

TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER
OFFICE OF THE VICE PRESIDENT,
LUBBOCK, TEXAS 79430



TEXAS TECH UNIVERSITY SCHOOL OF MEDICINE BULLETIN 1979~80

ABOUT THE COVER

Cover art pictures the 150-foot tapestry which hangs in Lubbock's Memorial Civic Center. The Center and its tapestry are monuments to those who perished in the tornado which swept through Lubbock on May 11, 1970, and to those who remained to rebuild.

The Windmill, source of life-giving water on the Plains, dominates the 30X90-foot center panel. Cotton crops, rangeland and the city are woven in the rich umbers and siennas of the West Texas landscape by artist Romeo Reyna. Only natural fibers, many hand dyed and spun for the tapestry, were used.

INSIDE COVER

Inside front and back covers is a mural by artist Peter Rogers depicting the influence of water in arid lands. The mural in The Museum of Texas Tech University is done in india ink on gesso.

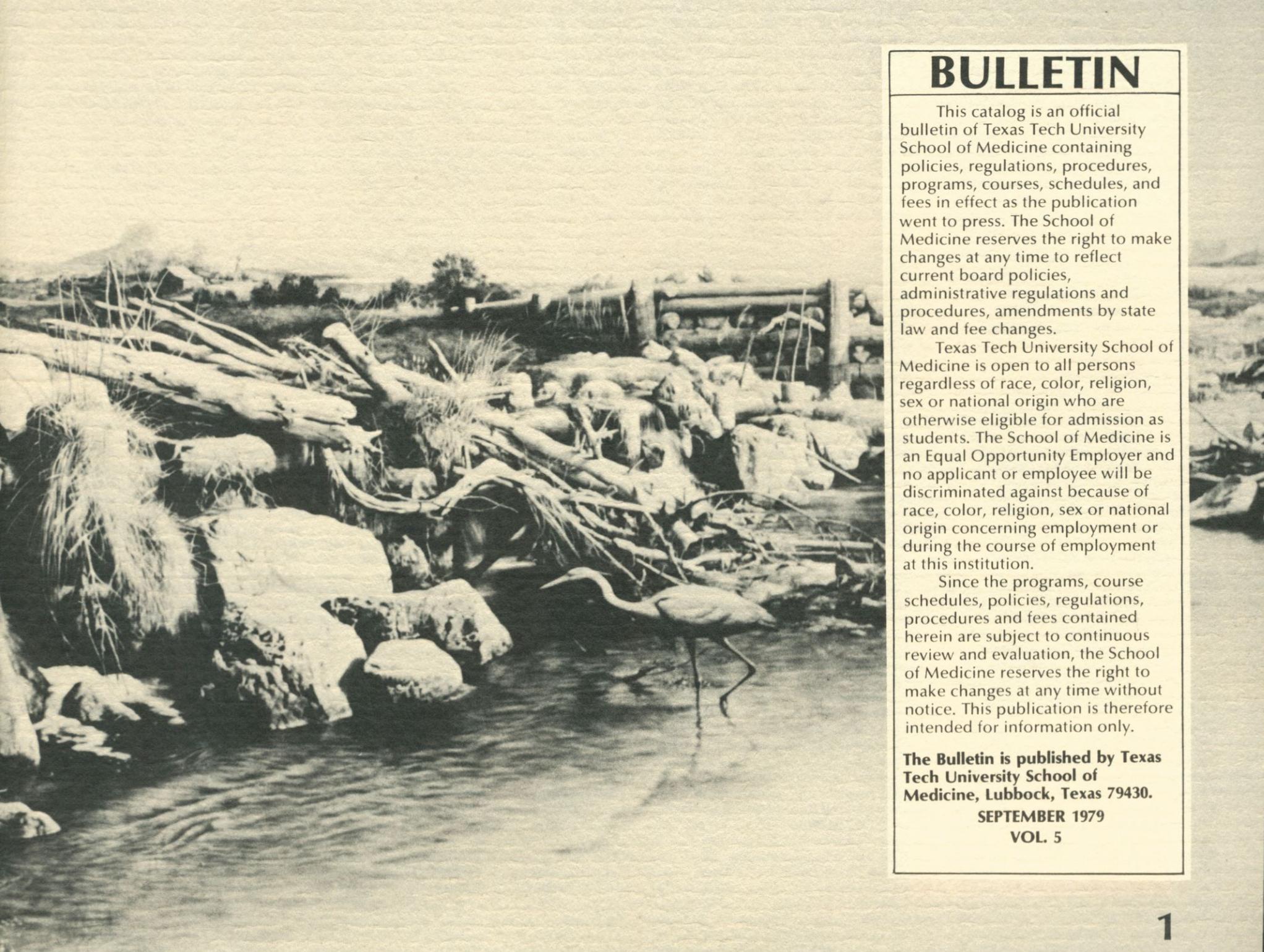
PAGES 2-3: Amarillo Medical Center

PAGES 4-5: The Lubbock skyline

PAGES 6-7: The Juarez Mountains south of El Paso taken from the Franklin Mountains which form the northern border of the Pass of the North for which the city of El Paso was named.

PAGES 8-9: Neonatal ICU





BULLETIN

This catalog is an official bulletin of Texas Tech University School of Medicine containing policies, regulations, procedures, programs, courses, schedules, and fees in effect as the publication went to press. The School of Medicine reserves the right to make changes at any time to reflect current board policies, administrative regulations and procedures, amendments by state law and fee changes.

Texas Tech University School of Medicine is open to all persons regardless of race, color, religion, sex or national origin who are otherwise eligible for admission as students. The School of Medicine is an Equal Opportunity Employer and no applicant or employee will be discriminated against because of race, color, religion, sex or national origin concerning employment or during the course of employment at this institution.

Since the programs, course schedules, policies, regulations, procedures and fees contained herein are subject to continuous review and evaluation, the School of Medicine reserves the right to make changes at any time without notice. This publication is therefore intended for information only.

The Bulletin is published by Texas Tech University School of Medicine, Lubbock, Texas 79430.

SEPTEMBER 1979

VOL. 5

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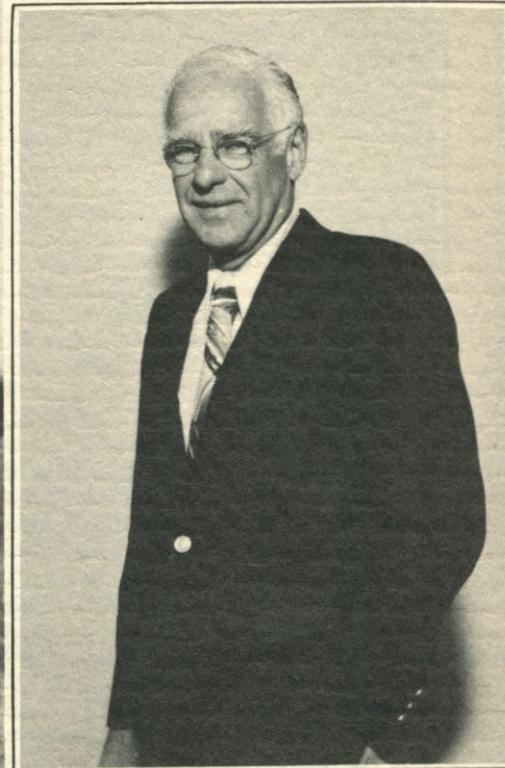
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PRESIDENT'S MESSAGE



The Texas Tech University School of Medicine is the only medical school in Texas located on the campus of a major multipurpose university. The intellectual enrichment afforded to both institutions from this close association can hardly be overestimated. In addition to the professional curriculum offered by the School of Medicine, the university offers a broad spectrum of rich multidisciplinary studies through its six colleges, Agricultural Sciences, Arts and Sciences, Business Administration, Education, Engineering, and Home Economics, and two schools, the Graduate School and the School of Law. The university and the medical school are committed to continuous improvement of their education, research, and public service programs which involve more than 22,000 students. Many of the programs of the medical school are carried on not only on the school's Lubbock campus but also through its Regional Health Centers at Amarillo, El Paso, and the Permian Basin.

*Lawrence L. Graves, Ph.D.
Interim President
Texas Tech University
Texas Tech University School of
Medicine*

VICE PRESIDENT'S MESSAGE



Created by the Legislature to address problems of health care delivery in primarily rural West Texas, Texas Tech University School of medicine is developing regional programming to a level unparalleled in medical education. Academic Centers in four cities allow TTUSM to augment health services in those cities while offering students a selection of educational experiences. TTUSM programming will be the prototype for schools of nursing, allied health and pharmacy as they are developed.

*Richard A. Lockwood, M.D.
Vice President for the Health
Sciences Centers*

DEAN'S MESSAGE



The objective of the undergraduate curriculum at TTUSM is to educate students to become physicians and acquire competence in all medical areas. TTUSM places emphasis on Family Practice and other primary care disciplines. Rotations of students and house staff to teaching and patient care experience in rural areas supplement urban programs.

*George S. Tyner, M.D.
Dean, Texas Tech University School
of Medicine*

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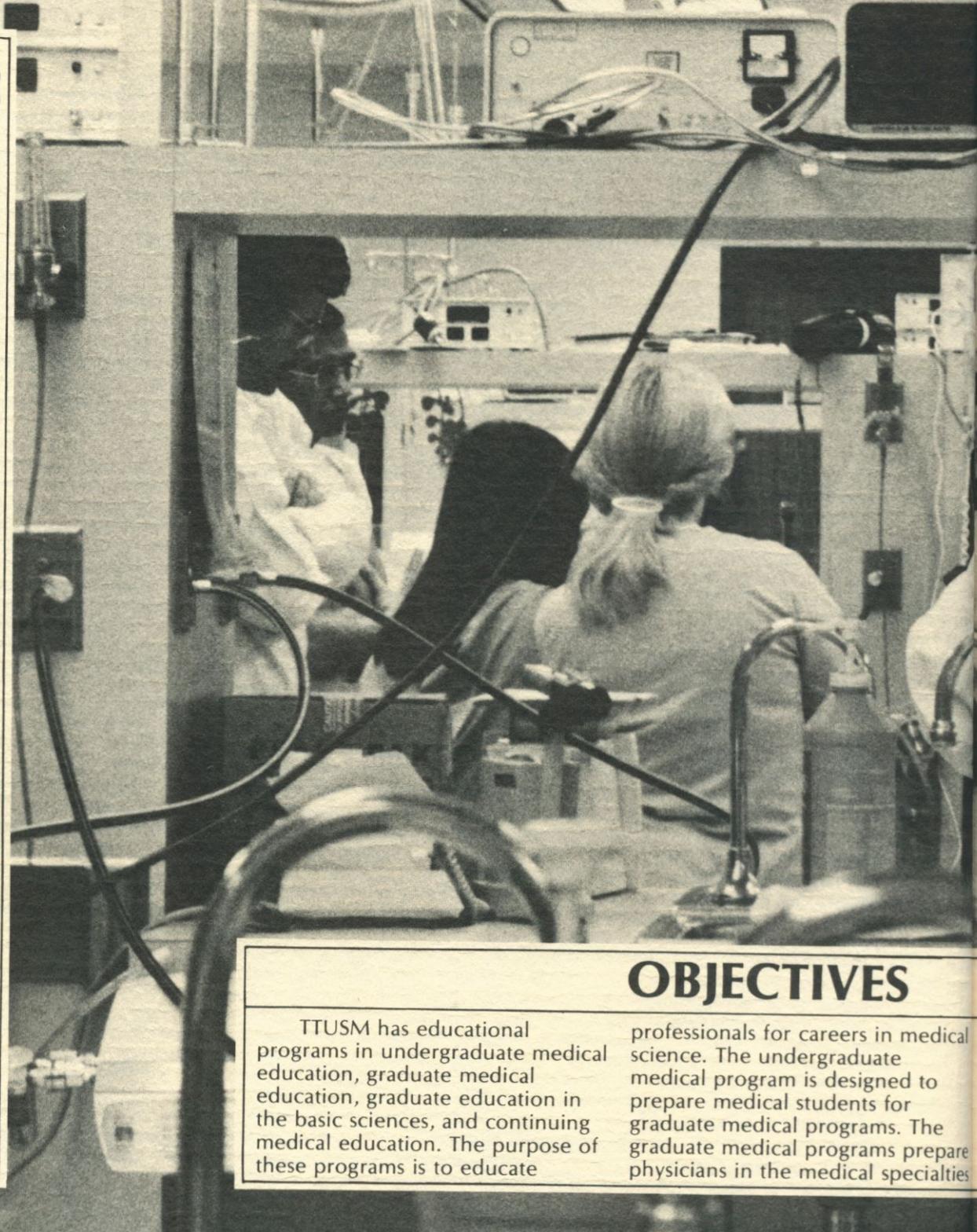
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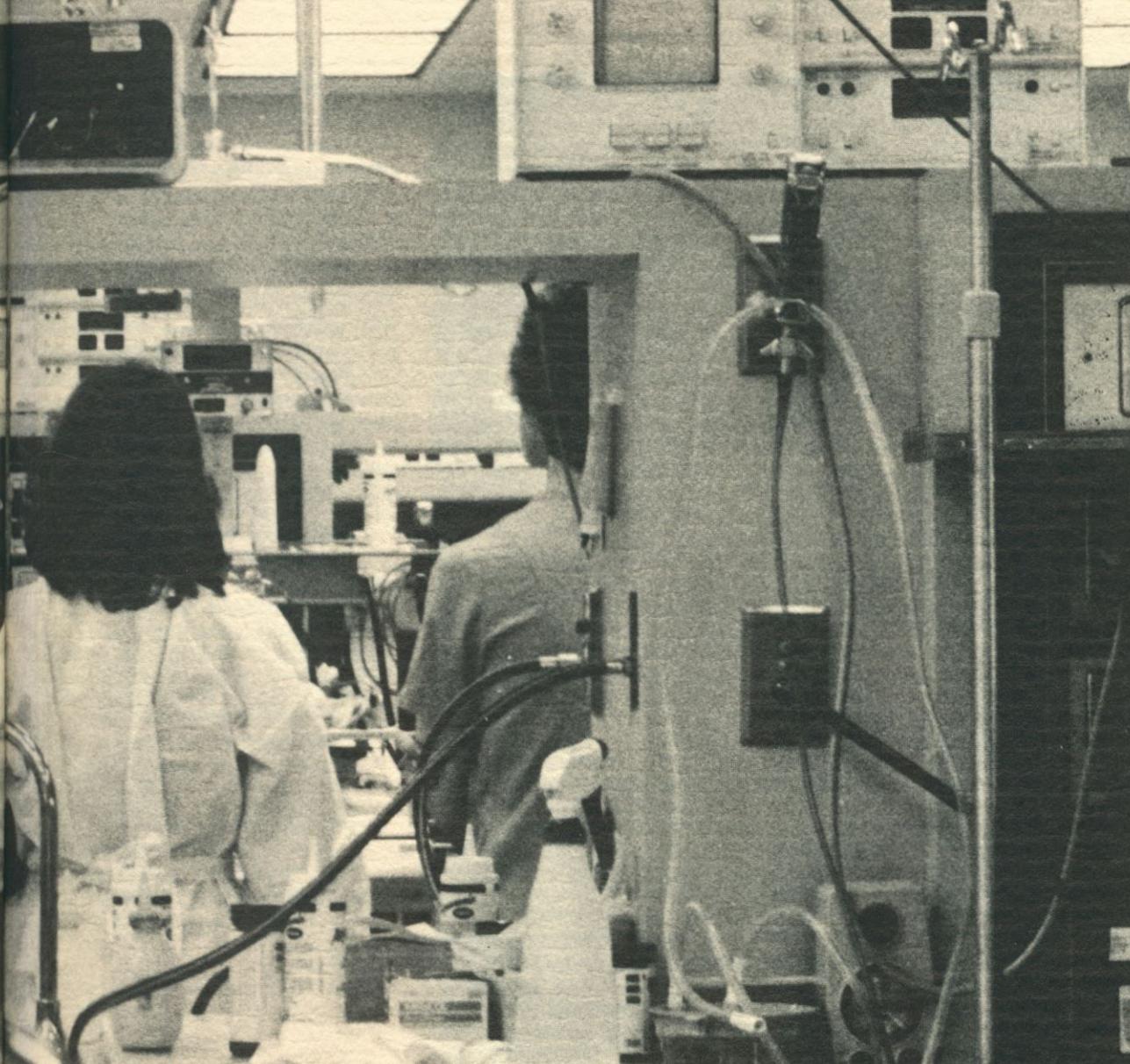
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OBJECTIVES

TTUSM has educational programs in undergraduate medical education, graduate medical education, graduate education in the basic sciences, and continuing medical education. The purpose of these programs is to educate

professionals for careers in medical science. The undergraduate medical program is designed to prepare medical students for graduate medical programs. The graduate medical programs prepare physicians in the medical specialties



for specific types of health care delivery. Almost all medical specialties are represented. These include the primary care areas of family practice, general internal medicine, and general pediatrics. The continuing medical education program provides an opportunity for the practicing physician to obtain supplemental training as needed or desired. The graduate school program trains professionals for research and teaching in the basic medical sciences.

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HISTORY

Texas Tech University School of Medicine, created by the 61st Texas Legislature in May 1969, was established as a regional school, headquartered on the campus of Texas Tech University at Lubbock.

Objectives of the School of Medicine are to provide quality medical education, to address problems of health care delivery in rural areas and to develop education programs throughout West Texas emphasizing primary health care.

Texas Tech University School of Medicine formally opened in August 1972 with a freshman class of 36 and junior class of 25. Admission of students was accomplished in a record-setting 23 months from initiation of planning to implementation of programs. More common start-up periods range from four to eight years.

The medical school was the first operational phase of the Texas Tech University Health Sciences Center. The Health Sciences Center concept is designed to facilitate coordination of the medical school's regional programs and development of schools of Nursing, Pharmacy, Allied Health and Veterinary Medicine. These future health professional schools have been approved by the Coordinating Board, Texas College and University System, and their establishment awaits funding by the Legislature.

The school's Ambulatory Teaching Clinic initiated delivery of patient care in 1973. Currently the teaching clinic includes eleven specialties: pediatrics, orthopaedics, dermatology, internal medicine, obstetrics / gynecology, surgery, ophthalmology, family practice,

psychiatry, preventive medicine and community health, and physical medicine and rehabilitation.

Ground was broken in 1973 for the Health Sciences Center Building, permanent home of the School of Medicine. The building contains nearly 18 acres of floor space. One-third of the building was finished and dedicated in June 1977. When current construction projects are completed approximately half of the building's interior will be complete. The building and adjacent county teaching hospital are the first phase of a health sciences campus at Texas Tech.

The Texas Tech Regional Academic Health Center at Amarillo was dedicated in June 1976. The 37,000 square foot facility is within the Amarillo Medical Center on land provided by the Amarillo Area Foundation, Inc.

The first phase of approximately 25,000 square feet for the Regional Academic Health Center in El Paso was dedicated in 1977.

Planning and development efforts are now being initiated for a fourth center to be established in the Permian Basin. Educational programs will involve health resources in Andrews, Big Spring, Midland and Odessa. A building for this center is envisioned at some future date and will be located in Odessa.

The School of Medicine graduated its fifth class in 1979. In addition to the Doctor of Medicine, the school offers Master of Science and Doctor of Philosophy degrees in five basic science fields and residency programs in eleven medical specialties.

TARBOX PARKINSON'S DISEASE INSTITUTE

The Tarbox Parkinson's Disease Institute was established by the Texas Legislature in 1972 for the purpose of furthering research, patient care, and education in Parkinson's Disease and related neurological disorders. The Tarbox Institute is named after Mr. Elmer L. Tarbox, a graduate of Texas Tech University and for many years state representative to the Texas Legislature from the Lubbock area.

The educational activities include the sponsorship of biennial symposia which bring together leading international scientists involved in both basic and clinical research related to the neurological disciplines.

The First Tarbox Symposium was held in Lubbock in October, 1976. The Second Tarbox Symposium was held in February, 1978. The proceedings of both symposia were published by Plenum Press in its *Advances in Experimental Medicine and Biology Series*.

The Tarbox Fellowship programs were instituted in 1977 and represent the research thrust of the Institute. The programs include the Tarbox Postdoctoral Fellowships, the Tarbox Predoctoral Research Fellowships, and the Tarbox Medical Student Research Fellowships.

The Tarbox Lecture Series was instituted for the purpose of bringing distinguished neuroscientists to campus to discuss their research findings related to the neurological sciences. The annual Tarbox Research Conference was established to

permit the Tarbox Fellows to present their recent research activities to the Texas Tech University School of Medicine academic community.

The Tarbox Clinic for Parkinson's Disease is conducted at the Texas Tech University School of Medicine. The Clinic is concerned with the diagnosis and treatment of persons with known or suspected Parkinson's Disease. The Clinic services benefit from the full support of the Medical School's diagnostic, inpatient, and rehabilitation services. Dr. Jack Dunn, Professor and Chief, Division of Neurologic Surgery is acting medical director of the Tarbox Clinic.

Dr. Alexander D. Kenny, Professor and Chairperson, Department of Pharmacology and Therapeutics, is the director of the Tarbox Parkinson's Disease Institute.

TEXAS TECH UNIVERSITY MEDICAL SCHOOL FOUNDATION

The Texas Tech University Medical School Foundation was formed in August, 1970, exclusively for charitable, education and scientific purposes and to assist in the establishment of the School of Medicine. It was chartered by the Secretary of State, State of Texas as a non-profit corporation with a perpetual duration, on February 18, 1970.

The Foundation is responsible for accepting donations, gifts and grants of money and property and administering these funds on a charitable, educational or non-profit basis on behalf of the School of Medicine. In addition, the Foundation helps provide support for training facilities, research, and financial assistance for students.

Officers currently serving the Texas Tech University Medical School Foundation are:
James G. Morris, M.D., President
William R. Moss, Vice President
Harry Jung, Secretary
Ken Thompson, Treasurer
S. C. Arnett, Jr., M.D., Immediate Past-President



REGIONAL MEDICAL EDUCATION

Texas Tech University School of Medicine is a regional medical school and a vital part of its philosophy of education and service is its outreach program.

Unlike schools in large urban areas where the medical school-medical center complex may be located within a few square blocks of real estate, many of the Texas Tech University School of Medicine facilities and faculty are distributed throughout West Texas—an area encompassing approximately 135,000 square miles and 106 counties. The regional medical school concept complements the program of primary care with an emphasis in family practice training at TTUSM. In a large, urban medical center, primary and ambulant care may be only classroom concepts to medical students. At TTUSM students work and learn in actual primary health care delivery situations, in ambulatory clinical environments.

In addition to affiliation agreements with selected health care institutions throughout the West Texas region, the School of Medicine has developed a Regional Academic Health Center (RAHC) system. The RAHCs are a part of the region's health education system along with affiliated health care institutions. There currently are three RAHCs in operation: Amarillo, El Paso and at the main campus in Lubbock. Junior-senior medical students may receive part of their training in the clinical environment of an RAHC outside of Lubbock. The RAHCs also conduct continuing education programs for health professionals in their respective areas. A fourth

center in the Permian Basin is being planned.

The RAHCs are staffed and operated by the faculty of the School of Medicine, with resident physicians as junior members of the medical staff.

PHYSICAL FACILITIES

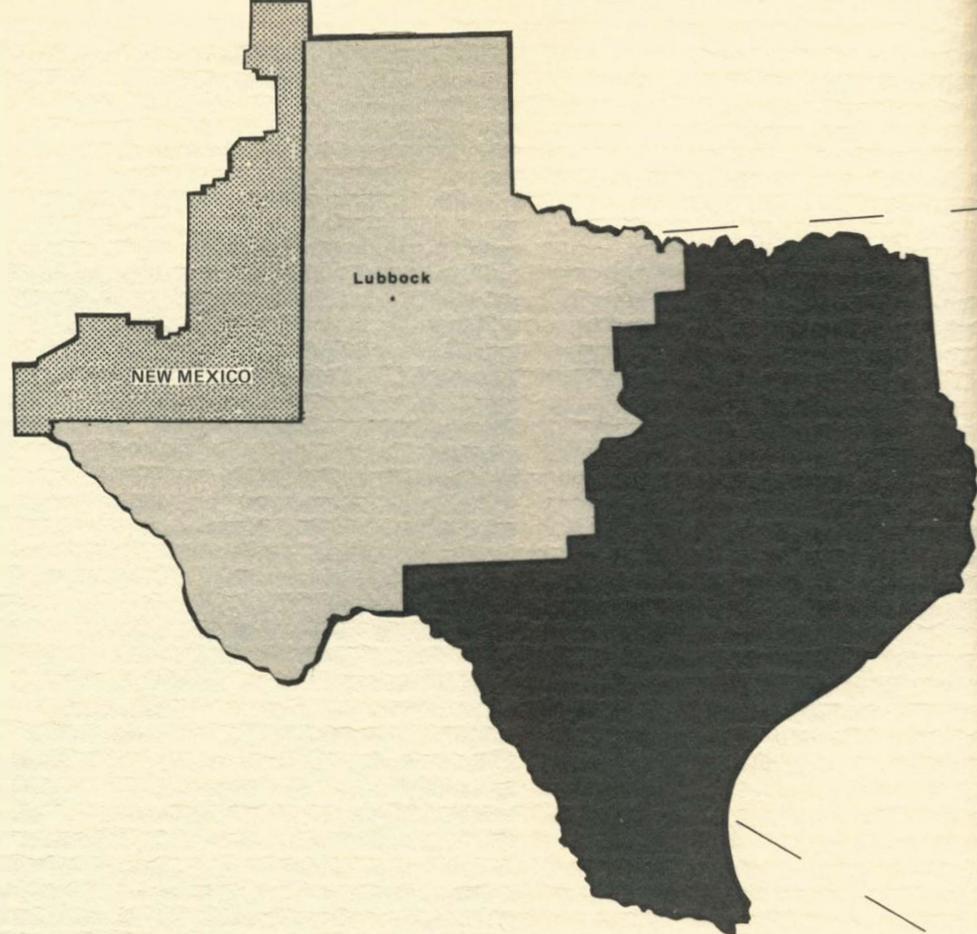
Texas Tech Regional Academic Health Centers (RAHC) serve as academic bases for fulfillment of the Medical School's commitment to both medical education and health care service for West Texas.

RAHCs in Lubbock, Amarillo and El Paso work in conjunction with affiliated institutions in the regions they serve to provide programs for medical students and resident physicians and continuing medical education opportunities for practicing physicians.

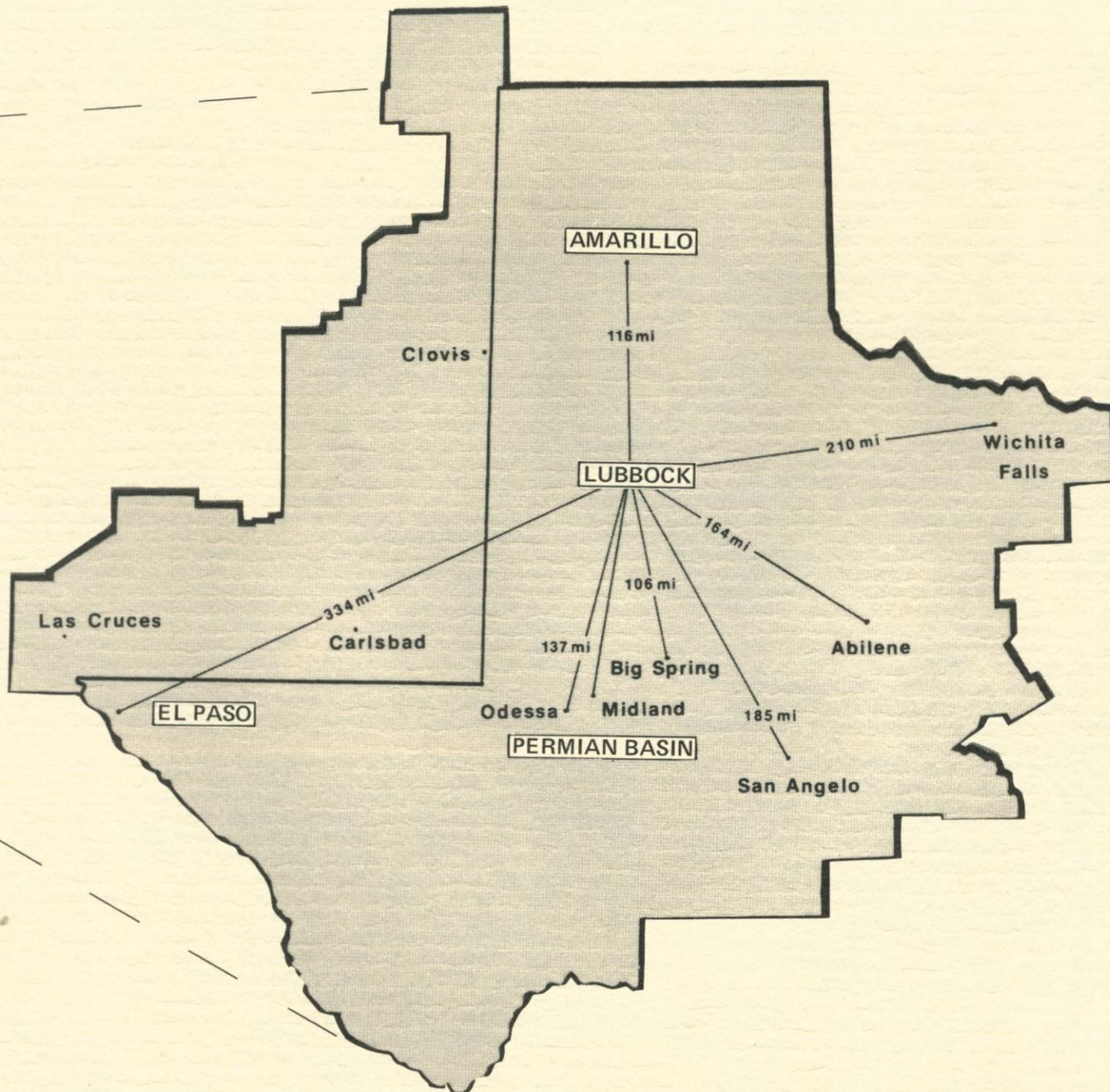
Individual clinical strengths and opportunities at each location are emphasized. Medical students rotate through the three centers at various stages of their medical education to benefit from a full spectrum of experiences.

Permian Basin at Odessa

As student enrollments are increased over the next decade, a fourth center may be required. Presently, planning and development efforts are being established for the center. Programmatic efforts will focus initially on Continuing Medical Education and senior electives. Postgraduate efforts and expanded undergraduate offerings will be developed as appropriate at a later date.



TTUSM SERVICE AREA—The Tech Medical School was created by the 61st Texas Legislature as a regional education system to serve 106 counties in West Texas. Regional Academic Health Centers are operational in Amarillo, Lubbock and El Paso. A fourth site has been designated for the Permian Basin at Odessa. The map of Texas illustrates the service area. Enlargement of service area indicates mileage from Lubbock to other cities.





AMARILLO

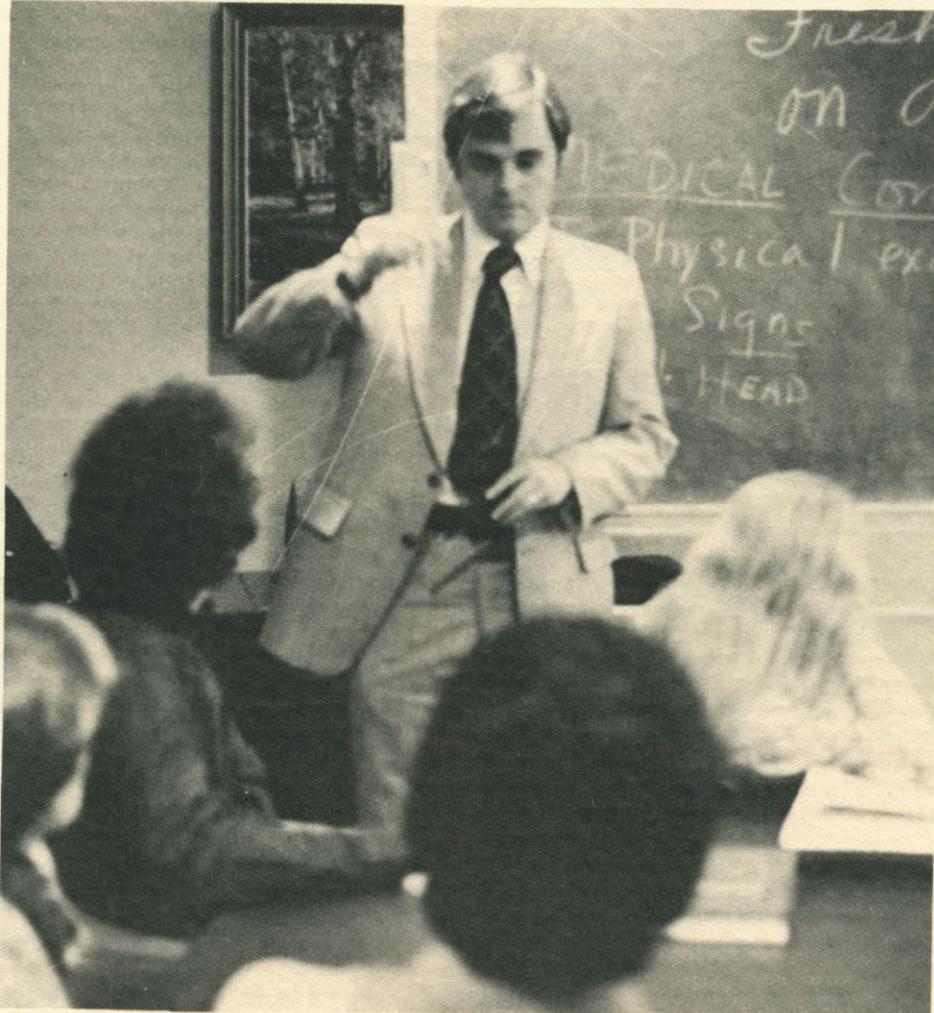
The Texas Tech Regional Academic Health Center at Amarillo serves as a base for clinical education for senior medical students and resident physicians.

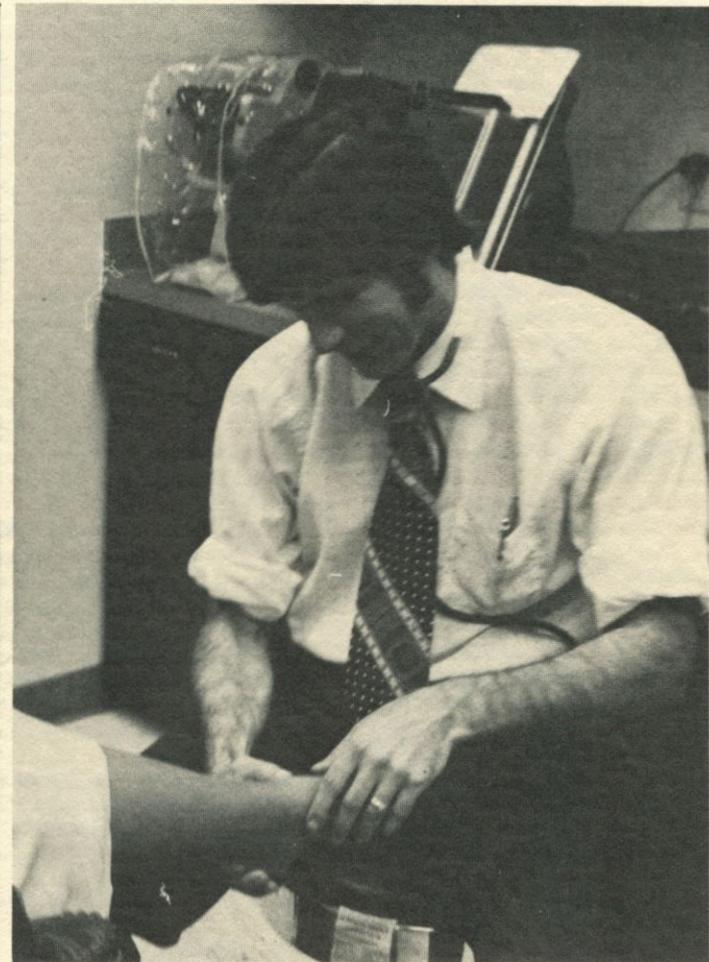
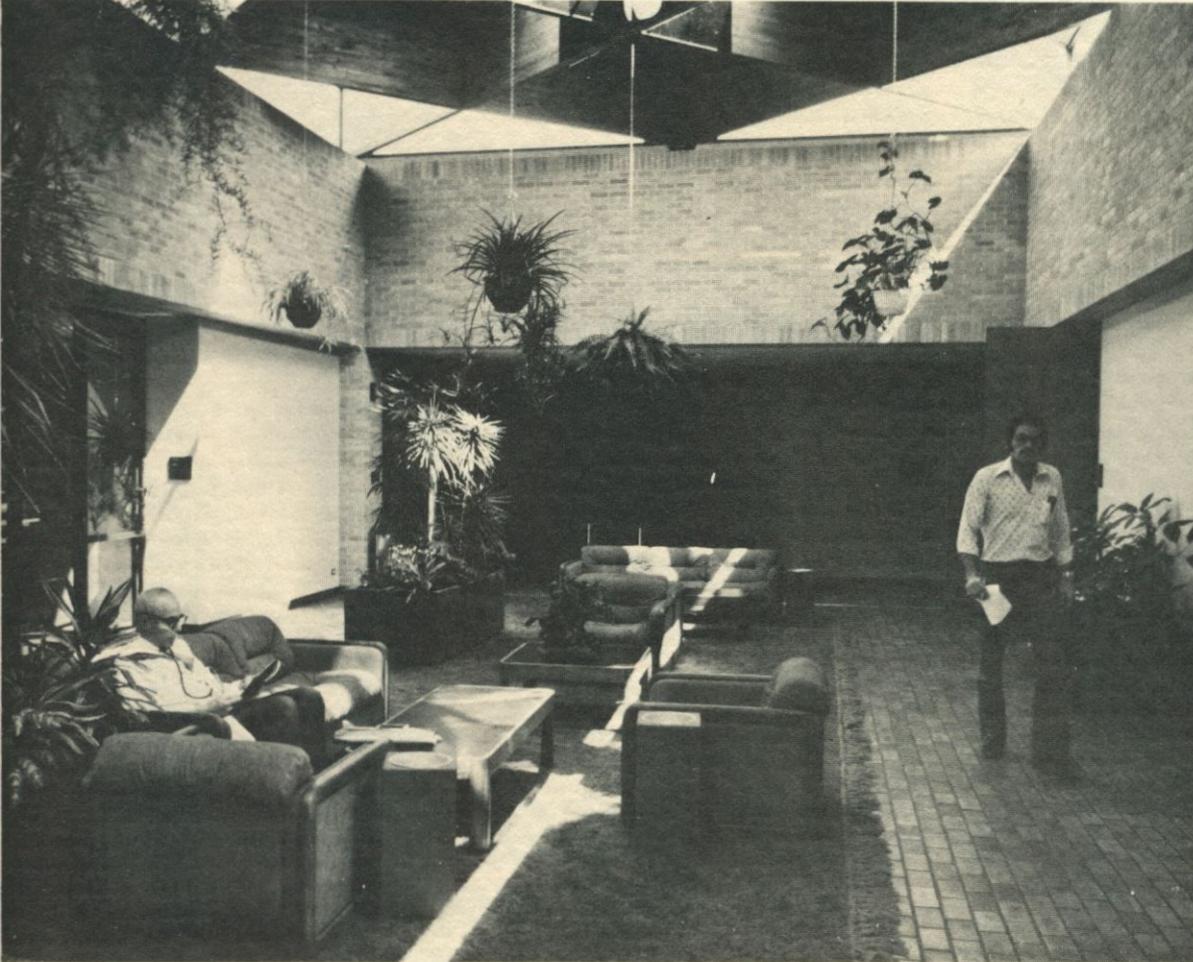
A new 37,000 square foot facility for the RAHC was dedicated in April 1976. The building, located within the Amarillo Medical Center, includes space for teaching, a library and auditorium, research and support services.

Clinical experiences are provided through affiliation with High Plains Baptist Hospital, Northwest Texas Hospital, Psychiatric Pavilion, St. Anthony's Hospital, Veterans Administration Hospital and Killgore Children's Psychiatric Center.

The center also is a base for coordination of rural and urban preceptorships in clinics and private practices throughout the Panhandle region.

Emphasis at the Amarillo center is on primary care, particularly family practice, with support provided by other clinical departments.







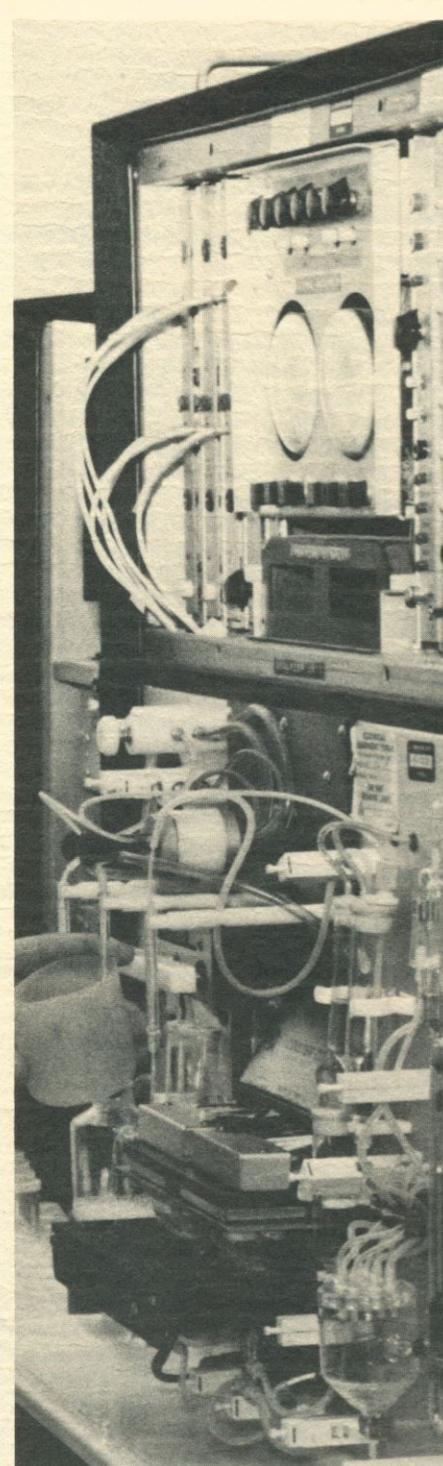
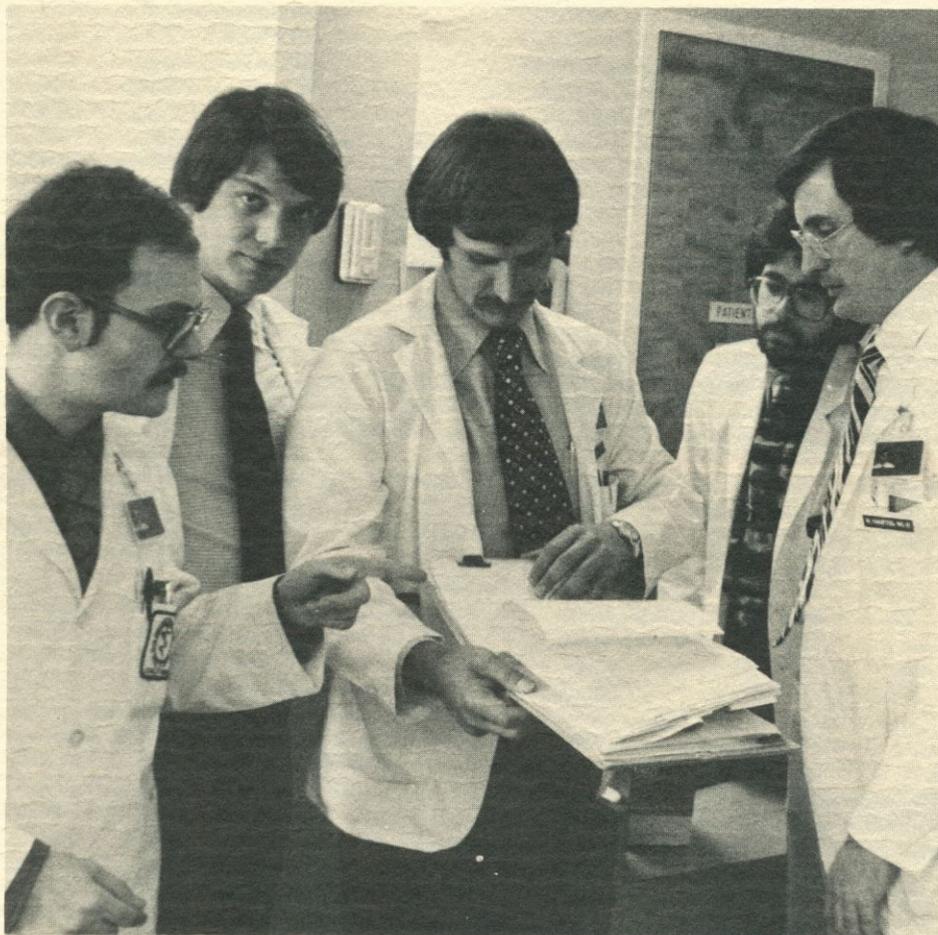
EL PASO

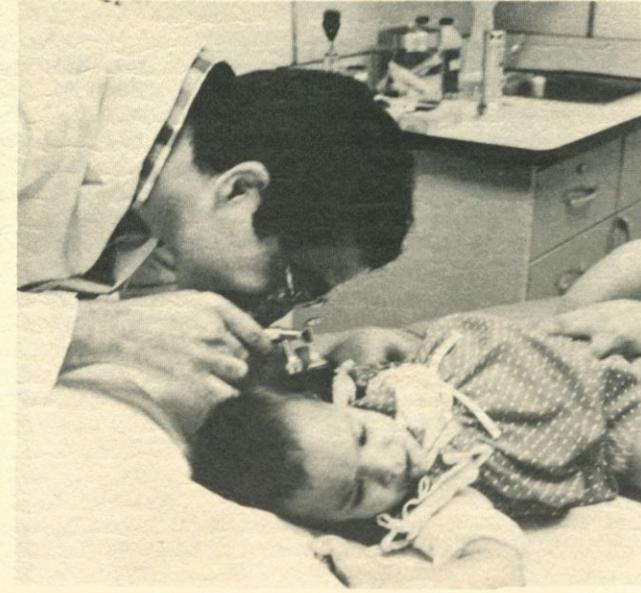
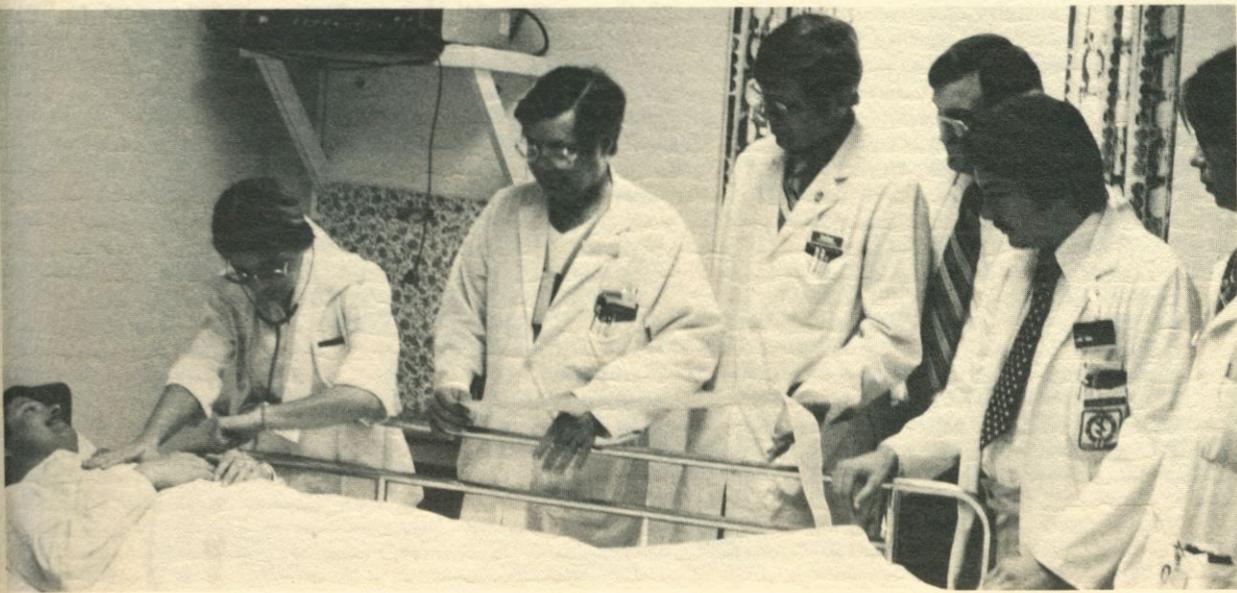
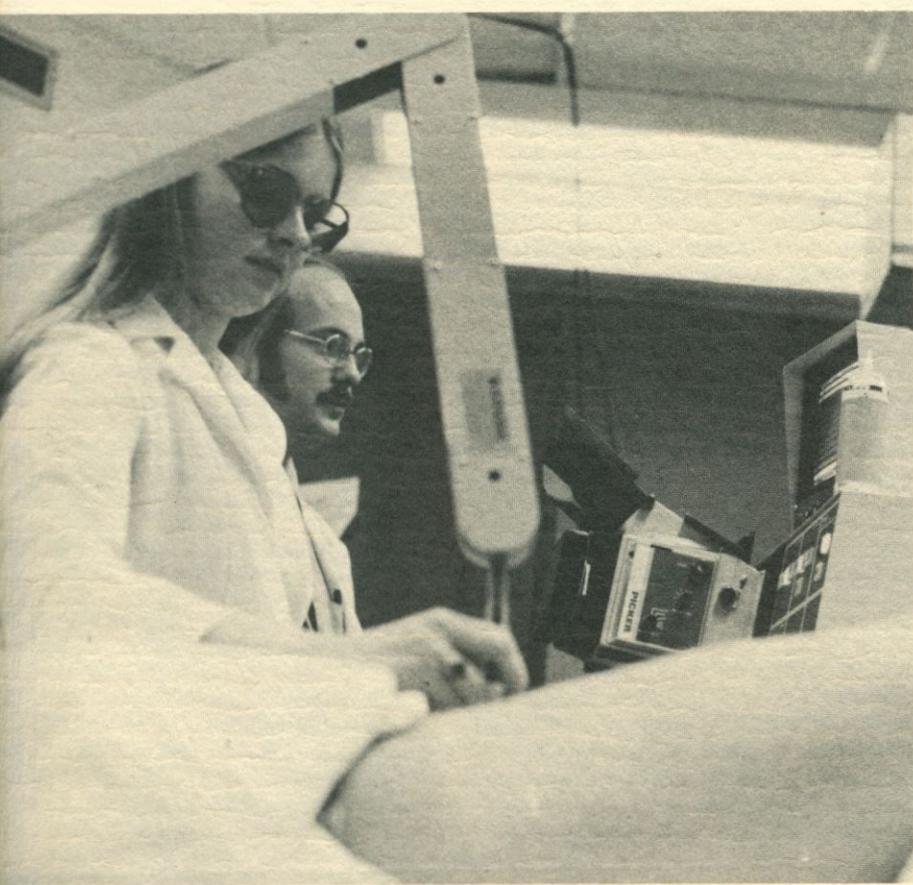
A building for the Regional Academic Health Center at El Paso was dedicated in 1977. The facility includes academic space for clinical departments, auditorium, classroom and support space. Additional clinical departments currently housed in temporary facilities will be added in later phases of construction.

All junior students are presently based in El Paso for training in the clinical areas of Surgery, Obstetrics and Gynecology, Psychiatry, Internal Medicine and Pediatrics. Family Practice, while not the primary thrust in El Paso, supports other clinical training programs. Some senior students and resident physicians in most clinical specialties are based in El Paso. The location of resident physician programs in El Paso is essential to the training of junior medical students in that center.

The center provides clinical experiences through affiliation with R. E. Thomason General Hospital, the primary teaching hospital, augmented through affiliation with William Beaumont Army Medical Center and community hospitals and clinical facilities.

Urban and rural preceptorship programs for students in the El Paso region are coordinated through this RAHC.



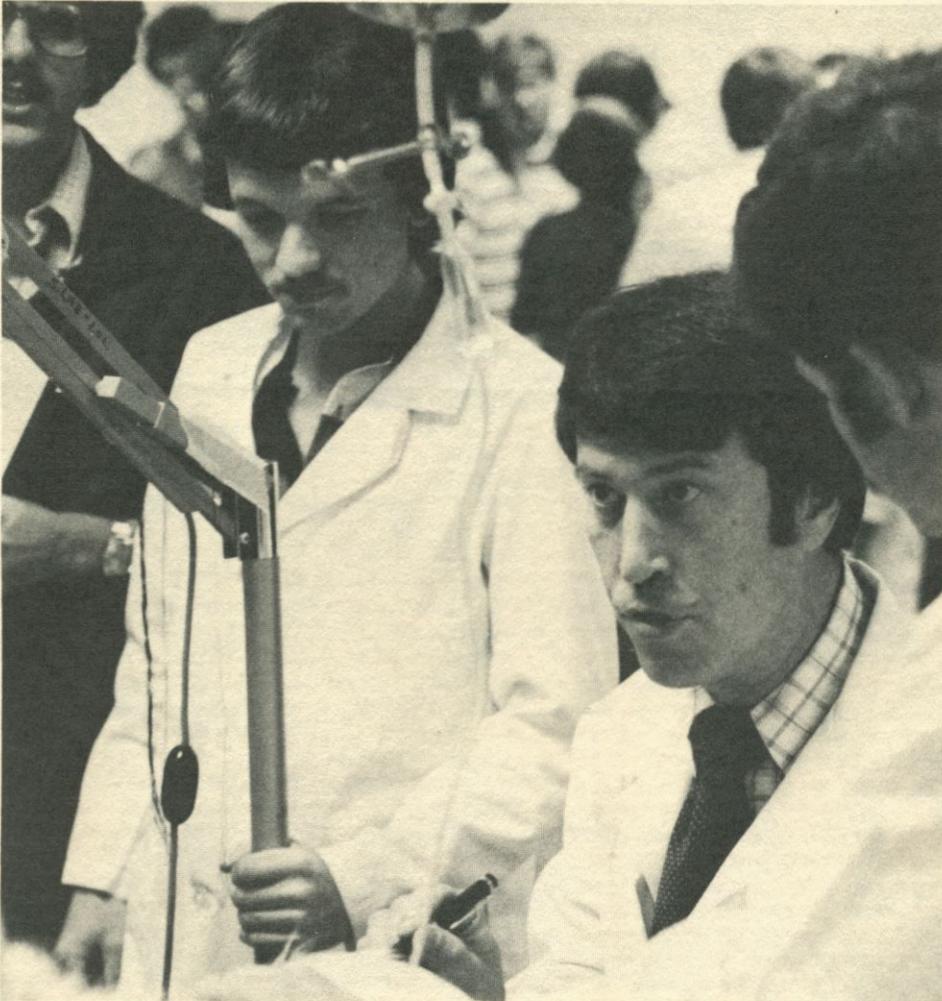
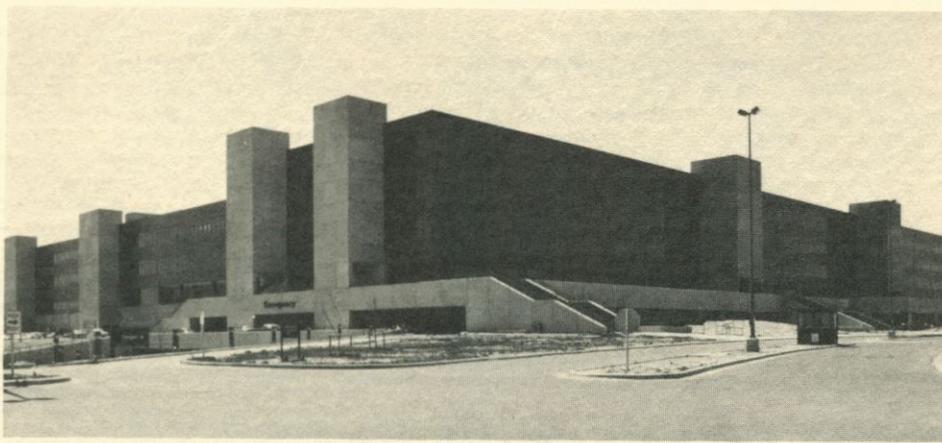
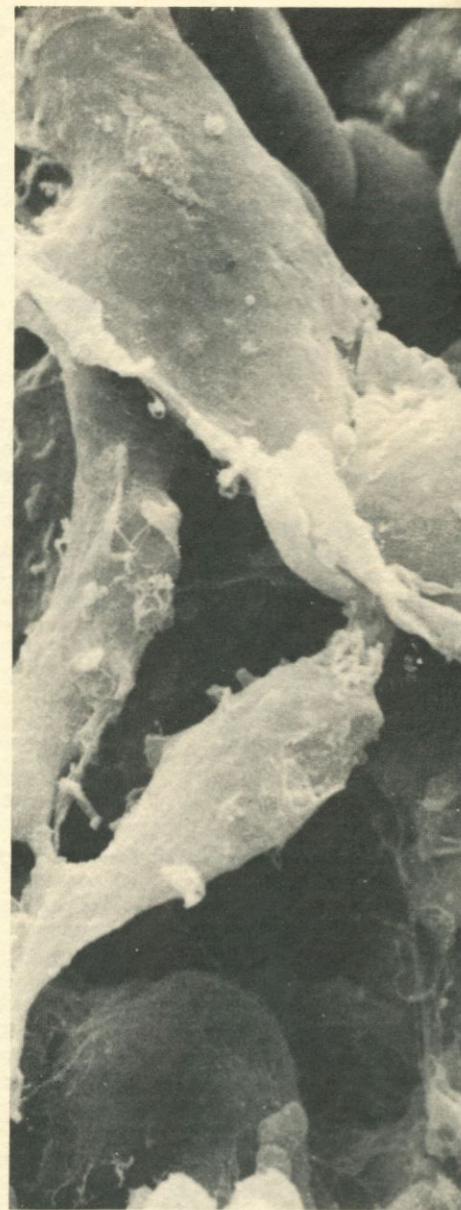


LUBBOCK

The Regional Academic Health Center at Lubbock is incorporated in the home base facilities of the School of Medicine. All freshman and sophomore students are based there. Senior electives are available in most departments. Residency programs currently located in Lubbock are Ob-Gyn, Pediatrics, Family Practice, Orthopaedic Surgery, Ophthalmology, Surgery, Dermatology, Preventive Medicine, Anesthesiology, and Internal Medicine.

The primary teaching hospital for the Lubbock RAHC is Health Sciences Centers Hospital, operated by the Lubbock County Hospital District. A full spectrum of residency training programs is being developed in preparation for establishing education for juniors in Lubbock by 1980. Preceptorship programs, model clinic programs and outreach efforts in the Lubbock region are coordinated through the center.

Affiliated institutions in Lubbock include the City-County Maternity Clinic, Posey Center, St. Mary of the Plains Hospital, University Hospital, West Texas Hospital, and Veteran's Administration Outpatient Clinic. Additional affiliations include Central Plains Comprehensive Community Mental Health /Mental Retardation Center (Plainview) and Central Plains General Hospital (Plainview), Permian General Hospital (Andrews) and the Veterans Administration Hospital (Big Spring).





GENERAL REQUIREMENTS

Admission to the Texas Tech University School of Medicine is not a right acquired by exceeding the minimum entrance requirements, but is a privilege granted to those especially qualified applicants for the purpose of providing the public with highly trained physicians dedicated to first class health care delivery. The Admissions Council has the responsibility of evaluating a large number of applicants for the qualities which will best ensure the attainment of this goal. The academic record and the Medical College Admission Test (MCAT) provide an estimate of intellectual ability and attainment. The less tangible personal qualities are judged from the written comments, letters of recommendation, biographical data, and personal interviews.

The requirements for admission to Texas Tech University School of Medicine include at least 90 credit hours of college level study in an accredited institution; however, since the traditionally high standard of medical practice requires a broad concept of human relations, maturity of judgment and a constantly increasing amount of scientific knowledge, the receipt of the baccalaureate degree is strongly recommended. The undergraduate student planning a career in medicine is advised to complete the minimum required courses prior to his senior year so that his college transcript reflects a more accurate ability in the sciences when evaluated by the Admissions Council. Because of the curriculum flexibility, there are no preferred

undergraduate majors. Equal consideration is given to non-science majors provided they demonstrate an aptitude for handling scientific material.

Required pre-medical courses are:

Courses	Semesters
General Chemistry (with lab)	2
Organic Chemistry (with lab)	2
General Biology (with lab)	2
Physics (with lab)	2

In addition, a reasonable working knowledge of conversational Spanish is recommended. Students lacking Spanish language training will be encouraged to achieve first year college Spanish proficiency prior to the required Medical Spanish course given in the second year. Calculus also is highly recommended but not required. All required pre-medical courses must be completed prior to matriculation.

The MCAT is required for all applicants to the entering class. The MCAT will be valid for only a two year period of time and thereafter must be retaken. It is strongly recommended that the MCAT be taken in the spring of the year in which the application to medical school is submitted; however, the fall test will still allow time for the applicant to be considered for the upcoming class. Application to take the MCAT should be made to MCAT Registration, The American College Testing Program, Box 414, Iowa City, Iowa 52240. Application blanks may be obtained through the counseling and testing service at the student's college or university.

RESIDENCE STATUS

Texas Tech University School of Medicine follows the non-resident rules and regulations for determining resident status as published by the Coordinating Board - Texas College and University System. Attendance at a college or university in Texas by itself does not satisfy the bona fide residence requirements. A copy of the Rules and Regulations for Determining Residence Status may be obtained by writing to the Texas Coordinating Board, Texas College and University System, L.B.J. Building, P.O. Box 12788, Austin, Texas 78711.

APPLICATION PROCEDURES

Texas Tech University School of Medicine is a participant in the centralized application service provided by the Association of American Medical Colleges (AAMC). Applicants need to complete one standardized application when applying to any of the medical schools participating in the American Medical College Application Service (AMCAS), and supply only one set of transcripts to AMCAS. The application will be reproduced and the transcripts standardized prior to distribution to medical schools designated by the applicant.

An individual using AMCAS must be applying for the first year of study leading to the M.D. degree. Students applying for transfer or advanced standing must request application information and material directly from the Office of Admissions at Texas Tech University School of Medicine

AMCAS applications may be obtained from the Association of American Medical College

Application Service, Suite 301, 1776 Massachusetts Ave., N.W., Washington, D.C. 20036, or from the Office of Admissions at this school. The completed forms are returned directly to the AAMC by the applicant. Early application is advisable, but may not be initiated before **June 15**. The deadline for receipt of applications at Texas Tech University School of Medicine is **November 1**.

Immediately upon receipt of the AMCAS application, a supplementary packet will be sent from the Admissions Office of this school requesting additional information. The packet should be completed as soon as possible and returned, along with an application fee of \$10, to the

Office of Admissions
Texas Tech University
School of Medicine
Lubbock, Texas 79430

Applicants are carefully evaluated by the Admissions council with regard to their potential for pursuing a curriculum leading to the Doctor of Medicine degree. Academic achievement, MCAT scores and a personal interview constitute the major factors for applicant evaluation before a final decision is made. There is no discrimination because of race, creed, sex, or national origin.

APPLICATION AND ACCEPTANCE TIMETABLE

Filing of formal application by applicant

Earliest date: June 15
 Latest date: November 1
 Earliest Decision deadline date: August 1
 Application fee: \$10 due with application

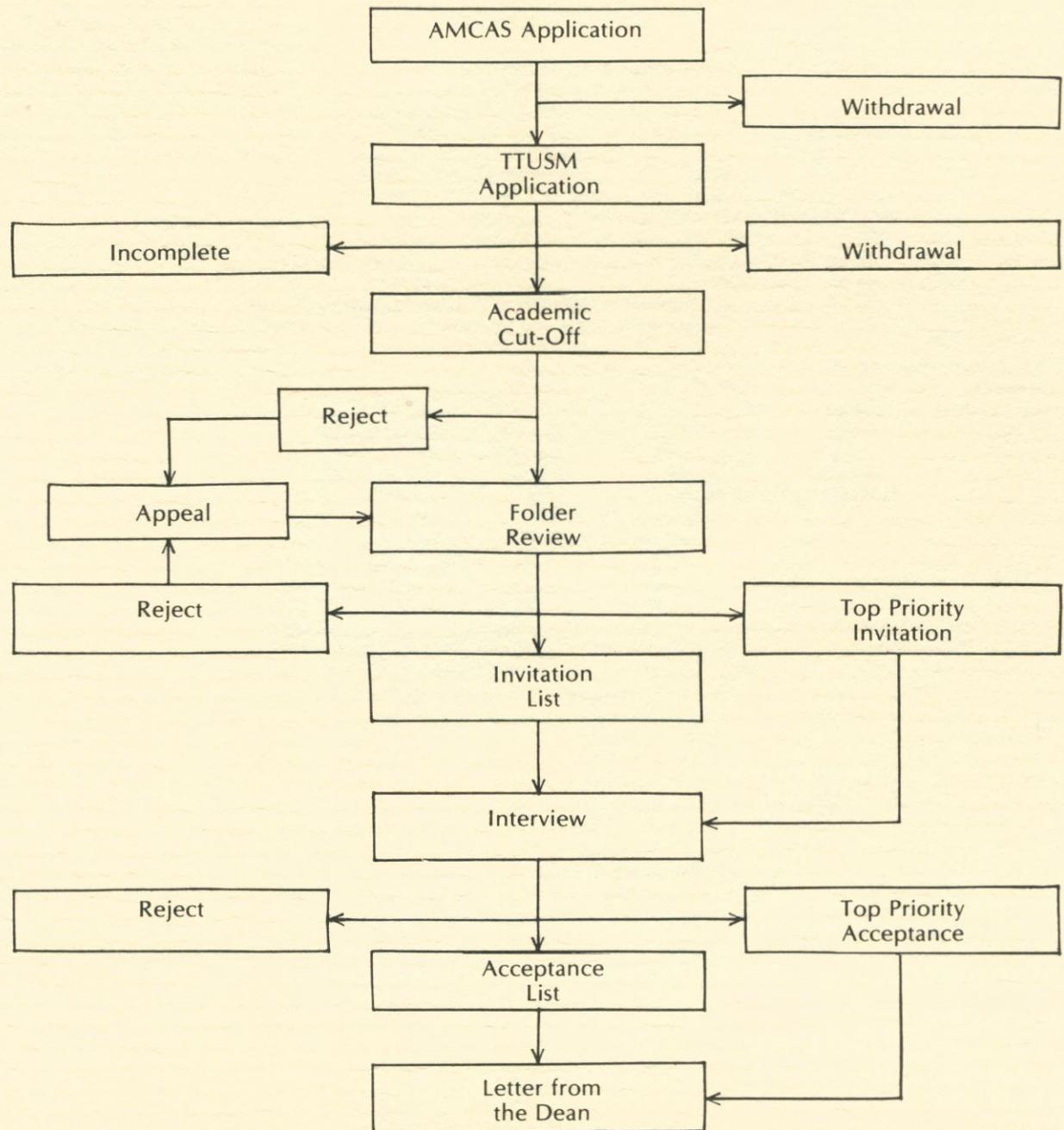
Notification of acceptance by School

Earliest date: October 1
 Latest date: When class is filled
 Time from receipt of application to acceptance notice: Varies

Applicant response to acceptance offer

Maximum time: 2 weeks
 Deposit fee to hold place in class (applies to tuition): \$100, due upon acceptance

APPLICATION PROCEDURE



TUITION AND FEES

All fees are subject to change without prior publication.

The full amount of tuition and fees for the nine-month school year is due at registration.

Approximate Cost for 9-Month School Year

	Resident	Non-resident
Tuition	\$267.00	\$800.00
Building Use	100.00	100.00
University Center	54.00	54.00
Student Services*	52.00	52.00
Laboratory and Course Fee	32.00	32.00
General Property Deposit	7.00	7.00
Student Health*	30.00	30.00
Microscope	75.00	75.00
Liability Insurance	25.00	25.00
	<u>\$610.00</u>	<u>\$1143.00</u>

For further information contact:

The Registrar
Texas Tech University
School of Medicine
Lubbock TX 79430

Tuition and Fees

Tuition and fees for each academic year are due and payable in full at the time of registration and a student is not enrolled until his fees are paid in full.

Texas Resident \$267.00
Nonresident \$800.00

Laboratory Fee

Laboratory fees \$32.00

Student Use Fee

A Student Use Fee of \$100.00 a year is required by state law to be paid by all students at the time of registration.

Student Service

Each student is required to pay a Student Services Fee of \$54.00* at the time of registration.

Student Health Service

The Texas Tech University School of Medicine operates the Student Health Service and provides treatment for all students in Texas Tech University including the School of medicine. The Student Health Service Fee is \$30.00* per nine-month period.

*Fee increase to be recommended for 1979-1980.

University Center

A University Center Fee of \$20.00 a year is required of all students.

Microscope Fee

The Texas Tech University School of Medicine makes available microscopes on a rental basis. A single \$75.00 rental fee payable at the time of registration for first-year students covers the use of the microscope during the first two academic years.

Liability Insurance

\$25.00 per year.

Property Deposit

Each student enrolled must make a general property deposit of \$7.00. This deposit is subject to charges for property loss, damages, breakages, or violation of rules in the library or laboratories.

Student Hospitalization Coverage

Cost of the plan to a single medical student is \$49.75 per year.

Housing

Texas Tech University School of Medicine does not furnish living quarters for its students. Housing is an individual matter and each student must make his own arrangements. Estimated living costs for room and board range upward from \$175 per month.

Campus Parking

Limited parking facilities are available on the medical school grounds. Any student wishing to park on the campus will be required to obtain a permit and pay a Parking and Registration Fee of \$18.00 per year.

REFUND OF TUITION AND FEES*

The medical student who officially withdraws from the Texas Tech University School of Medicine during the course of an academic year will be entitled to a refund of tuition and fees in proportion to the length of time between the date of registration for the academic year and the date of official withdrawal in accordance with the schedule below, subject to this policy.

Forms for withdrawal will be available from the Office of the Registrar, Texas Tech University School of Medicine.

Expiration of Calendar Days from the Official Date of Registration	Benefits for Which the Student Is Entitled
Official Date of Registration through 59 Calendar Days	80% Tuition and Allowable Fees
60 through 78 Calendar Days	60% Tuition and Allowable Fees
79 through 97 Calendar Days	40% Tuition and Allowable Fees
98 through 116 Calendar Days	20% Tuition and Allowable Fees
After 116 Calendar Days	0%

*Board of Regents Minutes, TTUSM, October 17, 1975.

FINANCIAL AID

The objective of the Financial Aid staff at Texas Tech University School of Medicine is to provide financial assistance to students who, without such assistance, would not be able to pursue a medical education.

There are several types of financial aid, including loans, scholarships, and grants, which are offered to students on the basis of financial need and other qualifications as specified by state and federal agencies as well as private donors.

Financial need is defined as the difference between the anticipated costs of attending TTUSM and the amount of money available to the student from all sources. A need analysis is required of applicants for most financial aid programs. TTUSM uses the need analysis system published by the Graduate and Professional Student Financial Aid Service (GAPSFAS).

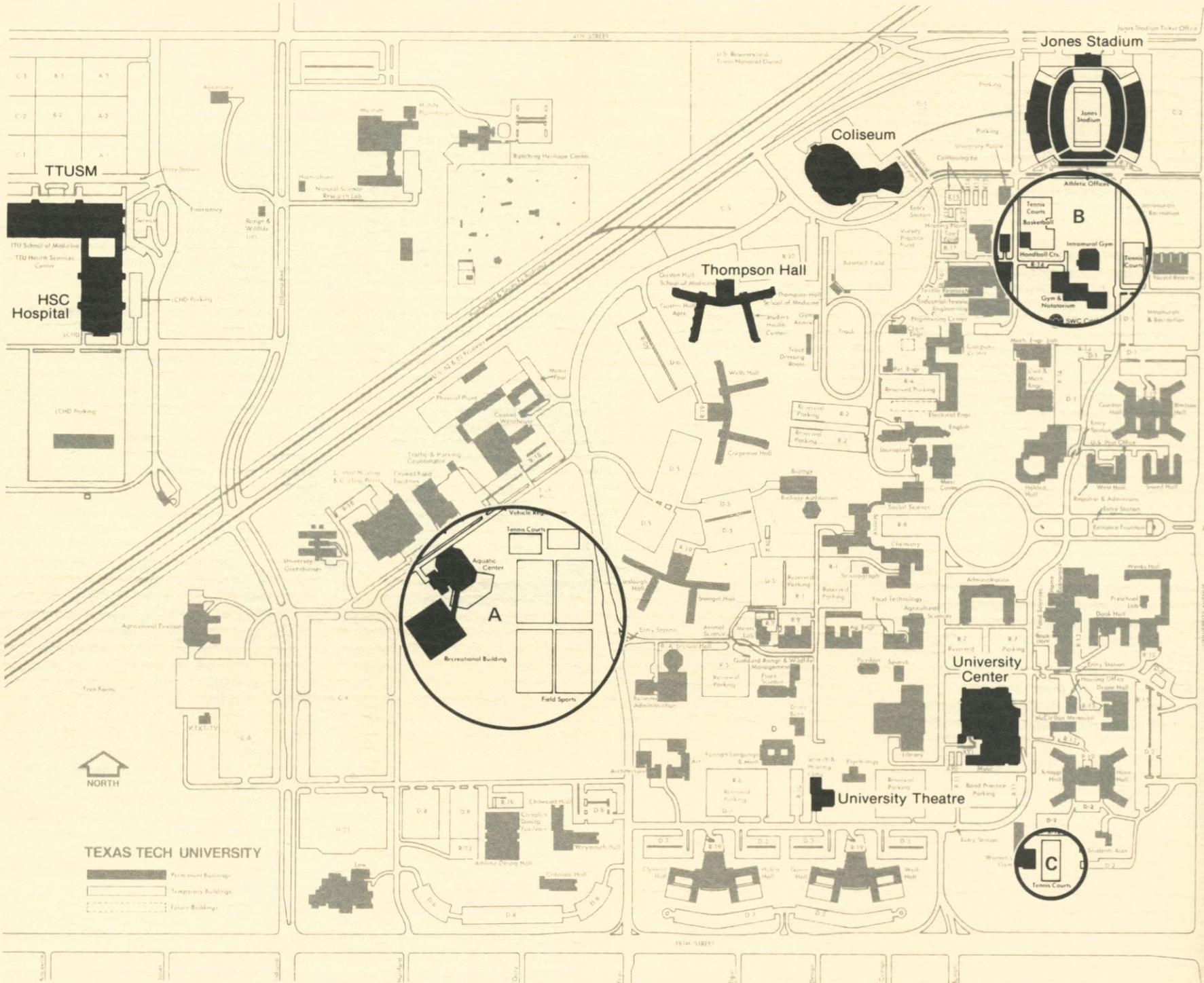
Although qualifications for each financial aid fund might differ, and aid at TTUSM comes from many sources, no student or prospective student shall be excluded from participation in or be denied the benefits of any financial aid program on the basis of race, color, national origin, religion, or sex.

A Student Financial Aid Handbook, which describes the various financial aid programs in detail, is available upon request.



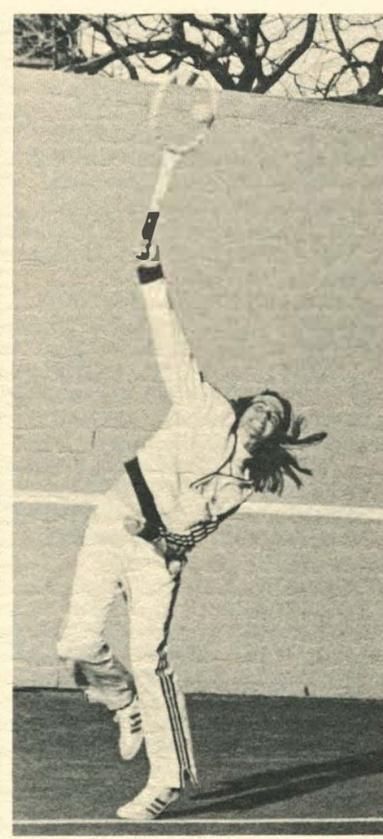
Students seeking financial aid or information about financial aid should contact:

M. J. Crozier
Director of Student Financial Aid
Texas Tech University Health Sciences Center
Lubbock, Texas 79430



TEXAS TECH UNIVERSITY

- Permanent Buildings
- Temporary Buildings
- Future Buildings



RECREATION AND ENTERTAINMENT

In Lubbock, TTUSM is on the campus of Texas Tech University, affording students easy access to campus recreational and entertainment facilities at student rates. The music and drama departments maintain a calendar of events in addition to Lubbock's cultural arts programming.

In addition to varsity and intramural sports, Tech maintains facilities for individual recreation. On-campus athletic facilities include an indoor swimming pool, lighted tennis courts, gymnasium facilities and area for field sports. Through the Department of Recreational Sports, rental equipment is available for camping and boating.

Municipal facilities for sports and civic cultural arts programming are available in Amarillo, El Paso and Odessa.

ORGANIZATIONS

The student body of Texas Tech University School of Medicine currently holds memberships in the American Medical Student Association, the Student National Medical Association, the Texas Academy of Family Practice, the Organization of Student Representatives and the American Medical Women's Association. Also, medical students serve on state committees in conjunction with the Texas Medical Association—Student Business Section.

LEGEND

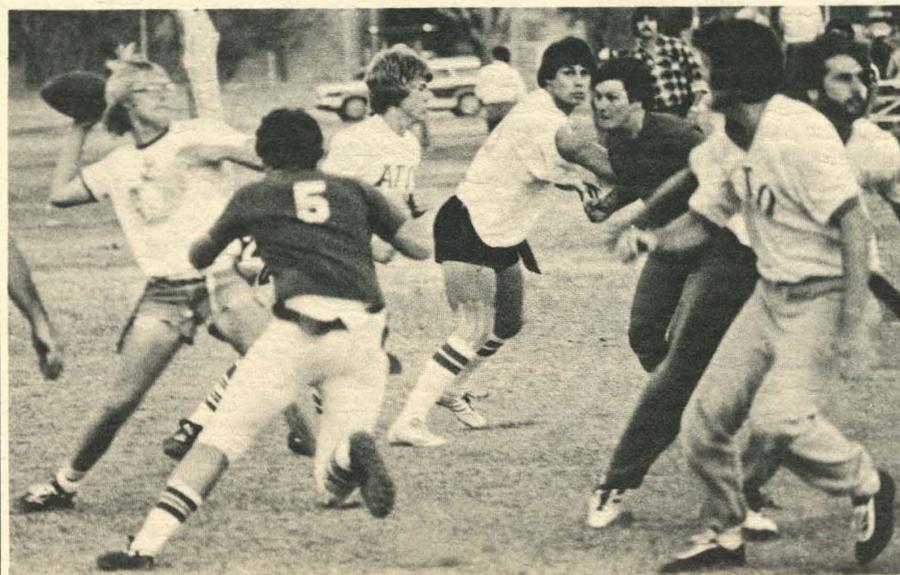
Recreational facilities for student use, clockwise from top left:

- A 1 Year-round Swimming Pool
- 2 Tennis Courts
- 3 Field Sports
- 4 Student Recreation Center

- B 1 Tennis Courts
- 2 Field Sports
- 3 Men's Gym and Natatorium
- 4 Handball Courts
- 5 Basketball Courts

- C 1 Tennis Courts

Reservations recommended for tennis and handball courts.



HOUSING

Texas Tech University maintains 20 residence halls which accommodate approximately 7,300 students for board and room. Medical students are eligible for University housing if they desire it, and assignments will be made according to student preference if space is available. For further information, students interested in University housing should contact the

Texas Tech Housing Office
P.O. Box 4629
Texas Tech University
Lubbock, Texas 79409

In addition, there are numerous off-campus apartments and housing facilities available near the campus. Students are expected to make their own arrangements concerning off-campus housing.

STUDENT HOSPITALIZATION COVERAGE

At the time of registration each student will complete a health insurance enrollment card indicating the extent of his/her coverage and the name of the carrier and policy number. All medical students enrolled in Texas Tech University School of Medicine are expected to carry health insurance, either the plan offered through the Texas Tech School of Medicine, or a similar policy providing equivalent coverage.

For additional information or specific questions concerning health insurance coverage, students should contact the Assistant Dean for Student Affairs.

STUDENT HEALTH SERVICE

The Texas Tech University School of Medicine operates the Student Health Service and provides treatment for all students in the Texas Tech University complex, including the School of Medicine.

The Student Health Service, 2nd Floor, South Wing of Thompson Hall, provides ambulatory medical care 8 a.m.-7 p.m., Monday through Friday. Treatment is confined to the clinic; student health service physicians do not make routine dormitory or house calls. Transportation for the transfer of on-campus students who are ill is available through the University Police Service.

From 7 p.m.-8 a.m. Monday through Friday and on weekends, medical care is available through the Emergency Room of the Health Sciences Center Hospital. The Emergency Room admission fee and the physician's usual fee is covered under the Student Health Fee during the above stated times only.

Between the hours of 8 a.m. to 5 p.m. Monday through Friday the services of a laboratory are available for a variety of tests. Also, between 8 and 5 Monday through Friday pharmacy service is available.

Student requiring in-patient care or who have serious injuries or chronic illnesses requiring hospitalization will be given necessary emergency care by the Student Health Clinic and then transferred to the Health Sciences Center Hospital or hospital of the student's choice.

The Health Service staff will

notify the parents, guardians or nearest relative of a patient believed to be threatened with a serious illness or thought to be in need of an emergency surgical operation.

The Student Health Service cannot be responsible for continuing treatment of students suffering from chronic diseases. The student health primary care physicians will provide referrals to specialists to give special care to students who need it and who are unacquainted with Lubbock physicians.

Three components are represented in the Student Health Service program. They are:

Personal health services, including preventive, diagnostic, therapeutic and rehabilitative care for both physical and emotional problems.

Environmental surveillance and control, including occupational medicine.

Education for health that includes educational programs for individuals through which they may be motivated to healthful individual and community behavior.

TUTORIAL TEAM INSTRUCTION

An important element in the School of Medicine is the Tutorial Team Instruction program. Tutorial Teams consist of the faculty mentors and about 12 students at various levels of training. This program is designed to meet student needs which are not regularly met by the school curriculum. These needs fall in to three broad categories: (1) academic and personal counseling; (2) educational experiences not provided by the curriculum; (3) opportunities for social and leisure time activities.

The mentors not only function as members of the group but also serve as a student advocate as needed, assist with student academic advisement and provide a role model for the students.

This program provides a forum for students and faculty to discuss controversial and sensitive issues in small group settings and allows students the opportunity to take an active role in their educational experiences. Additionally, students learn to function as group members and receive personalized attention as required. The Tutorial Team is recognized as a formal channel of communication from students to the various offices of the Dean.

LIBRARY OF THE HEALTH SCIENCES

The Library of the Health Sciences at Texas Tech University School of Medicine was developed in a record time span of 11 months, and presently contains approximately 90,000 bound volumes. More than 2,600 periodicals published both domestically and in foreign countries are received and bound regularly.

Associated libraries in the Amarillo and El Paso Regional Academic Health Centers of the medical school also are being developed, and anticipated collections of about 40,000 volumes in each location are growing daily.

Besides offering its bound volumes and periodicals as a valuable reference collection, the Library houses a Media Library comprised of audio-visual materials, films, tapes, and other non-book media to aid in the learning experience. Teaching devices such as a medical injectable teaching arm and a heart-sound simulator are available for use.

Computerized searching services with access to more than 50 data bases on a variety of subjects ranging from medicine and engineering to education, agriculture, and many others are available. These data bases come from sources nationwide, especially the National Library of Medicine, Bethesda, Md. A few of the data bases available include MEDLINE, TOXLINE, AGRICOLA, NTIS, and others.

Study carrels and other study facilities are provided within the Library for students, faculty, and residents.

Medical students also have access to the Texas Tech University Library, which contains more than 1.5 million items including U.S. Government documents and substantial holdings in the sciences.

FACULTY

The full-time faculty of the School of Medicine currently numbers 200. In addition, 617 West Texas area health care professionals and scientists have been appointed to the clinical faculty of the School of Medicine. As the school's educational programs grow and as the Regional Academic Health Centers continue to develop, both the full-time faculty and the clinical faculty will grow with them.

STUDENT EMPLOYMENT

It is recommended that, if possible, students arrange their financial affairs so that employment during the academic session will not be necessary. However, if financial need arises, students may undertake limited employment; usually no more than 10 hours per week are advisable. Any student undertaking employment during the academic session is required to notify the Assistant Dean for Student Affairs.

CONTINUING EDUCATION

The goal of Continuing Medical Education (CME) at Texas Tech University School of Medicine (TTUSM) is to improve health care by providing quality educational programs for all members of the health-care delivery team. Programs are designed to update and inform the individual in various aspects of basic medical education as well as the developments within his particular field of interest.

A number of specialty societies and academies are requiring continuing education credits for recertification. Several states also require continuing education credits for relicensing. The Liaison Committee on Continuing Medical Education (LCCME) has accredited the TTUSM office of CME, enabling the office to sponsor conference programs for Physicians' Recognition Award (PRA) credit.

CME works with faculty sponsors in planning and implementing medical conferences.

Any faculty member with an idea for a conference contacts the CME office and the process begins.

The tasks objectives of the Office of Continuing Medical Education of TTUSM are: (a) to implement a method for determining realistic continuing medical education needs and then match appropriate educational program formats to these needs. (b) to provide medical meetings and conferences that will augment and modify an adequate initial education and make possible the acquisition of such new skills and knowledge to maintain competence. (c) to work with the faculty of TTUSM to design, implement and evaluate continuing medical education conferences and workshops. (d) to provide suggestions to faculty as to how the educational programs can be most effectively done according to the principles of educational psychology. (e) to provide continuing medical education through visiting experts, conferences and utilization of the most up-to-date technology available for transporting programs to remote areas. (f) to evaluate the effectiveness of the educational effort, thus ascertaining how and where modification could be made in the process. (g) to relate information on upcoming medical education conferences and meetings to the physician community in West Texas and Eastern New Mexico.

In summary, continuing education develops programs for faculty and practicing physicians to increase, improve or maintain medical knowledge and skill.

ACADEMIC REGULATIONS

A grade is assigned for all courses in which a student is regularly enrolled during any semester. Only through regular enrollment can a grade be earned. A passing grade may be earned only if the student is enrolled for the duration of the course and a grade, once given, may not be changed without the approval of the department chairperson.

All credits are expressed in semester hours. An overall cumulative weighted grade average of 75 will be required for graduation. The grade of "I" (incomplete) is given only when a student's work is satisfactory in quality but due to reasons beyond his/her control, has not been completed. The grade "I" (incomplete) should also be used when a student is going to be re-tested or otherwise re-evaluated in a course. This is not given in lieu of a failing grade. Grades of "I" received as a result of illness will be dealt with on an individual basis. The instructor assigning the grade will stipulate in writing, at the time the grade is given, the conditions under which the "I" may be removed. Students who receive the grade "I" will have a maximum of two semesters in which to complete work for the course and remove this grade, or it should be changed to a failing grade at the end of the second semester following receipt of the "I".

The grade of "WP" is given for a course officially dropped provided the student's work is passing at the time the course is dropped. The grade of "WF" is given when the student's work is not passing at the time the course is dropped.

The lowest passing numerical grade for any course is 70. The lowest acceptable weighted average for promotion and/or graduation is 75. If a course is repeated, the second grade shall be used for purposes of promotion. Both grades shall be used for calculation of the cumulative weighted grade average. All grades shall remain on a permanent transcript.

Work completed at another school may be transferred with the approval of the academic dean and the appropriate department chairperson. Grades for transferred work will be recorded as "CR" (credit) and will not be considered for calculating the weighted grade average. Transfer of credits toward the Doctor of Medicine degree is never automatic but rather shall be made at the discretion of the dean upon recommendation of the appropriate advisory faculty bodies. The grade "CR" (credit) should also be used for students enrolled in extra-credit electives during any semester or the summer.

All credits are expressed in semester hours. The second and third digits of the course number represent the credit hours. Passing grades: numerical grades that are 70-100, "S" (satisfactory). Failing grades: numerical grades below 70, "U" (unsatisfactory). Other grades: "CR" (credit), "WP" (withdrawal passing), "WF" (withdrawal failing), "I" (incomplete), "X" (course audited). Grades with NO point values: "S", "U", "CR", "WP", "WF", "I", "X".

The weighted average for a semester is determined by dividing the total number of **quality points*** acquired during the

semester by the total number of semester hours of all courses in which the student was registered in that semester, exclusive of courses in which a grade of "WP" or "S" is received. In the same manner, the cumulative weighted grade average is obtained by dividing the total number of quality points earned in all courses taken at this school by the total number of semester hours of all courses for which the student has registered at this school, but excluding hours for which the grade of "WP" or "S" is received. The hours of courses receiving grades of "WF" and "U" are included in calculating weighted averages.

A student may repeat courses for credit with the prior approval of the academic dean. When a course is repeated, only the grade made in the last registration is used in calculating the weighted grade average for meeting promotion requirements. Repeated registrations are counted in the total overall weighted grade average.

* **Quality points** for a course are the product of the number of course credits and the numerical grade received by the student.

CURRICULUM

The curriculum consists of a four year (140 week) program of study in the basic and clinical sciences leading to the Doctor of Medicine degree.

Texas Tech University School of Medicine recognizes the need for integrating both the basic and the clinical sciences. Towards this end clinical topics are introduced in the first semester. Approximately twenty per cent of the time in the first two years is devoted to clinical courses. In addition, the basic science courses include correlation by clinicians. During the last two clinical years, basic scientists participate in clinical teaching.

In order to enable medical students to direct their own education, the curriculum includes elective courses in the first and fourth year.

Recognizing the impact of the large Spanish-speaking population in West Texas on both medical training and practice, Texas Tech University School of Medicine includes a unique course in Medical Spanish in its curriculum.

CURRICULUM REVISION

In the interest of improving medical education, the curriculum undergoes continuous review. Any part, or all of the curriculum may be changed at any time, without prior notice, by Texas Tech University School of Medicine.



UNDERGRADUATE MEDICAL EDUCATION

The broad goal of Texas Tech University School of Medicine is to prepare physicians for all areas of medical endeavor. Recognizing the specific needs of the nation, a specific goal is to foster interest among its trainees in patient care, and especially in primary care. Furthermore, considering the special health care needs of West Texas, another specific goal is to interest many of its trainees in rural health care delivery.

The undergraduate medical curriculum has two goals. The short-term goal is to prepare medical students for any area of graduate medical education. The long-term goal is to prepare medical students for practice after graduate medical education. In order to attain these goals, the undergraduate medical curriculum: (1) provides a broad but intense introduction to medical knowledge, (2) seeks to develop scientific problem-solving skills in medical students, (3) begins to develop the ability of medical students to assume sole responsibility for their own education, and (4) encourages an interest in the primary care specialties, but not to the exclusion of the secondary and tertiary care specialties.

CURRICULUM BY YEARS

FIRST YEAR CURRICULUM:

begins the basic medical sciences with an introduction to clinical topics.

TERM I

Course

- Anatomy
 - Gross Anatomy
 - Histology
 - Embryology
- Biochemistry
- Emergency Medical Care
- Electives
- Introduction to Cell Biology
- Biostatistics

TERM II

Course

- Physiology
- Neurosciences
- Clinical Biochemistry
- Biochemical Genetics
- Electives
- Integrated Case Analysis

THIRD YEAR CURRICULUM:

introduces the major disciplines of medicine through a series of clinical clerkships

Clerkship

Internal Medicine	12
Surgery	12
General Surgery	(7)
Surgery Electives	(4)
Anesthesiology	(1)
Psychiatry	8
Pediatrics	8
Obstetrics and Gynecology	8

TOTAL: 48

SECOND YEAR CURRICULUM:

includes more clinically-related basic science courses as well as more clinical science courses.

TERM III

Course

- Pathology
- Microbiology
- Introductory Psychiatry
- Introduction to Medicine
- Preventive Medicine & Community Health
- Parasitology
- Forensic Medicine

TERM IV

Course

- Pathology
- Pharmacology
- Introduction to Medicine
- Medical Spanish
- Psychiatric Interviewing

TERM V

Course

- Dermatology
- Ophthalmology
- Otolaryngology
- Medical Spanish
- Advanced Life Support

FOURTH YEAR CURRICULUM:

completes the introduction to the major medical disciplines and provides opportunity for additional exposure to these and the subspecialty areas of medicine.

	Weeks
Family Practice Clerkship	8
Family Practice Rural or Urban Preceptorship	4
Electives (usually 5)	20
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TOTAL: 32	

The curriculum is under a continuous review process and therefore subject to periodic change.

ANATOMY

Professor William G. Seliger, Ph.D., D.D.S., Chairperson

Professors: Berlin, Sproat, Wolcott

Associate Professors: Coates, Markwald, Richards, Rylander

Assistant Professors: Bolender, Casady, Dalley, Hutson, Karkos, Lox, Yee

The core courses of anatomy are designed specifically as the first anatomy teaching episode for the training of physicians, not for the training of professional anatomists. When unlimited time is available to teach anatomy, the traditional methods are excellent, but today new clinical materials and techniques have seriously curtailed the available time for anatomy. The obvious solution, then, is to find more efficient and effective methods of teaching anatomy and to screen out all material from the basic courses that is not needed to train the general physician.

To accomplish this, the Department of Anatomy has restructured its courses and teaching methods to fit the needs of today's physician. The faculty uses a minimum number of hours for formal lectures and emphasizes the laboratory time. The course material is trimmed down to what directly applies to the training and practice of a physician. The students are taught to find material in source books rather than to commit large amounts of material to memory. New teaching methods using audiovisual aids, notes and microscopic demonstrations increase the efficiency of the microanatomy laboratory time.

Thus, by careful incorporation

of modern teaching methods, modern instruments, improved faculty contact and careful screening of course material, today's medical student can be taught the necessary material in greater depth and in a more meaningful manner despite the reduced amount of time.

Required Courses

MAN 50210—Human Development.—The study of human development beginning at fertilization and continuing through embryogenesis, the formation of mature organ systems, the fetal period and culminating with events leading to birth. Normal development is integrated with discussions of various congenital malformations. Students have a unique opportunity for first hand observation of fetal material during a special laboratory session. This course must be taken in conjunction with MAN 50411 and 50509.

MAN 50411—Human Histology and Cell Biology—An integrated course of Anatomy starting with the ultrastructural and light microscopic study of cells and continuing through the basic tissues and their organization into the various organs of the body. This course must be taken in conjunction with MAN 50509 and 50210.

MAN 50509—Human Gross Anatomy—A highly integrated course of general anatomical study (including human prosection) which embodies the gross morphology of the body and coordinates it with the clinical, developmental and microscopic aspects of the human body. This course must be taken in conjunction with MAN 50411 and 50210.

ANESTHESIOLOGY

El Paso—Associate Professor & Associate Chairperson: Ronald Heinrich, M.D.

Associate Professor: Brown Amarillo: Elective available with Clinical faculty.

Arrangements to be made with Dr. Racz.



William G. Seliger, Ph.D., D.D.S.



Gabor B. Racz, M.D.

ANESTHESIOLOGY

Professor Gabor B. Racz, M.D., Chairperson

Professor & Associate Chairperson:

Edward T. Thomas, M.D.

Professor: Cockings

Associate Professor: Soliman

Assistant Professors: Havasi, Krayneck, Sabonghy, Warren

The Department of Anesthesiology offers a unique opportunity for the medical student to apply knowledge of the basic sciences in a patient setting.

The primary goal is to expose future physicians to current methods of life support, enabling the student to approach with confidence the management of the airway of the unconscious patient as well as support of the respiratory and cardiovascular systems.

Electives and preceptorships are afforded where, under direct supervision, the students will have an opportunity to gain first hand experience in the art and science of anesthesiology in a spectrum of patients undergoing anesthesia for surgery. Instruction will be given in the management of respiratory problems, acid-base and fluid balance and the use of mechanical ventilators.

The Department is involved in the preclinical, basic science teaching when clinical expertise is used to express the applicability of such knowledge.

Basic and clinical research projects will be available to interested students.

BIOCHEMISTRY

Associate Professor John W. Pelley, Ph.D., Acting Chairperson
Professor: Shetlar
Associate Professors: Everse, Garner Morrow, Perez
Assistant Professors: Little, Stocco

The Department of Biochemistry of the school of medicine provides the educational and research programs in biochemistry for (1) professional students in medicine and related health sciences, (2) graduate students majoring or minoring in biochemistry, and (3) medical residents and housestaff.

Medical School Program: The Department of Biochemistry provides a required comprehensive course in medical biochemistry for first year medical students. The course is divided into lectures, laboratory-demonstrations and clinical correlation conferences. These largely clinical conferences afford students the opportunity to ask questions and to participate in discussions regarding lecture material. They establish a close relationship between the students, the faculty and the department. Finally, the clinical correlation sessions help demonstrate to the students the relevance of biochemistry to modern medicine. The laboratory-demonstrations provide foundational material for developing the concept of laboratory assisted diagnosis of disease. Recent advances in understanding disease are presented with illustrative cases from the medical literature. If the biochemical basis of the disease has been determined, the rationale for diagnosis and therapy will be

examined. The Department of Biochemistry provides required courses in clinical biochemistry and medical genetics to freshman medical students.

These required courses are described below.

Required Courses

MBC 50721—Biochemistry I: Medical Biochemistry. A study of life processes at the molecular level with emphasis on the biochemistry of man in health and disease.

MBC 50223—Biochemistry II: Human Biochemical Genetics. A study of the chromosomal and molecular basis of genetically related disease processes with emphasis on human genetic disorders and their consequences.

MBC 50224—Biochemistry III: Clinical Biochemistry. A study of clinical biochemistry with emphasis on the interpretation of clinical laboratory data and the concepts of laboratory-assisted diagnosis of human disease.



John W. Pelley, Ph.D.

BIOMEDICAL ENGINEERING AND COMPUTER MEDICINE

Associate Professor Blair A. Rowley, Ph.D., Chairperson
Professors: Ayoub, Portnoy, Ramsey
Associate Professor: Jarzembski
Assistant Professors: Anderson, Cameron

The Department of Biomedical Engineering and Computer Medicine is concerned with education, research, and development in medicine and the allied health fields. Interdisciplinary methods are used which enable the department to draw on specialists covering a wide range of expertise. Educational efforts are directed towards teaching the health professional how to use technology effectively.

The department offers a special interdisciplinary master's degree study program, administered by the Texas Tech University Graduate School, by which a medical student may earn a master's degree while attending medical school. The department also offers senior electives for medical students.

Courses are available for engineers in the life sciences leading to a graduate degree with emphasis in Biomedical Engineering. Students have the option of pursuing the masters or Ph.D. level through the Masters of Engineering or the Interdisciplinary Ph.D. programs administered in the College of Engineering.

In research, the department is developing concepts and applications of technology in the problems of health care delivery. In addition, programs in bioelectric phenomena, instrumentation and rehabilitation are available and

other areas of bioengineering, clinical engineering, and medical engineering.

Efforts are also directed towards the appropriate use of computers in the medical setting and the development of biomathematical expertise in medical research. In particular, the application of the computer technology to medically remote populations is an on-going program. Additional research is directed in the area of computer usage in biostatistical theory.

The department also provides engineering development for all departments of the medical school. It furnishes expertise in intensive care, life support, implantables, monitoring, transduction, safety and instrumentation. In addition, consultation is available to the medical community at large.

Required Course

BME 50150—Biostatistics: This course introduces the basic biostatistical concepts frequently encountered by the student, researcher, or medical practitioner. It includes an introduction into the use of descriptive statistics, statistical tests, confidence intervals, and other frequently encountered distributions. Examples are taken primarily from the basic and clinical sciences, emphasizing applications encountered by the medical student.

Elective Courses

BME 50100—Computer Medicine: This course introduces computers and their use in medicine. Clinical, patient care, and private practice applications are covered by lectures, demonstrations, and tours. Principles of programming are also presented that can be utilized by the student in other medical classes.

Senior Elective: This elective is available at various times for the 4th year medical student. It provides for in-depth work in this department and a clinical department linking computers into patient care activities as well as learning how to utilize biomedical engineering in the practice of medicine.



Blair A. Rowley, Ph.D.

DERMATOLOGY

Associate Professor Barbara H. Way, M.D., Chairperson
Professor: Shetlar
Assistant Professors: Cole, Cannon

The Department of Dermatology provides educational and research programs in Dermatology for (1) undergraduate medical students, (2) residents, (3) and other students requiring instruction in Dermatology. In addition to the required sophomore course, the department offers elective preceptorship training to senior medical students and residents. The instructional program includes training in general dermatology, pediatric dermatology, dermatopathology, venereology, and dermatologic research.

Required Course

MDM 60101—Introduction to Dermatology: This course is designed to acquaint the sophomore student with the etiology, epidemiology, pathophysiology, clinical characteristics and prognosis of selected disorders of the skin. In addition, the student will be instructed in dermatologic diagnostic techniques and be given the opportunity to examine patients with specific skin diseases.



Barbara H. Way, M.D.

FAMILY PRACTICE

Professor Berry N. Squyres, M.D., Chairperson
Professors: Gordon, Wainscott
Associate Professors: Chinn, Culvahouse, Dietrich, Fordyce, Johnson, Patzkowsky, Peddicord, Shields
Assistant Professors: Best, Brown, Gaddis, Jett, Kilham, Mathers, Smith
Associate Clinical Professors: Fagan, Johnson, Rehm
Assistant Clinical Professor: Autrey
Instructors: Chauncey, Klover, McLeroy

The Department of Family Practice is primarily concerned with provision of training in ambulatory care which involves evaluating and managing unselected patients with unselected illnesses. Included is comprehensive medical care with particular emphasis on the family unit. Stressed is the physicians' continuing responsibility for health care delivery, not limited by patient's age, sex, or disease entity. Building upon a core of knowledge derived from other disciplines—drawing most heavily on internal medicine, pediatrics, obstetrics and gynecology, surgery, and psychiatry—there is established a cohesive unit, combining the behavioral sciences with the biological and clinical sciences. The core of knowledge encompassed by the discipline of family practice prepares the physician for a unique role in patient management, problem solving, counseling, and coordinating the total health care delivery for his patients.

The research of the Department is conducted in clinical

settings and is designed to develop and evaluate more effective methods of health care delivery. The Department's laboratories include ambulatory care centers, physicians' offices, emergency rooms, nursing homes, and various types of health care clinics, both urban and rural.

Required Courses

MFP 50101—Emergency Medical Care: Techniques of emergency care are taught in the freshman year with a multiple disciplinary approach using appropriate teaching personnel from various departments of the medical school as well as experienced teachers from the community. Methods used are didactic lecture, audio visual demonstrations, simulated procedures, and when possible, emergency room observation.
MFP 80018—Family Practice: For senior students. Family-oriented health care, both in the office and hospital, are combined with seminars concerned with clinical skills, family dynamics and social-cultural relationships. The team approach to health care is emphasized along with community and psychological medicine. Includes a four-week preceptorship in a family practitioner's office.

Elective Courses

MFP 50100—Principles of Non-Urban Care: For freshman students. Non-urban care is described in didactic presentation, audio visual demonstration, and by observation of actual care delivered in various settings. Additional approaches to health care delivery are demonstrated as they occur in urban, suburban, and rural settings. This offers the student the opportunity to compare similarities and differences in the types of health care delivery.
MFP 80028—Family Practice Rural Preceptorship: Students are assigned to a variety of practices within the Regional Academic Health Center areas for a supervised exposure to day-to-day practice problems. Emphasis is on the application of clinical skills within the demands and limits of actual practice in a rural area. This preceptorship is normally for a period of four weeks, but can be extended in certain circumstances.

MFP 50102—Emergency Medicine: Students participate in delivery of emergency medical services in an emergency room setting. The students are a part of an emergency room team which is the first contact for patients and follows the total care of the patient under the supervision of an emergency room physician especially skilled in this aspect of medical care delivery. The student has ample opportunity to become acquainted with emergency medical care in trauma, medical emergencies, surgical emergencies, pediatric and obstetrical emergencies. The student is able to follow all patients admitted to the Family Practice Service as an integral part of the team and is able to experience the responsibility of the delivery of emergency care.

MEDICINE

*Professor A. W. Holmes, Jr., M.D.,
Chairperson*

*Professor: Bartholomew
Associate Professors: Adams,*

*Beceiro, Ekery,
Lawrence, Mills, Shields
Smith, Stanbaugh, Wolf*

*Assistant Professors: Abedin,
Aung, Cooper,
Dhafir, Menendez,
Sherwood, Voda*

The prime objective of the Department of Medicine is to develop in students the intellectual and physical mechanisms for the careful evaluation of the patient and the use of fundamental principles of the basic sciences in the rational study of the patient and his or her disease. This major aim translates into a series of instructional objectives which include,

1. teaching of the careful elicitation of a history
2. teaching of a thorough and orderly physical examination
3. teaching of techniques of clinical problem solving through
 - a. didactic discussions of disease processes emphasizing fundamental mechanisms and natural history of the disease
 - b. bedside discussion of patients and their problems and the means by which to help solve those problems.

Clinical teaching occurs in both in-patient and out-patient

settings. Student activities are directed by salaried and volunteer members of the faculty and the activities of students are integrated as part of the patient care team. Organized didactic sessions are programmed as necessary to ensure that a given body of knowledge is transmitted.

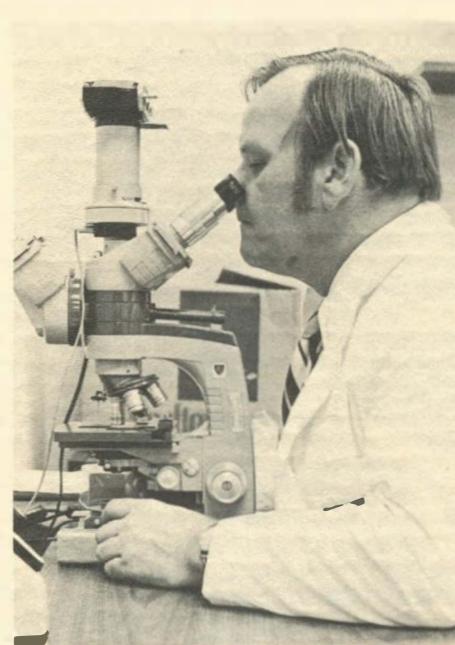
Required Courses

MIM 50102—Integrated Case Analysis: Through the mechanism of case presentation and discussion the integration of pertinent information in the basic sciences is demonstrated in its role in the solving of clinical problems.

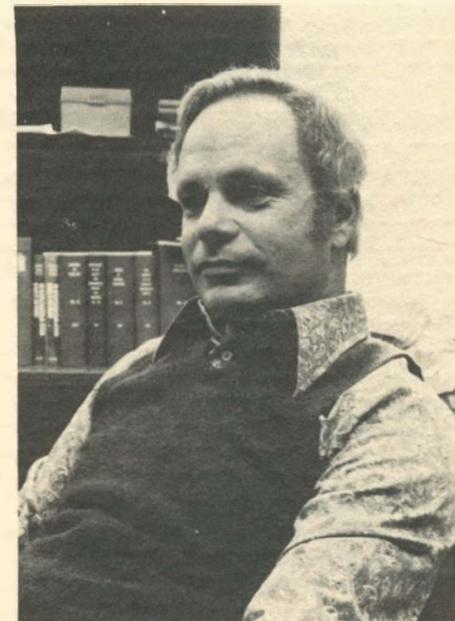
MIM 60433—Introduction to Medicine: Through a combination of didactic presentations and preceptorial clinical sessions the student will be introduced to the techniques utilized in obtaining a history, performing a physical examination, and organizing a medical record.

MIM 71217—Junior Clerkship: Internal Medicine: This eight week course serves as an introduction to the broad field of internal medicine. Students will be expected to develop the ability to study a patient in an organized way utilizing historical and physical data to generate logical diagnostic possibilities which can then be tested by appropriate tests or procedures. While it is desirable for the student to learn some principles of therapy, emphasis is placed upon rational and accurate diagnosis.

MIM 80618—Senior Medicine Clerkship: Students will spend one month on an in-patient medical service. Their clinical responsibilities will vary commensurate with the abilities they have developed during the previous experience in medicine.



Albert W. Holmes, M.D.



Stanley S. Lefkowitz, Ph.D.



Berry N. Squyres, M.D.

MICROBIOLOGY

*Professor Stanley Lefkowitz, Ph.D.
Acting Chairperson*

Professor: McKenna

Associate Professors: Baskett, Joys

Assistant Professors: Diedrich,

Fralick, Gooch

*Adjunct Assistant Professors: Hayes,
Pence*

The Department of Microbiology in the School of Medicine offers educational and research programs in Microbiology for (1) professional undergraduate students in the medical curriculum and related health sciences, (2) graduate students majoring in Microbiology and (3) other students requiring instruction in Microbiology.

Medical School Program: The Department of Microbiology offers a required comprehensive course in Medical Microbiology for second year medical students. The course is divided into lectures, laboratory demonstrations, and clinical correlation conferences. The clinical correlative conferences, given by members of the various clinical departments in the School of Medicine, can afford the students an opportunity to inquire into the relevance of Microbiology in modern medicine, especially in infectious diseases. The laboratory demonstrations provide clinical material for helping to establish the diagnosis of disease by standard laboratory diagnostic methods. Recent advances in understanding infectious diseases are presented from the medical literature.

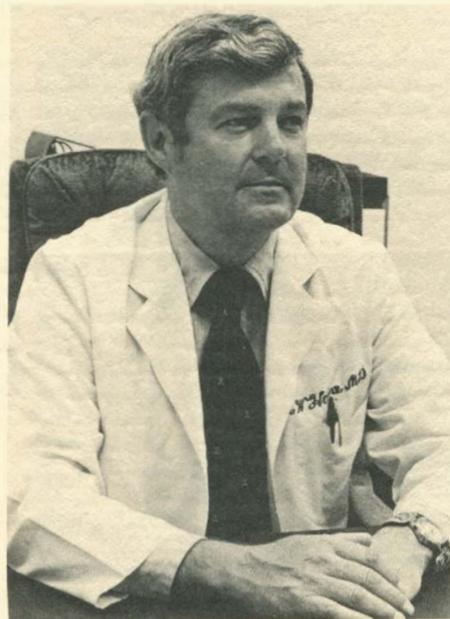
The interplay of the parasite (bacterial, mycotic, and viral) and host in the development and subsequent outcome of infectious

diseases is the central theme of this course. A study of the biochemical, biological aspects of immune mechanisms and disorders of the immune system also is integrated into the course.

The required course is described below.

Required Course

MMB 60631—Medical Microbiology: A study of the role and place of bacteria, fungi and viruses in human infectious disease processes, with emphasis on the interplay of the host and parasite relationships. Heavy emphasis will be placed on the biochemical, biological and medical aspects of immune mechanisms and disease processes together with a study of immune deficiencies and diseases of the immunologic mechanism.



Wayne Heine, M.D.

OBSTETRICS AND GYNECOLOGY

*Professor Wayne Heine, M.D.,
Chairperson*

*Professors: Misenhimer, Scragg,
Reeves, Yannone*

Associate Professor: Semchyshyn

*Assistant Professors: Phillips,
Salazar*

Obstetrics and Gynecology deals with the woman as a primary care patient during her reproductive years, and with those functional aberrations and diseases of the female generative tract occurring at any time during life. The course of study provides the student with a basic knowledge of the reproductive process and an understanding of the function of the female reproductive system, especially during pregnancy and childbirth. The student gains practical experience through the management of normal pregnancy, the evaluation of the status of the fetus in utero, the supervision of labor, in the conduct of delivery, as well as management of complications.

Gynecology instruction focuses on presenting the basic principles of gynecologic examination and the diagnosis and therapy of disease of the female reproductive system. This includes the physiology of menstruation, fertility, infertility and fertility regulation, as well as gynecological disease, cytology, oncology and pathology.

Required Course

MOB 71247—Obstetrics-Gynecology: A study of the treatment of female patients by the primary care practitioner. Obstetrics-gynecology spans the entire age range of womanhood and is extensively health oriented with emphasis on prevention of illness and on surgical and obstetrical techniques. The quality of human life is emphasized.

OPHTHALMOLOGY AND VISUAL SCIENCES

*Professor James Price, M.D., Ph.D.,
Chairperson*

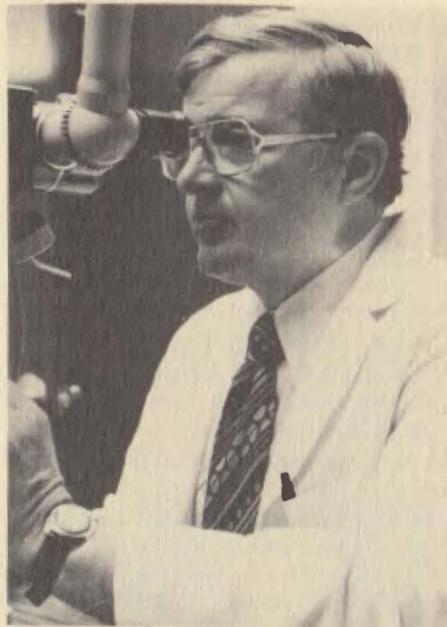
Professors: Buesseler, Tyner

Associate Professor: Holly

*Assistant Professors: Halpern,
Naegele, Speros, Lamberts*

Our educational objective in the lecture series is to provide each medical student with a core knowledge that is necessary to physicians who will practice in a wide range of medical disciplines. Seven problem areas are used to structure the series and enhancement lectures are included. The seven problem areas are: visual acuity, ophthalmoscopy, glaucoma, red eye, injuries, amblyopia/strabismus, and neuro-ophthalmology. An extensive audio-visual program is available as a required part of the student's work. Clinical instruction on ocular examination is given during the physical diagnosis rotation.

Electives are available. These include a clinical rotation and the possibility of a research period. Information about these electives can be obtained by contacting the department chairperson.



James Price, M.D., Ph.D.



J. Ted Hartman, M.D.

ORTHOPAEDIC SURGERY

Professor J. Ted Hartman, M.D.,
Chairperson

Associate Professor: Fordyce

The primary goals of the department are to teach medical students, train physicians in the speciality of orthopaedic surgery, provide high quality medical care and further medical knowledge through clinical and basic research.

The departmental functions are divided into administration, teaching, patient services and research in pediatric orthopaedics, adult orthopaedics, traumatic orthopaedics and orthopaedic research. The principles of orthopaedic surgery are coordinated with the teaching of the basic sciences as applicable.

An approved residency program in Orthopaedic Surgery is conducted by the faculty members of this department.

Required Course

MOR 50101—Introduction to Orthopaedic Surgery. This course is designed to provide first year students with an introduction to orthopaedic surgery. Its correlation with the basic sciences, especially anatomy, will be emphasized. The early part of the course will provide a review and interpretation of material necessary to provide an adequate background for discussion of the clinical aspects of traumatic and reconstructive orthopaedic surgery. This course is truly an introduction to the principle of musculoskeletal diseases and trauma.

PATHOLOGY

Professor Harry F. Sproat, M.D.,
Chairperson

Professors: Dahl, Gordon Jr.,
Associate Professors: Alexander,
Buddingh, Larsen,
MacNair, Messiha,
Morales, Pence, Rector

Assistant Professors: Balch, Gogate
Instructor: Irani

Pathology, often called the bridge between the basic sciences and clinical medicine, is concerned with the study of the causes, progressive mechanisms and effects of disease. The teaching of laboratory procedures that are helpful in the above studies is correlated with the teaching of the tissue changes that occur in the organ systems in disease processes.

The programs of the department are organized into four divisions: Anatomical Pathology; Clinical Pathology; Forensic Pathology; and Comparative Pathology.

In addition, the pathology department is involved in inter-departmental teaching and participation whenever indicated.

Required Courses

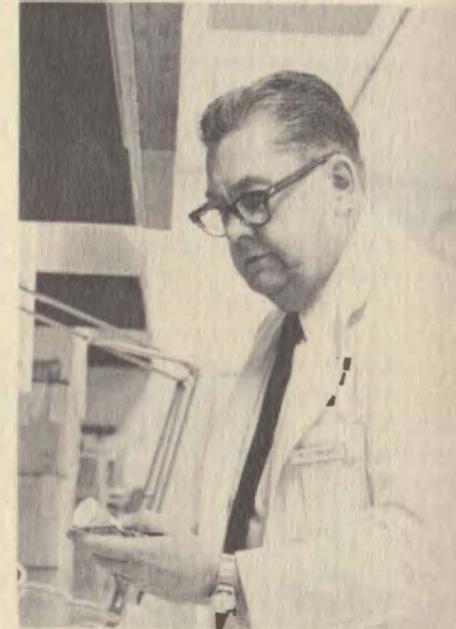
MPA 60743—Pathology I: General Pathology and Introduction to Clinical Pathology. A study of the major categories of general disease processes with an introduction to basic clinical laboratory procedures in which the students are required to attain a satisfactory degree of proficiency.

MPA 60744—Pathology II: Organ System Pathology. A study of specific disease states by organ systems. During both semesters, teams of three or four students also rotate on autopsy call at local hospitals where they observe autopsy examinations under the supervision of local pathologists who are members of the clinical staff. Use of laboratory procedures

in differential diagnosis is further demonstrated and correlated with systems being studied.

MPA 60110—Parasitology: Pathobiology. A study of the protozoan, helminth and arthropod parasites of man, vectors and animal reservoirs of human disease, and venomous and poisonous animals.

MPA 60101—Introduction to Forensic Medicine. Overview of regulations governing medical licensure and practice, informed consent, malpractice, medicolegal autopsies, medical records, workmen's compensation, prescription writing, drug control, competency/sanity/commitment, doctor-patient relationships.



Harry F. Sproat, M.D.

PEDIATRICS

*Professors: Mary Ann South, M.D.,
Chairperson; Edgar O.
Ledbetter, M.D., Vice-Chairperson*
*Associate Professors: Byrne,
Gururaj, Habersang,
Heim, Rai, Varma*
*Assistant Professors: Handal,
Maurer, Menchaca, Menendez,
Naqvi, Park, Parrino,
Sridaromont*
*Adjunct Assistant Professor:
Mirkovic*
Instructor: Levin

The course of study in the Department of Pediatrics provides each student with an adequate, closely supervised and progressively responsible learning experience in the care of infants and children, either sick or well. To this end, primary emphasis is placed on practical application of basic science knowledge to the solution of clinical problems. Students observe and participate in diagnostic and care programs concerned with the premature and the newborn, growth and developmental processes, immunology, infectious diseases, hematology, adolescent medicine, developmental disabilities, endocrinology, allergy, cardiology, psychiatry, communicable diseases and in the problems of a nutritional or metabolic nature. There will be emphasis on preventive as well as therapeutic medicine. Both the ambulatory and hospitalized patients, along with well-baby care, offer the student interested in family practice or in pediatrics as a specialty, the necessary broad range of experience.

Electives for senior students are available in nephrology, immunology, hematology,

adolescent medicine, developmental disabilities, endocrinology, cardiology, infectious disease and general pediatrics (at Lubbock) and hematology, infectious disease, and general pediatrics (at El Paso).

An elective course is available to freshman students in introduction to well-baby care at Lubbock. This gives an introduction to the care of infants as well as a broad overview of preventive pediatrics.

Required Course

MPD 71237—Pediatrics: A comprehensive overview of the physician's role in the care of the well and sick child.

Elective Course

MPD 50100—Introduction to Well-Baby Care.



Mary Ann South, M.D.

PHARMACOLOGY AND THERAPEUTICS

*Professor Alexander D. Kenny, Ph.D.,
Chairperson*
Professor: Pirch
*Associate Professors: Lombardini,
Pang, Potter*
Assistant Professor: Tenner

Pharmacology is the biomedical science concerned with the interactions of chemicals with living systems and their constituent parts. The emphasis in the Doctor of Medicine Program is on the study of chemicals in their role as therapeutic agents used in the prevention, alleviation, treatment, or diagnosis of human disease, and as toxic agents producing undesirable effects. The laboratory component focuses on autonomic-cardiovascular pharmacology. Clinical relevance is stressed both in the lecture material and in a complementary series of clinical conferences.

Required Course

MPH 60613—Medical Pharmacology: A study of chemicals in their role as therapeutic agents used in the prevention, alleviation, treatment, or diagnosis of human disease, and as toxic agents producing undesirable effects.



Alexander D. Kenny, Ph.D.



Lester E. Wolcott, M.D.

PHYSICAL MEDICINE AND REHABILITATION

*Professor Lester E. Wolcott, M.D.,
Chairperson*
Associate Professor: Richards
Assistant Professor: Heinrich

The Department of Physical Medicine and Rehabilitation participates in educational, service and research activities. A comprehensive restorative patient care program offers the environment for the students' clinical experience as well as a service to the community and the region. This clinical experience is supplemented by educational materials for independent study, conferences and seminars on the structural and functional characteristics of human organisms related to health, mobility, self care and other normal human activities. Electro-diagnostic techniques and therapeutic use of physical agents also are demonstrated. Basic and clinical research activities related to physical medicine and rehabilitation are pursued.

PHYSIOLOGY

*Professor Charles D. Barnes, Ph.D.,
Chairperson*
Professors: Hughes, Kopetzky
*Associate Professors: Crass, Davies,
Lutherer*
Assistant Professors: Nathan, Orem

The Department of Physiology in the School of Medicine offers educational and research programs for students working for professional degrees in medicine, related health sciences areas and advanced degrees in Physiology.

Required Course

MPY 51022—A study of human physiology with major emphasis on body controlling systems and their interrelations. Pathophysiological mechanisms also are stressed.

Elective Courses

MPY 50301—Neurophysiology—Physiology of nerve cells and their processes with emphasis on excitability, conduction, synaptic transmission. Major portion of course devoted to physiology of neuronal systems including mechanisms of sensory and motor system function, neurobiological rhythms, integration, and role of the central nervous system.

MPY 50401—General Physiology—A general course in mammalian physiology designed to teach the basic principles of physiology. The subject matter will include cellular physiology, neuro, cardiovascular, respiratory, renal, water and electrolytes, gastrointestinal and endocrine as an introduction to physiology of the organ systems, with emphasis on the human.

MPY 60330—Clinical Physiology of Respiration—Mechanical, distributive, alveolar, transport, and integrative respiratory functions as applied to human pathology.

MPY 60334—Gas Exchange and the Regulation of Respiration—An in-depth study of the regulation of respiration and gas exchange in humans and in a variety of related species. Some emphasis will be

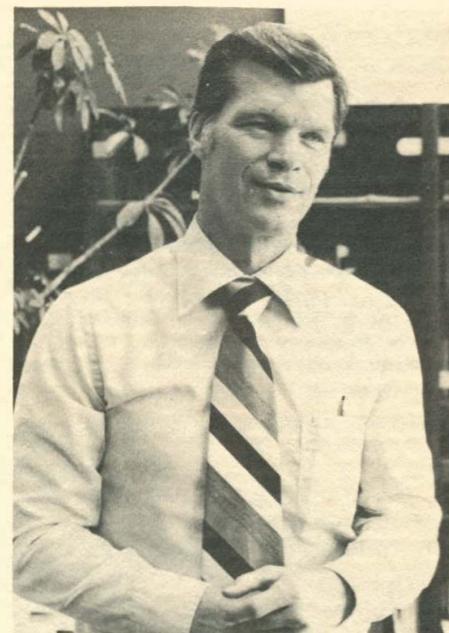
placed on the comparative aspects of respiratory physiology. The course will consist of discussions and oral presentations of original papers by the class. A written report dealing with some aspect of respiratory physiology will be required.

MPY 60335—Membrane Biophysics—Current topics and techniques in the physiology of excitable membranes. Discussion of Hodgkin-Huxley papers and more recent theoretical approaches to excitation and conduction in nerve, skeletal muscle, and cardiac muscle. Introduction to current biophysical techniques such as the voltage clamp, membrane noise analysis, lipid bilayers, and optical fluorescence.

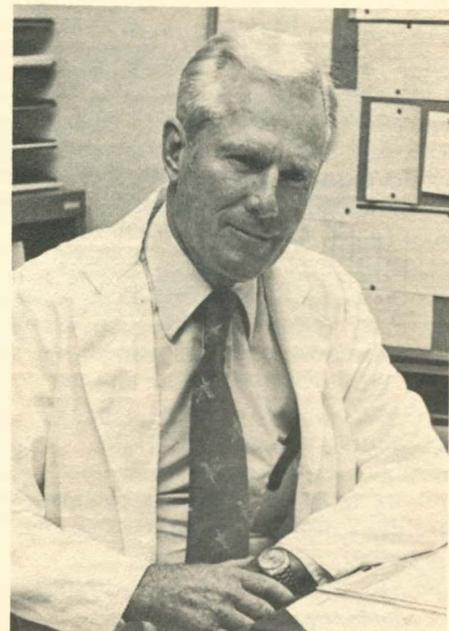
MPY 60401—Advanced Physiology I: Neurophysiology—An in-depth study of the nervous system from the molecular to the behavioral level, with special emphasis on electro-physiology and reflexes.

MPY 60402—Advanced Physiology II: Circulation, Respiration, and Fluid Balance—A detailed study of respiration and the composition, circulation, and excretion of body fluids, including acid-base balance.

MPY 60403—Advanced Physiology III: Gastrointestinal System, Metabolism, and Endocrines—A study of gastro-intestinal function and the endocrine regulation of metabolic pathways, utilizing the classical and contemporary literature.



Charles D. Barnes, Ph.D.



*Robert H. Kokernot, D.V.M., M.D.,
Dr. P.H.*

PREVENTIVE MEDICINE AND COMMUNITY HEALTH

Professor Robert H. Kokernot,
D.V.M., M.D., Dr. P.H.,
Chairperson
Professor: Tyner
Associate Professors: Gruber, Way
Assistant Professor: Hayes

The principal goal of this department is directed toward prevention and health maintenance. A new national health strategy has emerged with emphasis on disease avoidance as the best way of assuring higher levels of health and a higher quality of living. It also has become abundantly clear that disease avoidance is by far the most economical approach in terms of money, manpower and effort.

The teaching objectives of this department are to introduce principles and methods of general preventive medicine and to show their applicability to other medical specialties. The service objectives involve participation in public health and neighborhood clinics as well as other health related community activities. Research activities are focused on models for health care delivery.

Required Course

MPM 60210—Preventive Medicine and Community Health: This course introduces principles and methods of general preventive medicine as it involves both the individual and his community.

PSYCHIATRY

Professor K. D. Charalampous, M.D.,
Chairperson
Professor: Tyner
Associate Professors: Erickson,
Johnson, Karamanos, Weddige
Assistant Professors: Aguirre,
Arredondo, Briones, Einisman,
Farr, Munyon, Perez

The major purpose of the educational program is to provide comprehensive understanding of the field of psychiatry. The curriculum emphasizes the integration of broadly based knowledge and supervised clinical experience. The students are expected to obtain a basic understanding of the behavioral and emotional disturbances typically presented by psychiatric patients. A major theoretical tenet is that normal growth and development within the life cycle and the biological roots of psychiatry are essential features for a contemporary mastery of psychopathology.

The instructional approach uses a wide variety of innovative techniques within different clinical settings, providing both small group and individualized learning experiences together with traditional lectures to implement the objectives of the program. Cooperative teaching programs, using specialists from other departments, as well as specialists from the Texas Tech University Complex, insure a broadly based choice of elective courses for the student during his final trimester.

Required Courses

MPS 60452—Introduction of Psychiatry: This course includes an overview of normal emotional growth and development as well

as an introduction to clinical psychopathology. Teaching methods include lecture, videotape presentation, seminar, and actual patient demonstration. The course serves as a didactic base for the Psychiatric Interview Course and the Junior-level Psychiatric Clerkship.

MPS 60273—The Psychiatric Interview as Process and Diagnostic Technique: The emphasis in this introductory course is the psychiatric interview, its value as information gathering and therapeutic technique. A faculty member supervises each student interview of a patient. A discussion follows which focuses primarily on the conduct of the interview and the psychopathological implications derived.
MPS 71257—Junior Clerkship: The clerkship provides an intensive and comprehensive experience in the field of psychiatry. The students obtain a supervised clinical experience in interviewing, diagnosis and treatment of patients. The students have supervised experience in both inpatient and outpatient facilities. An integral part of the clerkship is the students presentation at a case conference of a diagnostic formulation and treatment plan for a psychiatric patient. A seminar series augments supervised clinical seminar series



K. D. Charalampous, M.D.

RADIOLOGY

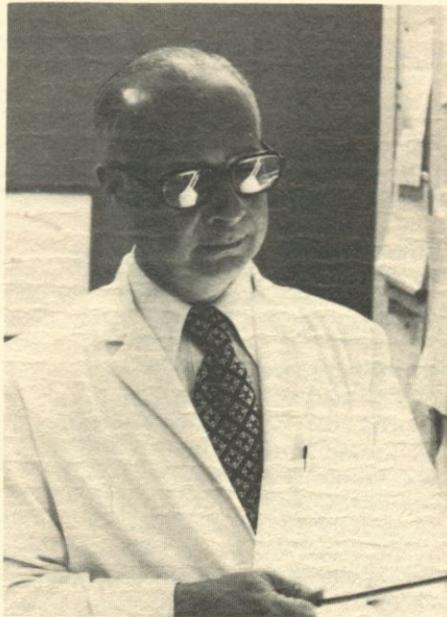
Professor Jay P. Sackler, M.D.
Chairperson
Professor: Dunnagan
Associate Professors: Terry, Magill
Assistant Professors: Blackwell,
Leo, Strang, Luttenton

The Department of Radiology is concerned with the diagnostic uses of ionizing radiation and ultrasound and the therapeutic applications of radioactivity.

The diagnostic radiologist studies the physiology and anatomy of the human body in health and disease. Some of the available tools include radiography, fluoroscopy, diagnostic ultrasound, nuclear medical imaging and computed tomography.

The therapeutic radiologist uses ionizing radiation to treat malignant disease. He is also known as a radiation oncologist.

Radiology and radiation physics are fields which provide basic knowledge for the radiologist.



Jay P. Sackler, M.D.

SURGERY

Full Time

Professor Francis C. Jackson, M.D.,
Chairperson

Professor Mario Feola, M.D.,
Associate Chairperson
(Amarillo)

Professor: Edward Saltzstein, M.D.,
Associate Chairperson (El Paso)

Professor: Francis J. Behal, Ph.D.,
(Biochemistry)

Professors: Cocke, Dunn,
El-Domeiri, Firor, Hardaway,
Lawton

Professor: (Adjunct) Eisner (El Paso)

Associate Professors: Austermann
(El Paso), Baker, Meyer

Assistant Professor: Beesinger,
Peacock (El Paso)

Part Time

Clinical Professors: Bricker, Dalton,
Salem, Watkins (Amarillo),
Woolam

Associate Clinical Professors:
Spaulding (Big Spring),
Wegleitner (El Paso), Koch,
Hewitt

Assistant Clinical Professors: Rao
(Big Spring), Renault, Shroff (Big
Spring)

Clinical Instructor: Hugo, Lee
(El Paso)

Division of General Surgery

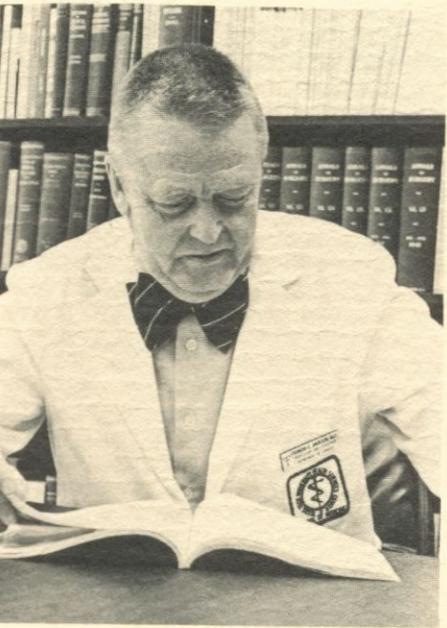
Clinical Professor: Robert J. Salem,
M.D., Chief (Acting)

Professors: Eisner (El Paso)
El-Domeiri, Jackson, Lawton,
Saltzstein (El Paso), Hardaway
(El Paso)

Associate Professor: Baker

Assistant Professor: Beesinger,
Peacock (El Paso)

Clinical Professor: Woolam



Francis C. Jackson, M.D.

Instruction provided by the Division of General Surgery currently includes a correlative course in Clinical Sciences (Clinical Anatomy 50100, 16 hours, Semester I) and a clerkship in the Junior year (Surgery 70, MGS 71227, 8 weeks).

Electives (one month each) are offered in the Senior year.

All programs are designed to acquaint the student with the clinical discipline of surgery and introduce him to the principles and techniques used in the operative management of surgical disease and injury.

Basic science prerequisites include anatomy, pathology, physiology, pharmacology, and microbiology. The major clinical prerequisite is Introduction to Medicine 60433 (Physical Diagnosis).

The Introduction to Surgery provided in the **Junior Clerkship** reinforces an understanding of the pathophysiology of surgical disease, the techniques of arriving at judgmental decisions in management, pre and post operative care, and emergency care. The student learns as a participating member of the surgical team at one of the primary teaching centers affiliated with the Medical School. In this role, he masters the technique of taking a surgical history, performs a physical examination, learns certain basic diagnostic and therapeutic techniques, and attends operations and autopsies. Teaching sessions include ward rounds, a lecture series ("Introduction to Surgical Diseases") reviews of patients with a faculty member and attending conferences. His performance is continuously supervised by faculty and resident surgeons.

The **Senior Clerkships** are provided in all surgical specialties as elective preceptorial assignments to West Texas and other surgical centers. The purpose is to acquaint the student with the special management of patients in neurosurgery, urology, otorhinolaryngology, plastic and reconstructive surgery, pediatric surgery, oncology, organ transplantation, and trauma. The student usually functions at a more advanced level as a team member and in certain instances may serve as an intern.

Grand Surgical Rounds for faculty, practicing physicians, residents, and students are held weekly on Saturdays in the Medical School auditorium (5B-149).

Required Courses

MGS 50100 (Clinical Anatomy):

(Semester I): This course correlates gross anatomy with clinical management of disease and injury for the beginning medical student. The importance to the practicing physician of an anatomical knowledge of location, structure, function, nerve and blood supply of vital systems is emphasized.

MGS 71227 (General Surgery):

(Semester V-VI): An introduction to the pathophysiology of surgical diseases and the principles and techniques used in their diagnosis and management. Course includes participation in pre and post operative patient care, operating room and clinic experience as a member of a team of the surgical faculty.

Division of Cardiovascular Surgery

Clinical Professor: Donald L. Bricker,
M.D., Chief (Acting)

Professor: Feola (Amarillo)

Clinical Professor: Dalton

The division provides a series of lectures on the fundamentals of cardiovascular disease and management during Semester I

(Clinical Anatomy, MGS 50100), the Junior Surgical Clerkship (MGS 71227) and an elective surgical clerkship. During the Senior year elective, the student acts as a preceptor to members of the division and learns the techniques of the diagnosis and surgical management of congenital and acquired disease. The student is exposed to a large number and variety of cardiovascular problems at one of the affiliated teaching hospitals. Instruction is also provided for residents in general surgery and family practice.

Division of Neurological Surgery

Professor: J. Dunn, M.D.,

Chief

Associate Professor: Meyer

This division provides a series of lectures during the neuroscience correlation period of Semester II and the Junior Surgical Clerkship.

Elective clerkships are offered in the senior year with student preceptorships served with the Chief of the Division and members of the neurosurgical faculty of the Regional Academic Health Centers. Special attention is given to the neurological examination and the management of pain problems. The Tarbox Clinic in Lubbock is the primary center for neurological diseases.

Division of Oncology

Professors: Ali A. H. El-Domeiri, M.D., Chief, Richard L. Lawton, M.D.

A senior elective is offered in surgical oncology. Experience includes participation in the management of the patient with

cancer using a multimodal, multi-disciplinary approach to the treatment of the disease. Because of the many 'faces' of cancer, it is essential that students be exposed to a broad patient population presenting a wide variety of associated problems (i.e., paraneoplastic). The multimodal approach is divided, or combined into surgical, radio, chemo, and immunotherapeutic techniques. Special surgical therapeutic modes will be discussed such as isolation perfusion of extremities, radical and extended radical techniques, prolonged continuous infusion of anatomic areas, and adjuvant therapy.

A tumor board and conference meets weekly. In addition, discussions and lectures of the natural history and etiology of cancer, are held regularly. The oncology clinics are held 3 times a week and cover tumors in different anatomic sites—head and neck, breast, G.I., etc. There is an active inpatient service which permits the student to participate in the day-to-day management of patients with malignant disease. There is a fully equipped research laboratory with on going work in tissue culture and experimental chemotherapy and immunotherapy.

Division of Oral Surgery

Chief (Vacant)

This Division was formed at the time of the opening of the HSC Hospital in Lubbock in the spring of 1978. Five oral surgeons were appointed and provide educational and patient care services on call and are required at two academic health centers.

Division of Organ Transplantation

*Professor Richard L. Lawton, M.D.,
Chief*

Experience in the surgical management of end stage renal disease is offered as an elective in the Senior year. The student will be exposed to the practical and theoretical aspects of transplantation, immunology, the use of artificial organ and man-machine interface as a life support system. Experience will more specifically include participation in the selection and management of the transplant patient, experience in techniques of histocompatibility and clinical immunology, and the follow-up process through weekly conferences. In addition, the student will be instructed in long term storage of vital organs under a variety of conditions. Unique and standard techniques for prolonged vascular access will be included. Finally, the experience will bring the student in contact with a variety of specialties including social science, dietetics, nursing, nephrology, and the entire spectrum of medical specialties. In addition to the senior elective, a series of introductory lectures is offered during the Junior Clerkship (MGS 71227).

Division of Otorhinolaryngology

Chief (vacant)

Associate Clinical Professor:

Wegleitner (El Paso)

Assistant Clinical Professor: Renault

This division provides instruction to Freshmen (Clinical Anatomy 50100), Sophomores (MGS 60101), Juniors (MGS 71227) an an elective for seniors. The courses introduce the student to the

methodology of examining the ear, nose, throat, and oral cavity, using otolaryngological diagnostic instruments. Lectures, and demonstrations are provided on diseases common to the upper respiratory tract, oral cavity, and ear including allergies, infections, tumors, and trauma. The senior elective is a preceptorial assignment to one of the clinical or full time faculty.

Required Course

MGS 60170 (Introduction to Otorhinolaryngology): This course is a series of lectures given in conjunction with the Medicine 60433 (Introduction to Medicine). The student is taught the proper techniques and instruments for examination of the ear, nose, and hypopharynx. Common diseases are discussed in terms of changes noted in normal examinations.

Division of Pediatric Surgery

Professor Hugh V. Firor, M.D.,

Chief

This division, in cooperation with the Department of Pediatrics, provides a series of lectures to junior surgical clerks, (MGS 71227), residents, and faculty on the management of surgical diseases of infants, children and adolescents. Emphasis is focused on congenital defects and on techniques and concepts of management unique to this group. A senior elective clerkship is also offered. And the student serves as an acting intern and receives advanced training in the intensive care of surgical pediatric patients.

Division of Plastic and Reconstructive Surgery

Professor: W. M. Cooke, Jr., Chief
Associate Clinical Professors:
Koch, North
Clinical Instructor: Hugo

This division presents the principles of plastic and reconstructive surgery to the Freshmen (Clinical Anatomy 50100) and Juniors (MGS 71227) and offers electives for Seniors. Included in these courses are instruction in the principles of wound healing; restoration of musculo-skeletal function, repair of maxillo facial injuries, replantation of extremities, microsurgery, correction of certain congenital defects and reconstruction. Seniors may elect to spend their rotation with faculty preceptors or at other medical centers associated with TTUSM.

Division of Surgical Research Laboratories

Professor Francis J. Behal, Ph.D., Chief
Professors: El-Domeiri, Feola (Amarillo), Hardaway (El Paso), Jackson, Lawton, and Saltzstein (El Paso).

The Surgical Research Laboratories are concerned with the investigative activities of all members of the Department of Surgery in Lubbock as well as in the Regional Academic Health Centers at El Paso and Amarillo. This Division provides for the articulation of the sciences basic to the medical and the surgical sciences on a day-to-day basis. One of the major objectives of the Division is to assist in solving patient care problems arising on

the surgical wards, to seek new and improved methods of patient management. Another objective is to promote and facilitate research, basic and applied, by each member of the surgery faculty, and to provide a milieu for students and surgical residents oriented toward research. The laboratories are also available to assess new operative techniques, improve operative skills (microsurgery), and to devise new procedures for old problems.

The Surgical Research Division offers research electives to Senior Medical Students to meet the particular needs and/or interests of such students.

Division of Thoracic Surgery

Clinical Professor: Martin L. Dalton, Jr., Chief (Acting)
Professor: Feola (Amarillo)
Clinical Professor: Bricker
Assistant Clinical Professor: Rao (Big Spring)

The Division of Thoracic Surgery is concerned with instruction in the broad management of surgical diseases of the lungs, pleura, mediastinum and chest wall. The teaching program is similar in format and design to that in the Division of Cardiovascular Surgery. A Senior elective includes care responsibilities in a preceptorial setting and includes ward round seminars, operating room experience, and pre and post operative care.

Division of Trauma and Burns

Associate Professor: C. R. F. Baker, Jr., M.D., Chief
Assistant Professor: D. Beesinger, Director, Burn Service

The Division of Trauma and Burns is concerned with the physiologic and metabolic response of the body to severe injury. The division offers a Senior elective on resuscitation, evaluation, triage, and initial management of injured patients. The supportive management of injured patients. The supportive management of the severely traumatized patient includes particular attention to the fluid and electrolyte, renal, pulmonary, gastrointestinal, and nutritional problems during the most acute phase of care. The teaching mechanisms employed are introductory clinical material during basic science years, lectures within a core surgical curriculum (MGS 71227), clinical exposure during clerkships, including emergency department rotations, conferences, and rounds on the trauma service and unit.

A senior elective clerkship is offered in Lubbock and El Paso. The student serves as an intern on these services. Emphasis is on training in manipulative skills of patient management.

Division of Urology

Associate Clinical Professor A. Lee Hewitt, M.D., Chief (Acting)
Associate Professor: Austerman (El Paso)
Assistant Clinical Professor: Shroff (Big Spring)

This division provides two series of lectures on the genitourinary tract: one during Semester I of Clinical Anatomy (MGS 50100) and the second during the Junior Surgical Clerkship (MGS 71227) as well as offering a one month, preceptorial elective in the Senior year at one of the medical centers affiliated with TTUSM. The student is instructed in the urological diagnostic steps, the management of common urological disorders and the basic pathological and abnormal physiological changes which occur with these abnormalities.

INTERNSHIP AND RESIDENCY PROGRAMS

As a regional medical school with three clinical campuses being developed in Amarillo, El Paso, and Lubbock, emphases in primary-care programs with appropriate specialty and sub-specialty residencies are in various stages of development at Texas Tech University School of Medicine (TTUSM). A fourth center is in the planning stage for the Permian Basin (Odessa-Midland). Primary teaching hospitals are available in El Paso (R. E. Thomason General Hospital), Lubbock (Health Sciences Center Hospital) and Amarillo (Northwest Texas Hospital) with a complement of federally supported and community affiliated facilities available for teaching. Existing residencies are approved by the Council on Medical Education of the American Medical Association, as well as by the respective medical specialty boards.

Residency programs currently approved at Texas Tech University School of medicine include:

- Anesthesiology
- Dermatology
- Family Practice
- Flexible Internship
- Internal Medicine
- Obstetrics and Gynecology
- Ophthalmology
- Orthopaedic Surgery
- Pediatrics

- Fellowship in Neonatology
- Preventive Medicine
- Psychiatry
- Surgery

TTUSM participates in the National Residency Matching Program (N.R.M.P.) and follows the policies as established by this program. Information relative to the N.R.M.P. may be obtained by



writing to:
The National Residency Matching Program
 1603 Orrington Avenue
 Evanston, Illinois 60201

GENERAL REQUIREMENTS FOR APPOINTMENT

All applicants are required to be graduates of a medical school approved by the Council on Medical Education of the American Medical Association or from a medical school listed by the World Health Organization. Graduates of foreign medical schools must be

certified by the Educational Council for Foreign Medical Graduates (ECFMG), or have fulfilled AMA requirements under the "fifth pathway", or be licensed to practice medicine in a state or territory of the United States. Interns and residents, in general, do not need to hold a license to practice in Texas, but those who do not must apply for an institutional permit and annual registration from the Texas State Board of Medical Examiners. This may be done through the Office of Graduate Medical Education at the time of

beginning service and thereafter on or before each July 1.

Application and/or information requests should be directed to:

*Office of Graduate Medical Education
 Texas Tech University School of Medicine
 Lubbock, Texas 79430*

*Or:
 Department in which the applicant has an interest.
 Texas Tech University School of Medicine,
 Lubbock, Texas 79430*

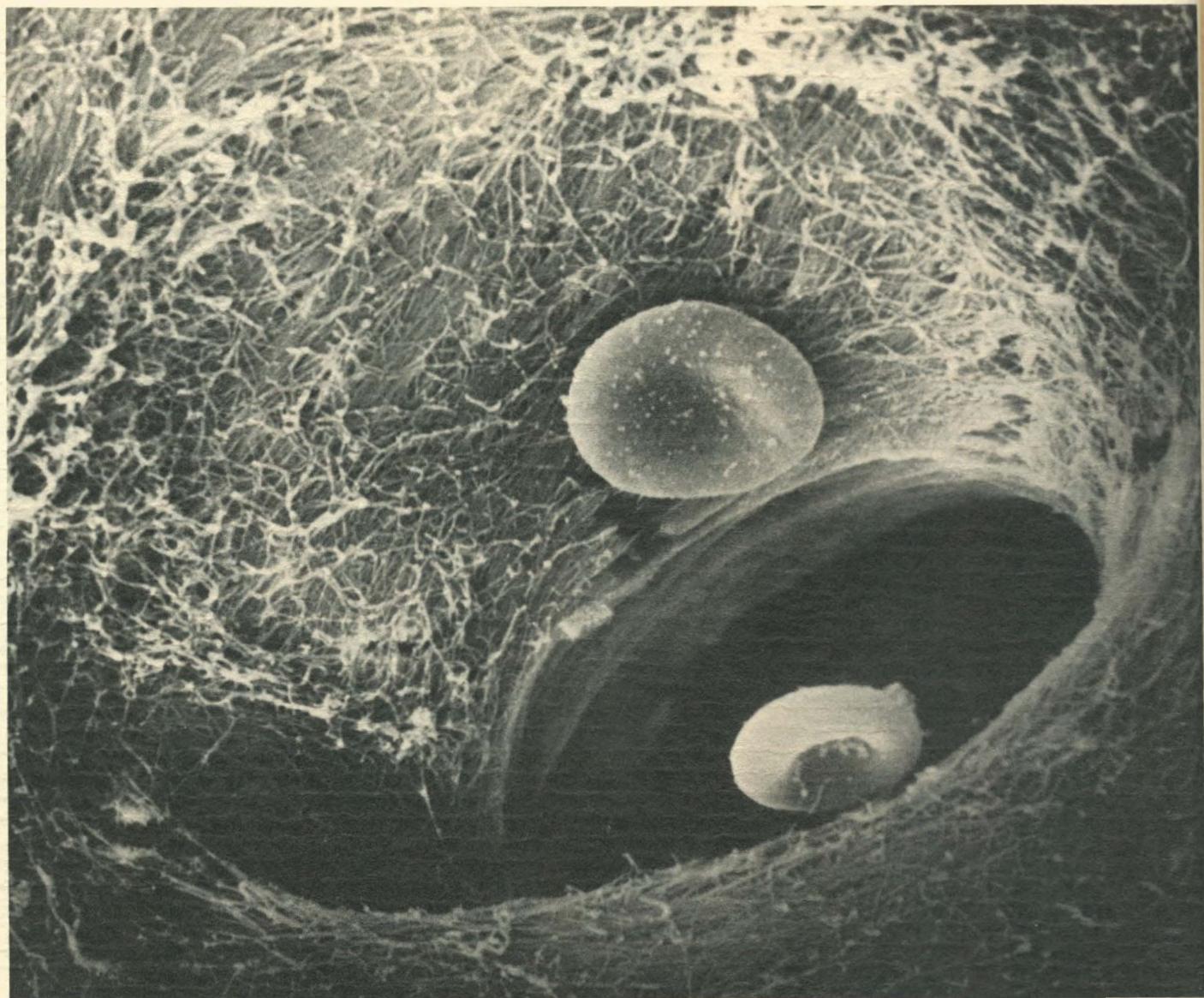
GENERAL INFORMATION

Development of a strong program of graduate education in the basic medical and related health sciences is one of the responsibilities and goals of the Texas Tech University Health Sciences Center. This decision is based on the realization that present day medicine is dependent upon the academic framework and intellectual discipline of the chemical, biological, behavioral and medical sciences.

Graduate programs leading to the Master of Science and Doctor of Philosophy degrees are offered in the basic medical sciences: Anatomy, Medical Biochemistry, Medical Microbiology, Pharmacology and Therapeutics, and Physiology. Interdisciplinary M.S. and Ph.D. programs with concentration in Biomedical Engineering are offered through the cooperation of the department of Biomedical Engineering and the College of Engineering at Texas Tech University. Individual departmental descriptions can be found within this bulletin.

The Master of Science and Doctor of Philosophy degrees emphasize research. The degrees will be conferred in recognition of the soundness of scholarship in the specific field of knowledge. Evidence of such attainment will be provided through comprehensive written and oral examinations and through the presentation of an acceptable thesis or dissertation based upon independent research.

The basic admission requirements include a Bachelor's Degree or the equivalent from an accredited college or university.



An average of B and a score of 1100 on the combined verbal and quantitative portions on the Graduate Record Exam is highly desirable.

Instructions and materials for making application for admission to any of the programs at Texas Tech University Health Sciences

Erythrocytes photographed through electron microscope

Center are available from:
Dr. Stanley S. Lefkowitz
 Associate Dean for Graduate Programs
 Texas Tech University
 School of Medicine
 Lubbock, Texas 79430

The Texas Tech University School of Medicine reserves the right to cancel any scheduled course, as well as to withdraw any program from the list of graduate offerings, if the best interests of the institution require such action.

ANATOMY

Professor William G. Seliger, Ph.D., D.D.S., Chairperson
Associate Professors: Coates, Markwald
Assistant Professors: Bolender, Casady, Dalley, Hutson, Karkos, Lox, Yee

Majors and Minors for the Master's Degree and the Doctor's Degree in Anatomy

The Department of Anatomy offers programs leading to the Master of Science and Doctor of Philosophy degrees in the anatomical sciences. The objective of this graduate training is to prepare superior students for careers in teaching and research in the field of anatomy. The major areas of employment for anatomists are in medical and paramedical professional schools and research institutes.

The Department of Anatomy offers a program emphasizing well-rounded training in gross anatomy, microscopic anatomy, developmental anatomy and neuroscience. Specialized training is offered in areas such as histocytochemistry and ultrastructural morphology, including analysis of clinical specimens, mineralized tissue study, and instrumentation. Every effort is made to use the most modern concepts of teaching, stressing the relationships between structure and function.

Graduate Courses

ANM 5411—Anatomy I m: Human micro-anatomy and embryology. An integrated course of Anatomy starting with the ultrastructural and light microscopic study of cells and continuing through developmental and microscopic anatomy. This course must be taken in conjunction with ANM 5811 Anatomy I g.

ANM 5811—Anatomy I g: A highly integrated course of general anatomical study (including human prosection) which embodies the gross morphology of the body and coordinates it with the clinical, developmental and microscopic aspects of the human body. This course must be taken in conjunction with ANM 5411 Anatomy I m.

ANM 5612—Anatomy II: Neuroscience—A detailed course of neuroscience, passing from the study of ultrastructural cytology, through the light microscopic, gross and neuroanatomical aspects of the nervous system. This course includes strong emphasis on the functional and clinical aspects of neuroscience.

ANM 5301—Clinical Applications of Electron Microscopy: Specimen preparation, theory and use of the electron microscope for clinical medicine, including specimen analysis and diagnosis of disease.

ANM 5302—Histochemistry: Techniques and applications of histochemical techniques for light and electron microscopy.

ANM 5303—Advanced Anatomical Studies: Advanced studies in surgical anatomy, gross anatomy, histology, embryology, neuroscience, or cell biology.

ANM 5304—Advanced Cytochemistry: Discussions and applications of current cytochemical theory and techniques.

ANM 5305—Medical Cell Biology: An interdepartmental course for graduate students in the biomedical sciences. Emphasis will be placed on the medical aspects of cell structure and function, including analysis of recent concepts and current literature. Techniques and methods of cell biology will also be examined in the laboratory.

ANM 5306—Biodynamics of Bone: Study of the morphology and cell biology of bone and bone changes.

ANM 5307—Surgical Anatomy: A study of the anatomy of the landmarks, approaches, and problems of the surgeon as related to the head and neck, musculoskeletal system, abdomino-pelvic cavity, and thoracic cavity.

ANM 5309—Biology of Reproduction: This course will analyze the various aspects of biological reproduction with an emphasis on human problems. The reproductive process will be taught from union of the gametes to the delivered fetus. Morphology, in relation to functional and pathological states, will be stressed. Social

aspects will be considered as they relate to current reproductive problems, i.e., abortion and contraception. The course will draw upon experts in the field from anatomy, medicine, and physiology.

ANM 5310—Microscopy and Microscopic Technique: Prerequisite: BIOL 431, Biological Techniques, or its equivalent. The first half of the course will be concerned with the theory, design, and use of the many various forms of light microscopes. The course will include lectures, demonstrations, and use of these instruments as well as an Abbe diffraction demonstration microscope explaining his theory and principles of image formation. The second half of the course will be concerned with the theory, techniques, and practices of general histological and cytological preparations. The various microtomes, fixatives, embedding materials and stains will be discussed and a number of them will be used in the laboratory.

ANM 5311—Advanced Musculoskeletal System: Detailed study of the skeleton and muscles with the aid of models and gross dissection. The purpose of this course is to present a detailed view of the skeleton and muscles and their interrelations to produce movement. A detailed study of the joints will be presented, as well as a study of the functions of muscles and their innervations.

ANM 5312—Advanced Medical Embryology. The purpose of this course is to provide an in-depth study into the developmental processes necessary to transform a zygote into a term fetus. Basic concepts of medical genetics will be utilized in order to provide a better understanding of the mechanisms involved in congenital malformations. Among the topics to be discussed will be: gametogenesis, fertilization, placentation, embryogenesis, experimental embryology, medical genetics and dysfunction, and congenital malformations. A laboratory will provide experience in identifying embryonic and fetal structures. Mechanisms of teratology will be studied through participation in a simple research project.

ANM 5113, 5213, 5313—Selected Topics in Anatomy. Material may vary from semester to semester. May be repeated for credit if different topics are covered.

ANM 5316—Autonomic Nervous System: Prerequisite: Anatomy II or its equivalent. A study of the autonomic nervous system with major emphasis on the morphological, functional and developmental aspects.

Clinical applications are also stressed.
ANM 5317—Neuroendocrinology (3:3:1). Lectures and discussions on selected topics of current interest concerning the regulatory mechanisms and interrelationships of the neural and endocrine systems. The role of the hypothalamus as it relates to and controls the other endocrine organs will be stressed.
ANM 5318—Structure and Function of the Nervous System I: A detailed study of the neural system. An examination of both gross and fine structure, as well as cell biology of both the peripheral and central portions of the nervous systems will be included. The basic structures that are immediately pertinent to the makeup and function of the nervous system (meninges, vasculature, Schwann cells, microglia, neuroglia, ependyma, choroid plexus, neurons, neuropil, as well as special related structures, including pituitary gland, pineal body, other neuroendocrine structures, CSF, and interstitial substances) will be studied. In reviewing these, it is necessary to touch upon the physiology, chemistry and physics, as well as the microanatomy (including ultrastructure) of those elements. Using this cellular approach, the naturally complex functions of this system will be simplified.

ANM 5319—Structure and Function of the Nervous System II: Prerequisite: Structure and Function of the Nervous System I. A variety of methods of investigation used for the functional study of the nervous system will be examined. Techniques and methods of measuring morphological, metabolic and electrical properties of nervous tissue will be discussed, demonstrated and used. These will be utilized to clarify the functional organization of the nervous system. Included will be applications and use of the cathode ray oscilloscope in the study of nerve impulses and nerve pathways (bioelectric study), cytochemistry, for interrelating some of the more important chemical systems with the functioning of the neural complex, as well as light and electron microscopy for the correlation of structure and function. This course will also include current controversies in neural research and will indicate some of the directions in which the neural sciences will move in the next decade.

ANM 5321—Advanced Gross Anatomy. In-depth study into the gross anatomy of the following specific regions of the

human body:
Topographical Anatomy
Head and Neck
Thorax and Abdomen
Pelvis and Perineum
Extremities and Back

ANM 5333—Microscopic Anatomy of Human Tissues and Organs. A detailed course in microscopic anatomy designed primarily for non-anatomy graduate students, advanced undergraduates in the biological sciences and allied health students who desire additional training in microscopic anatomy.

ANM 5613—Advanced Microscopic Anatomy. The course supplements and extends the core microscopic material of Anatomy I by emphasizing ultrastructural, cell biological and histopathologic aspects of tissues and organs. Attention is focused on connective tissue macromolecules, calcification, ossification, bone remodeling, muscle contractions, platelet aggregation and blood clotting, nerve intracellular transport and communication, immunologically active connective tissue cells, micro-circulation and structural-functional correlates of the endocrine, renal and reproductive systems. Didactic material is presented through formal lectures or student seminars covering current journal articles. Laboratories consist of completing fourteen fully programmed 35mm slide lessons on human cells, tissues and organs. Additionally, each student is required to identify and record photomicrographically selected structures from a collection of prepared tissue sections.

ANM 631—Master's Thesis: Enrollment required at least twice.

ANM 711—Anatomy Seminar:

ANM 731—Anatomical Research:

ANM 831—Doctor's Dissertation:

Enrollment required at least four times.

BIOCHEMISTRY

Associate Professor John W. Pelley, Ph.D., Acting Chairperson
Associate Professors: Everse, Garner, Morrow, Perez
Assistant Professors: Little, Stocco

The Department of Biochemistry of the School of Medicine provides the educational and research programs in biochemistry for (1) professional students in medicine and related health sciences, (2) graduate students majoring or minoring in biochemistry, and (3) medical residents and housestaff.

Graduate Student Program:
The Department of Biochemistry offers opportunities for study and research leading to the Master of Science and/or Doctor of Philosophy degrees in Medical Biochemistry.

Each student in this program must take a Preliminary Examination. This examination will include an assessment of the student's background in physical, organic, and either analytical or inorganic chemistry to ascertain his comprehension of these fields. The nature of the Preliminary Examination will be determined in part by the student's undergraduate curriculum. Satisfactory proficiency in one foreign language and in statistical methods are requirements for the Ph.D. degree.

The Qualifying Examination (for admission to candidacy for the Ph.D. degree) consists of two parts; the first part is administered at the end of the first year, and the second part is given after most of the coursework has been completed. A thesis based on original biochemical research is

required for the master's degree and the Ph.D. degree. Credit for the master's thesis shall be for at least six hours credit, but not more than nine hours credit. Credit for the doctoral thesis shall constitute not less than one-sixth nor more than one-third of the total work presented for the Ph.D. Completion of the master's degree is not an obligatory step leading to the Ph.D. degree.

The major areas of research in the Department of Biochemistry are:

1. disorders of mucopolysaccharide metabolism and metabolism of complex carbohydrates
2. genetics of somatic cell hybrids
3. chemical and kinetic mechanism of enzyme action
4. mechanism of action of thyroid hormones in differentiating tissues
5. mitochondrial compartmentation of enzyme complex aggregates
6. biochemical aspects of wound healing and hypertrophic scar formation
7. immobilized enzymes in chemotherapy
8. interconversion of lipids and structure of pancreatic lipase
9. development of new techniques for clinical analysis
10. Comparison of mitochondria in normal and neoplastic tissue
11. Effects of various gonadotropins on testis cells in culture

Inquiries about the graduate program in Biochemistry should be sent to:

Coordinator of Graduate Studies
Department of Biochemistry
Texas Tech University
School of Medicine
Lubbock, Texas 79430

Graduate Courses

BCH 5721—Biochemistry (7:5:2).

Prerequisite: CHEM 335, 336 or equivalent. Human life processes at the molecular level with emphasis on biochemical homeostasis and control mechanisms. This course consists of a series of closely related lectures, laboratories, and clinical correlation sessions.

BCH 631—Master's Thesis (3). Enrollment required at least twice.

BCH 6127—Seminar in Somatic Cell Genetics (1:1:0). Prerequisite: Permission of instructor. May be repeated.

Presentation of current research topics in the genetics and molecular biology of eukaryotic cells, and related areas: oncogenesis, differentiation, ageing.

BCH 6320—Clinical Biochemistry (3:3:0).

Prerequisite: BCH 5721, CHEM 433, 436, 437, or equivalent. A study of clinical chemistry with emphasis on the interpretation of clinical laboratory data and concepts of laboratory-assisted diagnosis of human disease.

BCH 6321—Biophysical Characterization of Macromolecules (3:3:0). Prerequisite: BCH 5721, CHEM 433, 436, 437 or equivalent. A study of the characterization of macromolecules with major emphasis on the analytical ultracentrifuge and related instrumentation, consisting of lectures and laboratory exercises and familiarity with the analytical ultracentrifuge and interpretation of data.

BCH 6322—Biomedical Radioisotope Techniques (3:3:0). Prerequisite: BCH 5721, CHEM 433, 436, 437, or equivalent. Basic radioisotope techniques as used in biomedical research with special emphasis on liquid scintillation counting techniques.

BCH 6324—Biochemical Basis for Inherited Disease (3:3:0). Prerequisite: BCH 5721, CHEM 433, 436, 437 or equivalent. Biochemical and molecular basis of genetic disorders, genetic counseling, human population genetics, chromosomal defects,

sex determination, and gene mapping in man.

BCH 6325—Advanced Genetics (3:3:0). Prerequisite: A course in genetics. Further development of concepts introduced in introductory course in genetics, molecular biology, gene mapping, extranuclear genetic systems, gene expression, population genetics.

BCH 6326—Advanced Human Genetics (3:3:0). Prerequisite: A course in genetics. Detailed consideration of population genetics, cytogenetics, molecular biology, and biochemistry as related to human heredity.

BCH 6328—Biochemistry of the Mitochondrion (3:3:0). Prerequisite: A course in general biochemistry. Subject areas involve structure-function relationships, ion and metabolite transport, enzyme and metabolite compartmentation, and enzyme regulation.

BCH 6329—Advanced Immunochemistry (3:3:0). A study of protein, carbohydrate, and complex antigens and the specificity of the immune response to them.

BCH 6330—Special Topics in Environmental Biochemistry (3:3:0). Prerequisite: Consent of instructor; organic chemistry recommended. May be repeated with change in content for a total of 6 hours. Reading, conferences, and/or laboratory work on selected chemicals which may exist in ambient air, water, or food—separation, identification, and physiological effects.

BCH 6331—Special Topics in Toxicological Biochemistry (3:3:0). Prerequisite: Consent of instructor; organic chemistry recommended. May be repeated with change in content for a total of 6 hours. A consideration of the uses, abuses, and potential biochemical effects of agricultural chemicals. Reading, conferences, and/or laboratory work.

BCH 6332—Advanced Clinical Biochemistry (3:3:0). Advanced study of the use of chemistry in laboratory medicine for diagnosing disease and evaluating therapy. Consideration of new methods in clinical chemistry, use of automated equipment, organ profiles, and other current developments in clinical biochemistry.

BCH 6333—Topics in Developmental Biochemistry (3:3:0). In-depth study of biochemical mechanisms in embryonic and post-embryonic development including biochemistry of cellular differentiation, biochemical mechanisms in growth and

morphogenesis, development of specific enzyme systems, and endocrine mechanisms in development.

BCH 6335—Topics in Biochemistry (3:3:0). Prerequisite: Consent of instructor. specific areas of biochemistry not normally included in other courses. May be repeated for credit with change in content.

BCH 6336—Neurochemistry (3:3:0). A study of the biochemistry and regulation of metabolic processes characteristic of neural tissues, the biosynthesis and metabolism of neurotransmitters, the biochemical basis of certain neurological disease states in man, and the structure and mechanism of function of neurohormones, in normal and pathological states.

BCH 6521—Human Intermediary Metabolism and Its Regulation (5:5:0). Prerequisite: BCH 5721, CHEM 433, 436, 437 or equivalent. Consideration of normal and abnormal human intermediary metabolism with major emphasis on biosynthetic and catabolic pathways and on modulation and control.

BCH 711—Biochemistry Seminar (1:1:0).

BCH 731—Biochemical Research (3).

BCH 831—Doctor's Dissertation (3).

Enrollment required at least four times.

BCH 839—Postdoctoral Research (3). Independent study by postdoctoral fellows under the direction of the graduate faculty of the Department of Biochemistry. May be repeated for credit.

BIOMEDICAL ENGINEERING AND COMPUTER MEDICINE

Associate Professor Blair A. Rowley, Ph.D., Chairperson

Professors: Ayoub, Portnoy, Ramsey

Associate Professor: Jarzembski

Assistant Professors: Anderson, Cameron

The Department of Biomedical Engineering and Computer Medicine offers graduate courses of study in cooperation with the College of Engineering of Texas Tech University. Graduate study is offered in bioengineering (engineering methods applied to the solution of problems in the life sciences), clinical engineering

(improvement of health care delivery in the clinic and hospital through the application of engineering sciences), and medical engineering (traditional engineering methods as applied to the development and manufacture of medical instruments and devices).

The courses below are currently offered by the faculty in the School of medicine but are subject to change to meet the requirements of this dynamic, growing field of study. An individualized program of study is developed for each student to meet his or her needs and interests. Courses are selected from current offerings and special topics in this department, various departments in the College of Engineering, and the basic science departments of the School of Medicine.

Although not listed as a formal course, the clinical internship is an important part of education and training in the clinical engineering program. Individual internship programs are tailored to the student within the Texas Tech University Health Sciences Center, local cooperating hospital, or area Veterans Administration hospitals and clinics.

Graduate Courses

BME 5101, 5201, 5301—Selected Topics in Biomedical Engineering. Material may vary from semester to semester. May be repeated for credit if different topics are covered for each registration. Typical topics are concepts of biomedical engineering, transport phenomena and living systems and engineering in health care delivery systems.

BME 5302—Function and Structure of the Human Body for Biomedical Engineers I. The basic micro and macro units of the human body. Biomedical engineering principles, anatomy, and physiology of cells, tissues, skeletal system, muscular system, and nervous system are presented.

BME 5303—Function and Structure of the Human Body for Biomedical Engineers II. Prerequisite: BME 5302. This course presents six major systems of the human body; cardiovascular, respiratory, fluid regulatory, digestive, endocrine, and reproductive.

BME 5304—Systems Analysis in Biomedicine. Using realistic yet simple physiological examples, analysis methods are developed in models and analogs; system properties of resistance and storage, step response, transfer functions, impedance, periodic signals, transient oscillations, resonance, and feedback.

BME 5305—Concepts of Biomedical Engineering. Prerequisite: consent of instructor. An introduction to the basic concepts of biomedical engineering including bioengineering, clinical engineering, medical engineering. The following subjects are treated: research, product development, legal implications, documentation, and introduction to analysis of living systems, and clinical instruments in common use.

BME 5306—Health Care Delivery Systems. Prerequisite: consent of instructor. Specific requirements of health care delivery systems in the physicians's office, clinic, hospital, medical center, and emergency care are covered. Includes analysis of intensive care, automated data collection and analysis, data base use in diagnosis, multiphasic screening, laboratory systems, use of computers, communication, and systems concepts.

BME 5307—Biological Data collection and Analysis. A study of the concepts of data collection and analysis. Topics to be covered include noise description and reduction; data input methods including transduction theory, signal description, conditioning and transmission; and real time methods for recovering the desired information. Also covered will be hardware-software methods for inferring significance from the resulting data.

BME 5309—Modeling of Living Systems. An introduction to the theory and application of modeling techniques to living systems. Current methods of mathematical modeling including model formulation and solution will be discussed. Methods of testing, normalizing, and verifying mathematical models using experiments will be presented. Students will be required to complete a project using mathematical modeling to analyze a physiological system.

BME 5310—Hospital Engineering Systems. A study of the engineering systems that are required for the efficient functioning of a

modern health care delivery system including analysis of the interrelationships that exist between such systems. Included are electric power systems, mechanical systems, communication and data processing systems, patient monitoring systems, and physical plant.

BME 6301—Bioelectric Phenomena—To introduce graduate students with backgrounds in the physical sciences and engineering to the electrical behavior of nerve and muscle using mathematical techniques to provide a quantitative basis for observed phenomena. Electrode theory, membrane structure and phenomena, propagated action potential, and electrocardiography.

BME 731—Research. Prerequisite: Admission to doctoral study and consent of instructor. May be repeated for credit.

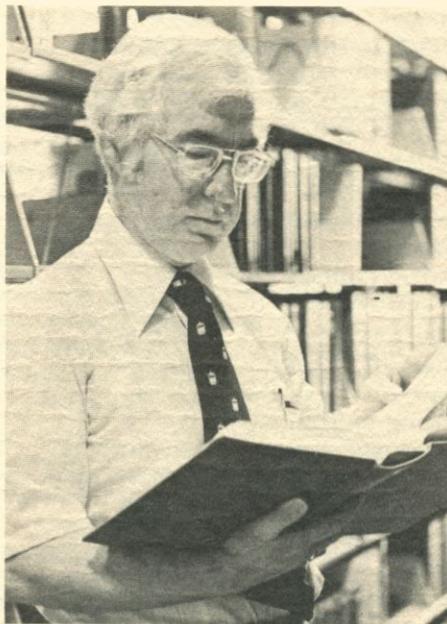
CMB 5101, 5201, 5301—Selected Topics in Computer Medicine and Biomathematics. Material may vary from semester to semester. May be repeated for credit if different topics are covered for each registration.

CMB 5302—Intermediate Biostatistical Analysis for the Medical Sciences.

Prerequisite: An introductory knowledge of calculus or statistics or consent of instructor. To provide graduate students in health-related areas with a working knowledge of commonly used statistical techniques for analyzing biological data. Emphasis on training the student to recognize the design of the experiment, what reasonable assumptions may be made, and to perform the necessary analysis.

CMB 5303—Programming for the Medical Sciences. An introduction to medical applications of computer programming. Comparison between levels and structures of programming languages, choosing a language based on job and hardware characteristics, programming the microcomputer, and the use of packaged software in the clinical and basic sciences are covered.

CMB 731—Research.



Charles W. Sargent, Ph.D.

HEALTH COMMUNICATIONS

*Professor Charles W. Sargent, Ph.D.,
Chairperson*

Departmental research includes the communication aspects of health care, the diffusion of health information, the role of the patient-consumer and health information programs based on knowledge-level and attitude data.

Graduate Courses

HCOM 5316—Introduction to Information Science. Computer-oriented techniques for mechanized non-numeric information processes, with emphasis on medical bibliographic record systems. Automated information systems such as MEDLARS, MEDLINE, TOXICON and others, as well as the design of an information system, will be emphasized.

HCOM 537—Information Storage and Retrieval. This course is designed to introduce the student to information organization and retrieval of natural language data. Computer techniques will

be emphasized. Topics typically covered would include: an introduction to automatic information systems, the syntactic operations, the retrieval process, auxiliary information services, and data base retrieval systems. The course will emphasize mathematical and statistical methods of detailed analysis of system performance.

HCOM 5317—Information Retrieval Systems Design. This course is concerned with the design of retrieval systems based upon theories covered in Information Storage and Retrieval (Course II). Topics typically covered are: information dissemination process, information centers, file organization, search strategy, output operations, language design, and retrieval evaluation. Prerequisite: Information Storage and Retrieval.

HCOM 5319—Seminar in Current Topics of Information Sciences. This will vary each semester emphasizing either information science topics or other topics in the health communications area.

HCOM 5326—Visual Techniques Practicum. Introductory course involving media in health sciences education, research, and service programs. Working with the medical faculty and staff and patients in preparing instructional packages and ways to improve them.

HCOM 5115—Individual Problems in Health Communications. Individual research and reporting projects. A student may enroll in this course any number of times up to a maximum of 5 semester hours.

HCOM 5117—Health Terminology. Medical and health terminologies most important to health communicators, presented in the framework of general health and medical concepts. Includes both the specialized professional languages and vernacular of the health professions, the hospital, and other health care systems, and the idiomatic expressions of certain patient populations.

HCOM 560—Health Communications Internship. Students will perform communication functions for eight weeks at Texas Tech University School of Medicine Regional Health Education Centers, under joint supervision of the chairman of the student's advisory committee and a Texas Tech University School of Medicine faculty member at the Center, who will also determine content of the internship in consultation with the student, and evaluate a written

and oral report of the experience. Students will normally do the internship at the end of their course work for the degree.

MICROBIOLOGY

Professor Stanley Lefkowitz, Ph.D.

Acting Chairperson

Professor: McKenna

Associate Professors: Baskett, Joys

Assistant Professors: Diedrich,

Fralick, Gooch

Adjunct Assistant Professors: Hayes,

Pence

The faculty of the Department of Microbiology offers broadly based programs leading to the Master of Science and Doctor of Philosophy degrees in Medical Microbiology with sufficient flexibility and diversity of orientation to meet the needs of both the School of Medicine and of Texas Tech University.

The course work and information presented below describe those aspects of the program of particular interest to students choosing to study and conduct research in the areas of medical microbiology which are traditionally found in a medical center. The program is currently in an expanding state and courses will be added as appropriate.

Students seeking information concerning admission to the graduate program in medical microbiology, training and research opportunities, or teaching and research assistantships in the Department of Microbiology of the Texas Tech University School of Medicine should contact the chairperson of the department.

- I. The Graduate Program
The Department of Microbiology has no general

requirement for a foreign language for either the Master of Science or the Ph.D. degree. However, it may be necessary for a student to demonstrate a proficiency in a foreign language(s) in certain programs.

Incoming students are urged to seek a faculty advisor within the first semester after enrolling in the department.

This should be done in consultation with the department chairman, and thus will facilitate the formation of students' committees as they progress through the program of study.

The Master's Program.

Before being recommended for admission to a master's degree program, the student may be required to take an examination which includes the subject matter usually required of undergraduates.

The master's degree will ordinarily require a minimum of 30 hours of graduate study. This does not include time required to complete any unfinished prerequisites or delays encountered on thesis problems. The graduate program requires that original research and a thesis be completed. Credit for the master's thesis shall be at least six credit hours, but not more than nine credit hours.

Doctor of Philosophy Degree.

The Doctor of Philosophy Degree indicates an ability to teach and train others in the field of specialization. A period of lecture and laboratory preparation in teaching

may be required of all candidates. In addition, the quality of research demanded at the Ph.D. level is such that mastery of basic principles and techniques in Microbiology must be clearly demonstrated by the dissertation.

The Ph.D. Degree is awarded on the basis of scientific maturity and not solely on the basis of completion of the prescribed course of study.

The completion of the master's degree is not a prerequisite step leading to the Ph.D. Degree.

IV. Major areas of research interest in the Department of Microbiology include:

- A. Viral Oncology
- B. Tumor Immunology
- C. Microbial Ecology
- D. Microbial Genetics
- E. Infectious Diseases
- F. Molecular Biology
- G. Radiation Microbiology
- H. Clinical Microbiology.
- I. Immunochemistry

Inquiries about the graduate program in Microbiology should be sent to the Chairperson, Department of Microbiology, Texas Tech University School of Medicine, Lubbock, Texas 79430.

Graduate Courses

MIB 6631—Medical Microbiology. A study of the role and place of bacteria, fungi and viruses in human infectious disease processes, with emphasis on the interplay of the host and parasite relationships. Heavy emphasis will be placed on the biochemical, biological, and medical aspects of immune mechanisms and disease processes together with a study of immune deficiencies and diseases of the immunologic mechanism.

MIB 6347—Microbial Ecology. Prerequisite: At least an introductory course in Microbiology, or permission from the instructor. The aim of this course is to provide an understanding of the place of microorganisms in nature and in human society. Bacteria, fungi, protozoa, and algae will be considered with regard to their structure, function and role in a variety of ecosystems. The influence of physical, chemical and biological factors on microorganisms and microbial contributions to the environment will be described. Among the major themes of the course are the following: interactions between microbial population; interactions of microbial populations with plants and animals; microbial ecology of aquatic and terrestrial environments.

MIB 6321—Tumor Immunology. Prerequisites: Introductory courses in Microbiology, Biochemistry, Pathology, and Immunology; or, permission of the instructor. The objectives of this course will be to collate the various immunological, biochemical, and pathological parameters of tumor growth, both in animal model systems and man. Emphasis will be placed on investigations of current concepts of tumor immunity, transplantation and auto-immunity; immunological tolerance, surveillance, and enhancement; as well as viral induced immunosuppression and inherited immunodeficiency states.

MIB 6322—Viral Oncology. Prerequisites: Introductory courses in Microbiology, Immunology and Virology or consent of instructor. This course is designed to introduce the concept of a viral etiology of cancer. It will be developed through an examination of the effects of oncogenic viruses on intact animals as well as isolated cells in vitro. Emphasis will be placed on the immunological relationships and host response to viruses using many of the known animal models. The implications of a possible viral etiology of human cancer will be explored.

MIB 6323—Topics in Bacterial Genetics. Prerequisites: General Microbiology, Microbial Genetics or equivalent, and consent of instructor. Lectures, demonstrations and review of literature on inheritance in bacteria and their viruses with emphasis on aspects relevant to infectious diseases.

MIB 6324—The Molecular Biology of Microorganisms. Lectures and discussions illustrating how modern techniques of

genetics and biochemistry are being used to elucidate the structure and function of DNA, RNA, and Protein in prokaryotic cells. Courses in biochemistry and microbial genetics suggested, but not required.

MIB 5181, 5281, 5381—Special topics in Microbiology.

MIB 5380—Medical Mycology. Prerequisite: Two semesters of microbiology or consent of instructor. Course is concerned with medically important fungi and the mycoses caused by these organisms. Laboratory sessions will emphasize identification methods.

MIB 6325—Biology of Animal Viruses. Lectures and laboratory work illustrating viral infection and replication within the affected cell. The interaction at the cellular level between virus and host.

MIB 6326—Medical Virology. A study by lectures and discussions of the pathogenesis of viral diseases of man. The course treats viral infections at the level of the metazoan organisms, with chemotherapy and/or prophylaxis where indicated.

MIB 6327—Molecular Biology of Prokaryotic Membranes. Prerequisite: Permission of instructor. The molecular organization of prokaryotic membranes with emphasis on the correlation between structure and function of biological membranes.

MIB 6328—Radiation Biology. Prerequisite: Permission of instructor. This course will deal with the effects of ionizing radiation on biological systems at the molecular, cellular, organ, and whole body level of organization. Introductory material on radiation chemistry and physics will be included.

MIB 6329—Structural Concepts in Immunology. Prerequisite: consent of instructor. A course designed to consider the chemical nature of molecules involved in the immune reaction and the relationship between their structure and function.

MIB 711—Microbiology Seminar. May be repeated. Presentation of present research current topics by faculty and students in all areas of Microbiology.

MIB 712—Literature Reviews Seminar. Review of literature on special topics either assigned by instructor and/or selected by students. May be repeated.

MIB 631—Master's Thesis: Enrollment required at least twice.

MIB 731—Research. Prerequisite: Consent of instructor. May be repeated for credit.

MIB 831—Doctoral Dissertation. Enrollment required at least four times. Other courses available for the programs in microbiology are listed in the Graduate School Catalog.

PHARMACOLOGY

*Professor Alexander D. Kenny, Ph.D.,
Chairperson*

*Professor James H. Pirch, Ph.D.,
Director*

*Associate Professors: Lombardini,
Pang, Potter*

Assistant Professor: Tenner

The Pharmacology Graduate Program offers studies leading to the Master of Science and Doctor of Philosophy degrees. A minimum of three years of study beyond the bachelor's degree is required for the Ph.D. degree, but experience indicates that it usually takes at least four years and sometimes longer. The student must maintain a B average in Pharmacology courses and a B average in all other courses taken for graduate credit. During the period of study the student will complete the required graduate course work, take a preliminary examination, demonstrate a proficiency in biostatistics, take a qualifying examination, complete a Ph.D. dissertation based on original research, and take a final examination in the dissertation field. A minimum of two years of study beyond the bachelor's degree is required for the M.S. degree. During the period of study the student will complete the required course work (thirty hours minimum, including thesis research), complete an M.S. thesis based on original work, and take a final comprehensive examination in Pharmacology.

The major areas of research in

the Department of Pharmacology and Therapeutics are: endocrine, autonomic, cardiovascular, renal, biochemical and comparative pharmacology; drug metabolism; neuropharmacology; and psychopharmacology. More specific areas include: pancreatic endocrine function; regulation of vitamin D endocrine system; evolutionary and endocrine aspects of osmoregulation in lower vertebrates; alcoholism; Parkinson's Disease; pharmacology of brain electrical potentials; pharmacology of cardiac receptors; and taurine function and metabolism.

Inquiries about the Pharmacology Graduate Program should be sent to:

Director of Graduate Studies
Pharmacology and Therapeutics
Texas Tech University School
of Medicine

Lubbock, Texas 79409

phone: 806/743-2425.

Graduate Courses

PHM 5101, 5201—Topics in Pharmacology. Prerequisite: consent of instructor. Specific areas of pharmacology not normally included in other courses. May be repeated for credit with change in content.

PHM 5130—Clinical Pharmacology. Prerequisite: PHM 5613. Participation in clinical rounds in a medical or surgical specialty in order to observe the therapeutic regimens being used in the treatment of specific diseases.

PHM 5224—Pharmacokinetics. Prerequisite: PHM 5613 or equivalent. An advanced study of the principles and factors governing the access of a drug to its site of action. Such factors include the absorption, distribution, metabolism, and excretion as well as the influences of species, age, disease, and the interaction of other drugs.

PHM 5225—Techniques in Pharmacological Research. Prerequisite: BCH 5721, PHY 5822, or equivalent. A lecture and laboratory course designed to provide an introduction to and hands-on experience with standard experimental techniques used in

pharmacological research.

PHM 5226—Pharmacology of the Autonomic Nervous System—Prerequisite: BCH 5721, PHY 5822, PHM 5613 or equivalent. A conceptual study of drugs which alter the function of the autonomic nervous system. Emphasis will be on mechanisms by which drugs affect transmitter synthesis, release, uptake, and metabolism as well as receptor function.

PHM 5227—Neuropsychopharmacology. Prerequisite: PHM 5613. A study of current biochemical, physiological and behavioral evidence regarding mechanisms of action of the major classes of drugs which affect the central nervous system.

PHM 5228—Special Topics in Chemotherapy. Prerequisite: PHM 5613. Basic and current concepts concerning mechanisms of action, pharmacokinetics, and therapeutic efficacies of antimicrobial and antineoplastic agents.

PHM 5229—Comparative Pharmacology. A study of drug action in nonhuman animals with special attention given to vertebrate and invertebrate animal models in pharmacological research. Discussion of plants and animals as sources of drugs and toxins.

PHM 5301—Topics in Pharmacology. Prerequisite: consent of instructor. Specific areas of pharmacology not normally included in other courses. May be repeated for credit with change in content.

PHM 5323—Pharmacodynamics. Prerequisite: BCH 5721, PHY 5822, PHM 5613 or equivalent. Emphasizes the sites at which and the mechanisms by which drugs produce their biological effects.

PHM 5613—Pharmacology. A study of pharmacology with emphasis on mechanisms of drug action, drug interactions, and therapeutics.

PHYM 631—Master's Thesis. Enrollment required at least twice.

PHM 711—Pharmacology Seminar

PHM 731—Pharmacology Research

PHM 831—Doctor's Dissertation.

Enrollment required at least four times.

PHYSIOLOGY

*Professor Charles D. Barnes, Ph.D.,
Chairperson*

*Professors: Hughes, Kopetzky
Associate Professors: Crass, Davies,
Lutherer*

*Assistant Professors: Nathan, Orem
Adjunct Assistant Professor: Chinn*

The Department of Physiology in the School of Medicine offers educational and research programs for students working for professional degrees in medicine, related health sciences areas and advanced degrees in Physiology.

Graduate School Program: The Department of Physiology offers a graduate program leading to the Master of Science degree and the Doctor of Philosophy degree. Training in physiology is provided in the following fields of study: cardiovascular physiology including autonomic receptors, hemodynamics, and metabolism; respiratory physiology; body fluid physiology; endocrine physiology; neurophysiology and biophysics. Research work is progressing in the department along each of these areas. The program is designed to train persons who will teach and conduct research in medical institutions.

Graduate Courses

PHY 5402—General Physiology. Prerequisite: Permission of instructor. A general course in mammalian physiology designed to teach the basic principles of physiology. The subject matter will include cellular physiology, neuro, cardiovascular, respiratory, renal, water and electrolytes, gastrointestinal and endocrine as an introduction to physiology of the organ systems, with emphasis on the human.

PHY 5803—Physiology. A study of human physiology with major emphasis on body-controlling systems and their interrelations.

Pathophysiological mechanisms are also stressed.

PHY 631—Master's Thesis. Enrollment required at least twice.

PHY 6301—Introduction to Physiological Research. The course is open to beginning graduate students to learn research approaches and techniques. A student may register for a maximum of three semesters in three different research laboratories. The kind of research problems and methodology will be determined by the research currently being conducted in the laboratory to which the student is assigned. The student will be expected to spend nine hours a week learning the use of instrumentation, surgical procedures and analytical evaluation of data. The student will receive 3 hours of pass-fail credit for each semester.

PHY 6304—Advanced Physiology. A detailed consideration of physiological systems. To be taken concurrently with 5803.

PHY 6305—Topics in Physiology.

PHY 6311—Neurophysiology. Physiology of nerve cells and their processes with emphasis on excitability, conduction, synaptic transmission. Major portion of course devoted to physiology of neuronal systems including mechanisms of sensory and motor system function, neurobiology rhythms, integration, and role of the central nervous system.

PHY 6312—Experimental Neuroscience. Prerequisite: Consent of instructor. A study of the current techniques used in the neuroscience research laboratory.

PHY 6313—Advanced Neurophysiology. Prerequisite: PHY 5822 or permission of instructor. An in-depth study of the nervous system from the molecular to the behavioral level, with special emphasis on electrophysiology and reflexes.

PHY 6314—Membrane Biophysics. Prerequisite: PHY 5822, 5301 and BME 6301, or consent of instructor. Current topics and techniques in the physiology of excitable membranes. Discussion of Hodgkin-Huxley papers and more recent theoretical approaches to excitation and conduction in nerve, skeletal muscle and cardiac muscle. Introduction to current biophysical techniques such as the voltage clamp, membrane noise analysis, lipid bilayers, and optical fluorescence.

PHY 6315—Physiology of Neuroeffector Systems. A consideration of adrenergic, cholinergic, histaminic, and serotonin receptor systems and physiological applications.

PHY 6316—Topics on the Neurophysiology

of Sleep. Possible topics include 1) the neural basis of states of consciousness; 2) neuronal activity during sleep with the emphasis on the results of single neuron recordings during sleep-wakefulness; and motor activity during sleep.

PHY 6321—Cardiodynamics. A consideration of cardiac physiology and pathophysiology.

PHY 6322—Physiological Chemistry of the Heart and Blood Vessels in Health and Disease. Readings and laboratory experiments directed toward understanding metabolic function and regulation of the heart and blood vessels in health and disease.

PHY 6331—Respiratory Physiology. An in-depth course concerning all aspects of respiratory physiology with the exception of the regulation of respiration. Areas to be covered include: mechanics of respiration; gas exchange; CSF acid-base balance; blood acid-base balance; oxygen and carbon dioxide transport. The comparative aspects of respiratory physiology will also be addressed.

PHY 6332—Regulation of Respiration. An in-depth course concerning the chemical and neural regulation of respiration. Areas to be studied can include: regulation of breathing during sleep; altitude acclimatization; regulation of breathing during exercise.

PHY 6341—Renal Physiology. Discussion and correlation of recent advances in the normal and pathophysiological mechanisms of the kidney.

PHY 6351—Advanced Gastrointestinal Physiology. Readings and classical experiments related to the secretory and contractile functions of the gastrointestinal tract.

PHY 6361—Advanced Endocrinology. Various endocrinopathies will be discussed in terms of recent advances in the areas of assay of endocrine gland function, control of hormone secretion, actions of hormones, mechanisms of action, and the interrelationships between hormones.

PHY 6362—Endocrinology of Pregnancy. Topics related to the role of endocrine glands in the support of the fetus, the maternal-fetal exchange, the development of endocrine function in the fetus, and the changes occurring at birth.

PHY 711—Physiology Seminar.

PHY 712—Readings in Physiology. Review of the research literature on special topics either assigned by instructor or selected by students. May be repeated for credit.

PHY 5402—General Physiology. Prerequisite: Permission of instructor. A general course in mammalian physiology designed to teach

the basic principles of physiology. The subject matter will include cellular physiology, neuro, cardiovascular, respiratory, renal, water and electrolytes, gastrointestinal and endocrine as an introduction to physiology of the organ systems, with emphasis on the human. **PHY 5803**—Physiology. A study of human physiology with major emphasis on body-controlling systems and their interrelations. Pathophysiological mechanisms are also stressed.

PHY 631—Master's Thesis. Enrollment required at least twice.

PHY 6301—Introduction to Physiological Research. The course is open to beginning graduate students to learn research approaches and techniques. A student may register for a maximum of three semesters in three different research laboratories. The kind of research problems and methodology will be determined by the research currently being conducted in the laboratory to which the student is assigned. The student will be expected to spend nine hours a week learning the use of instrumentation, surgical procedures and analytical evaluation of data. The student will receive 3 hours of pass-fail credit for each semester.

PHY 6304—Advanced Physiology. A detailed consideration of physiological systems. To be taken concurrently with 5803.

PHY 6305—Topics in Physiology.

PHY 6311—Neurophysiology. Physiology of nerve cells and their processes with emphasis on excitability, conduction, synaptic transmission. Major portion of course devoted to physiology of neuronal systems including mechanisms of sensory and motor system function, neurobiology rhythms, integration, and role of the central nervous system.

PHY 6312—Experimental Neuroscience. Prerequisite: Consent of instructor. A study of the current techniques used in the neuroscience research laboratory.

PHY 6313—Advanced Neurophysiology. Prerequisite: PHY 5822 or permission of instructor. An in-depth study of the nervous system from the molecular to the behavioral level, with special emphasis on electrophysiology and reflexes.

PHY 6314—Membrane Biophysics. Prerequisite: PHY 5822, 5301, and BMF 6301, or consent of instructor. Current topics and techniques in the physiology of excitable membranes. Discussion of Hodgkin-Huxley papers and more recent theoretical approaches to excitation and conduction in nerve, skeletal muscle and cardiac muscle.

Introduction to current biophysical techniques such as the voltage clamp, membrane noise analysis, lipid bilayers, and optical fluorescence.

PREVENTIVE MEDICINE AND COMMUNITY HEALTH

*Professor Robert H. Kokernot,
D.V.M., M.D., Dr. P.H.,
Chairperson*

Professor: Tyner

*Associate Professors: Way, Gruber
Assistant Professor: Hayes*

The Department of Preventive Medicine and Community Health offers a core of elective courses in epidemiology and preventive medicine. These courses are open to graduate students in a variety of health, biomedical and health and social behavior fields. Prerequisites: Permission of the instructor.

Elective Courses

PMM 6211—Principles of Epidemiology. This course is concerned largely with epidemiologic methodology. Some of the ways in which properly conducted observations of the distribution and dynamic behavior of disease in the population can contribute to an understanding of etiologic factors, modes of transmission, and pathogenesis of disease are illustrated.

PMM 6212—Problems in Epidemiology. A course for students who wish to make an intensive study of some special problem in epidemiology.

PMM 6213—Epidemiology Seminar. Presentation of research in progress or recently completed by staff, students and visiting lecturers.

ABEDIN, Zainul, Assistant Professor of Internal Medicine; M.D., The Post-Graduate Institute of Medical Education and Research Chandigarh, Punjab, India, 1970.

ADAMS, William H., Associate Professor of Internal Medicine; M.D., Ohio State University College of Medicine, 1962.

ALEXANDER, Carter M., Associate Professor of Pathology; M.D., Columbia University College of Physicians and Surgeons, 1942.

ANDERSON, Dwane E., Assistant Professor of Biomedical Engineering and Computer Medicine; Ph.D., Southern Methodist University, 1968.

AQUIRRE, Salvador R., Assistant Professor of Psychiatry; M.D., Autonomous University of Chihuahua, 1971.

ARREDONDO, Rodolfo M., Assistant Professor of Psychiatry; Ed.D., Texas Tech University, 1976.

ASHBY, Wendall B., Assistant Professor of Obstetrics & Gynecology; M.D., University of Texas Medical Branch at Galveston, 1974.

AUNG, Maung K., Assistant Professor of Internal Medicine; M.D., Institute of Medicine, Burma, 1967

AUSTERMAN, Warrington, Associate Professor of Surgery; M.D., Albany Medical School, 1944.

BAGG, Raymond J., Professor of Orthopaedic Surgery; M.D., New York Medical College, 1958.

BAKER, C. Richard, Jr., Associate Professor of Surgery; M.D., Johns Hopkins University School of Medicine, 1961.

BALCH, James A., Assistant Professor of Pathology; M.D., University of Texas Southwestern Medical School at Dallas, 1974.

BARNES, Charles D., Professor and Chairperson of Physiology; Ph.D., State University of Iowa, 1962.

BARTHOLOMEW, Bruce A., Professor of Internal Medicine; M.D., University of Michigan Medical Center, 1958.

BASKETT, Russell C., Associate Professor of Microbiology; Associate Dean; Ph.D., University of Missouri, 1971.

BECEIRO, Jose R., Associate Professor of Internal Medicine; M.D., Faculty of Medicine, University of Santiago, Spain, 1964.

BEESEINGER, David, Instructor of Surgery; M.D., University of Texas at San Antonio, 1973.

BEHAL, Francis J., Professor of Biochemistry and Surgery; Ph.D., University of Texas at Austin, 1958.

BEST, Paul W., Assistant Professor of Family Practice; M.D., Tulane Medical School, 1972.

BLACKWELL, David Eric, Assistant Professor of Radiology; M.D., Bowman Gray School of Medicine, 1973.

BOLENDER, David L., Assistant Professor of Anatomy; Ph.D., West Virginia University, 1974.

BRIONES, David F., Assistant Professor of Psychiatry; M.D., University of Texas Medical Branch at Galveston, 1971.

BROWN, Craig D., Assistant Professor of Family Practice; M.D., University of Texas Medical Branch at Galveston, 1971.

BROWN, Hugh A., Associate Professor of Anesthesiology; M.D., McGill University, 1959.

BUDDINGH, Fred, Associate Professor of Pathology; D.V.M., Colorado State University, 1951; Ph.D., University of California at Davis, 1969.

BUESSELER, John A., University Professor, Professor of Ophthalmology; M.D., University of Wisconsin School of Medicine, 1944., M.S., University of Missouri, 1965.

BYRNE, Basil, Associate Professor of Pediatrics; M.D., Indiana University School of Medicine, 1940.

CAMERON, James M., Jr., Assistant Professor of Biomedical Engineering and Computer Medicine; M.S., Louisiana Tech University, 1973.

CANNON, Joe R., Assistant Professor of Dermatology; M.D., University of Texas Health Sciences Center at San Antonio, 1974.

CASADY, Robert L., Assistant Professor of Anatomy; Ph.D., University of California at Los Angeles, 1972.

CHARALAMPOUS, Kanellos D., Professor and Chairperson of Psychiatry; M.D., Baylor College of Medicine, 1958.

CHINN, John H., Jr., Associate Professor of Family Practice; M.D., University of Texas Medical Branch at Galveston, 1953.

COATES, Penelope W., Associate Professor of Anatomy; Ph.D., University of Texas Southwestern Medical School at Dallas, 1969.

COCKINGS, Eeon, Professor of Anesthesiology; M.D., University of Manchester College of Medicine, England, 1955.

COLE, Richard D., Assistant Professor of Dermatology; M.D., Vanderbilt University School of Medicine, 1952.

COOPER, M. Wayne, Assistant Professor of Internal Medicine; M.D., University of Texas Medical Branch at Galveston, 1969.

CRASS, Maurice F., III, Associate Professor of Physiology; Ph.D., Vanderbilt University School of Medicine, 1965.

CULVAHOUSE, Bruce M., Associate Professor of Family Practice; M.D., University of Tennessee, 1951.

DHAFIR, Rafil, Assistant Professor of Internal Medicine; M.D., University of Baghdad Iraq School of Medicine, 1971.

DAHL, Elmer V., Professor of Pathology; M.D., University of Southern California, 1953.

DALLEY, Bernell, Assistant Professor of Anatomy; Ph.D., University of Nebraska, 1974.

DAVIES, Donald G., Associate Professor of Physiology; Ph.D., Johns Hopkins University, 1970.

DIETRICH, Dana L., Assistant Professor of Microbiology; Ph.D., Pennsylvania State University, 1974.

DUNN, Jack, Jr., Professor of Surgery; M.D., University of Texas Medical Branch at Galveston, 1948.

DUNNAGAN, William A., Professor of Radiology; M.D., University of Maryland, 1951.

EL DOMERI, Ali, Professor of Surgery; M.D., Cairo University Faculty of Medicine, Egypt, 1958.

ERICKSON, Harold M., Jr., Associate Professor of Psychiatry; M.D., University of Oregon Medical School, 1964.

EVERSE, Johannes, Associate Professor of Biochemistry; Ph.D., University of California at San Diego, 1973.

AGAN, Peter, Associate Professor of Family Practice; M.D., University of Texas Southwestern Medical School, 1972.

FARR, Stephen P., Assistant Professor of Psychiatry; Ph.D., University of Louisville, 1978

FEOLA, Mario, Professor of Surgery; M.D., Faculty of Medicine and Surgery, University of Naples, Italy, 1950.

FIROR, Hugh V., Professor of Surgery; M.D., University of Maryland School of Medicine, 1953.

FORDYCE, A.J.W., Associate Professor of Orthopaedic Surgery; M.D., University of Edinburgh College of Surgeons, Scotland, 1974.

FRALICK, Joe A., Assistant Professor of Microbiology; Ph.D., University of Tennessee, 1970.

GADDIS, William, Assistant Professor of Family Practice; M.D., Baylor College of Medicine, 1942.

GAINER, Barbara J., Assistant Professor of Radiology; M.D., University of Texas Southwestern at Dallas, 1966.

GARNER, Charles W., Associate Professor of Biochemistry; Ph.D., University of Texas at Austin, 1969.

GHISELLI, Antonio, Assistant Professor of Orthopaedic Surgery; M.D., Faculty of Medicine, University of Pretoria, South Africa, 1970.

GILES, Harlan R., Professor of Obstetrics & Gynecology; M.D., Duke University School of Medicine, 1969.

GILMER, Emily A., Assistant Professor of Health Communications; Reference Librarian; M.A., University of Missouri, 1972.

GINTAUTAS, Jonas, Associate Professor of Anesthesiology; Ph.D., Northwestern University, 1975; M.D., Moscow Piragov Medical Institute, 1967

GOGATE, Prema A., Assistant Professor of Pathology; M.D., University of Poona, India, 1971.

GOOCH, Gary T., Assistant Professor of Microbiology; Ph.D., Brigham Young University, 1974.

GORDON, William H., Sr., Professor of Family Practice; M.D., Medical College of Virginia, 1933.

GRUBER, Felix J., Associate Professor of Preventive Medicine and Community Health; M.D., Faculty of Medicine, Central University of Venezuela, Caracas, Venezuela, 1961; Dr. P.H., University of North Carolina School of Public Health, 1971.

GURURAJ, Vymutt J., Associate Professor of Pediatrics; M.D., University of Mysore, India, Government Medical College, 1959.

HABERSANG, Rolf., Associate Professor of Pediatrics; Assistant Professor of Pharmacology; M.D., University of Basel, Switzerland, Faculty of Medicine, 1970.

HALPERN, Jesse I., Assistant Professor of Ophthalmology; M.D., State University of New York, Downstate Medical Center, 1957.

HANDAL, Gilberto A., Assistant Professor of Pediatrics; M.D., Faculty of Medicine, University of Santiago, Chile, 1966.

HARDAWAY, Robert M., III, Professor of Surgery; M.D., Washington University Medical Center, 1939.

HARTMAN, J. Ted, Professor and Chairperson of Orthopaedic Surgery;

M.D., Northwestern University School of Medicine, 1952.

HAVASI, George, Assistant Professor of Anesthesiology; M.D., University of Medical Sciences of Budapest, 1966.

HAYES, Jack, Associate Professor of Preventive Medicine and Community Health; Ph.D., University of Texas School of Public Health, Houston, 1973.

HEIM, Lyle R., Associate Professor of Pediatrics and Microbiology; Ph.D., University of Minnesota, 1969.

HEINE, M. Wayne, Professor and Chairperson of Obstetrics and Gynecology; M.D., Duke University School of Medicine, 1958.

HEINRICH, George R., Associate Professor of Anesthesiology; M.D., University of Saskatchewan, Canada, 1962.

HOLLY, Frank, Associate Professor of Ophthalmology and Biochemistry; Ph.D., Cornell University, 1962.

HOLMES, A. W., Jr., Professor and Chairperson of Internal Medicine; M.D., Case Western Reserve University School of Medicine, 1956.

HUGHES, Maysie J., Professor of Physiology; Ph.D., University of Tennessee, 1963

HUTSON, James C., Assistant Professor of Anatomy; Ph.D., University of Nebraska, 1976.

IRANI, Darius A., Instructor of Pathology; M.D., Seth G. S. Medical School and University of Bombay, 1973.

JACKSON, Francis C., Professor and Chairperson of Surgery; M.D., University of Virginia, 1943.

JARZEMBSKI, William B., Associate Professor of Biomedical Engineering and Computer Medicine; Ph.D., Marquette University, 1971.

JETT, James D., Assistant Professor of Family Practice; M.D., Baylor College of Medicine, 1960.

JOHNSON, Clark A., Associate Professor of Family Practice; M.D., University of Texas Medical Branch at Galveston, 1948.

JOHNSON, Dale T., Associate Professor of Psychiatry; Ph.D., Vanderbilt University, 1966.

JOYS, Terence M., Associate Professor of Microbiology; Ph.D., London University, England, 1961.

JUDKINS, Timothy C., Assistant Professor of Health Communications; Associate Librarian; M.A., University of Missouri, 1971.

KARKOS, Kenneth R., Assistant Professor of Anatomy; Ph.D., University of Rochester, 1973.

KENNEDY, Virginia, Assistant Professor of Preventive Medicine and Community Health; Coordinator of Health Systems Research; Ph.D., University of Texas School of Public Health, 1972.

KENNY, Alexander D., Professor and Chairperson of Pharmacology and Therapeutics; Ph.D., St. Thomas Institute for Advanced Studies, 1950.

KILHAM, Michael, Assistant Professor of Family Practice; M.D., University of Maryland Medical School, 1970.

KOKERNOT, Robert H., Professor and Chairperson of Preventive Medicine and Community Health; D.V.M., Texas A&M University, 1946; M.D., Baylor College of Medicine, 1950; Dr. P.H., Johns Hopkins University, 1952.

- KOPETZKY, Michael T.**, Associate Professor of Physiology; M.D., Charles University Medical School at Prague, Czechoslovakia, 1952.
- KRAYNACK, Barry**, Assistant Professor of Anesthesiology; M.D., University of Pittsburgh, 1973.
- LAMBERTS, David W.**, Assistant Professor of Ophthalmology; M.D., Wayne State University, 1970.
- LARSON, Lowell D.**, Associate Professor of Pathology; M.D., University of Utah, 1959.
- LAWRENCE, Ruth M.**, Associate Professor of Internal Medicine; M.D., Boston University School of Medicine, 1964.
- LAWTON, Richard L.**, Professor of Surgery; M.D., University of Nebraska College of Medicine, 1943.
- LEFKOWITZ, Stanley S.**, Professor and Acting Chairperson of Microbiology; Coordinator of Research; Associate Dean for Graduate School; Ph.D., University of Maryland, 1961.
- LEO, Jin Shone**, Assistant Professor of Radiology; M.D., College of Medicine National Taiwan University, Taipei, Taiwan, 1969.
- LEVIN, Garrett S.**, Instructor in Pediatrics; M.D. School of Medicine, University of Chihuahua, Mexico, 1973.
- LITTLE, Gwynne H.**, Assistant Professor of Biochemistry; Ph.D., University of Wales, United Kingdom, 1960.
- LOCKWOOD, Richard A.**, Professor of Surgery; Vice President for the Health Sciences Center; M.D., Johns Hopkins University, 1947.
- LOMBARDINI, John B.**, Associate Professor of Pharmacology and Therapeutics; Ph.D., University of California Medical Center at San Francisco, 1968.
- LOX, Charles D.**, Assistant Professor of Obstetrics and Gynecology and Anatomy; Ph.D., University of Missouri, 1971.
- LUTHERER, Lorenz O.**, Associate Professor of Physiology; Ph.D., University of Florida, 1969; M.D., Texas Tech University School of Medicine, 1977.
- LUTTENTON, Charles**, Assistant Professor or Radiology; M.D., University of Michigan Medical School, 1971.
- McKENNA, John M.**, Professor of Microbiology; Ph.D., Lehigh University, 1959.
- MacNAIR, Donald S.**, Associate Professor of Pathology; M.D., New York University, 1953.
- MAGILL, Hubert L.**, Associate Professor of Radiology; M.D., Northwestern University Medical School, 1970.
- MARK, Lloyd K.**, Professor of Radiology; M.D., Ohio State University, 1950.
- MARKWALD, Roger R.**, Associate Professor of Anatomy; Ph.D., Colorado State University, 1969.
- MATHERS, L. E., III**, Assistant Professor of Family Practice; M.D., University of New Mexico School of Medicine, 1976.
- MAURER, William F.**, Assistant Professor of Pediatrics; M.D., Ohio State University College of Medicine, 1966.
- MENCHACA, John A.**, Assistant Professor of Pediatrics; M.D., University of Texas Medical Branch at Galveston, 1967.
- MENENDEZ, Carlos E.**, Assistant Professor of Internal Medicine; M.D., Columbia University, 1969.
- MESSIHA, Fathy S.**, Associate Professor of Pathology and Psychiatry; Ph.D., Faculty of Medicine, University of Berne, Switzerland, 1965.
- MEYER, Paul G.**, Associate Professor of Surgery; M.D., State University of New York, 1964.
- MILLS, David M.**, Associate Professor of Internal Medicine; M.D., Case Western Reserve University School of Medicine, 1956.
- MISENHIMER, H. Robert**, Professor of Obstetrics and Gynecology; Associate Dean Regional Academic Health Center at El Paso; M.D., George Washington University School of Medicine, 1956.
- MORALES, Carlos**, Associate Professor of Pathology; M.D., Faculty of Medicine, University of the Valley, Bogota, Colombia, 1963.
- MORROW, Kenneth J., Jr.**, Associate Professor of Biochemistry; Ph.D., University of Washington, 1964.
- MUNYON, William H.**, Assistant Professor of Psychiatry; M.D., University of Michigan, 1959.
- NAEGELE, Donald F.**, Assistant Professor of Ophthalmology; M.D., West Virginia University School of Medicine, 1969.
- NAQVI, Mubariz**, Assistant Professor of Pediatrics; M.D., Dow Medical College, Pakistan, 1969.
- NATHAN, Richard**, Assistant Professor of Physiology; Ph.D., University of Florida, 1971.
- OREM, John M.**, Assistant Professor of Physiology; Ph.D., University of New Mexico, 1970.
- ORR, Judith A.**, Assistant Professor of Health Communications; Cataloger, Health Sciences Library; M.L.S., North Texas State University, 1970.
- PANG, Peter K. T.**, Associate Professor of Pharmacology; Ph.D., Yale University, 1970.
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DERMATOLOGY

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 BASS, Bill, Jr., M.D., Assistant Clinical Professor
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 JOHNSON, Lowell, M.D., Associate Clinical Professor
 JONES, Charles Eric, M.D., Assistant Clinical Professor
 KERN, Billy B., M.D., Associate Clinical Professor
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NEUROLOGY

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OBSTETRICS AND GYNECOLOGY

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OPHTHALMOLOGY

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ORTHOPAEDIC SURGERY

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PATHOLOGY

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PEDIATRICS

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AYO, Luis, M.D., Clinical Instructor
ADAMS, Erie D., M.D., Associate Clinical Professor
ALPARD, Allan, M.D., Assistant Clinical Professor
ALVA, Jose D., M.D., Associate Clinical Professor
BARRON, Stanton J., M.D., Associate Clinical Professor
BARRY, David Hawe, M.D., Assistant Clinical Professor
BLONKVIST, Brent G., M.D., Associate Clinical Professor
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BORIS, Glen J., M.D., Assistant Clinical Professor
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CARR, Robert L., M.D., Associate Clinical Professor
CEPERO, Rafael L., M.D., Associate Clinical Professor
CHING, Lily Tan, M.D., Assistant Clinical Professor
CRAIG, Donald R., M.D., Associate Clinical Professor
CRISP, James R., III, M.D., Associate Clinical Professor
DEMPSEY, Edwin B., M.D., Associate Clinical Professor
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FEARNOW, Ronald G., M.D., Clinical Professor
FOSTER, John Wood, M.D., Associate Clinical Professor
FURST, William D., M.D., Associate Clinical Professor
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DANDADE, Pritam B., M.D., Associate Clinical Professor
GUYNES, William A., M.D., Assistant Clinical Professor
MARTIN, George William, M.D., Associate Clinical Professor
MARTINEZ, Henry, E., M.D., Associate Clinical Professor
SELBY, John Horace, M.D., Clinical Professor
SUTHERLAND, Robert D., M.D., Associate Clinical Professor
THERING, Harland R., M.D., Associate Clinical Professor
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Division of Urology

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AVANT, Odis L., M.D., Assistant Clinical Professor
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COWAN, James W., M.D., Assistant Clinical Professor
CURTIS, Wickliffe P., M.D., Associate Clinical Professor
DEVANNEY, Louis R., M.D., Associate Clinical Professor
DIAZ-BALL, Fernando L., M.D., Associate Clinical Professor
GARDUNO, Abel, M.D., Assistant Clinical Professor
HEWITT, A. Lee, M.D., Associate Clinical Professor
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KIBBEY, Richard G., M.D., Assistant Clinical Professor
MALDONADO, Leonard, M.D., Associate Clinical Professor
NASLUND, Edward G., M.D., Associate Clinical Professor
STALCUP, Obie L., M.D., Clinical Instructor
TABER, David Owen, M.D., Associate Clinical Professor

FALL 1979 CALENDAR

August

- 13 & 14 (Mon & Tues) 1st Year—Orientation
15 (Wed) 1st Year—Classes Begin
20 (Mon) 1st & 2nd Years—
Registration
3rd Year—Clerkships
Begin
22 (Wed) 2nd Year—Classes
Begin

September

- 3 (Mon) 1st, 2nd, 3rd, 4th
Years—Labor Day
Holiday

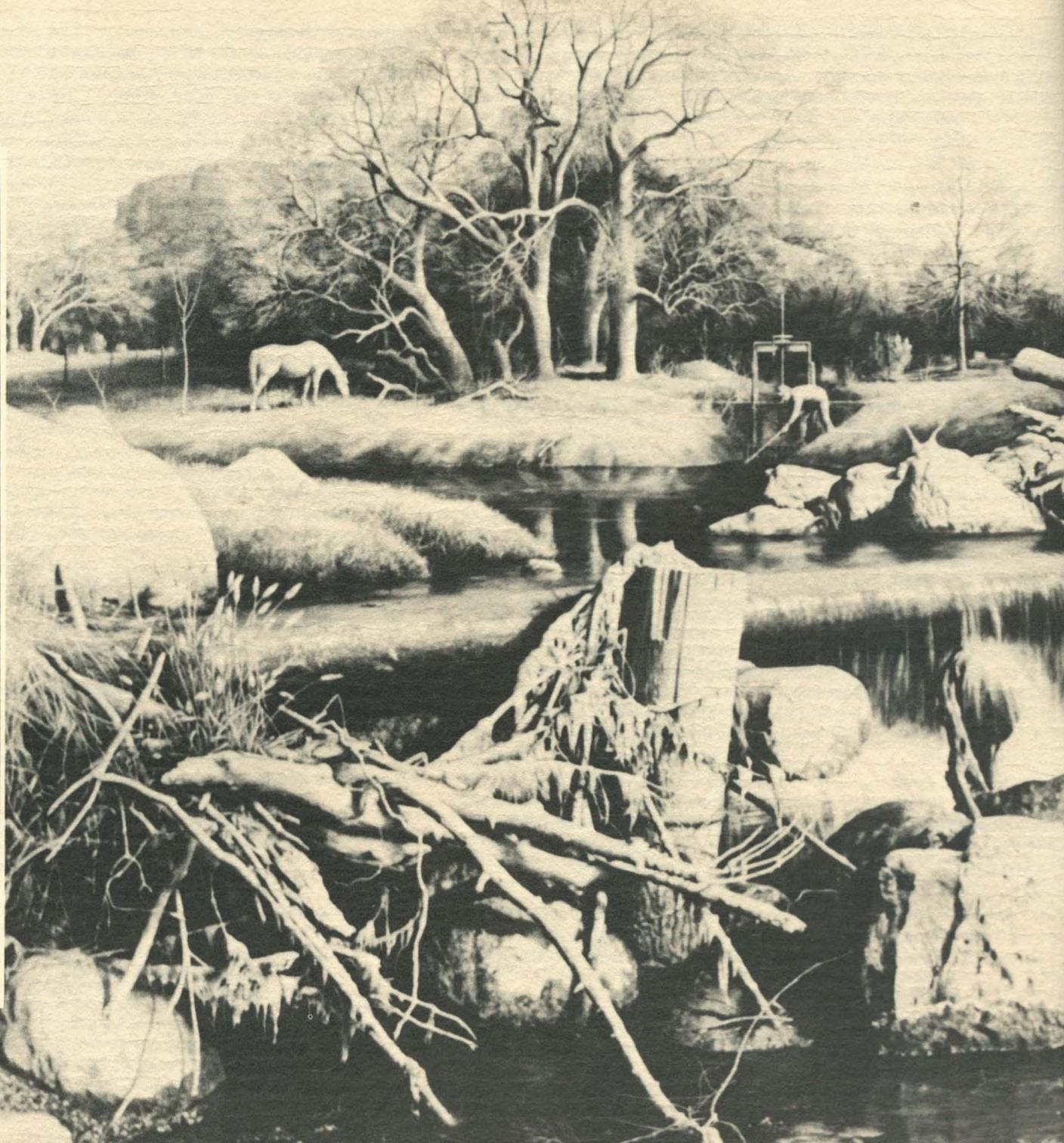
November

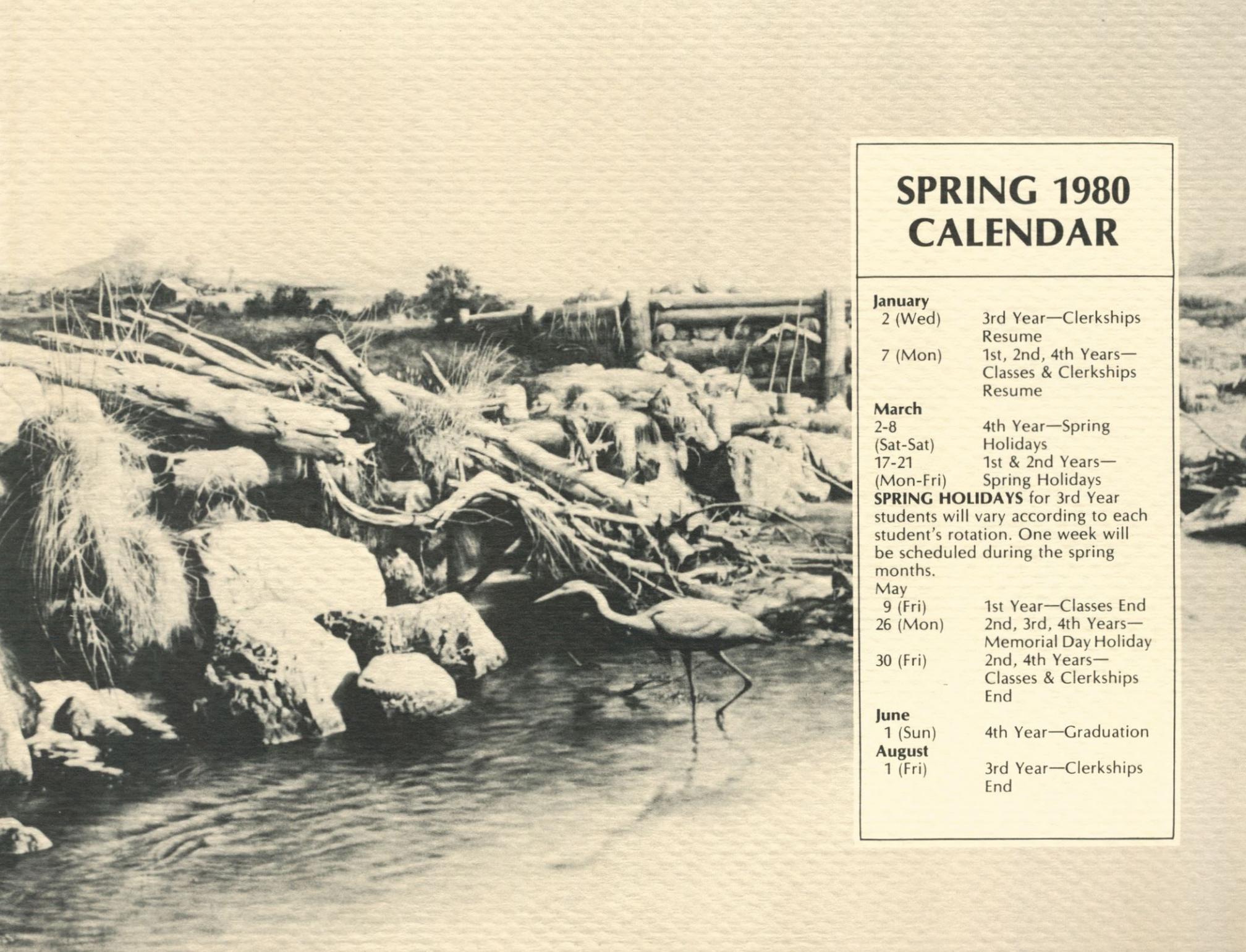
- Noon 21 (Wed) 1st, 2nd, 3rd, 4th
22 & 23 Years—Thanksgiving
(Thu & Fri) Holidays

- December 22** 1st, 2nd, 4th Years—
(Sat) thru Christmas & New
January 5 Year's Holidays
(Sat)

- December 22** 3rd Year—Christmas &
(Sat) thru New Year's Holidays

- January 1**
(Tues)





SPRING 1980 CALENDAR

January

2 (Wed)

3rd Year—Clerkships
Resume

7 (Mon)

1st, 2nd, 4th Years—
Classes & Clerkships
Resume

March

2-8

(Sat-Sat)

4th Year—Spring
Holidays

17-21

(Mon-Fri)

1st & 2nd Years—
Spring Holidays

SPRING HOLIDAYS for 3rd Year
students will vary according to each
student's rotation. One week will
be scheduled during the spring
months.

May

9 (Fri)

1st Year—Classes End

26 (Mon)

2nd, 3rd, 4th Years—
Memorial Day Holiday

30 (Fri)

2nd, 4th Years—
Classes & Clerkships
End

June

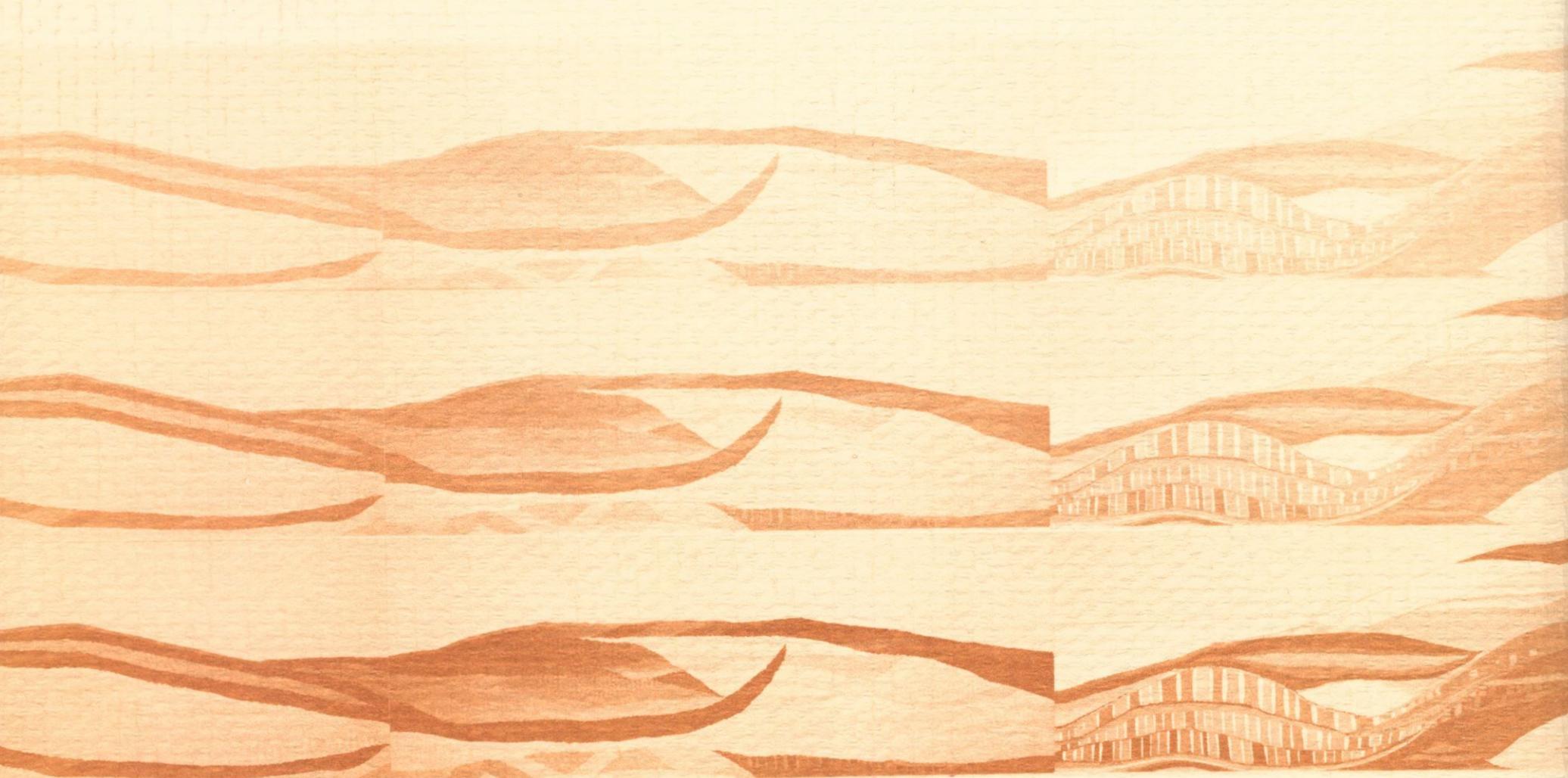
1 (Sun)

4th Year—Graduation

August

1 (Fri)

3rd Year—Clerkships
End



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