UTHealth®
The University of Texas
Health Science Center at Houston

McGovern
Medical School

2021-2022 Catalog

Cover Page

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Accreditation

The University of Texas Health Science Center at Houston is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award certificate, baccalaureate, masters, doctorate and special professional degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679- 4500 for questions about the accreditation of The University of Texas Health Science Center at Houston.

The McGovern Medical School is accredited by the Liaison Committee on Medical Education located at: 655 K Street, NW, Suite 100, Washington, DC 20001. Telephone: 202.828.0596.

To the extent provided by applicable law, no person shall be excluded from participation in, denied the benefits of, or be subject to discrimination under any program or activity sponsored or conducted by UTHealth on the basis of race, color, national origin, religion, sex, sexual orientation, gender expression or gender identity, age, veteran status, genetic information, disability or any other basis prohibited by law.

A Message from the Dean of McGovern Medical School

Hello,

McGovern Medical School is proud to offer an excellent curriculum to educate and mentor compassionate physicians and biomedical scientists instilled with a passion for lifelong learning. Our outcomes-based curriculum is founded within a context of medical humanities and innovative technology.

Within the expanse of The University of Texas Health Science Center at Houston (UTHealth) and the Texas Medical Center, McGovern Medical School is poised to offer a collaborative and supportive environment.

Our school fosters a culturally diverse and inclusive community and promotes professionalism and leadership. With our hospital affiliates, including Memorial Hermann Hospital-Texas Medical Center, LBJ General Hospital, and UT Harris County Psychiatric Center, we offer an outstanding clinical environment for learners, providing excellent care and working to eliminate health care disparities.

I invite you to learn more about our degree programs and curriculum.

Warm regards,

Richard Andrassy, MD
Executive Dean, *ad interim*
H. Wayne Hightower Distinguished Professor
McGovern Medical School at University of Texas Health Science Center at Houston

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Neurosurgery
Dong H. Kim, MD

Obstetrics, Gynecology and Reproductive Sciences
Sean C. Blackwell, MD

Ophthalmology and Visual Science
Timothy J. McCulley MD, *(effective 9/1/21)*

Orthopedic Surgery
Walter R. Lowe, MD

Otorhinolaryngology- Head & Neck Surgery
Martin J. Citardi, MD

Pathology and Laboratory Medicine
Jalyeola Thomas-Ogunniyi, MBBS, *ad interim*

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Pediatrics
Mary Aitken, MD, MPH

Physical Medicine and Rehabilitation
Gerard Francisco, MD

Psychiatry and Behavioral Sciences
Jair C. Soares, MD, PhD

Surgery
Richard J. Andrassy, MD

Introduction

On November 11, 1968, the Coordinating Board of the Texas College and University System approved the establishment of a new four-year public school of medicine in the Texas Medical Center in Houston. On June 13, 1969, The University of Texas Medical School at Houston was created by act of the Legislature, and an appropriation for its initial cost became effective September 1, 1969. Three considerations led to the organization of the school: local, regional, and national shortages of physicians; the extraordinary, but until then underutilized, resources for medical education in Houston and in the Texas Medical Center; and the large number of well-qualified candidates seeking entry to medical school.

A dean and supporting staff were appointed in the spring of 1970. Two years were then devoted to assembling faculty, resources, and equipment; designing a curriculum; and organizing these various parts into an effective medical education team. During this period, The University of Texas Medical School at Houston was accredited by the Association of American Medical Colleges (AAMC) Liaison Committee on Medical Education. The faculty grew rapidly, and effective instruction began, in both the basic sciences and clinical disciplines. New facilities were opened, major construction programs were initiated, and the renovation of Memorial Hermann Hospital was completed. In 1972, The University of Texas Medical School at Houston, along with five other UTHealth programs, was incorporated into The University of Texas Health Science Center at Houston (UTHealth).

In November 2015, after a transformational gift from the McGovern Foundation, the school was renamed The University of Texas John P. and Kathrine G. McGovern Medical School at Houston, placing a renewed emphasis on humanism, ethics, research, and scholarship.

Now, more than 40 years later, McGovern Medical School has achieved a position of excellence among the other notable institutions in the Texas Medical Center. It has remained fully accredited throughout this time and was re-accredited in 2021.

Academic Calendar

Please see the Office of the Registrar's website for the most up-to-date calendar:
https://www.uth.edu/registrar/current-students/student-information/academic-calendar.htm

Mission

The mission of the McGovern Medical School is to educate a diverse body of future physicians and biomedical scientists for a career dedicated to the highest ideals of their profession; to provide outstanding patient-centered care; and to conduct innovative research that benefits the health and well-being of the population of Texas and beyond.

In pursuit of this mission, McGovern Medical School:

- Endeavors to select a group of caring, well-prepared, highly motivated, intellectually able and socially aware students from diverse cultural, ethnic, social, and economic backgrounds.
- Offers them educational experiences: in the basic human biological and behavioral sciences that underlie modern medicine, in the cultural and social forces that shape its practice, and in the ethical responsibilities of physicians.
- provides training in cognitive, technical, and interpersonal skills necessary for practicing patient–centered medicine
- Emphasizes problem solving and creates educational opportunities that involve the use of modern information resources and technology.
- Encourages students, faculty, and staff to participate in outreach activities that benefit the wider community.

Core Values

- Deliver compassionate patient care focusing on effectiveness, quality, safety, and service
- Provide a competency-based curriculum emphasizing integrity and professionalism
- Embrace a culture of lifelong learning, evidence-based practice, open inquiry, and scholarship
- Cultivate professional and respectful communication
- Foster a diverse and inclusive learning community
- Support the health and well-being of students, faculty, and staff
- Promote interprofessional collaboration
- Support leadership and innovation in teaching, research, and service
- Advocate for excellent care for the underserved and for the reduction of health care disparities

Affiliated Hospitals and Outpatient Facilities

McGovern Medical School is affiliated with several inpatient hospitals, including Memorial Hermann-Texas Medical Center (Memorial Hermann Hospital System,) Lyndon B. Johnson Hospital (Harris Health System), University of Texas MD Anderson Cancer Center, TIRR Memorial Hermann, and Harris County Psychiatric Center, providing a broad range of clinical services. As such, the students are exposed to a large and diverse population, with an appropriate balance of common and rare disorders.

Please refer to https://med.uth.edu/ for more information regarding our affiliated hospitals.

Ambulatory care is provided at the UT Physicians clinics, at eight community health centers operated by the Harris Health System; and at several other clinical outreach programs and WIC (Women, Infants and Children) clinics located throughout the greater Houston community. Please refer to https://www.utphysicians.com/locations/ for further information regarding UT Physician clinic locations.

MD Admissions

Admission to McGovern Medical School is determined by the Admissions Committee, which is composed of faculty members from both basic science and clinical departments.

For all medical schools of The University of Texas System, the Texas Legislature requires that 90% of the admitted class each year be Texas residents; therefore, no more than 10% of the entering class can be non-residents.

UTHealth endeavors to foster an educational and working environment that provides equal opportunity to all members of the university community. To the extent provided by applicable law, no person shall be excluded from participation in, denied the benefits of, or be subject to discrimination under, any program, or activity sponsored or conducted by The University of Texas System or any of its institutions on the basis of race, color, national origin, religion, sex, sexual orientation, age, veteran status, disability, genetic information, gender identity or expression or any other basis prohibited by law.

Any student or potential student who has a complaint regarding equal opportunity under this policy should contact the respective school's associate dean for student affairs, or the Equal Opportunity Advisor in the Office of Diversity & Equal Opportunity.
The full policy can be found online in the UTHealth Handbook of Operating Procedures (HOOP) Policy 183, Nondiscrimination, Anti-Harassment and Equal Opportunity). Students may access the HOOP online at **https://www.uth.edu/hoop/index.htm**.

Academic Prerequisites

Applicants must complete at least 90 undergraduate semester hours, including the prerequisite coursework listed below, at a regionally accredited United States or Canadian college or university. Preference is given to students who obtain a baccalaureate degree prior to admission to medical school. Graduate courses do not satisfy premedical requirements.

Prerequisite Coursework:
English: a minimum of 6 semester hours of college English. Any college English course earned at an accredited institution of higher education that fulfills a general education English requirement of a baccalaureate degree will be accepted. Remedial or developmental courses or "English as a Second Language" courses are not accepted..

Biology: 14 semester hours (12 lecture hours plus 2 lab hours). One year may be completed by advanced placement. The other year must be completed in residence at a college and must include formal laboratory work. Biology courses must be as required for science majors.

Inorganic Chemistry: 8 semester hours (6 lecture hours plus 2 lab hours). The courses should be for science majors, including the corresponding laboratory experience. Should include familiarity with analytic and volumetric techniques. Inorganic courses include general chemistry, physical chemistry and quantitative analysis.

Organic Chemistry: 8 semester hours (6 lecture hours plus 2 lab hours). The courses should be for science majors, including the corresponding laboratory experience.

Physics: 8 semester hours (6 lecture hours plus 2 lab hours). Physics courses must be as required for science majors and must include laboratory experience.

Medical College Admission Test

The Medical College Admissions Test (MCAT) is required for admission. The exam should be taken no later than the last September test date in the year of application submission (i.e. no later than September 30 of the year before you expect to begin medical school).

Evaluation of Applicants

McGovern Medical School, in conformity with the purpose assigned it by the Texas Legislature and its mission statement, selects the best qualified students for its entering class who demonstrate a potential to become competent and caring physicians and who will serve the identified needs of the State of Texas. The Admissions Committee considers the totality of each application and gives importance to the factors enumerated below.

1. **Intellectual Capacity**
   Each student who is accepted must have the intellectual ability to successfully complete medical school and master the essentials of the practice of medicine.

   - undergraduate and graduate record
   - standardized test scores
   - academic awards and honors (e.g. Phi Beta Kappa, National Merit, etc.)
   - research accomplishments
   - degree of difficulty of undergraduate program
   - pre-professional evaluations, personal interview

2. Interpersonal and Communication Skills
The practice of medicine demands a high level of interpersonal skills and a compassionate attitude. The ability to communicate well is essential for these qualities.

- community or charitable service
- recognition for humanitarian service
- extracurricular activities and organizations
- leadership positions
- employment history
- cultural competency
- articulate and organized communication, both oral and written
- standardized test scores in verbal abilities
- statements made on the application or in the personal interview

3. Breadth and Depth of Pre-medical Educational Experience
The modern practice of medicine requires a strong scientific background and an ability to understand the complex non-scientific problems facing physicians and patients, e.g. ethical or socioeconomic problems. The bare completion of the pre-medical requirements is a base on which to build further knowledge and prepare physicians for a lifetime of study so that they will remain the best possible practitioners of medicine.

- undergraduate core curriculum or course selection
- participation in the intellectual life of the university
- involvement in discipline organizations and clubs
- extent and variety of reading
- papers written or published
- knowledge displayed at the interview
- enrollment in an honors program in college
- pre-professional evaluations

4. Potential for Service to the State of Texas
A state medical school must, as a primary concern, produce practitioners who will serve the people of that state.

- the applicant's goals for the future
- size and location of hometown
- residency in a Health Professions Shortage Area in Texas
- potential for future provision of health services to underserved areas
- potential for future provision of medical specialties in short supply
- language skills appropriate to the Health Profession Shortage Areas in Texas

5. Motivation
A physician must be prepared for a lifetime of intense service to her or his patients. This requires a high level of selfless motivation and commitment.

- success in overcoming adverse economic or educational conditions
- employment history occurring simultaneously with undergraduate academic preparation
- participation in activities requiring time management skills
- varsity athletics, campus symphony, and other time-intensive accomplishments
- improvement in the undergraduate record
- veteran status and military experience
- experience in health-related activities

6. Integrity
Because of the public trust given to members of the medical profession, a physician must have qualities of integrity beyond reproach.

- pre-professional evaluations
- any academic integrity violation
- commission of any crime
- any other relevant background relating either positively or negatively to applicant's standard of integrity
- honorable discharge or discharge under honorable conditions

7. Ethical Standards
A candidate must demonstrate professional demeanor and behavior and must perform in an ethical manner in all dealings with peers, faculty, staff, and patients.

8. Essential Functions/Technical Standards
All individuals, without exception, who apply for admission to McGovern Medical School, must be able to perform specific essential functions. Essential functions are the basic activities that a student must be able to perform to complete the general medical school curriculum. An applicant who cannot perform the medical school's essential functions, with or without reasonable accommodation, will not be considered for admission. Students can obtain information concerning program-related accommodations from the school's Section 504 Coordinator. See also HOOP 101, Disability Accommodation. A candidate for the MD degree at McGovern Medical School must be able to perform these essential functions:

OBSERVATION
- accurately observe demonstrations
- accurately observe patients close up and at a distance
- observe to gather patient data (affect, gait, appearance, posture, etc.)
- use visual, auditory, olfactory and somatic senses to gather information

COMMUNICATION
- communicate orally and in writing with patients and members of the health-care team
- read and comprehend written material

PSYCHOMOTOR SKILLS
- sufficient motor function to obtain data from patients
- use tactile, auditory, and visual maneuvers
- execute motor movements to provide general care and emergency treatment

INTELLECTUAL AND COGNITIVE ABILITIES
- measure, calculate, reason, analyze, synthesize, integrate and apply information
- comprehend three-dimensional relationships
- understand the spatial relationships of structures

BEHAVIORAL AND SOCIAL ATTRIBUTES

- emotional health to fully use intellectual abilities
- exercise good judgment
- promptly complete all responsibilities attendant to the diagnosis and care of patients
- developing mature, sensitive, and effective relationships with patients
- tolerate physically taxing workloads
- function effectively under stress
- adapt to changing environments
- display flexibility
- learn to function in the face of many patients
- show compassion, integrity, concern for others, interpersonal skills, interest, and motivation

CHRONIC CONDITIONS

A candidate must not possess any chronic or recurrent illnesses, including but not limited to, infectious, psychiatric or substance abuse problems that can interfere with patient care or safety and are not compatible with medical practice or training.

Application Procedure

All applicants to McGovern Medical School must complete the following:

A **primary** application

- Applicants to the MD program must apply through the Texas Medical and Dental Schools Application Service (TMDSAS).
    - Applications for entry are typically accepted between May 1 and October 1 of the year preceding matriculation.
    - Applicants should contact TMDSAS for the most current information.
    - Application information is available on TMDSAS's website: www.tmdsas.com

      Mailing address:
      Texas Medical and Dental Schools Application Service
      P.O. Box 2175
      Austin, Texas 78768
      512-499-4785

- Those applying to the **MD/PhD** dual degree program, you must complete the American Medical College Application Service (AMCAS) Application. The application can be accessed at: https://students-residents.aamc.org/preparing-medical-school/preparing-medical-school

A **secondary** application

- A McGovern Medical School Secondary Application is required of all applicants.
- Candidates will receive an email invitation from our school containing the link and instructions to complete our secondary application after we have received their complete application from TMDSAS. Please allow for processing time by TMDSAS.

A **CASPer Test** score

- All applicants applying to McGovern Medical School are required to complete an online assessment, Computer-Based Assessment for Sampling Personal Characteristics (CASPer), to assist in our selection process.

    - Applicants must go to takealtus.com to sign up for the Medicine test (CSP-10111 – U.S. Medicine), under your specific country (USA), and reserve a test using your TMDSAS ID and a piece of government-issued photo ID.

Once applications are processed by TMDSAS, they are forwarded to McGovern Medical School, where they are reviewed and evaluated by the Admissions Committee. The same criteria for evaluation are applied to all candidates.

After receiving an offer of acceptance, applicants are required to indicate their acceptance decision in writing within two weeks of notification. An applicant who later decides to accept a position at another institution should give prompt notice of withdrawal to McGovern Medical School.

McGovern Medical School recognizes the procedures and deadlines recommended by the Association of American Medical Colleges and the American Medical Colleges Application Services.

Entering medical students are required to consent to and pay for a criminal background check by an entity designated by McGovern Medical School. Admission is expressly contingent upon successful completion, review, and approval of the content of the criminal background check. The criminal background process will be repeated before the student enters the clinical rotations.

MD Student Development

Evaluation and Promotion

The official policies for evaluation of academic performance, promotion, grade grievance, and academic dismissal are outlined in the McGovern Medical School Policy and Guidelines for Evaluation and Promotions of Medical Students on the McGovern Medical School student handbook website at https://med.uth.edu/admissions/student-affairs/policies/. Paper copies are available in the Office of Admissions and Student Affairs.

McGovern Medical School uses the following grade system: Honors, High Pass, Pass, Below Pass, or Fail. Grades and other information relative to a student's academic performance are transmitted to the Student Evaluation and Promotions Committee which, based upon an overall consideration of the student's grades, demonstrated knowledge, clinical performance, and suitability to practice medicine, decides whether a student should be promoted, continued with remedial work assigned, or dismissed. Any student whose active record indicates that he/she is not suitable to continue the study of medicine will be dismissed.

Students can be referred for evaluation and counseling for academic or personal concerns through the Office of Admissions and Student Affairs. A Peer Tutoring Service is also available to all students at no charge.

Conduct and Discipline

Students are responsible for knowledge of and compliance with University policies concerning student conduct and discipline as set forth in HOOP Policy 186, Student Conduct and Discipline, and the McGovern Medical School's Policy and Guidelines for the Evaluation and Promotions of Medical Students. Students may access the HOOP online at **https://www.uth.edu/hoop/index.htm**.

For information regarding student academic and behavioral issues, contact:
Margaret C. McNeese, MD
Vice Dean for Admissions and Student Affairs
McGovern Medical School
6431 Fannin, Suite G400
Houston, Texas 77030

Research Programs for Medical Students

Medical student research is an essential component of the overall mission of McGovern Medical School. McGovern Medical School offers a "Summer Research Program", which provides an intensive, hands-on, 10-week, 40 hours/week, research experience for medical students during the summer after their first year. The program fosters development of scientific reasoning and other research skills.

Students work closely with faculty mentors of their choice on research projects organized individually for each student. At the end of the research project, students write an abstract on which they are first author. These abstracts are published and posted on the program's web site. In addition, the students develop a research poster that is presented at the annual Medical School Research Forum and Webber Prize Competition held in the fall. Students who complete the Program receive a certificate of completion and an acknowledgement letter in their permanent academic file, also known as, their Blue Book. Students may continue their research until graduation with their mentor. Visit the Summer Research Program website for more information and application deadlines: https://med.uth.edu/oep/summer-research-program/

Students also may participate in one of the twelve current "Scholarly Concentration Programs." All concentrations are thematic, interdisciplinary, longitudinal, and experiential, with guided faculty mentoring and structured group seminars/courses/journal clubs, etc. Additionally, all students in concentrations are expected to conduct an independent scholarly project. Students who successfully complete the concentration requirements receive a certificate of completion and recognition at graduation. Visit the Scholarly Concentration Programs website for more details: https://med.uth.edu/oep/scholarly-concentrations-program/.

Additionally, applicants and students of the MD program who are interested in research may apply to one of McGovern Medical School's dual degree programs. More information about the dual degree programs can be found in the "Dual Programs" section of the catalog.

Limited financial support is available for medical students.

Contact: Gary Rosenfeld, PhD
Director: Summer Research &
Scholarly Concentration
Programs
713-500-7435
e-mail: Gary.C.Rosenfeld@uth.tmc.edu

MD Expenses

Tuition and fees are subject to change and become effective on the date enacted. The Texas Legislature does not set the specific amount for any particular student fee. Student fees are authorized by state statute; the specific fee amounts and the determination to increase fees are made by the university administration and The University of Texas System Board of Regents.

Please refer to the UTHealth Student Financial Services website (https://www.uth.edu/sfs/cost-of-attendance.htm) for the Cost of Attendance (COA). The COA is an estimated cost of a student's educational and living expenses for the period of enrollment. It includes tuition, fees, books/supplies, room and board, and other expenses.

The Office of the Registrar website (https://www.uth.edu/registrar/current-students/registration/tuition-fee-schedule.htm) lists Tuition and Fee Schedules.

Tuition and Fees (2021-2022)

Resident Tuition	$18,604.00
Non-Resident Tuition	$26,125.00
School Specific Fees	
Laboratory	$35.00
Foundations of Medical Science Course Fee (BSCI 1100; MS1 Year)	$500.00
Malpractice Ins	$25.00
Computer Resource	$200.00
Technology Fee	$1,450.00
Library Resource	$125.00
Simulation and Skills Fee	$1,150.00
UWorld Fee (MS2 Year)	$359.00
Health Insurance[1]	$3,190[2]
Student Record Fee	$15.00

All UTHealth Schools-Required Fees (2021-2022)

Student Services Fee	$571.10
Audit Fee (per course)	$25.00
Information Technology Access	$114.00
Student Record Fee (per term)	$5.00
Graduation[3]	$100.00
Installment Use Fee	$20.00
Late Payment fee	$50.00
Late Registration fee	$25.00
Return Check/E-Check Fee	$25.00
Credit Card Use Fee	2.50%
Evacuation/Repatriation Insurance *Subject to Change (Assessed to international students who do not elect to carry the student Health Insurance Policy)	Fall - $32.00 Spring- $40.00 Summer - $24.00
Reinstatement Fee - assessed to student who want to re-enroll after being dropped for nonpayment on the 12th day of class.	$200.00

[1] Health insurance is required of all UTHealth students. If students have a health insurance policy, they may provide proof of comparable insurance to Auxiliary Enterprises no later than the 12th class to have this charge waived. Details on the insurance plan are available through the Auxiliary Enterprise Office.

[2] The 4th year Class is charged $3722 to cover 14 months of Health Insurance. The months of May and June are added to allow the time between the end of the 4th year and the beginning of their residency.

[3] A graduation fee of $100 payable at registration for the final academic term is required of all students. This fee does not include regalia rental.

Through reciprocal agreements, students at other components of The University of Texas System, as well as graduate students from Rice University, Baylor College of Medicine, Texas Woman's University, and the University of Houston, may take some graduate courses for credit at McGovern Medical School, subject to the approval of the instructor. In addition, McGovern Medical School graduate students may take some courses for credit at any of the above institutions. Mechanism for payment of tuition or registration fees vary according to the individual institution. Consult with that Registrar's Office for specific details.

Scholarships

Scholarships are awarded based on need, merit, or a combination of both. Scholarships do not need to be repaid, but may have specific criteria for the recipient to remain eligible (i.e., grade point average, hometown, undergraduate university, high school, etc.). Competitive scholarships are reviewed in the same manner as all other scholarships. Students may apply online through the Office of Admissions and Students Affairs once each aid year.

Scholarship award decisions are made by the Scholarship Committee.

Books and Supplies

For the 2021-2022 curriculum, the cost of required textbooks and supplies averages $3,630.00 (excluding cost of computer) for the pre-clerkship curriculum and $3,312.00 for the clerkships and required advanced clinical experiences. Information regarding specific textbook requirements and costs may be found here: https://med.uth.edu/admissions/admissions/entering-class-checklist/

Laptop Requirement

Information technology and informatics are integral parts of medical education and practice. In order to fully utilize information resources required by the faculty during your education, the school requires that all incoming medical students have laptop computers that meet specific minimal requirements.

The requirements for the current entering class are provided on the Office of Admissions and Student Affairs web site.

Disability Insurance

McGovern Medical School encourages students to consider whether or not they wish to purchase disability insurance. The Office of Admissions and Student Affairs has information regarding available plans.

Liability Insurance

Students may be required to show evidence of student liability insurance when enrolled in extramural electives. Basic coverage is included for $25 a year as one of the required fees.

Ethics

McGovern Medical School recognizes that in addition to intellectual capability and expert technical skills and knowledge, a good physician must have a solid and unassailable foundation and commitment to ethical behavior and principles. Patients and society at large expect and deserve no less. These principles are embedded in the life of McGovern Medical School and its faculty.

Because these principles are so important to McGovern Medical School, students are asked to make an explicit commitment to them.

Ethical Pledge (Code of Professional Conduct)

Incoming students are asked to agree to and sign the following ethical pledge following their acceptance to McGovern Medical School.

- I acknowledge and accept the privileges and responsibilities given to me as a physician-in-training and dedicate myself to provide care to those in need.
- I will approach all aspects of my education with honesty and integrity, embracing opportunities to learn from patients, teachers, and colleagues.
- I will always maintain the highest standards of professional conduct.
- I will certify only that which I have personally verified, and I will neither receive nor give unauthorized assistance on examinations.
- I will value the knowledge of wisdom of the physicians who have preceded me.
- I will recognize my weaknesses and strengths and strive to develop those qualities that will earn the respect of my patients, my colleagues, my family, and myself.
- I will respect the humanity, rights, and decisions of all patients and will attend to them with compassion and without bias.
- I will maintain patient confidentiality and be tactful in my words and actions.
- I will value the diversity of patients' experiences, cultures, and beliefs because it enhances my ability to care for them and enriches my education.
- I will not forget that there is an art to medicine as well as a science and that warmth, sympathy, and understanding are integral to patient care.
- I will strive to earn the trust my patients place in me and the respect that society places upon my profession.
- I recognize the privileges afforded to me as a physician-in-training and promise not to abuse them.
- Even as a student, I have a responsibility to improve the standard of health in my community, to increase access to care for the underserved, and to advance medical knowledge.
- As I accept these new responsibilities, I will not forget the importance of my own health and well-being. I will continue to value my relations with those who have supported me in the past and those who will share in my future.
- Knowing my own limitations and those of medicine, I commit myself to a lifelong journey of learning how to cure, relieve pain, and comfort with humility and compassion.
- I make these promises solemnly, freely, and upon my honor.

White Coat Ceremony

Dr. Arnold P. Gold, a faculty member at Columbia University College of Physicians and Surgeons, initially conceived the White Coat Ceremony. The White Coat Ceremony marks students' initial entry into the medical profession. A White Coat Ceremony is held at the beginning of the third year. Students are presented white coats, which symbolize their journey to becoming physicians. At the end of the ceremony, the students recite The Physician's Oath of Hippocrates and re-affirm the Ethical Pledge.

MD Academic Organization

During medical school, students are required to take USMLE Step 1 after completion of the pre-clerkship courses and prior to the start of the clinical clerkships. Students are required to take USMLE Step 2 CK and CS prior to graduation.

The Curriculum Committee is charged by the Dean to provide oversight of the medical education program, including the design, management, integration, evaluation, and enhancement of a coherent and coordinated medical curriculum.

Curriculum

The basic four-year program outlined below is required for the MD degree. Variations and adjustments may be made as the Curriculum Committee deems necessary.

First Academic Year

Required Courses:

Fall Semester/20 instructional weeks

Foundations of Medical Science ***required*** **BSCI 1100** (Pass/Fail; $500 course fee – anatomy)
The purpose of this module is to provide students with the fundamentals necessary to study human disease at an advanced level. Students will learn the basic structure and function of major organs at the same time as they practice the related physical exam and clinical skills in Doctoring. In addition, students will learn the basic biochemical, cellular, and physiological mechanisms that underlie the major classes of disease.

Doctoring 1: History and Physical Exam ***required*** **BSCI 1101** (Pass/Fail)
This course introduces the student to the basic clinical skills of interviewing a patient and conducting a comprehensive medical history. Students learn to perform a normal physical examination on a healthy adult and document patient encounters (comprehensive history and physical examination) in an organized, accurate manner. The student integrates their own experiences during the course with longitudinal theme content to illustrate ways in which a physician communicates respect, compassion, and empathy. The student applies knowledge obtained from the longitudinal themes including the treatment of special patient populations (geriatric, pediatric etc.) and they will have specific training in the interview of the psychiatric patient.

Spring Semester/18 instructional weeks

Hematology and Introduction to Pathology ***required*** **BSCI 1200**
The Hematology and Introduction to Pathology (HIP) module begins with an introduction to basic principles underlying disease: cell injury, adaptation, cell death and the effects that these processes have on tissues and organs. This is followed by an introduction to neoplasia. The second portion of the HIP module focuses on hematologic disorders, including anemias, coagulation disorders, and thrombotic disorders and how these conditions are treated. Reactive white blood cell disorders and hematologic malignancies will also be presented.

Cardiovascular System ***required*** **BSCI 1201**
The Cardiovascular Module focuses on expanding the concepts presented in Foundations and developing a knowledge base in pathology, pharmacology and clinical skills associated with the heart and vascular system. The emphasis is on management of cardiovascular disease including hypertension, myocardial infarction, congestive heart failure, arrhythmias, and both congenital and acquired cardiovascular defects. The concepts presented in this module are linked those presented during the subsequent pulmonary and renal modules to emphasize the tight integration of these organ systems.

Pulmonary System ***required*** **BSCI 1202**
This course begins with a review of pulmonary physiology from Foundations, followed by lung development and introduces radiologic imaging of lung structure. Students will study more in-depth lung physiology, and infectious and obstructive diseases of the lung in both adults and children. Students will be introduced to pathology, physiology, radiology and management of various acute critical conditions such as sepsis, acute respiratory distress syndrome and pulmonary embolism.

Renal System ***required*** **BSCI 1203**
The Renal System Module covers the physiology defining normal renal function, clinical characteristics and pathology / pathophysiology of diseases of the kidney, and clinical disorders that result from failure of the kidney to function correctly. Students will learn to evaluate changes in fluid and electrolyte balance, mineral metabolism and glomerular function and renal clearance. The clinical implications of renal dysregulation/dysfunction will be explored.

Doctoring 2: Longitudinal Clinical Experience *required* BSCI 1204
During Doctoring 2 students begin to use the skills acquired in Doctoring 1. Students will interview, perform comprehensive and focused histories, and perform comprehensive physical exams to evaluate patients with diseases and symptoms. Students will document patient encounters in an organized manner. Student will be able to integrate clinical and basic science knowledge in order to: analyze basic laboratory results; develop a differential diagnosis; determine a basic science pathology and pathophysiology. The student will be able to integrate their own experiences during the course with longitudinal theme content to describe in depth at least two key lessons learned by attending an interprofessional patient safety meeting.

Second Academic Year

Fall Semester/20 instructional weeks

Doctoring 3: Longitudinal Clinical Experience *required* BSCI 2102
Doctoring 3 builds on skills gained from Doctoring 1 & 2 (interview, comprehensive/focused history, comprehensive/focused physical exam) to evaluate patients with diseases and symptoms, and document patient encounters in an organized, accurate manner. The student will be able to integrate clinical and basic science knowledge in order to: analyze basic laboratory results; develop a differential diagnosis; determine a basic science pathology and pathophysiology. The student will be able to integrate their own experiences during the course with longitudinal theme content to describe in depth at least two key lessons learned by attending an interprofessional patient safety meeting. Students are required to complete Basic Life Skills during Doctoring 3. This course spans the fall and spring semesters.

Gastrointestinal System *required* BSCI 2100
The Gastrointestinal Module builds on the concepts learned in Foundations and other systems modules further enhancing their knowledge base in anatomy, biochemistry, microbiology, pharmacology, pathology, and clinical expertise pertaining to the field of gastroenterology, hepatology, and nutrition. This module uses a variety of pedagogies, including didactic lectures, problem-based learning (PBL) cases and independent study. Doctoring 3 concepts are integrated into this module.

Nervous System and Behavior *required* BSCI 2101
The Nervous System and Behavior Module (NSB) is a team-taught course that provides an interdisciplinary approach to understanding the nervous system and behavior. The module consists of multi-modal learning approaches: lectures, clinical presentations with patients, laboratory sessions, clinical correlations, small group learning exercises, self-study exercises and problem based learning (PBL) cases. The ultimate objectives and goals of the NSB Module are to provide an understanding of the structure, function and dysfunction of the nervous system. Mental illness, behavioral dysfunction, and substance use issues are presented from a biopsychosocial perspective with both pharmacological and psychological interventions for treatment.

Endocrine System *required* BSCI 2103
This module focuses on hypothalamic-pituitary axis, and normal growth patterns and growth disorders. Students will learn about diagnostic strategies and therapeutic options for various diseases including pituitary, metabolic, adrenal and thyroid disorders. Students will also be introduced to the diagnosis and pharmacologic management of osteoporosis.
Spring Semester/10 instructional weeks

Reproductive Systems *required* BSCI 2201
This module focuses on hormonal regulation of reproductive function, evaluation and management of infertility, and pregnancy, including preconception planning and the physiology of birth. Students will be introduced to the management of diabetes, hypertension, and infectious diseases during pregnancy. They will also learn about uterine, ovarian and breast pathology, as well as the genetics of breast and gynecologic malignancies. Students will also be introduced to breast imaging and the medical treatment of breast cancer, as well as management of sexually transmitted infections and male genitourinary pathology. Students will discuss sexual identity, sexual function, and the reproductive health of older adults.

Musculoskeletal System and Integumentary System *required* BSCI 2202
Students will learn about the morphology, pathophysiology, clinical presentations and management of common skin disorders. They will spend time in the dermatology clinic where they will have the opportunity to perform skin examinations, and learn about evaluating and diagnosing skin conditions. Students will also learn about various bone disorders and soft tissue malignancies, including pathophysiology, diagnosis, differential diagnosis, management and treatment. The approach to various forms of musculoskeletal pain, relevant physiology, and treatments will be explored.

Transition to Clerkships *required* BSCI 2304
This course prepares students for the clerkships. It is composed of required sessions including large group and skills sessions.

Third Academic Year

Required Clerkships:
48 instructional weeks

Clerkships

The required clerkships include family medicine, geriatrics, internal medicine, neurology, obstetrics and gynecology, pediatrics, psychiatry, and surgery, as well as one elective. The goal of the clerkships is to provide broad exposure to the major disciplines of medicine. Specific descriptions are below. Geriatrics and the elective are pass/fail.

Family Medicine *required* FAMD 3001
The goal of this clerkship is to introduce the principles and practice of Family Medicine, and to provide the essential clinical skills and training, which students will find useful in whichever specialty they choose to pursue. This clerkship focuses on the approach to the ambulatory patient and learning activities are planned to introduce the skills, knowledge, and attitudes that all physicians need when faced with such a patient. The curriculum for this course focuses more on the process of evaluating and treating a new patient or problem, and is not limited by a specific content. A core content will be addressed that is central to the acute, chronic, and preventive care that family physicians deliver. Additional knowledge and skills are gained in the specific areas relevant to the patient encounters. Students develop a framework within which they can initiate evaluation and care for any patient, regardless of clinical setting or problem, and do so in a fashion that fosters an ongoing relationship with the patient.

Geriatrics *required* GERI 3030 (Pass/Fail)
The geriatric and palliative third year clerkship rotation is designed to enable medical students to practice effectively in a clinical setting. Students will actively participate in the ongoing, daily care of older patients. Students will be paired with a geriatric or palliative preceptor who will provide clinical teaching and feedback. Throughout the clerkship, students will work with a variety of geriatric and/or palliative focused health professionals as part of the interprofessional team approach.

Internal Medicine *required* INTM 3001
The Internal Medicine Clerkship is an eight week rotation split into two four week blocks with the primary goal of introducing students to the evaluation and treatment of adults hospitalized with acute medical illness. Emphasis is placed on developing the skills to diagnose common clinical conditions and to recognize the clinical presentations of common diseases. Students will take patient histories, perform comprehensive physical exams, formulate problem lists with appropriate differential diagnoses, and document their findings in the electronic health record. Students will participate in the evaluation of a diversity of patients as part of a team of residents and students under the supervision of an internal medicine faculty member.

Neurology ***required*** **NEUR 3000**
This clerkship is a four-week rotation split into two blocks. Our goal is to educate all medical students sufficiently to appropriately evaluate the patient with a neurologic complaint or deficit. Students will perform a thorough history and neurologic exam, will develop the ability to "localize the lesion" and develop an appropriate diagnosis and treatment plan.

Ob/Gyn ***required*** **OBGY 3001**
The Obstetrics and Gynecology clerkship covers pathophysiology of the female reproductive system. The basis for the diagnosis, management, and treatment of diseases specific to women are also covered. Students participate in patient encounters in the operating room, labor and delivery, emergency room, ambulatory clinics and on the hospital wards.

Pediatrics ***required*** **PED-3001**
Pediatrics is an eight week rotation, with four weeks spent on the inpatient unit at Children's Memorial Hermann Hospital and four weeks spent at one of several outpatient pediatric clinics scattered around Houston. Students will be exposed to the care of newborn infants, children with acute and chronic medical conditions, and well children coming in for their regular checkups. A major focus of the clerkship is injury and illness prevention. Students will become familiar with congenital and acquired conditions, as well as normal and abnormal patterns of development.

Psychiatry ***required*** **PSYC 3001**
Students in this clerkship will build on their knowledge about behavioral sciences from their Doctoring and Nervous System and Behavior module experiences and will expand their interviewing, diagnostic and treatment skills for psychiatric disorders.

Surgery ***required*** **SURG 3001**
The Surgery clerkship curriculum emphasizes the basic clinical skills required to solve common surgical problems. Students will be introduced to preoperative, postoperative, emergency, and ambulatory care of patients. By the completion of this clerkship, students will be expected to demonstrate an understanding of the pathophysiology of surgically treatable diseases and to have acquired sufficient knowledge and diagnostic skills to be able to recognize when a patient's condition might best be served by a surgical consultation. Students will also develop skills for the safe, effective, and efficient management of patients in the hospital and ambulatory setting.

Students will have four weeks of vacation during this time period.

Fourth Academic Year
Required courses:
42 instructional weeks

Students will take the required Comprehensive Clinical Competency Examination (CCCE) at the beginning of the fourth academic year.

Career Focus Tracks

The final phase consists of the Career Focus tracks. The goal of the Career Focus tracks is to provide career mentoring and guidance. There are four tracks: primary care, acute care, medical sciences, and applied anatomy. During the tracks, the students complete three required advanced clinical selectives: ambulatory care, advanced patient care, and critical care. Additionally, the career focus tracks incorporate seven (7) four-week electives tailored to the students' intended career path.

Career Focus Tracks CFT 4001
Students choose one of four fourth year tracks, corresponding to their career goals. These tracks have specialty-related educational activities throughout the year.

- The **Primary Care** track is designed for students interested in Pediatrics, Internal Medicine, Family Medicine, and Psychiatry. Students planning on practicing OB/Gyn in the community might also select this track.
- The **Acute Care** track is primarily designed for students planning to go into Emergency Medicine or Anesthesia.
- The **Applied Anatomy** track is designed for students interested in surgical specialties, pathology, and radiology.
- **Medical Science** is a track for students who have embarked on a significant research project during medical school; they are permitted additional elective time to ready their project for publication.

Ambulatory Medicine *required selective* INTM 4000/PED 4000/OBGY 4000/FAMD 4000
The required fourth year ambulatory rotation is an outpatient clinic based selective, allowing students to choose a particular area of focus consistent with their career trajectory. Students will care for patients coming in for preventative health checkups, as well as those with minor acute illnesses. Students also revisit the principles of evidence based medicine, and complete a critical review of the literature for a clinical question of their choosing.

Required Critical Care *required* RCC- 4000
The required critical care rotation places fourth year students in an ICU setting, caring for patients that are most sick in the hospital under the supervision of critical care fellows and faculty. Students are able to request from a list of ICUs, tailoring the experience to their intended career. There is a focus on procedures and ventilator management.

Advanced Patient Care *required* APC 4000/4001
This rotation, commonly referred to as an "acting internship" or a "Sub-I" rotation, puts fourth year students on inpatient teams in the role of an intern, giving students primary responsibility for hospitalized patients under the direct supervision of a faculty member. Students will work on a call or shift system alongside the residents, taking admissions, practicing order entry, and working with case managers to ensure safe discharges. Students may choose a rotation that best fits their career plans from wide variety of inpatient services.

Transition to Residency *required* RTR- 4000
This course includes specialty-based workshops, panel discussions, plenary speakers, and clinical skills practice sessions designed to prepare students for residency.

McGovern Medical School's fourth-year elective programs permit students to seek clinical opportunities away from Houston, at their own expense, ranging from family practice in rural communities to experiences in the most sophisticated settings requiring advanced technology. International clinical and research electives also are available. The School is fortunate regarding the wealth of clinical opportunities available to its students.

The fourth-year elective catalog is available online at https://med.uth.edu/admissions/current-students/ms4/

Ten weeks are available for vacation or additional electives. These weeks may be used during the required clerkships in special circumstances and with prior approval of the Office of Admissions and Student Affairs.

MD Curriculum Goals and Objectives

MD Curriculum Goals and Objectives

Educational Goals for McGovern Medical School

(a) Students should acquire a KNOWLEDGE AND UNDERSTANDING of health and its promotion; of disease and its prevention and management; and, of psychosocial factors that influence a patient's well-being, in order to provide competent and humane medical care to individuals, families, and the larger society. Furthermore, students should be able to use their knowledge and understanding appropriately in the care of patients. Students should have an opportunity to participate in scholarly activities including research.

(b) Students should acquire and become proficient in basic clinical SKILLS, such as the ability to obtain a patient's history, to perform a comprehensive physical and mental status examination, to interpret the findings, and to demonstrate competence in the performance of basic technical procedures. Students should appreciate the appropriate use of technologies in assisting in diagnosis and management.

(c) Students should acquire and demonstrate ATTITUDES that foster patient-centered care and support the highest standards of the medical profession.

Competencies and Medical Education Program Objectives

McGovern Medical School expects all of its students to demonstrate the following competencies prior to graduating with the M.D. degree.

1. **Patient Care and Clinical Skills** – Graduates must be able to provide patient-centered care that is compassionate, appropriate, and effective for the promotion of health and the evaluation and management of disease.
2. **Medical Knowledge** – Graduates must be able to demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.
3. **Interpretation of Medical Data/ Practice-Based Learning and Improvement** – Graduates must be able to demonstrate the ability to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care based on constant self-evaluation and life-long learning.
4. **Interpersonal and Communication Skills** – Graduates must be able to demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals.
5. **Professionalism** – Graduates must be able to demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
6. **Health Systems Science** – Graduates must be able to demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

The medical education program objectives are specified for each competency area and can be found here: https://med.uth.edu/oep/medical-education-2/core-competencies-and-educational-program-objectives-epos/

Pre-Entry Program

The Pre-Entry Program is an intensive four-week program offered to a subset of students prior to the matriculation to the first year of medical school. The program includes course content in anatomy, biochemistry, histology, immunology, microbiology, and physiology/neuroscience taught by McGovern Medical School faculty members. Students are also introduced to study skills. The noncredit program is designed to assist students prepare for the academic rigors of the medical school curriculum. Invitations are sent to students who might benefit from the program. Students may also request consideration for participation in this program. Second year students serve as tutors for the program.

For information about the Medical School's academic program, call 713-500-5140, e-mail: ms.ume@uth.tmc.edu, or write:

Philip Carpenter, PhD, Director, Pre-Entry Program
Erin Bodeker, Educational Programs Coordinator
Office of Educational Programs
McGovern Medical School
6431 Fannin, JJL 304
Houston, Texas 77030

Visit the Pre-Entry Program Web site:
https://med.uth.tmc.edu/oep/medical-education/student-programs/pre-entry-program/

Learning Resource Center (LRC)

The LRC supports teaching and learning functions of McGovern Medical School. It liaises with faculty and students to acquire and promote use of innovative teaching-learning resources, in support of school's curricular offerings. There is 24/7 access to over 250 seating spaces, 170 study carrels, 11 group study rooms, 2 fully equipped rooms for practice of physical diagnosis skills. Also included are audiovisual devices, required and recommended instructional resources and simulators. A satellite LRC is available elsewhere in the medical school building, at Lyndon B Johnson hospital and a functional Student Lounge carved out from the LRC offers comfortable seating, kitchenette and facilities for leisure activities. Further details at: https://med.uth.edu/lrc/

Dual Programs

Medical Scientist Training Program (MD/PhD) Program

The Medical Scientist Training Program (MSTP) is a dual degree MD/PhD program of McGovern Medical School and MD Anderson UTHealth Graduate School of Biomedical Sciences. The program educates physician-scientists and draws from faculty expertise at The University of Texas Health Science Center at Houston and MD Anderson Cancer Center. This rich training environment—encompassing laboratories, hospitals, and clinics in the Texas Medical Center—ensures that our graduates are uniquely prepared for careers in translational research, where basic research is applied to improving patient care and promoting well-being, and observations/samples from patients are taken to the laboratory to improve understanding of disease mechanisms.

Students must meet the admissions requirements of McGovern Medical School to qualify for admission to the MSTP. The program is restricted in size and provides stipend and tuition support for exceptional MD/PhD candidates. For information, visit the program's Web site at **https://gsbs.uth.edu/mdphd/**

Those interested in the MSTP should inquire through the Office of Admissions and Student Affairs at McGovern Medical School. Application for admission to the MSTP may be made by submitting an application online through the American Medical College Application Service (AMCAS) and a mandatory secondary application online at **https://gsbs.uth.edu/mdphd/apply-here.htm**. Three (3) letters of recommendation (two (2) general letters and an additional letter from a research mentor) are also required and should be submitted through AMCAS. The application deadline is November 1st. For additional information you may also contact the MD/PhD administration at 713-500-6865 or by email at mstp@uth.tmc.edu.

MD/MPH Program

McGovern Medical School and the UTHealth School of Public Health (UTSPH) offer a dual degree program leading to an MD degree and a Master of Public Health (MPH). The requirements established for the program meet the general requirements of both degrees. The curricula are integrated along a four- or five-year path to support student career objectives.

Information regarding the MD/MPH dual degree program can be found online at:
https://sph.uth.edu/degree-finder/?searchby=dp&did=7129b0c2-9aaa-46c1-a00c-7c2d666374e4&dept=ea81c064-92da-4551-8eda-2a65ca67e78c

Students must meet the admission requirements of both schools to qualify for the dual MD/MPH program. Acceptance to UTSPH is accomplished by applying during the regular application cycles – deadlines are April 1 (for Summer/Fall admission) and October 1 (for Spring admission).

MD/MS in Biomedical Informatics

McGovern Medical School and the UTHealth School of Biomedical Informatics (UTSBMI) offer a dual degree program leading to an MD degree and a Master of Science in Biomedical Informatics (MSBMI). The requirements established for the program meet the general requirements of both degrees. The curricula are integrated along a four-year path to support student career objectives.

Dual degree students will explore the wide range of applications of health and biomedical informatics in the quest to improve patient care. The program examines both electronic health records systems and clinical decision support systems and methods for enhancing those tools. Students learn about data interpretation and knowledge management as they discover how to collect, process, and transform health and biomedical data into health information and knowledge. Dual degree students will understand core clinical informatics disciplines such as technology assessment, quality and outcome improvement, data analytics and precision medicine.

Information regarding the MD/MSBMI dual degree program can be found online at:
https://sbmi.uth.edu/prospective-students/academics/dual-degree-mdms.htm

Students must meet the admission requirements of both schools to qualify for the dual MD/MSBMI program. Acceptance to UTSBMI is accomplished by applying during the regular application cycles – deadlines are July 1 (for Fall admission), November 1 (for Spring admission), and March 1 (for Summer admission).

MD/MBA Program

The challenges of managing healthcare entities demand leaders prepared in the business as well as the science of medicine. McGovern Medical School and the University of Houston Clear Lake College of Business (UHCL) offer a dual degree program leading to a Doctor of Medicine (MD) degree and a Master of Business Administration (MBA). The requirements established for the program meet the general requirements of both degrees. The curricula are integrated along either a four-year or a five-year path to support student career objectives.

Students must meet the admission requirements of both schools to qualify for the dual MD/MBA program. Enrollment in the MBA program at UHCL is accomplished after acceptance to McGovern Medical School.

Any questions or requests for information or to begin the application process please contact Michael W. Bungo, MD, Director MD/MBA Dual Degree Program, at michael.w.bungo@uth.tmc.edu. Additional and more comprehensive information is available on the website at https://med.uth.edu/dualdegreeprograms/mdmba/. Sample schedules are detailed on that site and links are provided to obtain more updated information.

MD/MBE Program

McGovern Medical School and Rice University offer a dual degree program leading to an MD degree and a Master of Bioengineering (MBE). The requirements established for the program meet the general requirements of both degrees. The curricula are integrated along a five-year path to support student career objectives.

Students must meet the admission requirements of both schools to qualify for the dual MD/MBE program. Applicants will submit applications to McGovern Medical School through the Texas Medical and Dental Schools Application Service ("TMDSAS") and Rice University independently according to the admission criteria, schedules and policies of each school. Rice's Application process and admission standards can be found in the General Announcements, at: https://ga.rice.edu/graduate-students/academic-policies-procedures/admission/

Information regarding the MD/MBE dual degree program can be found online at: https://med.uth.edu/dualdegreeprograms/

Doctorate of Medicine/Oral and Maxillofacial Surgery Residency (MD/OMS)

Both a four-year and six-year Advanced Education Program in Oral and Maxillofacial Surgery are offered by UTHealth. The six-year program is offered jointly through the UTHealth School of Dentistry and McGovern Medical School. Each program prepares practitioners to treat diseases, injuries, and defects involving both the functional and aesthetic aspects of the hard and soft tissues of the oral and maxillofacial region. The basic prerequisites for both the four- and six-year programs are a DDS or DMD degree from an ADA accredited dental school.

The six-year program adopts a similar schedule to the four-year program, with the primary difference consisting of requirements for obtaining the MD degree. The first year is spent with the oral and maxillofacial surgery department. In the second, third, and fourth years, residents are enrolled in medical school, completing years two, three, and four of the medical school curriculum. During the fourth year of medical school, eight months are provided for the fulfillment of requirements related to the oral and maxillofacial surgery residency, such as rotations on neurosurgery, anesthesia, and general surgery services. The remaining fifth and sixth years of the program are focused on completing the requirements for medical licensure in the State of Texas and oral and maxillofacial training. The OMS training includes rotations to six different hospitals as a senior surgical resident. Upon satisfactory completion of the six-year program, residents receive a certificate in oral and maxillofacial surgery and a MD degree.

More information on the MD/OMS Program is found at:
https://dentistry.uth.edu/students/advanced-education/programs/index.htm#students-oms

Graduate Medical Education

The learning process encompasses more than a student's four years in medical school. All graduates may continue to expand their knowledge and refine their skills by seeking further supervised medical training.

Graduate Medical Education programs provide physicians the opportunity to prepare for practice in a medical specialty. Residency and fellowship programs focus on the development of clinical skills and professional competencies.

McGovern Medical School conducts its residency and fellowship training programs at hospitals and clinics affiliated with The University of Texas Health Science Center at Houston. The GME program offers carefully organized and evaluated instruction in the various disciplines of medicine. These accredited programs are recognized toward fulfillment of the requirements of the respective specialty boards. McGovern Medical School programs participate in the National Residency Matching Program. Information and applications for residency or fellowship programs are available from the program directors listed in the American Medical Association (AMA) Directory of Residency Training Programs and the Fellowship and Residency Electronic Interactive Database (FREIDA).

Sub-specialty residency programs are open to application by physicians who have completed their general residency training and meet the requirements of the sub-specialty program.

McGovern Medical School sponsors accredited residency programs in the following disciplines: Anesthesiology, Dermatology, Emergency Medicine, Family Medicine, Internal Medicine, Medical Genetics, Neurological Surgery, Neurology, Obstetrics and Gynecology, Occupational Medicine, Ophthalmology, Oral and Maxillofacial Surgery, Otolaryngology, Orthopaedic Surgery, Pathology, Pediatrics, Plastic Surgery, Psychiatry, Child Psychiatry, Diagnostic Radiology, General Surgery, Colon and Rectal Surgery, Vascular Surgery Integrated, Urology, Internal Medicine/Pediatrics, and Physical Medicine and Rehabilitation. McGovern Medical School also offers a variety of unaccredited sub-specialty programs approved through the Texas Medical Board.

For information on residency and fellowship programs at McGovern Medical School, contact:
The Office of Graduate Medical Education
McGovern Medical School
6431 Fannin, Suite JJL 310
Houston, Texas 77030
Web site: **https://med.uth.edu/oep/gme/**

Continuing Medical Education

Through a collaborative partnership with Baylor College of Medicine's Office of Continuing Medical Education (CME) McGovern Medical School offers CME conferences, seminars, regularly scheduled series, enduring materials such as webinars and internet-based formats, and other learning opportunities for physicians in Texas, and throughout the United States.

CME programs are available on various subjects, range in length from one hour to several days, and are offered throughout the year. The programs are sponsored by various McGovern Medical School departments and divisions.

The joint Baylor/McGovern Medical School CME program is fully accredited by the Accreditation Council for Continuing Medical Education. For further information, call 713-500-5134, or visit **https://med.uth.tmc/cme/**.

Office of Continuing Medical Education
McGovern Medical School
6431 Fannin, JJL 304
Houston, Texas 77030

Master of Science in Clinical Research Degree Program

The Master of Science in Clinical Research Degree Program has been offered at McGovern Medical School since the fall of 2002. This MS degree program was designed as a focused, flexible, and affordable program to train clinical investigators in designing and conducting patient-oriented research of exemplary quality. The curriculum accommodates clinicians' busy schedules; the courses are concentrated on Wednesdays after noon. The degree can be completed in three to four years, depending on the amount of time a student devotes to the program. For updated information about this program, see:
https://med.uth.edu/pediatrics/crebm/clinical-research-education/ms-in-clinical-research/

MS Admission Requirements

This program is expected to appeal primarily to MDs at the fellow and faculty levels, as well as other clinicians who have not had previous formal training in clinical research. The rapid pace of the curriculum assumes a working knowledge of clinical medicine and excellent scholastic aptitude.

All applicants are required to be engaged in or preparing to conduct clinical research and to meet one of the following two types (a or b) of academic criteria:

a) Advanced degree in health-related field:
   (1) MD or DO
   (2) PhD in a related field
   (3) DDS or DMD
   (4) RPh or PharmD

b) Bachelor's or master's degree with a G.P.A. of greater than 3.0 and previous work experience in a health-related field, such as nursing, psychology, dietetics, etc.

Application and Admission Procedures

Completed applications, including letters of reference and transcripts, must be received by:
June 15 for fall semester
Oct. 15 for spring semester (non-degree status only)

Applications should be submitted online to the Office of the Registrar
https://www.uth.edu/registrar/applicants/application-forms.htm

The following are required:

a) A completed application form with a curriculum vitae. Each applicant will be required to summarize his/her career goals, describe how the Master's Program will support these goals, and propose a timeline for completion of the program.

b) Letters of reference from at least two individuals who are qualified to evaluate the applicant's academic or professional performance, as well as ability and motivation to complete the program. If an applicant will be employed or in a training program while enrolled in the program, a letter of support/recommendation will be required from the applicant's supervisor to verify the supervisor's commitment to provide the applicant with adequate "protected" time to complete the program. Letters should be on official letterhead.

c) Official transcripts covering all periods of post-secondary enrollment in accredited institutions of higher education. Applicants should request the institution to send official (original) transcripts directly to the Office of the Registrar. Graduates of Texas colleges and universities should request that transcripts be sent in electronic format. Copies of official transcripts sent by the applicant are not considered. Transcripts must include both grades and credit hours.

d) Applicants who are nationals of countries where English is not the parent language are required to submit scores from the Test of English as Foreign Language (TOEFL). See application form for current requirements and exceptions.

e) A $60 non-refundable application fee.

Direct telephone inquiries about the program to:
Center for Clinical Research and Evidence-Based Medicine
McGovern Medical School
713-500-6708

Address application inquiries to:
Office of the Registrar
The University of Texas Health Science Center at Houston
P.O. Box 20036
Houston, Texas 77225-0036
713-500-3388

Once an application has been submitted, the applicant will receive a PIN number from the Office of the Registrar. Once the PIN number is received, the status of the application, transcripts, and letters of reference can be checked online at MyUTH (**https://my.uth.tmc.edu**)

Factors Considered in Admissions Decisions

The Admissions Committee of the MS in Clinical Research Degree Program will review all completed applications. The committee considers the following factors in evaluating applicants for admission:

- Previous research experience, accomplishments and publications, enrollment in research-related courses, and current involvement in research projects;
- Expressed commitment to a career involving biomedical research;
- Grade point average;
- Career goals;
- Previous graduate-level study;
- Work experience in a health-related field;
- Honors and awards for academic achievement;

Other factors that may be considered by the Admissions Committee include:

- Success in overcoming socio-economic and educational disadvantages;
- Multilingual proficiency;
- Non-academic responsibilities, such as employment and child-rearing;
- Involvement in community activities; and
- Race and ethnicity

Except in rare circumstances, applicants will only be considered for acceptance into the degree program after one year of participation in the Clinical Research Curriculum. Preference will be given to candidates who have an established committed departmental mentor. Plans for departmental mentoring must be established prior to enrollment in the program. Candidates from institutions outside of UTHealth will be considered for admission if arrangements can be made for appropriate departmental and methodological mentorship from the applicant's own clinical/academic institution.

Enrollment Status

A student is considered officially enrolled if tuition and fees are paid by the due date listed on the schedule of classes.

- Degree Student: a student admitted to an academic program who is following a set curriculum and pursuing a degree without an interruption of more than one year in enrollment.

- Non-degree Student: a student who is admitted to the school for one or more courses but not admitted to a degree program.

Enrollment as a non-degree student does not entitle a student to admission to a degree program. A non-degree student is allowed to register only with the permission of the course instructor.

Degree Requirements

a) Satisfactory completion of the Clinical Research Curriculum courses (a two-year curriculum composed of a weekly lecture series and homework exercises). In addition to the 9-12 credit hours for the Clinical Research Curriculum (see below), each student will be required to complete an additional 24-27 credit hours (including practica and a thesis) for a total of 36 credit hours.

b) Satisfactory completion of three practica:

Institutional Review Board
Scientific Presentation
Scientific Writing

c) Satisfactory completion of a research thesis project or projects that collectively demonstrate competence in each of these areas:

To critically review clinical research literature
To postulate a sound new research question and design and clinical research study to address this question using the most unbiased feasible design.
To properly analyze and interpret clinical research findings

d) A GPA of 3.0 (B) must be achieved in the graded courses offered at McGovern Medical School for the MS in Clinical Research Degree Program (or courses deemed to be equivalent by the student's advisers).

e) Students must be enrolled for at least one credit hour during the semester in which they complete the degree requirements.

f) Students admitted to the program will need a minimum of three thesis credit hours. (A maximum of six thesis credit hours can be applied to the 36 credit hour requirement for the degree.)

Clinical Research Curriculum Topics

Introduction to Epidemiology Research
Clinical Trial Design
Social and Behavioral Aspects of Clinical Research
Health Care Quality and Safety

Biostatistics for Clinical Investigators
Literature Appraisal
Ethical Aspects of Clinical Research
Introduction to Translational Research
Clinical Research Design Workshop
Translational Research Design Workshop
Use of Computers in Clinical Research

Additional Coursework for Master's Degree

The curriculum for the Master's Program consists of two tracks — the Patient-Based Clinical Research Track and the Translational Research Track. In either track, the specific courses (usually four to five) chosen by an individual student will depend on his/her previous training and course work and current career goals. Most students in the Translational Research Track will take advanced courses in molecular biology and/or genetics; most students in the Patient-Based Clinical Research Track will take advanced courses in health care policy and practice.

Advanced Courses for Master's Program

Advanced Clinical Research Study Design
Advanced Biostatistics for Clinical Investigators
Using Research to Inform Health Care Policy and Practice
Methods of Economic Evaluation in Clinical Research

Examples of elective courses available at other UTHealth schools:
Methods of Economic Evaluation of Health Programs (School of Public Health, SPH)
Economic and Social Determinants of Health (SPH)
Developmental Biology (Graduate School of Biomedical Sciences, GSBS)
Molecular and Cellular Approaches to Human Genetics (GSBS)
Genetics and Human Disease (GSBS)
Eukaryotic Gene Expression (GSBS)
Cancer Biology (GSBS)

Transfer Students

A student may be given up to 18 hours of credit for formal coursework completed previously in a comparable program. Students who transfer into the program must meet the same overall degree requirements as students who undergo all of their training at UTHealth.

Petitioning for Course Equivalency

A student who wishes to receive credit for courses taken outside the MS in Clinical Research Degree Program at UTHealth may submit a Petition for Equivalency form (available in MSB 2.106). This includes the Clinical Research Curriculum courses as well as courses taken at other institutions that are similar in content to courses offered for the MS in Clinical Research Program. The student must complete the form and obtain the approval of his/her program adviser. For courses taken outside McGovern Medical School, the student must supply the required documentation about course goals and requirements for approval of credit hours by the Curriculum Committee.

Advisory Committee

Each student in the program will work jointly with two different advisors—a program advisor/mentor who provides methodological expertise and a departmental advisor/mentor from his/her own basic or clinical science department or institution who provides expertise in the participant's specific area of clinical research. For fellows and other trainees, the training program director will also serve as a member of the Advisory committee. At the end of each semester, the student will be scheduled to meet with his/her Advisory Committee to review academic progress, course selection, and thesis development.

MS Tuition and Fees

The resident tuition is $96 per semester credit hour. The non-resident tuition will be $504 per semester credit hour. Tuition and fees are subject to change according to the actions of the Texas Legislature or the UT System Board of Regents and are effective when enacted.

The Texas Legislature does not set the specific amount for any particular student fee. Student fees are authorized by state statute; the specific fee amounts and the determination to increase fees are made by the university administration and The University of Texas System Board of Regents.

Please refer to the Office of Registrar website at https://www.uth.edu/registrar/current-students/registration/tuition-fee-schedule.htm for the current Tuition and Fee Schedules. This site reflects current information regarding tuition and fee exceptions and/or waivers, Veterans education benefits, and the Policy for Texas Resident Tuition.

	Fee
Audit Fee (per course)	$25.00
Graduation Fee[1]	$100.00
Information Technology Access Fee (per semester)	$38.00
Installment Use Fee	$20.00
Late Payment Fee	$50.00
Return Check/E-check fee	$25.00
Credit Card Use Fee	2.5%
Health Insurance[2] (annual)	$3,190
Student Record Fee (per semester)	$5.00
Reinstatement Fee[3]	$200.00
Student Services Fee (Annual)[4]	$571.10
Evacuation/Repatriation Insurance[5]	$96.00

[1] A graduation fee of $100 payable at registration for the final academic term is required of all students. This fee does not include regalia rental.

[2] Health insurance is required of all UTHealth students. If students have a health insurance policy, they may provide proof of comparable insurance to Auxiliary Enterprises no later than the 12th class to have this charge waived. Details on the insurance plan are available through the Auxiliary Enterprise Office.

[3] Assessed to students who want to re-enroll after being dropped for nonpayment on the 12th day of class

[4] Required of all students, assessed per semester credit hour with a maximum charge of $566.25 annually. The fee provides for student health clinic and counseling services, student government, recreation center, and shuttle services.

[5] Assessed to international students who do not elect to carry the student Health Insurance Policy

Texas Residence Requirements

Please see the Office of the Registrar's Web site
https://www.uth.edu/registrar/current-students/student-information/policy-for-texas-resident-tuition.htm

Enrollment in Affiliated Institutions

Through reciprocal agreements, graduate students at other components of The University of Texas Health Science Center at Houston, as well as graduate students from Rice University, Baylor College of Medicine, Texas Woman's University, and the University of Houston, may take some graduate courses for credit through the MS in Clinical Research Program at McGovern Medical School, subject to approval of the instructor. In addition, full-time students (taking at least nine credit hours) at McGovern Medical School may take some courses for credit at any of the above institutions. The mechanism for payment of the tuition or registration fees varies according to the individual institution. Consult with the Registrar's Office for specific details.

MS Grading, Conduct, and Satisfactory Progress Policies

Grades

Core courses in the MS in Clinical Research Degree Program will be graded A, B, C, or F. An 'F' in a required course requires repetition of that course (or a course deemed equivalent by the student's advisers). Practica and thesis credit hours are graded pass (P) or fail (F). An incomplete (I) grade may be assigned at the discretion of the instructor when the course requirements have not been satisfied by the end of the semester. An incomplete grade will remain on the transcript until a final grade is assigned by the instructor. If an incomplete is not changed by the end of the following semester, it will be converted to an 'F.'

Criteria upon which grades are based are provided at the beginning of each course. Students may withdraw from a course through the last class day of the term. When a student withdraws from a course, a Withdrawn Passing (WP) or Withdrawn Failing (WF) grade will be recorded depending on the student's standing at the time of withdrawal. This WP or WF grade will remain on the transcript even if the course is repeated and passed.

Academic Conflict Resolution

Individual faculty members retain primary responsibility for grading and evaluations. The faculty member's judgment is final unless compelling evidence suggests discrimination, differential treatment, or mistake. In attempting to resolve any student grievance regarding academic matters, it is the obligation of the student first to make a serious effort to resolve the matter with the faculty member with whom the grievance originated. If the student and faculty member cannot resolve the matter, the student should consult the academic grievance procedure described on the school's website under Academic Guidelines (Grade Grievance Policy), https://med.uth.edu/admissions/student-affairs/policies/.

Satisfactory Academic Progress

The faculty of McGovern Medical School is responsible for identifying students who are having academic difficulty and determining whether the deficiency can be remediated. Satisfactory academic progress is defined for each student by following the degree plan for that student. Each student's Advisory Committee will review the student's course work to assist him/her in achieving the maximum potential and in assessing progress toward academic goals. Students are expected to complete the program within five years, unless extraordinary circumstances warrant an extension. At least one thesis component must be completed each academic year after admission to the MS Degree Program. Overall consideration of performance will be used by the Advisory Committee to determine which students have progressed satisfactorily and which students should be placed on academic probation.

Academic Probation and Dismissal

A student will be placed on academic probation by the program director following the completion of the semester in which any of the following occur:

1) a second grade of F or WF is earned,

2) the student fails to meet with his or her Advisory Committee within a 12-month period, or

3) the student fails to make satisfactory progress toward the degree (see above).

Once on probation, the student will be re-evaluated at least once each semester by his/her Advisory Committee. A student placed on probation for failing grades will be taken off probation when he/she has passed at least two courses and has passed the same or an equivalent course for any required courses that were failed. The student will be given one year to satisfy these requirements or up to two years if the failed required course is offered only every other year. A student placed on probation for failing to make satisfactory progress and/or meet with his or her Advisory Committee will be taken off probation when he/she successfully completes at least four credit hours over the next year. If the academic probation is not removed within the stated remediation time period, the student will be dismissed by the program director.

If the student wishes to request a reconsideration of the dismissal, a written request to the Advisory Committee, with a copy sent to the Dean, must be submitted within seven calendar days of receipt of the dismissal letter. The Student Evaluations and Promotions Committee will review the request and render its recommendation in writing to the Dean. The student will be notified in writing of the Dean's decision within five working days of the committee's recommendation. The determination of the Dean is final. Students can be referred for evaluation and counseling for academic or personal concerns through the Office of Student Affairs.

Long-Term Absences

Students who are unable to maintain active status may request a long-term absence of up to one year. If the absence lasts for more than one year, reinstatement will be considered at the discretion of the Admissions Committee. Any degree student who has not been granted a leave of absence and who fails to complete at least one degree requirement (course, practicum, or thesis component) within a one-year period will be considered to have withdrawn from the program. Once having been withdrawn, a student who wishes to resume participation in the program must apply to be readmitted to the program. Degree students may request a change in enrollment status to non-degree student. Reinstatement in the degree program will be considered at the discretion of the Admissions Committee. Non-degree status will expire after a two-year period of no activity in the program.

Courses for Clinical Research Curriculum

The following courses are offered as part of a two-year curriculum that is open to all clinical researchers in the Texas Medical Center. Students in the MS in Clinical Research Degree program receive 9-12 hours of formal credit for these courses using the Petition for Course Equivalency described above. Call 713-500-6708 to register for these courses.

Course Number: CLRS 5001
Course Name: Introduction to Epidemiology Research
Instructor: Charles Miller, PhD, Joshua Samuels, MD MPH
Course Description: This course provides a basis for an understanding of the concepts and methodological skills necessary for designing and interpreting observational studies. These include validity (random error, bias and confounding), measures of disease occurrence and impact, measures of association, reliability and generalizability, causal inference, and critically reviewing evidence.
Prerequisite: None (above admission requirements for MS in Clinical Research Program)
(1.0-1.5 credit hours)

Course Number: CLRS 5002
Course Name: Clinical Trial Design
Instructor: Jon Tyson, MD MPH, John Harvin, MD MS
Course Description: This course prepares the student to design and analyze randomized trials of medical interventions. Covered topics include basic study design, recruitment, randomization, masking, data collection and quality control, participant adherence, sample size considerations, data monitoring and analysis, and meta- analysis.
Prerequisite: None (above admission requirements for MS in Clinical Research Program)
(1.0-1.5 credit hours)

Course Number: CLRS 5004
Course Name: Research on Social and Behavioral Aspects of Clinical Research
Instructor: Angela Stotts, PhD
Course Description: This course will provide an overview of the role of social and behavioral factors in patient health outcomes, as well as an introduction to research methods specific to studying such factors.
Prerequisite: None (above admission requirements for MS in Clinical Research Program)
(1.0 credit hours)

Course Number: CLRS 5005
Course Name: Healthcare Quality and Safety
Instructor: Eric Thomas, MD MPH
Course Description: This course begins with an overview of health services research. Subsequent classes will focus on either important topics within HSR or methods used in HSR; conceptualization of healthcare quality and safety; quality of care measurements; improvement science; and introductions to survey research and qualitative research.
Prerequisites: None (above admission requirements for MS in Clinical Research Program)
(1.0 credit hour)

Course Number: CLRS 5009
Course Name: Biostatistics for Clinical Investigators Instructor:
Claudia Pedroza, PhD, Charles Green, PhD, Cynthia Bell, PhD
Course Description: This course begins with an overview of descriptive statistics and provides students with the tools to perform univariate analyses using parametric and non-parametric methods for paired and unpaired designs. Emphasis is placed on choosing appropriate tests, evaluating assumptions for the tests, understanding the limitations of statistical tests, and appropriate interpretation of test results. Survival analysis and multiple regression techniques are introduced to familiarize the student with the availability and limitations of these tests.
Prerequisite: None (above admission requirements for MS in Clinical Research Program)
(1.5 credit hours)

Course Number: CLRS 5011
Course Name: Literature Appraisal
Instructor: Joyce Samuel, MD MS, Susan Wootton, MD MPH
Course Description: In this course, the students will be expected to learn rules of evidence and demonstrate critical evaluation of the medical literature. Students will have an opportunity to demonstrate these concepts and skills by appraising the evidence in various areas of clinical research. This critical appraisal of existing evidence will be used to determine fruitful areas for new investigation. This course is run in small group sessions (6-12 students per group) to facilitate active participation and interaction.
Prerequisite: None (above admission requirements for MS in Clinical Research Program)
(1 credit hour).

Course Number: CLRS 5012
Course Name: Ethical Aspects of Clinical Research
Instructor: Jon Tyson, MD MPH, Susan Wootton, MD MPH
Course Description: This course introduces the fundamental ethical principles of autonomy, beneficence, nonmaleficence, and justice and applies these principles to clinical research involving human subjects. The use of unproven therapies, the use of placebos, the consent process, institutional review board submission and review processes, conflict of interests, and the costs of clinical research are covered.
Prerequisite: None (above admission requirements for MS in Clinical Research Program)
(1.0 credit hour)

Course Number: CLRS 5013
Course Name: Introduction to Translational Research
Instructor: Shervin Assassi, MD MS, John Hagan, PhD
Course Description: This course is an overview of the clinical research that bridges basic science and patient-based research. Topics include pharmaceutical research, genetic research, gene therapy, and genomics.
Prerequisite: None (above admission requirements for MS in Clinical Research Program)
(1.0 credit hour)

Course Number: CLRS 5003
Course Name: Clinical Research Design Workshop
Instructor: Jon Tyson, MD MPH, Charles Miller, PhD
Course Description: In this problem-based course, each student is expected to build a clinical research proposal in his/her field of interest. Each week, students are asked to present the appropriate parts of their protocols to facilitate the discussion of successive stages in study design. This course is run in small group sessions (6-14 students per group) to facilitate active participation and interaction.
Prerequisite: Consent of instructor
(1.5 credit hours)

Course Number: CLRS 5014
Course Name: Translational Research Design Workshop
Instructor: John Hagan, PhD , Shervin Assassi, MD MS
Course Description: This workshop course provides a hands-on venue to introduce fundamentals of genetics, epigenetics, and gene expression profiling to clinicians. The goal is to provide clinical researchers with a good understanding of the high-throughput molecular technologies that are needed to conduct clinically relevant translational research. This course is run in a small group format (10 students) to facilitate active participation and interaction.
Prerequisite: Consent of instructor
(1.5 credit hours)

Course Number: CLRS 5007
Course Name: Use of Computers in Clinical Research
Instructor: Joyce Samuel, MD MS
Course Description: This is a hands-on laboratory course. Each student is expected to complete computer-based projects that demonstrate skills, managing data, and analyzing data sets. Software packages used in the course include PC-based spreadsheet, database, and statistics software packages.
Prerequisite: None (above admission requirements for MS in Clinical Research Program)
(1-3 credit hours).

Courses for MS in Clinical Research Degree Program

The following advanced courses are offered as part of the MS in Clinical Research Degree Program.

Course Number: CLRS 5015
Course Name: Using Research to Inform Health Care Policy and Practice
Instructor: Susan Wootton, MD MPH, Joyce Samuel, MD MS
Course Description: In this course, the students apply rules of evidence and health services research to clinical practice, practice guidelines, and health care policy. Decision analysis and methods for quantifying benefit, risk, and cost will be used to evaluate health care interventions at the individual patient and population levels. This critical appraisal will be used to launch discussions of mechanisms to bridge the gap between clinical research evidence and health services delivery and health policy.
Prerequisite: Literature Appraisal or consent of instructor
(4 credit hours)

Course Number: CLRS 5020
Course Name: Methods of Economic Evaluation in Clinical Research
Instructors: Elenir AvritscherMD, PhD, MBA; Cecilia Ganduglia, MD, DrPH; Henry Wang, MD, MPH, MS
Course Description: This course will provide an in-depth exposure to the different economic evaluation methods used to assess the value of health care interventions and programs. Participants will learn how to critique and interpret economic evaluation studies and apply it in their own research projects. The course will also provide an introduction to research involving research networks, registry and administrative data with hands-on introduction to publicly available datasets that the students will have the opportunity to use in preparation for their required research proposal. A working knowledge of the principles of epidemiology, literature appraisal, and study design is required.
Prerequisite: Biostatistics for Clinical Investigators or consent of instructor
(4 credit hours)

Course Number: CLRS 5017
Course Name: Advanced Clinical Research Study Design
Instructor: Jon Tyson, MD MPH
Course Description: This course will build on design concepts for observational and interventional studies that were introduced in the prerequisite courses. Topics will include the use of matching and restriction to minimize bias in observational studies, consideration of analytic strategies (eg. correlated samples, use of propensity scores) in study design, survey research methods, the relationship between quality improvement and clinical research, adaptive randomization, alternatives for consent for research, factorial designs, cluster randomization, using patient values to select important study outcomes, weighing benefits and harms, approaches to stopping rules, and enhancing feasibility of clinical trials.
Prerequisite: Introduction to Epidemiology Research, Clinical Trial Design, or consent of instructor.
(4 credit hours)

Course Number: CLRS 5010
Course Name: Advanced Biostatistics for Clinical Investigators
Instructor: Claudia Pedroza, PhD; Charles Green, PhD, Cynthia Bell, PhD
Course Description: This course will focus on the mechanics of applying biostatistical techniques in a research setting. Emphasis will be placed on assumption testing and techniques of model fitting. Students will be expected to critically evaluate, develop, and execute analysis plans using descriptive analysis and regression techniques.
Prerequisite: Biostatistics for Clinical Investigators or consent of instructor
(4 credit hours)

McGovern Medical School Departments and Faculty

The most current listing of faculty is available on each department's website.

Anesthesiology	https://med.uth.edu/anesthesiology/
Biochemistry and Molecular Biology	https://med.uth.edu/bmb/
Cardiothoracic and Vascular Surgery	https://med.uth.edu/cvs/
Dermatology	https://med.uth.edu/dermatology/
Diagnostic and Interventional Imaging	https://med.uth.edu/radiology/
Emergency Medicine	https://med.uth.edu/emergencymedicine/
Family and Community Medicine	https://med.uth.edu/familymedicine/
Integrative Biology and Pharmacology	https://med.uth.edu/ibp/
Internal Medicine	https://med.uth.edu/internalmedicine/
Microbiology and Molecular Genetics	https://med.uth.edu/mmg/
Neurobiology and Anatomy	https://med.uth.edu/nba/
Neurology	https://med.uth.edu/neurology/
Neurosurgery	https://med.uth.edu/neurosurgery/
Obstetrics, Gynecology and Reproductive Sciences	https://med.uth.edu/obgyn/
Ophthalmology and Visual Science	https://med.uth.edu/ophthalmology/
Orthopedic Surgery	https://med.uth.edu/ortho/
Otorhinolaryngology-Head and Neck Surgery	https://med.uth.edu/orl/
Pathology and Laboratory Medicine	https://med.uth.edu/pathology/
Pediatric Surgery	https://med.uth.edu/pediatricsurgery/
Pediatrics	https://med.uth.edu/pediatrics/
Physical Medicine and Rehabilitation	https://med.uth.edu/pmr/
Psychiatry and Behavioral Sciences	https://med.uth.edu/psychiatry/
Surgery	https://med.uth.edu/surgery/