstetrics and basic gynecology.

■ PEDIATRICS CLERKSHIP

The eight-week pediatric rotation is divided into four weeks on the inpatient service at Children's Medical Center Dallas, two weeks in its outpatient department, one week in a private-practice office and one week in the newborn nursery at Parkland Memorial Hospital.

INPATIENT SERVICE: During the four-week inpatient rotation, students are placed on one of the general pediatric inpatient clinical services at Children's for two weeks and on one of the four

subspecialty services for two weeks. Students are part of the clinical management team under the supervision of a full-time faculty attending physician and an upper-level pediatric resident. The number of patients each student follows is determined by his or her individual educational requirements. Each student is expected to take initial histories, perform initial physical exams, write daily progress notes on his or her assigned patients and be prepared to present them on daily rounds.

OUTPATIENT ROTATION: Students spend two weeks in ambulatory pediatrics, one week in a private practice office and one week in the newborn nursery at Parkland. During the two weeks in ambulatory pediatrics, students spend most mornings in Medical Student Clinic, where they take complete histories and physicals and present to both full-time and volunteer faculty. The remaining time is spent in various pediatric subspecialty clinics and can be directed toward each student's interest. During the private practice rotation, students spend three days under the supervision of a volunteer faculty member. The remaining days are focused on adolescent medicine and child abuse/child advocacy. During the newborn nursery week, students examine healthy newborns and may attend complicated deliveries.

The course in pediatrics is designed to emphasize normal growth and development and the impact of disease and its treatment on the developing child. Additionally, the prevention of disease and injury, along with the role of the physician as child advocate, is stressed.

■ PSYCHIATRY CLERKSHIP

An intensive six-week rotation in psychiatry actively involves the student in a variety of psychiatric services. Students are assigned to two three-week sites for their primary clerkship experiences. These sites include inpatient psychiatry, consultation/liaison psychiatry, community health care and emergency psychiatry in a variety of hospital settings, including Parkland, UT Southwestern University Hospitals, Dallas VA Medical Center, Children's and Texas Health Presbyterian. These primary clerkship

experiences are supplemented by mentored sessions in outpatient psychiatry and emergency psychiatry. Students also are able to see clinical care unique to psychiatry, such as electroconvulsive therapy.

In addition to diverse clinical exposure, students also spend one half-day a week in didactic teaching sessions focusing on the diagnosis and biopsychosocial treatment of psychiatric disorders. Students attend weekly departmental Grand Rounds and participate in teaching conferences on their primary service site.

■ **SURGERY CLERKSHIP**

The junior surgical clerkship introduces students to the theoretical and practical aspects of surgical patient care. Emphasis is placed on the underlying pathophysiology rather than technical aspects. Students are fully involved in the daily care of surgical patients and participate in diagnostic and therapeutic decision making. This eight-week experience also includes didactic teaching sessions, small-group interactions with full-time faculty and skills lab training.

■ **USMLE STEP 2**

Students take the U.S. Medical Licensing Examination Step 2 - Clinical Knowledge and Step 2 - Clinical Skills after completion of the core clerkships in the third year. A passing score on USMLE Step 1, Step 2 – CK and Step 2 – CS is required for graduation.

FOURTH-YEAR CURRICULUM

CLERKSHIPS	CREDITS
Acute Care Clerkship	2.0
Ambulatory Care Clerkship	2.0
Subinternship	2.0
Four Electives	8.0

■ **ACUTE CARE CLERKSHIP**

This four-week clerkship offers instruction in the diagnosis and management of an acutely ill or injured patient. Students select a rotation from a variety of clinical settings, including intensive care units, critical care services and emergency departments.

The selection sites for this clerkship include Parkland’s burn ICU, critical care unit, emergency department, neonatal ICU, surgical ICU and trauma service; Dallas VA Medical Center’s cardiovascular anesthesia and surgical ICU; and Children’s emergency department, pediatric ICU and pediatric cardiac critical care unit.

During this clerkship the student functions as an integral member of the medical team providing a high level of care to acutely ill or injured patients. Under the supervision of residents, fellows and attending physicians, the student may gain an enhanced knowledge of stabilization, resuscitation and management of such critically ill patients.

■ **AMBULATORY CARE CLERKSHIP**

Students spend one month in outpatient clinics or private physicians’ offices for internal medicine, family medicine or women’s health. Students are expected to interview patients and obtain vital information for patient care, interpret data and discuss the treatment plan with the patient and family, promote general health maintenance and disease prevention, and consult with specialty services to coordinate care. Students should demonstrate knowledge about a wide variety of illnesses and apply this knowledge to patient care. Students also should be able to assimilate scientific evidence to improve patient care.

■ **SUBINTERNSHIP**

Students spend four weeks on an inpatient service in either internal medicine, pediatrics, or obstetrics and gynecology. Students are expected to interview patients and obtain vital information for patient care, interpret data and discuss the treatment plan with the patient and family, promote general health maintenance and disease prevention, and consult with specialty services to coordinate care. Students should be able to provide the differential diagnosis of a chief complaint and a treatment plan to investigate the cause. Students also are expected to apply current clinical knowledge to arrive at a diagnosis with the health care team. Students should be able to assimilate scientific evidence to improve patient care and be able to communicate effectively with

the health care team, patients and patients' families. There is special emphasis on skills needed for internship, such as cross-over, transitions of care, writing discharge summaries, conducting family meetings and breaking bad news.

■ ELECTIVES

The elective program has a two-fold purpose: 1) to aid the student in a career choice and 2) to offer an opportunity to build strengths in related fields should a career choice have been made by the senior year. Four months of the fourth year of medical school are available for electives.

Students may take electives off campus if approved by the chair of the relevant medical school department and then by an associate dean for student affairs. Some students may choose to spend their elective time on a research project.

An elective handbook listing the various offerings is published each year. Included are electives in the major clinical disciplines and in the medical and surgical subspecialties. Occasionally a student may, with faculty approval, design an elective to meet a special need. Selection of electives is guided by individual counseling from faculty when needed.

More than 100 elective courses are offered by many departments, including Anesthesiology and Pain Management, Cardiovascular and Thoracic Surgery, Clinical Sciences, Dermatology, Family and Community Medicine, Internal Medicine, Neurology, Neurological Surgery, Obstetrics and Gynecology, Ophthalmology, Orthopaedic Surgery, Otolaryngology - Head and Neck Surgery, Pathology, Pediatrics, Pharmacology, Physical Medicine and Rehabilitation, Plastic Surgery, Psychiatry, Radiology, Surgery, and Urology.

MEDICAL SCIENTIST TRAINING PROGRAM

The Medical Scientist Training Program at UT Southwestern Medical Center integrates medical and research training for qualified women and men at the graduate level leading to both M.D. and Ph.D. degrees. The goal of the program is to prepare individuals as physician-scientists. Graduates of this program typically

pursue careers in academic medicine and biomedical research at the nation's leading institutions.

This program offers students an integrated curriculum in the scholarly setting of UT Southwestern Medical School and UT Southwestern Graduate School of Biomedical Sciences. The MSTP curriculum is flexible and individualized to suit the background and interest of each medical scientist fellow. The program is designed to be completed in approximately seven to eight years. Additional time is allotted if needed to meet requirements for the Ph.D. degree.

■ PREREQUISITES

A baccalaureate degree is required, and significant experience in laboratory research is essential for admission. It is desirable, but not mandatory, that the minimum prerequisites for admission to UT Southwestern Medical School be supplemented by one year of college calculus and one year of physical chemistry. Potential applicants who have not had prior experience in a research laboratory should gain such experience before considering a career in academic medicine and medical research. It is possible to acquire the necessary research experience after entering UT Southwestern Medical School and to apply to the MSTP during the first or second year of medical school.

■ MEDICAL SCIENTIST FELLOWSHIPS

The Medical Scientist Training Program is the recipient of a training grant from the National Institute of General Medical Sciences of the National Institutes of Health. Support for the program also is provided by other sources. Most students accepted into the program receive stipend support and full funding for tuition and fees.

There is no priority assigned to an applicant's state of residency. MSTP fellows come from all over the United States, and a limited number of positions with full support are available to international applicants.

■ ORGANIZATION OF THE PROGRAM

Through the course of the program, M.D./Ph.D.

fellows are enrolled in UT Southwestern Medical School or UT Southwestern Graduate School. Students who complete the MSTP will have met all requirements for the Ph.D. degree in the graduate school and for the M.D. degree in the medical school. The Ph.D. may be earned in one of the basic science graduate training programs within the Division of Basic Sciences. Program faculty are derived from both basic science and clinical departments of the medical school.

The MSTP affords the student flexibility in the selection and scheduling of courses. A typical schedule would include the first two years of medical school with summer laboratory rotations prior to and following the first year and again following the second year. The summer laboratory rotations are research apprenticeships to aid the student in selecting a research area and a mentor for research training. These apprenticeships are established by discussion with each student, the MSTP committee and the potential preceptor. They are intended to expose the student to a variety of excellent laboratories in his or her area of interest.

■ APPLICATION PROCEDURE

The process for admission to the MSTP can be viewed at the website www.utsouthwestern.edu



/mstp. Application to the MSTP is made via the American Medical College Application Service. Concurrent application to the medical school alone is permissible via the Texas Medical and Dental Schools Application Service.

THE M.D./M.P.H. PROGRAM

UT Southwestern Medical School and The University of Texas Health Science Center at Houston School of Public Health offer students interested in medicine and public health an opportunity to be awarded a degree in each field at the end of a five-year program. Students complete all course work for both degrees on the UT Southwestern campus and receive the M.D. degree from UT Southwestern and the Master of Public Health from UT Houston School of Public Health. The activities leading to the M.D. degree are described earlier in this chapter. Curriculum and course descriptions for the M.P.H. are available from the Office of the Registrar, The University of Texas Health Science Center at Houston, P.O. Box 20036, Houston, TX 77225; 713-500-9032.

Students register at UT Southwestern for courses in the medical school. Registration and tuition for courses for the M.P.H. are handled through UT Houston School of Public Health.

■ PREREQUISITES

Applicants to the M.D./M.P.H. program must meet all the prerequisites for the medical school as outlined in this chapter of the catalog. The school of public health does not have prerequisite course requirements, but a baccalaureate degree is necessary for an application. In addition, it is recommended that applicants have at least a 3.0 GPA from course work in higher education. Applicants who are citizens of countries where English is not the native language are required to submit scores from the Test of English as a Foreign Language.

■ APPLICATION PROCEDURE

The student may submit two applications: one each to the medical school and the public health school. School of public health applications may

be obtained from the school of public health Office of the Registrar at the address listed above. Medical school applications must follow the procedure outlined in the Application Procedure section of this chapter. Applicants who submit both applications simultaneously will receive notification from both programs before the beginning of the academic year, though notifications may occur at different times.

The GRE is required for the school of public health application, and scores should be submitted. Applicants should submit two letters of recommendation, a statement of purpose and official transcripts covering enrollment in accredited institutions of higher education to the school of public health registrar's office. The same letters of recommendation submitted for the medical school application also may be submitted for the school of public health application. Transcripts should be sent directly to the school of public health by the educational institution.

Medical students also may apply to the school of public health at any time during their medical school tenure. Final acceptance to the M.P.H. program may be contingent upon satisfactory progress in medical school.

■ CURRICULUM

The first three years of the M.D./M.P.H. program are identical to the first three years of the medical school, as described earlier in this chapter. The school of public health year begins after the third year of medical school. The student is placed on a leave of absence from the medical school, enrolls in and may apply for financial aid from the school of public health. The curriculum includes courses in the five basic public-health areas (epidemiology, biostatistics, behavioral sciences, environmental health sciences, and health management and policy sciences) plus electives. Completion of the degree also requires a semester practicum of 180 hours in a public-health setting and a master's thesis.

After the school of public health year, the student re-enrolls in the medical school to complete the senior year. If the thesis is not complete by the time the senior year starts, the

student may complete the thesis during periods when the student is not taking medical school courses. Students in the M.D./M.P.H. program also have the opportunity to participate in medical school electives in public health during their senior year of medical school.

THE M.D./M.B.A. PROGRAM

The M.D./M.B.A. Program focuses on giving future physicians the skills to successfully integrate medicine and business. The combined degree program is a joint effort of UT Southwestern Medical School and the School of Management at UT Dallas. The five-year program offers interested students the benefits of a medical education and a strong business management curriculum.

■ CURRICULUM

Students usually complete the first three years of the medical curriculum (all basic science courses and third-year clinical rotations) and then take a one-year leave of absence from the medical school to complete the business education. Students then return to the medical school to complete the medical curriculum in the required fourth-year clinical clerkships and electives. At the end of the five years, the M.D. degree will be awarded by UT Southwestern and the M.B.A. by UT Dallas.

The business curriculum starts with the traditional M.B.A. core (accounting, information technology, economics, statistics, marketing, finance and organizational behavior) and adds additional seminars that emphasize the "softer" skills needed to succeed in business. Students also may select from a large number of elective courses offered by the management school to design their own specialization. Elective courses include corporate finance and policy, consumer behavior, database management systems, conflict and negotiation, money and capital markets, corporate taxation, and corporate financial reporting. The goal of the M.B.A. program is to prepare leaders who have mastered the fundamentals of business and learned how to innovate in a dynamic environment.

■ APPLICATION PROCEDURE

Students interested in the combined M.D./M.B.A. program should apply for admission to the medical school following the procedure outlined in the Application Procedure section in this chapter of the catalog. Once a student is admitted into the medical program, application for the M.B.A. program is completed in consultation with the UT Southwestern M.D./ M.B.A. adviser. The exact plan for applying to the business program, leave of absence from the medical school, and completing the business curriculum will be developed individually with each student to meet each student's educational and professional objectives. The GMAT is not required for applicants to the M.B.A. program.

CLINICAL AND RESEARCH FELLOWSHIPS

The various clinical and basic science departments of the medical school offer clinical and research fellowships at later stages of training. The fellowships in the clinical departments are designed to offer clinical and investigational training in preparation for subspecialty certifying boards or for other subspecialty expertise not subject to board examination but usually prerequisite for academic careers. Fellowships in the basic science departments provide advanced research training, usually to those with Ph.D. or M.D./ Ph.D. degrees.

CONTINUING EDUCATION/PUBLIC EDUCATION

The Office of Continuing Education/Public Education is responsible for coordinating continuing professional development of physicians. The CE office also conducts continuing education for UT Southwestern School of Health Professions and UT Southwestern Graduate School of Biomedical Sciences.

Under the direction of the associate dean for medical education, the full-time staff includes a director of public education, associate director of national programs, and CE coordinators who are experienced in meeting planning and

instructional design. An advisory committee composed of UT Southwestern faculty assures the quality and relevance of the programming.

The Office of Continuing Education/Public Education serves as a valuable resource for medical and health professionals to keep abreast of scientific knowledge; to enhance and improve their care of patients; and to help maintain licensure and professional certification requirements. Students and resident physicians are encouraged to attend continuing medical education events with appropriate approvals.

The Accreditation Council for Continuing Medical Education nationally accredits the UT Southwestern Office of Continuing Education/Public Education. Educational offerings sponsored by the CE office provide AMA/PRA category one credit. Various other kinds of credit are obtained from professional associations and other specialty societies such as the American Academy of Family Physicians. Attendance records are retained in the CE office.

Serving as a central source of information for continuing education in the health sciences, the office maintains a calendar of continuing education events, available on the CE office website at www.utsouthwestern.edu.

UT Southwestern faculty members serve as speakers for most continuing professional education offerings and are available to speak for community continuing education activities. A list of topics and speakers is available through the Office of Continuing Education/Public Education. Arrangements for speakers can be made through the director of public education.

In carrying out its mission to physicians and health care professionals, the CE office works with various departments within UT Southwestern to develop educational offerings with affiliated hospitals. The office also jointly sponsors educational offerings with regional hospitals, professional medical societies and health organizations.

Educational opportunities are offered to health professionals in preparation for several board examinations in the way of updates. Individual mini-fellowships can be designed for specific

needs and are intended to supplement experience with new skills and updated information for medical practice.

For information regarding continuing medical education offerings, please call the UT Southwestern Office of Continuing Education/Public Education at 214-648-3138.

DISTANCE LEARNING

UT Southwestern Medical Center offers distance learning courses to on-campus and off-campus students enrolled for academic credit in the health professions or for continuing education.

Undergraduate and postgraduate courses are under development by UT Southwestern's faculty. As courses are created, they will proceed through the usual phases of academic course review and approval. UT Southwestern does not offer, nor does it plan to offer at this time, full degree programs via distance education.