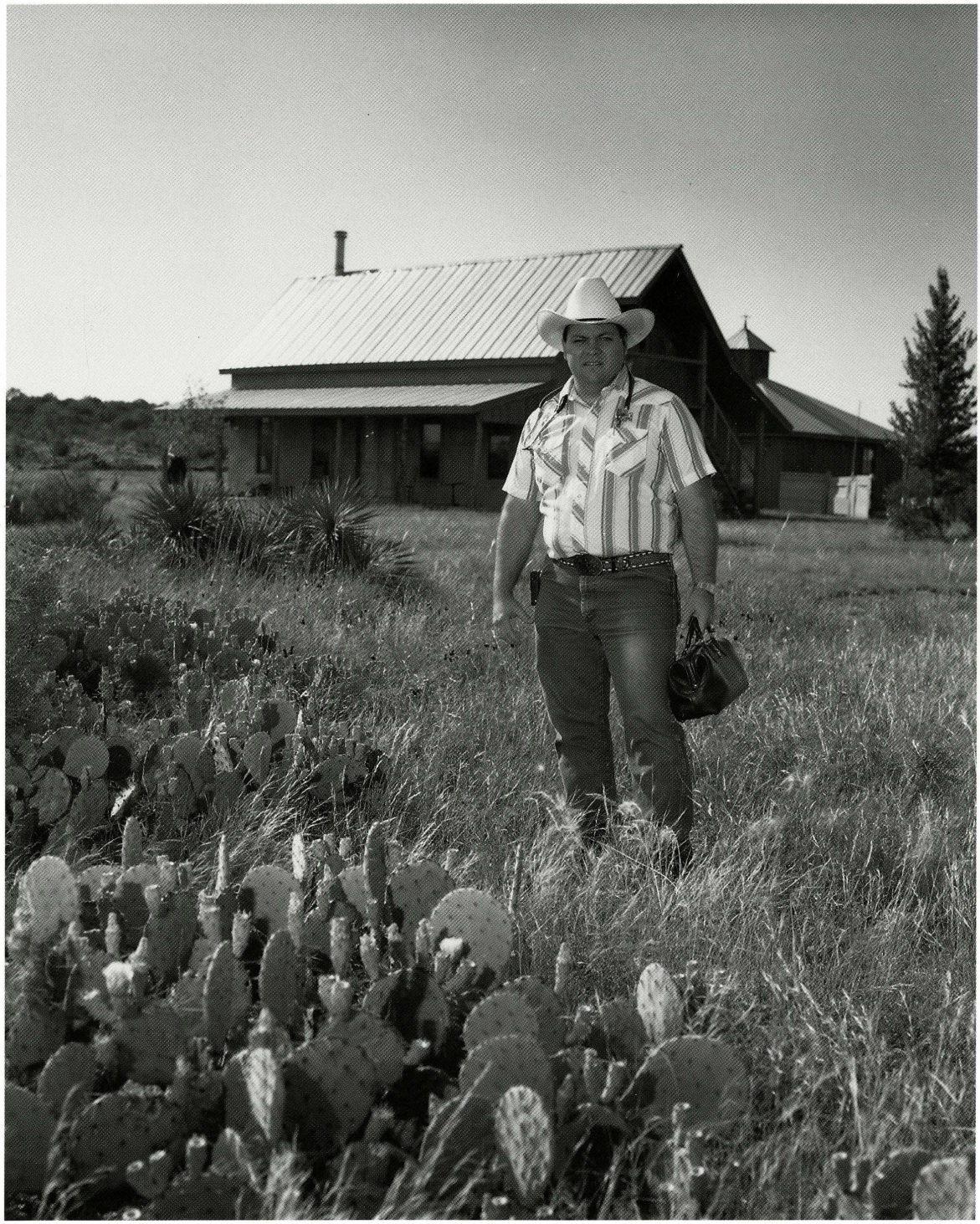
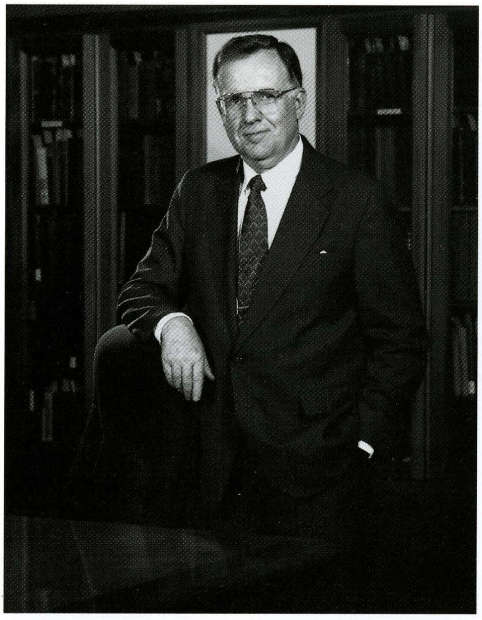
TCOM REVIEW
SUMMER/FALL VOL. 2., NO. 2 1989



The New Country Doctors

PRESIDENT'S MESSAGE



One of our greatest challenges, as educators of the physicians who will serve us in the 21st century, is to keep abreast of changes and trends in health care, and to make these relevant to our students.

At Texas College of Osteopathic Medicine, we feel strongly that there remains a role in medicine for the general practitioner — the family physician — and that this role becomes increasingly important in light of the pressures facing America's health care system. As physicians cluster in major health care centers, cooperative health care organizations and professional subspecialties, the need for primary care physicians in small or underserved communities becomes more critical.

We also believe that in order for physicians to be equipped to deal with tomorrow's health care problems, their training must include emphasis on how to help patients prevent disease and to promote healthful living. We must train them to work within the health care team, and we must provide them with information on the economics of medicine, managerial science and consumer concerns.

The physician best equipped to meet the challenges of health care in the 21st century will have the skills and expertise to utilize high-tech, data base-available diagnostics and therapeutics, and will know how to bring these services to the communities and facilities where they are most needed — to the small towns, to the inner city, to the aging patient who wants to stay healthier longer and to the family.

In this issue of the *TCOM Review*, you'll get a glimpse of how our osteopathic family is preparing for these challenges ... from visionary applications of computer technology in our medical curriculum to the significant potential of our research into hyperbaric oxygen therapy ... from the promise reflected in the faces of our sixteenth graduating class to the dedication of those alumni who have taken the roads less traveled through the Texas heartland.

Franklin Delano Roosevelt said, "The test of our progress is not whether we add more to the abundance of those who have much; it is whether we provide enough for those who have too little." I believe we are making progress.

Good health to you and your family.

David M. Richards, D.O.

CONTENTS

TCOM Review is published twice a year by the Office for Development at Texas College of Osteopathic Medicine for alumni, friends of the college, faculty, staff and students. Views expressed in *Review* do not necessarily reflect official policies of the college. Editorial offices are in Room 814 of Medical Education Building 1, 3500 Camp Bowie Boulevard, Fort Worth, Texas 76107-2690. Third class postage is paid at Fort Worth, Texas. State allocations are not used in the printing and mailing of *TCOM Review*.

On the cover: Hill Country native Richard Morgan, D.O., Class of '87, has returned to the heartland of Texas to practice medicine.

Rural communities are home to 3.2 million Texans – almost 20 percent of the state's population. Yet many counties have less than one physician for every 2,000 residents.

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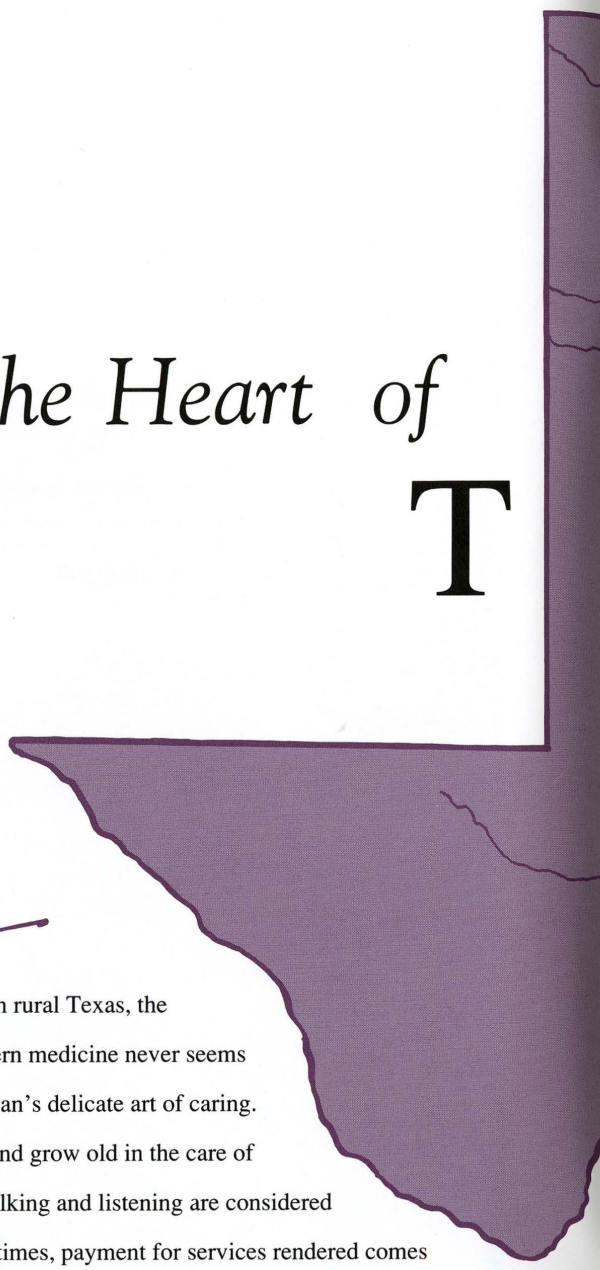
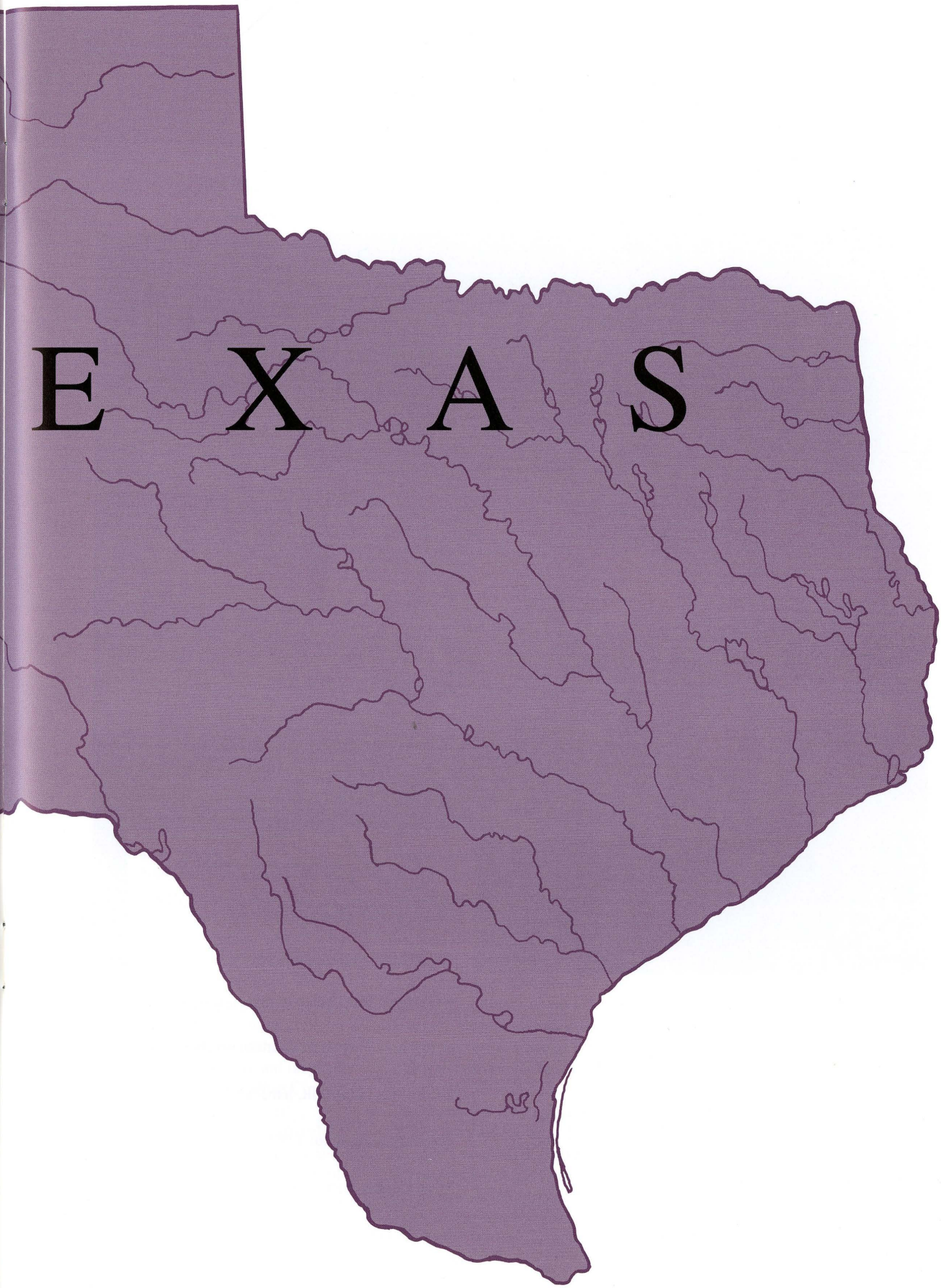
Resilience. Ingenuity. Independence. Compassion. Essential qualities for any physician, but particularly important for those who want to practice medicine

Deep in the Heart of T



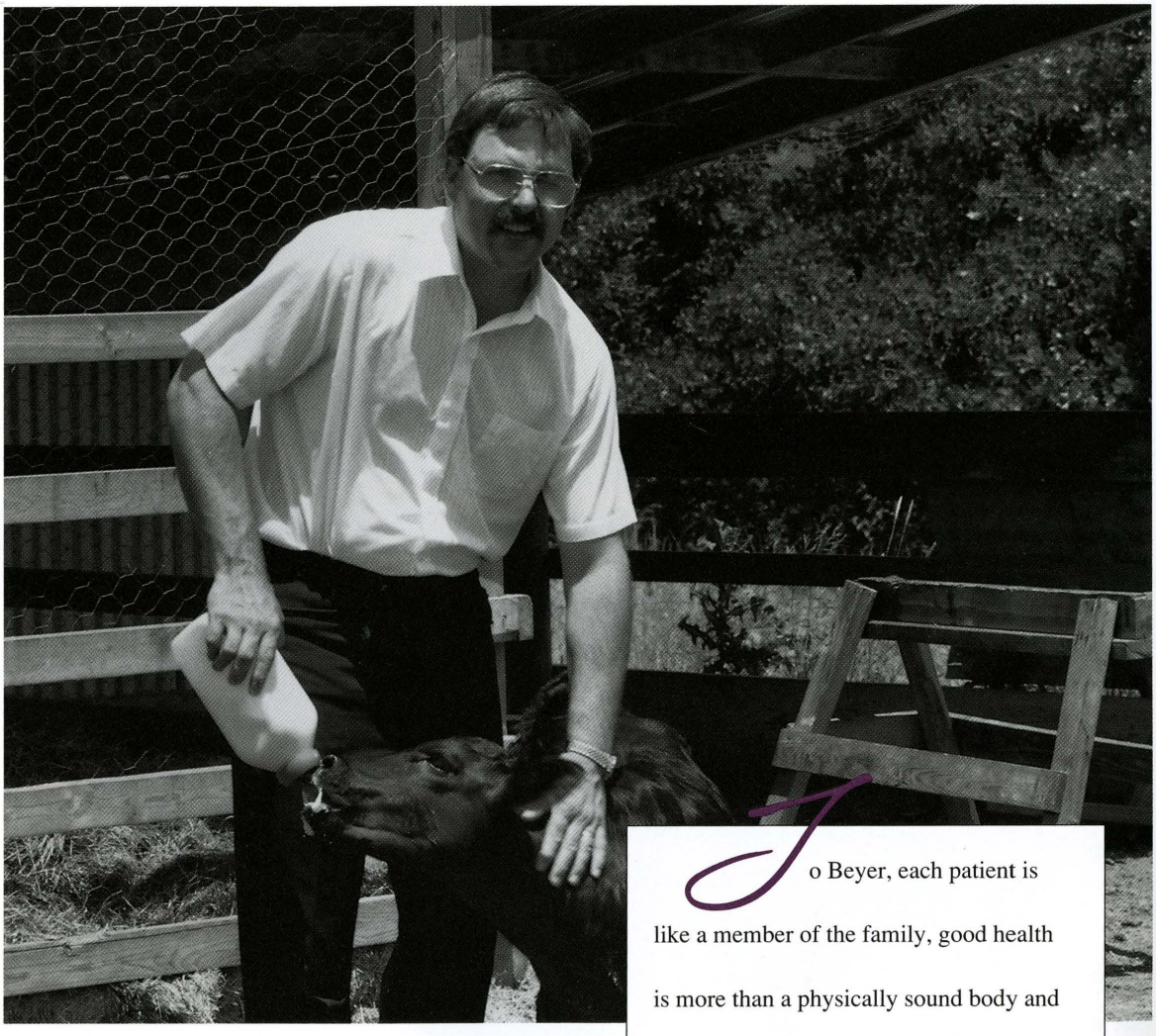
In rural Texas, the high-tech science of modern medicine never seems to overshadow the physician's delicate art of caring. Entire families grow up and grow old in the care of a single physician. Just talking and listening are considered valuable therapies. Sometimes, payment for services rendered comes from a bountiful country garden, not a pocketbook. And, too often, in the more economically depressed areas of the state, payment never comes at all.

These seven alumni represent a growing force of TCOM graduates who work to improve the health care services of small towns and rural communities across Texas. For many of them, it's a return to their roots, a fulfillment of a lifelong ambition to make a difference — literally — in the lives of their neighbors. For all of them, it's a highly visible role with sometimes awesome responsibilities that rival those of their busiest urban counterparts.


TEXAS

North Texas

Don Beyer, D.O., Class of '84



Beyer adopted the country life enthusiastically.

Jo Beyer, each patient is like a member of the family, good health is more than a physically sound body and Boyd is an ideal place to raise children.

Beyer, a Fort Worth native, had his eye on this close-knit, hard-working community of about 1,000 in southern Wise County even before he graduated from TCOM.

"This is where I want to live, work and raise a family."

Beyer opened his center for disabled adults in 1987.

"I had always wanted to be an old-time country practitioner," Beyer says. "The kind who spends time growing with the families he serves." In 1985, after an internship at Mount Clemons General Hospital in Detroit, Beyer, his wife and six children enthusiastically adopted the same lifestyle as their new neighbors — farm, livestock, garden and all. Beyer was Boyd's first doctor in more than a dozen years, and there was much to be done.

By June 1985 his clinic was open on the main highway and his appointment book was filling up. As a family physician, he, of course, provides the entire range of medical services. As the town's only registered pharmacist, he even fills his own prescriptions.

In 1987 Beyer's disabled brother came to live with him and inspired the ideas for Beyer's Wise County Activities Center for brain-damaged and mentally retarded adults. Built on Beyer's farmland by cash donations and the labor of volunteers and the parents of children who will use the facility, it has been many families' only answer to providing productive, rewarding activities for their 18-and-older children who are permanently disabled.

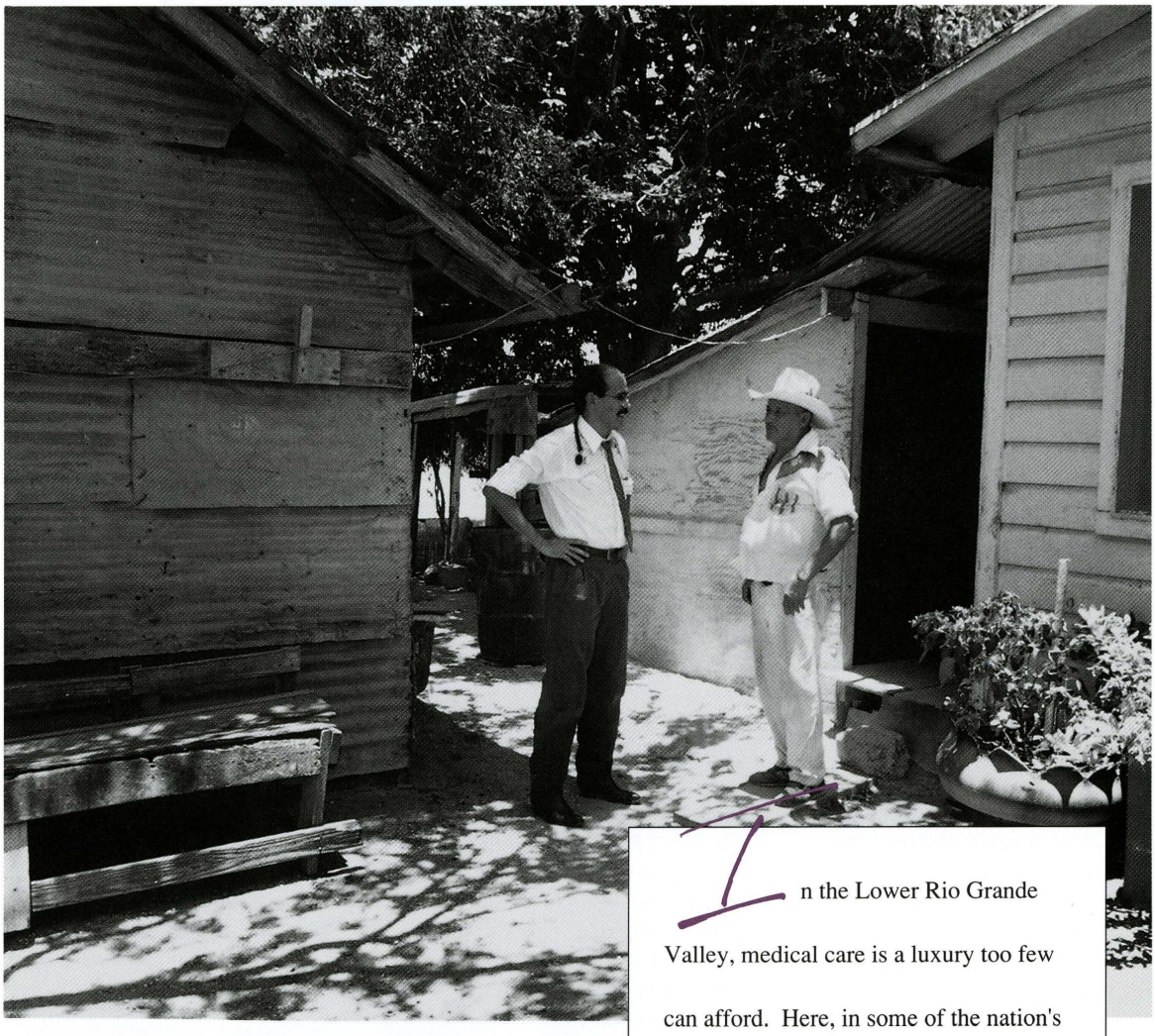
"We want to provide a dignified activity center where people can react and socialize with others in a pleasant environment," Beyer says. "Too often these kids have been allowed to just sit at home in front of a TV." The fully supervised activities include arts and crafts, job skills training, classes, games, feeding the farm animals, movies, Special Olympics participation, field trips and some contracted work to local businesses that need help in assembly, packaging or sorting.

A family physician in an underserved area is always in demand. Beyer estimates that he's on the road an average of four nights out of seven. In addition to house calls, he's the doctor on call for the emergency room at Boyd's 25-bed hospital, he's on the staff of Decatur's hospital and Hurst Northeast Community Hospital, and he travels with the athletic teams of the entire school district. He also shares his personal time with the Lion's Club, Knights of Columbus and his church, where he's choir director.

A rural physician is often a community spokesman, too. Beyer believes it's important to be politically active and to help educate his fellow citizens on the health care issues that affect their community. Most recently he's spearheaded a campaign to bring a much-needed ambulance service to the more than 15,000 residents of southern Wise County. "The system does work," Beyer says, "and I expect we'll see some action within the year."

South Texas

Gilberto Diaz, D.O., Class of '80
Gary Tamez, D.O., Class of '83



Tamez calls on a patient in Pharr.

In the Lower Rio Grande Valley, medical care is a luxury too few can afford. Here, in some of the nation's poorest communities, simple illnesses more rapidly become complicated and chronic illnesses are inadequately monitored. Primary care physicians such as Diaz and Tamez are in short supply.

"There's a tremendous need for medical care in this area, but there are few resources."

Diaz checks the vital signs of an emergency patient.

For many Hidalgo County residents, Diaz is a physician of last resort. He's director of emergency medicine at the 120-bed Edinburg General Hospital and a staff physician in emergency medicine at the 300-bed McAllen Medical Center.

Diaz says that with fewer physicians accepting Medicare, more and more poor or indigent Hidalgo County residents who have no other medical insurance are going to hospital emergency rooms for treatment of common ailments such as flu or sore throats. Migrants, though referred to migrant clinics in the area, also pour through the doors. "Sometimes it takes a month for them to get a clinic appointment, so they come back to us," Diaz says.

He estimates that as much as 35 percent of the patients seen at Edinburg are indigent and that at McAllen the figure is more than 50 percent. "There is a tremendous need for medical care in this area," he says, "but there are few resources."

No matter the socio-economic standing of his patients, Diaz loves emergency medicine. " I don't know what's going to come through the door next, "he says. "For me, satisfaction lies in the challenge of tending to such a variety of illnesses and injuries. "

In November 1988 Diaz was appointed to serve as one of two consultants from the Lower Rio Grande Valley to the Texas Rehabilitation Commission. He is a member of the Hidalgo County chapter of the Texas Historical Commission and the Hidalgo-Starr County Medical Society, and is an alternate delegate to the Texas Medical Association. He also has been medical director for the Hidalgo County Jail since 1984.

In nearby Pharr, Tamez is seeing his patient load increase, too. "There are more and more every day," he says. "I don't know where they're coming from."

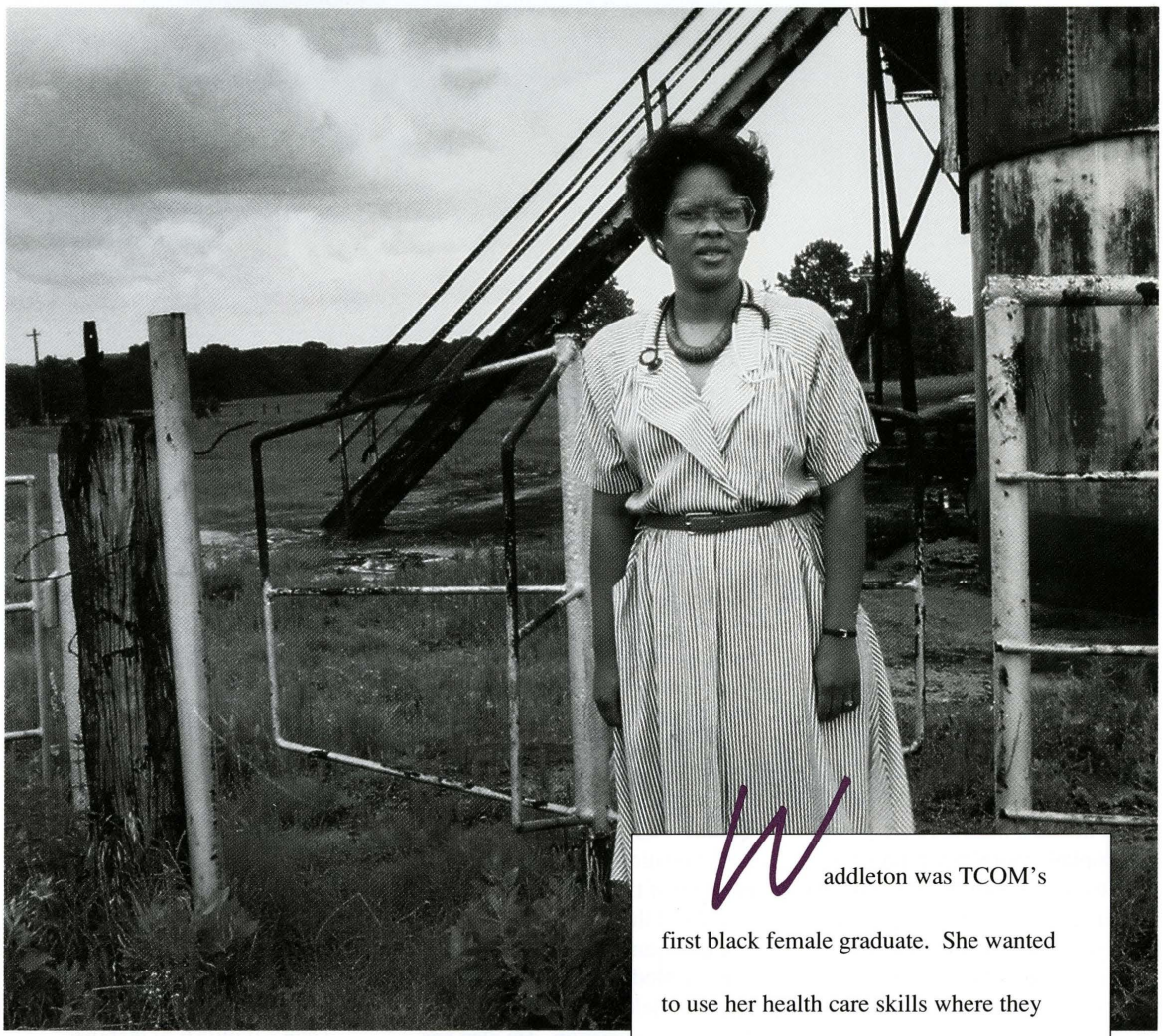
Tamez is one of 11 physicians on the staff of the Hidalgo County Health Care Corp., which operates four private community clinics financed primarily with federal funds to serve the county's indigent and low-income residents. The clinics have a sliding scale of fees, with $3 the minimum payment. "Ninety-five percent of the patients I see are at that level," Tamez says. "Most can't even afford that. They have no insurance or Medicare."

Tamez says that if the clinics did not exist, the young and the elderly, who have the greatest health care needs, would "suffer a lot more before they would finally spend the money for more costly medical care. Their illness or disease might go untreated or they might go across the border to see *curanderas* — Mexican faith healers."

Tamez returned to practice medicine not far from the agricultural community where he was born, Raymondville. He had trained across the country in Michigan and Pennsylvania before returning to the Lower Rio Grande Valley, where he knew he was needed most. "There's an urgent need for primary care physicians here in Hidalgo and Starr counties," Tamez says. "They're two of the poorest counties in the country."

East Texas

Beverly Waddleton, D.O., Class of '81



Waddleton returned to the oil-field country of East Texas to practice.

Waddleton was TCOM's first black female graduate. She wanted to use her health care skills where they were needed most, so after an internship at Hurst General Hospital in the heart of the Dallas/Fort Worth Metroplex, she returned to her hometown — Quitman, population about 2,000, roughly 40 miles north of Tyler.

She's found her specal niche, she says, and as long as the families of Quitman need her, she will be there for them.

Waddleton leaves her clinic for a house call.

Waddleton, a general and family practitioner, is the only woman among the town's five doctors and is one of two osteopathic physicians. Though as a family doctor she's involved in everything from pediatrics to geriatrics, she estimates that 40 percent of her patients are children and that another 40 percent are women, who see her for all their gynecological needs. She phased out her obstetrical services about three years ago to allow more time for these primary care areas and for her own son, now 2 and one-half.

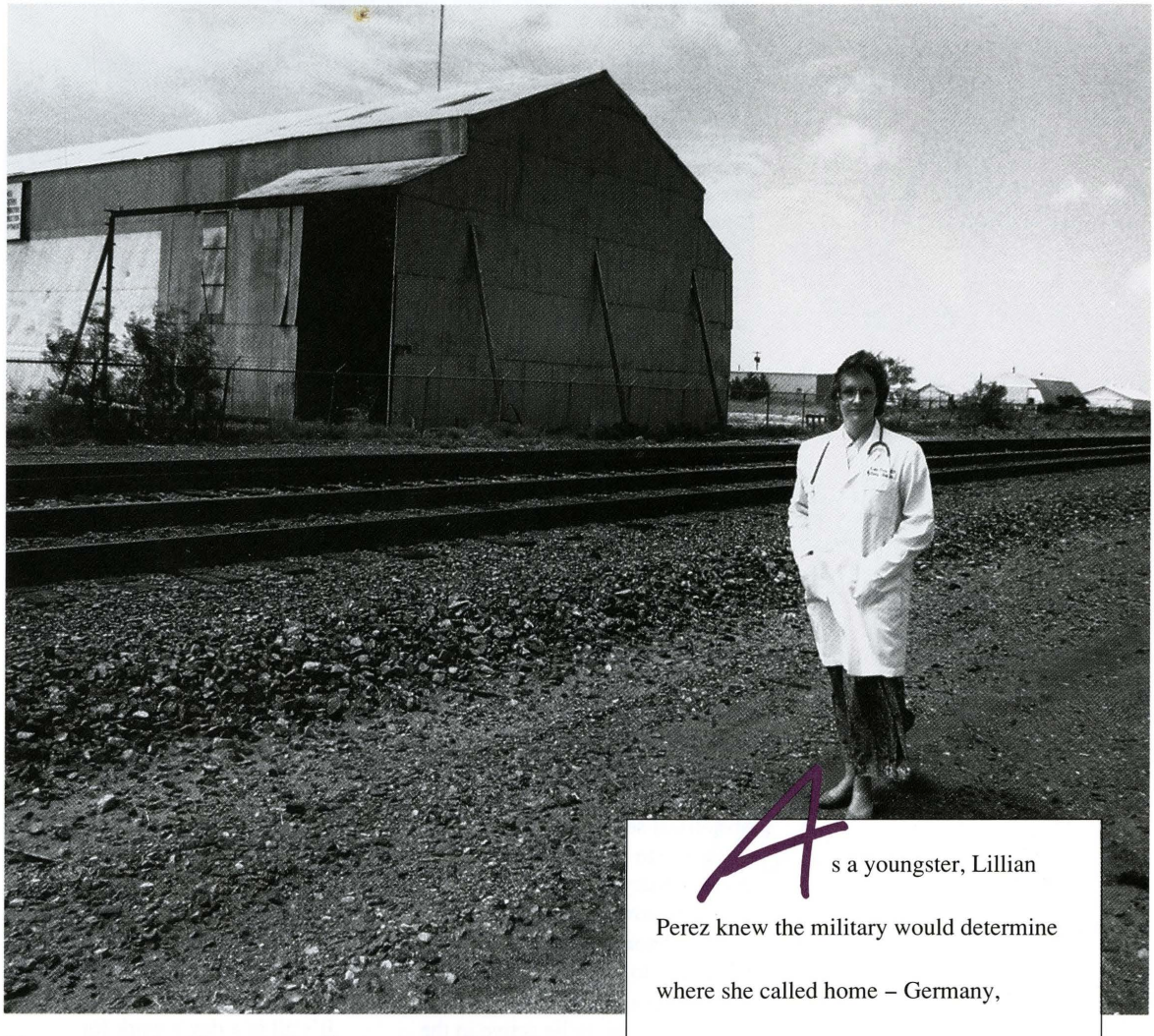
Waddleton also has made time in her career to be medical director for the local chapter of the American Cancer Society, to be active in the Quitman Outreach Society for Women and the American Heart Association and to serve on the county Child Welfare Board. She plays piano for her church's youth choir and teaches Sunday school. And she's an active member of both state and national osteopathic medical associations.

Waddleton believes a stable family life and strong community ties are not just personal pleasures but also part of important support systems for the people in and around Quitman ... especially since the oil fields went bust, the local farmers and dairy operators found it harder to make ends meet and other parts of the Texas economy worsened. Such adversities are the underlying causes, Waddleton believes, of a disturbing trend she has seen in her rural East Texas community over the past few years: an increase in suicide attempts that spans all ages, from 14 to 70. In response, she has devoted more of her clinic time to counseling and is referring some of her patients for more specialized mental health services in Tyler.

It's all in a day's work for Waddleton to minister to the needs of her patients' spirits as well as their bodies. She's found her special niche, she says, and as long as the families of Quitman need her, she will be there for them.

West Texas

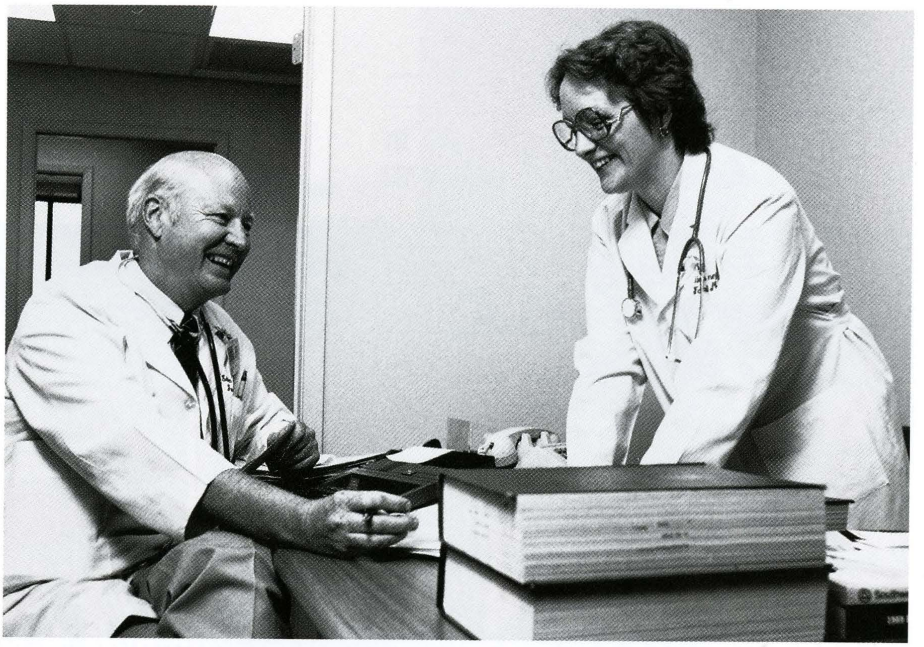
Lillian Perez, D.O., Class of '81



The country roads of Texas are familiar territory to Perez.

As a youngster, Lillian Perez knew the military would determine where she called home – Germany, California, Washington, D.C. Then her family settled in the small town of Stockdale, near San Antonio. Today, far-away places hold no appeal for the grown-up Perez with a family of her own; to her, there's still no place like Texas.

"I fear the day may come when there will be no small-town hospitals."



Perez confers with Ed Rathbun, M.D., at the Texas Tech Family Practice Clinic in Odessa.

After graduating from TCOM, Perez served in the Army for four years. She completed one year of a pediatric residency at Brooke Army Medical Center in San Antonio and then spent three years as the general medical officer at Fort Sam Houston (San Antonio) in the Academy of Health Sciences, where she taught advanced cardiac and advanced trauma life support. She also wrote the academy's pediatric catalog and developed its pediatric program. She received the Army Commendation Medal for her work.

Perez's strong motivation to care for people in the familiar surroundings of rural Texas then took her to the central Texas community of Mason. For about two years, she ran a general practice there on weekdays and on weekends worked in the nearby towns of Sonora, Big Lake and Menard. Then classmate Jim Pettit, D.O. (also featured here), "took over," allowing Perez to begin a family practice residency and become eligible for board certification.

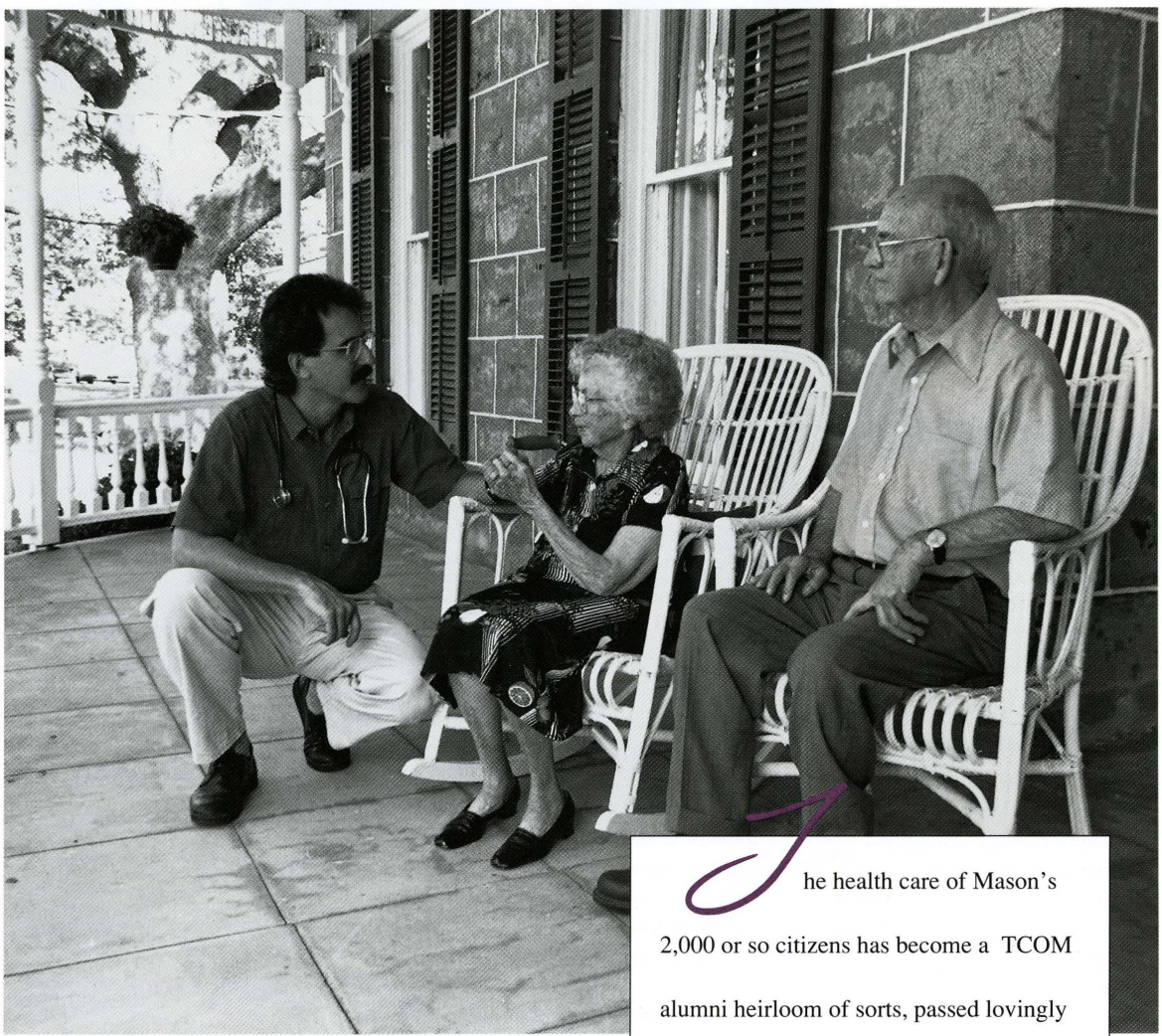
Perez now is in her third and final year of the residency at Odessa's Medical Center Hospital. After regular duties in the women's and children's clinic, she again spends her weekends working in nearby small towns. She helps with physical examinations for high school athletes, provides medical coverage for area football games and other athletic events and writes a medical information column for a local newspaper.

Perez says her experiences in the small towns of Texas have her concerned about the future of rural health care. "I've seen what Medicare and Medicaid regulations have done to the small-town hospitals," she says, "and I fear the day may come when there will be no small-town hospitals."

After completing her residency in December 1989, Perez plans to move her family (husband Juan and three daughters) to San Angelo. She says she'll work on a hospital or clinic staff for a few years and then find a teaching position where she can train other physicians to follow in her professional footsteps along the country roads of Texas.

Central Texas

Jim Pettit Jr., D.O., Class of '81
Richard Morgan, D.O., Class of '87



Pettit calls on octogenarians Marcus and Mildred Grant of Mason.

The health care of Mason's 2,000 or so citizens has become a TCOM alumni heirloom of sorts, passed lovingly from one pair of capable hands to another. Pettit came to this rural farming and ranching community, 40 miles north of Fredericksburg, after his classmate, Lillian Perez, D.O., moved on to her Odessa residency.

Now, Pettit is preparing to follow Perez's path, seeking board certification after completing his own family practice residency that begins in January at the same facility, Odessa Medical Center Hospital. He says he will leave Mason in good hands, those of fellow alumnus Morgan, a Hill Country native recruited by Pettit last July.

Pettit says he will return to central Texas after residency training. He likes the country and, in particular, communities where "people care about your personal life." "On more than one occasion, a patient has told me she likes to come to me because I attend church," he says.

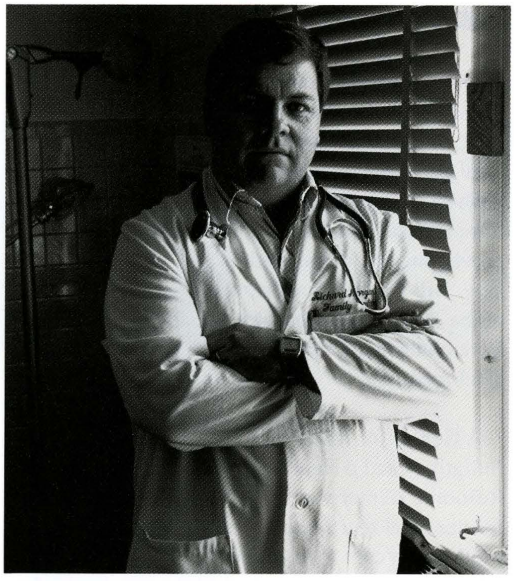
Even though practicing solo put Pettit on call 24 hours a day, seven days a week, "It was a great experience," he says. "I learned what it takes to be both a manager and a physician." To meet demands, Pettit coaxed a local M.D. out of early retirement to practice in his clinic part time. The addition of Morgan to the staff was welcome relief.

In traditional rural fashion, infections, broken bones, minor surgeries and house calls filled the long days. The town's 60-bed nursing home and urgent care center (open whenever the clinic is closed) required staffing, too. Somehow the two full-time physicians always made time to lecture for school health classes and work the emergency rooms of nearby Sonora, Del Rio and Eagle Pass on weekends.

It didn't take long for newcomer Morgan to be accepted into the community, too, as he became a member of the Mason Chamber of Commerce board of directors and the Lion's Club, and was named medical director of a nursing home in nearby Brady.

Pettit says their goal was simply to provide as much care as they could. He set a precedent in Texas rural mental health care by bringing a master's-level psychotherapy intern from the University of Texas School of Social Work to his clinic full time. It was UT's first rural placement. "She proved that even in a town of 2,000 there's enough business to support this kind of care," Pettit says. "Though she now spends most of her time at the Heart of the Hill Hospice in Kerrville, she still sees patients here and is continuing the therapy group she started," he says.

"Country people are tough ... and we respect them."



Morgan is a Hill Country native.

Pettit's latest project has been developing a grant proposal for an observation center where patients who would otherwise be sent to an out-of-town hospital for routine tests and observation can be monitored and treated aggressively for 24 hours there in Mason. "It's an alternative to hospital bills that our patients don't want and often can't afford," he says. "Medicare will save money and our clinic volume will increase. Everyone will be better off." Pettit says he is very optimistic about receiving the grant; word should come in September.

The town misses Mason Memorial Hospital, which closed in December 1986 after 35 years of operation, and it's been a quiet source of frustration for Pettit. "We needed too many people in the front office to handle the paperwork required by Medicare," Pettit says.

He believes Mason Clinic is capable of providing primary care to 100 percent of the local citizenry, but he says that from 25 to 35 percent of the Masonites insist on having their primary care physicians in Fredericksburg because it still has a hospital.

Pettit and Morgan believe that in the long run, though, this community will have practically every other service necessary to keep its people physically and mentally healthy. They believe not only that such comprehensive care is convenient but also that it works within the context of their patients' personalities, families and livelihoods.

To illustrate this, Pettit recalls one fellow who came in with a herniated disc but refused treatment because he was harvesting peanuts. "He didn't return until the crop was in," Pettit says. "Country people are tough. I've grown to respect that. And I've learned that I've got to work where the patient is."

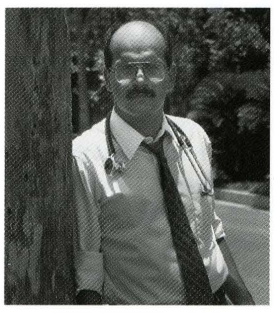
Legislation to the Rescue

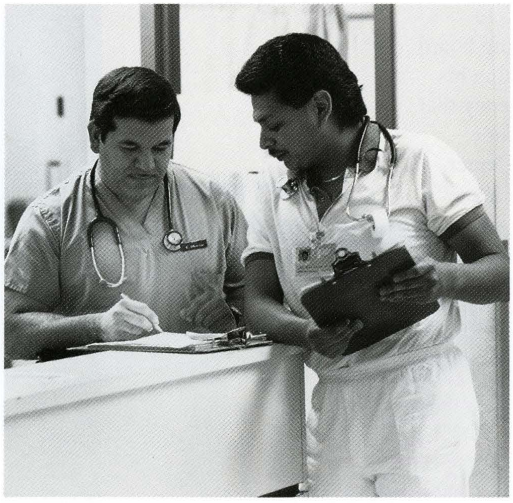
During the last hours of the 71st legislative session in June, new hope for the well-being of Texas' rural residents was created in the form of the Omnibus Rural Health Care Rescue Act. Among its many provisions, the bill signed by Gov. Bill Clements addresses three of the more serious problems that have contributed to the ailments of rural medicine:

• A Center for Rural Health Care Initiatives and a Health Professions Resource Center was established to bolster rural recruitment, emphasize rural health care in state medical schools and enhance student loan programs that help young doctors settle in small towns.

• The state will pay up to $100,000 in medical malpractice suits regarding obstetrical or emergency care filed against private physicians who do at least 10 percent charity work. The existing liability system has forced many rural physicians to either abandon their practices or eliminate procedures to avoid lawsuits and rising malpractice insurance premiums.

• A more equitable system for reimbursing small-town hospitals and others who care for Medicaid patients was approved, and is expected to clear Congress and be forwarded to President Bush by late summer or early fall.

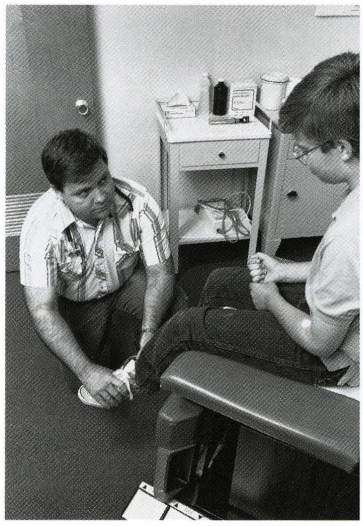




What the Media Say About Rural Health Care

"The line that connects rural Texans to hospitals and doctors is severely frayed. Unless federal, state and local policy-makers begin paying more attention to the deteriorating state of rural health care, the residents of the state's small towns may end up paying dearly for the neglect — perhaps with their lives. The future of rural health care ultimately will depend on whether enough young men and women will want to pursue medical careers in small towns."

The Dallas Morning News
Feb. 19, 1989



"Fully one quarter of the U.S. population — and one third of its elderly — live in rural America. Yet only 12 percent of the nation's active doctors work there, and many of those are nearing retirement age. A recent study for the National Rural Health Association predicts that the number of rural practitioners could drop by 25 percent within the next five years."

Newsweek
Feb. 27, 1989

What Statistics Say About Rural Health Care In Texas

- Texas has 3.2 million residents (almost 20 percent of the state population) living in rural areas.

- 87 of Texas' 254 counties have a doctor-to-population ratio of less than one physician for every 2,000 residents. The national average is one doctor for every 600 people.

- Since 1981, 57 Texas hospitals have closed, 38 of them since 1983. No other state has closed more hospitals.

- There are no hospitals in 49 of Texas' 254 counties.

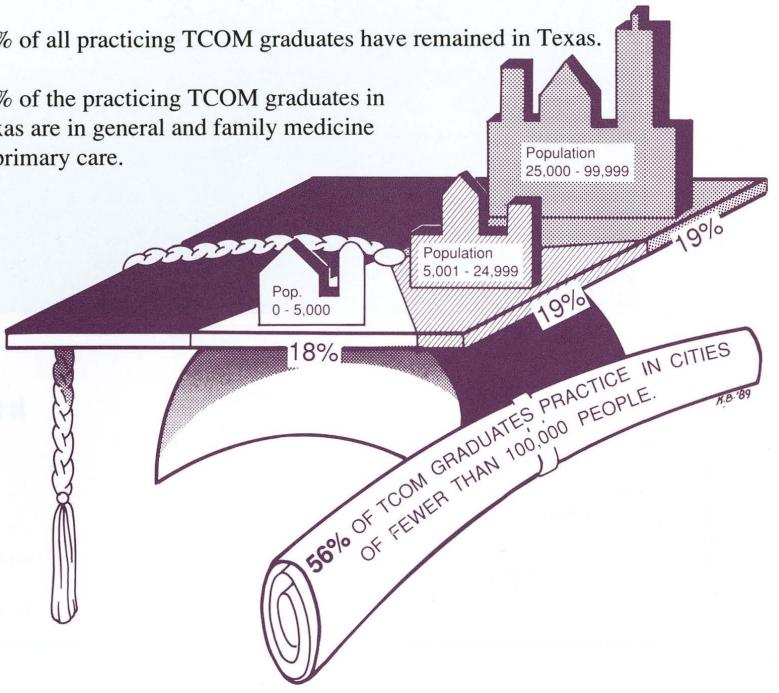
- 13 Texas counties do not even have a physician.

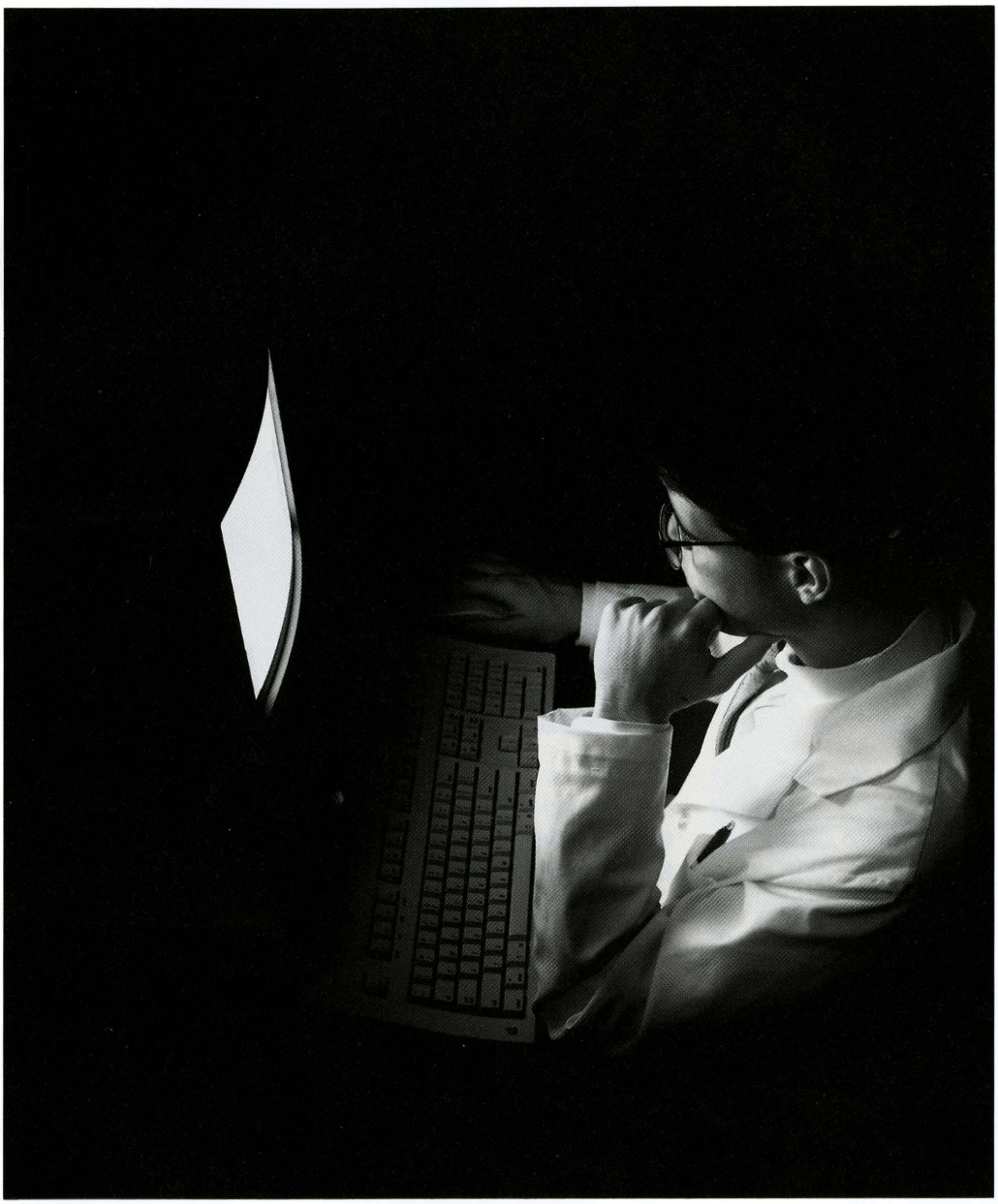
Information from The Dallas Morning News, the Leadership Texas organization and the Texas Special Task Force on Rural Health Care Delivery.

What TCOM Means To Rural Health Care In Texas

- 65% of all practicing TCOM graduates have remained in Texas.

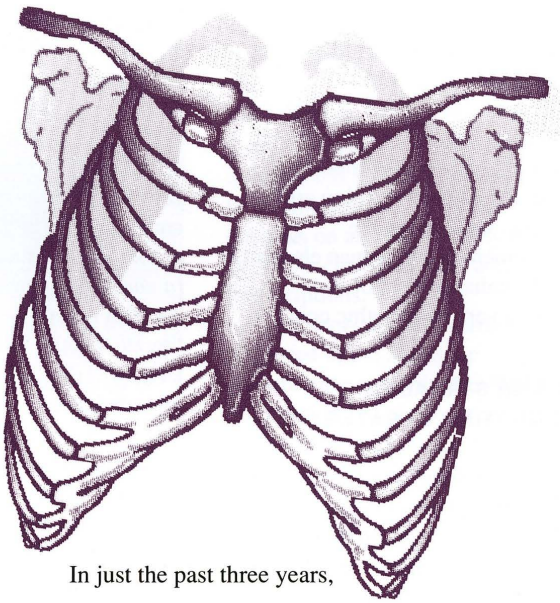
- 80% of the practicing TCOM graduates in Texas are in general and family medicine or primary care.





The goal of academic computing at TCOM is to provide convenient, easy-to-use tools for both students and faculty.

The Making of Computer-Literate Physicians



Not perhaps since papyrus replaced clay tablets some 5,000 years ago has the educational process been so revolutionized.

About 25 years ago computers began buzzing within the walls of academe. Since then, computing hardware and software have increased in speed and sophistication by about one million fold. By 1976 most "Fortune 50" medical schools had been involved in academic computing for more than a decade. Many schools had already introduced the computer into the medical curriculum.

In just the past three years, however, TCOM has made a national name for itself in library automation, computer-assisted instruction and the teaching of computer literacy. *(See the Anderson/ Barker Perspective.)*

Today at TCOM, the computer is not only an infinitely patient teacher of facts and concepts but also an objective examiner who knows how many times an answer is changed from right to wrong. It can assess a student's understanding of disease processes and then pit his diagnostic skills against a data base of expert opinions.

Illustrations in this article are reproduced from a new computer-assisted instruction program in anatomy that features full-color computer-generated images of every bone and muscle in the human body.

Program developers and instructors responsible for the electronic reformation at TCOM take care to point out that computers are not substitutions for people, but supplemental tools that help impart, integrate and expedite knowledge. They believe that as students and physicians utilize the computer to become more efficient at mastering the *science* of medicine, more time will be freed for cultivating the *art* of medicine. The ironic result of computer-assisted medical education and practice, then, is not the replacement of the human element, but the enhancement of it.

It is a very osteopathic concept.

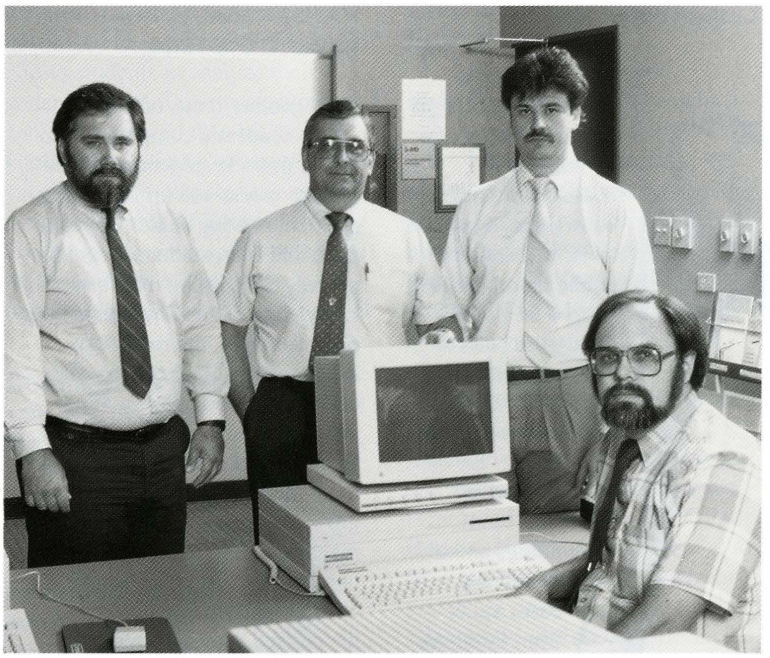
TCOM's Academic Computing Strategy

The college is still in the very early phases of expanding the use of computers for medical education. As with most institutions, issues such as which computer hardware and software to use, who will pay and who will provide administrative coordination have been thorny. Within the past two years, however, a consensus on many of these issues has paved the way for innovative integration of computer-based instruction into TCOM's traditional lecture-based curriculum.

Having taken an objective look at hardware and software now commercially available, TCOM's academic computing pioneers believe that, for the near future, most types of computer-based educational software for the college will be produced using Apple Macintosh computers. Key factors in this decision were: ease of use for students and faculty; the availability of a powerful authoring system called HyperCard; the trend begun by academic departments to acquire this brand of equipment; the preference shown by students to use Macintosh computers to complete computer literacy requirements; and the relative ease and cost-effectiveness of connecting these computers in networks. Though committing current in-house development efforts to the Macintosh, the college will continue to acquire the best educational software produced elsewhere for the IBM-compatible equipment that also is available for student use.

The goal of academic computing at TCOM is to provide convenient, easy-to-use tools for both students and faculty. The first step in accomplishing this goal is training *(a computer literacy curriculum)*. As both groups become computer literate, faculty members will need easy-to-use authoring systems to provide basic lessons *(computer-assisted instruction)*, drills and testing *(computer-based testing and evaluation)*, and review and reference materials *(library resources)*. As students become computer literate, they will need tools to help them organize and integrate a huge collection of facts *(curriculum integration and knowledge navigation)* and to strengthen their problem-solving skills, particularly in medical diagnosis *(expert systems and patient simulations)*. Finally, as TCOM begins to graduate a new generation of computer-literate physicians, the college will need to develop effective methods of professional development *(continuing medical education)* for its graduates as well as other physicians in Texas.

At the Sixth National Symposium on Computers in Medical Education, held in March at the University of Nebraska Medical Center, presentations by TCOM faculty members made up almost one-third of the program.



TCOM's academic computing pioneers include, from left, standing, James Sims, Ph.D., David Barker, Ph.D., Frank Papa, D.O., and, seated, Robert Bourdage, Ph.D.

A Computer Literacy Curriculum

TCOM's computer literacy curriculum was developed to ensure that graduates will be intelligent users and consumers of computer hardware and software and will know how to maximize their use of computer technology in the practice of medicine. The process began about three years ago when task forces were established, needs were evaluated and recommendations were made. Two of the recommendations were to establish a computer literacy requirement for graduation, and to provide a computer laboratory for medical instruction and staff training. The 1988 entering class was the first affected by the computer literacy requirement. The lab opened a month after those students began classes.

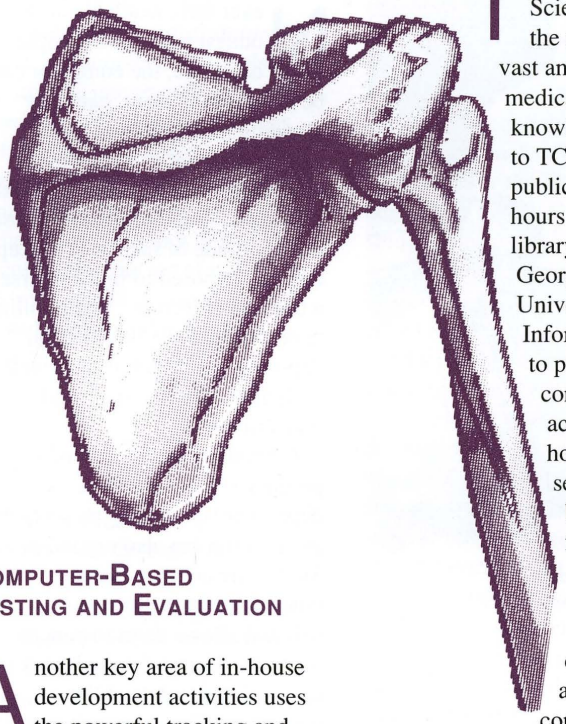
David Barker, Ph.D., and Robert Bourdage, Ph.D., are co-course directors for the self-paced, pass/fail computer literacy classes that are held on nights and weekends. Computer Literacy I, completed in the first year of medical school, covers six areas that are fundamental to productive use of a microcomputer: microcomputer basics, operating system, word processing, spreadsheets, data bases and communication between computers. Computer Literacy II, completed in the second year of medical school, covers four areas that relate computers to the practice of medicine: how to access and use medical data bases, how computers are networked together, how expert systems can be used for medical diagnosis, and how to select hardware and software for an office practice. The directors believe that Computer Literacy I may become obsolete in the near future as students become computer literate before entering medical school.

Computer-Assisted Instruction

Never sick, available at the oddest hours and completely objective, the computer can be an excellent tutor, patiently allowing a student to review subject material at a pace most comfortable for the learner, not the instructor. Few students can absorb the multitude of facts and concepts they are exposed to in the course of a traditional lecture. Their ability to consolidate the information depends on additional study aids such as lecture handouts and transcriptions.

Computer-assisted instruction, produced in the academic departments, not only presents the information but also organizes it. Such software frees students from note-taking in the lecture hall and allows them to concentrate on the concepts imparted, picking up the details while at the computer. This approach can eliminate errors in note-taking and transcriptions, which lead to decreased achievement, and can help students more effectively manage their study time. The goal is to provide structured learning materials that impart details, allowing lectures to become more integrative with an emphasis on problem solving.

More than 40 computer-assisted instruction programs were developed in 1988 for anatomy, biochemistry, emergency medicine and pharmacology. Programs for general and family practice, microbiology and immunology, internal medicine, pathology and radiology are in the works. Pioneer programmers Bourdage and James Sims, Ph.D., are busy developing new authoring systems that will allow non-programmer faculty members to produce their own specialized courseware and exams easily without having to learn a programming language. Courseware produced at other institutions also is being utilized.



Computer-Based Testing and Evaluation

Another key area of in-house development activities uses the powerful tracking and reporting features of Apple Computer's HyperCard system. Bourdage's HyperExaminer testing program used in gross anatomy provides examinations identical in style to traditional paper-and-pencil tests, but with two major differences: scoring is automatic at the completion of the exam; and both student and instructor receive an immediate and detailed analysis of performance. This information can then be used to identify strengths and weaknesses, and concentrate further study or instruction where it is needed most. Other faculty members should be able to use future versions of HyperExaminer to quickly and easily produce a variety of examinations from within their own computer-assisted instruction programs.

Library Resources

TCOM's Health Sciences Library is the repository of a vast amount of medical and scientific knowledge, available to TCOM and the public more than 100 hours a week. The library uses the Georgetown University Library Information System to provide computerized access to all holdings and to several data bases either from terminals in the library or from remote computers equipped with appropriate communications software. Using this system, faculty, students, staff and community physicians may search the library's card catalog and query the data bases via telephone lines from home or office.

A major goal of new computer-based instruction at TCOM is direct access to library resources while using the various instructional software packages. To accomplish this, plans call for indexing computer-based instructional materials to the National Library of Medicine's MeSH (Medical Subject Heading) code system. With such indexing, it should be possible to retrieve information related to the subject under study with very little effort. With so many resources so easy to access, they will become more valuable to more users.

Patient Simulations and Expert Systems

Another focus of TCOM academic computing is to provide students with the tools to assess and improve their problem-solving skills. In years three and four, students begin the process of applying their basic knowledge of anatomy, physiology, pharmacology, microbiology-immunology, biochemistry and osteopathic principles to the interpretation of signs and symptoms of disease. Of concern to all medical educators is a growing awareness that students may not be exposed to a sufficient number of cases on a specific clinical rotation to gain the desired level of diagnostic expertise. By augmenting real cases with computer simulations of cases, course developers hope to broaden every student's exposure to clinical problems.

In addition to providing additional "clinical" experiences via computer, TCOM is testing computer programs known as expert systems to enhance students' clinical problem-solving abilities.

Forty years ago, medicine's "gold standard," the autopsy, revealed that 8 percent to 12 percent of patient deaths could have been prevented if the physician had made the right diagnosis. Despite increasingly advanced diagnostic technology, today's autopsy studies reveal unimproved statistics. Five years ago, Frank Papa, D.O., began investigating whether conventional medical education testing tools were inadequate in measuring a medical student's critical decision-making skills and whether computer-based testing methodologies would improve diagnostic accuracy.

Papa's study of 88 students revealed that his computerized form of assessment and feedback did develop significantly superior

levels of diagnostic accuracy. Papa developed an expert system that allows students to analyze their understanding of disease symptoms and processes and then pit their knowledge against a computerized panel of expert clinicians or against a large data base of actual cases. For future physicians, this means better decision-making and improved patient care.

Curriculum Integration and Knowledge Navigation

TCOM's most ambitious academic computing goal is curriculum integration. In a standard lecture-based format, the job of assimilating the facts and concepts imparted in different courses is, for the most part, left up to the student. Of course, most students are able to accomplish this formidable task — as proven by their successful completion of coursework, high scores on board exams and, finally, graduation.

But, course developers are asking, wouldn't this task almost certainly be accomplished more efficiently and in less time if it were possible to obtain missing or forgotten information during a problem-solving session with a simple click of a button? This approach is being developed using the versatile features of HyperCard and the MeSH codes to link all computer-based course offerings at TCOM to each other. The result will be instant access to information, whether it is text, graphics, sound, animation, video or library-based reference materials.

Continuing Medical Education

The astounding rate at which scientific and medical literature is expanding presents significant challenges for community physicians who try to keep up with the information overload. To deal with this problem, TCOM is exploring new strategies in continuing medical education.

A tear-out survey for alumni and other Texas D.O.s to use in relaying their attitudes, experience and needs in the area of computing is included in this issue of *TCOM Review*. Responses will be used to help TCOM developers better serve practicing physicians by providing appropriate educational offerings, access to educational software and medical data bases, and reviews and evaluations of office practice hardware and software.

The efforts by faculty members Robert Bourdage, James Sims and David Barker in developing TCOM's Macintosh computer hardware and software so impressed Apple Computer that Bourdage was awarded a grant in 1988 that included four Macintosh II computers, two printers and network software to be used by the group for further courseware development. The equipment was worth more than $30,000. Bourdage has since received an Apple "finishing grant" of $5,000 to develop a user's manual for his HyperExaminer program.

Computer Kudo

TCOM has become the first medical school in Texas, Oklahoma and Arkansas to join a computer consortium of institutions of higher education and private business. The consortium, known as AppleSEED, is sponsored by Apple Computer, and membership is by invitation only. The invitation and subsequent approval by the organization's members followed presentations of two of TCOM's "home-grown" programs: HyperExaminer student testing and evaluation software by Robert Bourdage, Ph.D.; and TCOM Navigator, a data base of institutional information such as floor plans, property control inventories, personnel directories, emergency systems and chemical inventories, by James Sims, Ph.D.

Among the institutions of higher education that are members of AppleSeed are Texas Christian University, Southern Methodist University, Rice, Baylor, the University of Texas at both Austin and Arlington, Texas Tech and the University of Tulsa. Members from the private sector include General Dynamics, ARCO Oil and Gas Company, E-Systems, Northern Telecom, Rockwell International and Electronic Data Systems (EDS).

Student Opinions . . . Before

On the first day of classes in mid-August 1988, all freshman students filled out a survey assessing their previous experience with and attitudes toward computers.

64% had some previous experience
20% owned their own computer
16% reported no previous experience

The students were asked to choose either the Apple Macintosh or IBM-compatible computer so they would receive appropriate handouts.

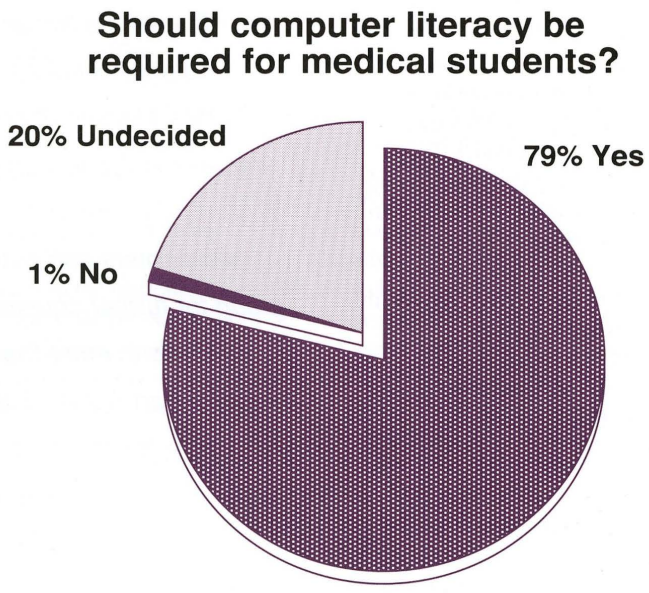
83% chose Macintosh
17% chose IBM-compatible

Is computer literacy important for doctors?

96% said yes
4% said no

Should computer literacy be required for medical students?

79% said yes
1% said no
20% were undecided



IN *Practice*

A Survey For Physicians: What do you need from computers?

Yes No

☐ ☐ 1. Do you own or lease a computer? (If No, please skip to question 9.)

2. Who uses the computer(s)? (Check all that apply.)
   ☐ I do ☐ Practice partner(s) ☐ Professional staff ☐ Office staff

3. What kind of computer do you use?
   ☐ IBM compatible ☐ Macintosh ☐ Time share
   ☐ Workstation (specify) _____
   ☐ Minicomputer (specify type) _____

4. What kind of software do you use?
   ☐ Office management (integrated) ☐ Accounting ☐ Patient scheduling
   ☐ Computer-assisted diagnosis ☐ Word processing ☐ Communications
   ☐ Spreadsheet ☐ Data base ☐ Other

☐ ☐ 5. Do you have special expertise on any hardware or software mentioned above that you would be willing to share? If Yes, please note your phone number below so we may contact you.

☐ ☐ 6. If you use your computer to communicate with other computers, please check Yes and describe your communications:
   Query TCOM library: ☐ Card catalog ☐ MiniMedline
   Query other medical libraries (specify): _____
   Commercial services: ☐ BRS AfterDark ☐ Dialog ☐ Knowledge Index
   ☐ GratefulMED ☐ MCI mail ☐ Dow Jones News ☐ CompuServe
   ☐ The Source ☐ PC Pursuit ☐ GEnie ☐ MacNET
   Other (specify): _____
   Non-commercial bulletin boards (specify): _____

☐ ☐ 7. Have you had formal training in how to use your computer?

☐ ☐ 8. Did you use a consultant to select your hardware and software?

☐ ☐ 9. Do you plan to buy a computer in the next two years? If Yes, which of the following CME offerings would you:

Attend at TCOM?	Take by correspondence?	
☐	☐	Computer Literacy (word processing, spreadsheet, data base, communications)
☐	☐	Computer access to Medline and other library resources
☐	☐	Expert system (computer-based assistance in diagnosis)
☐	☐	Selection of office management software and hardware

10. If TCOM provided enhanced electronic information services to practicing physicians, which of the following would you use and how much would you be willing to pay for such services:
    Electronic mail, bulletin boards, electronic file transfers:
    ☐ Make a local telephone call and be charged a fixed per-hour rate, or
    ☐ Have no per-hour charges, but make a long-distance call to TCOM to obtain services

11. Any other comments or suggestions? _____

Name _____

Address _____

City/State/Zip _____ Phone _____

TCOM Class of _____

Field of practice _____

PLEASE DETACH, FOLD ALONG DOTTED LINES, SEAL WITH TAPE AND MAIL. THANK YOU!

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Texas College of Osteopathic Medicine
Attn: David Barker, Ph.D., Office of Medical Education
3500 Camp Bowie Boulevard
FORT WORTH, TX 76107-9964

Do you know . . . an aspiring physician who should know about the distinctive opportunities available at TCOM? Fill out and return this card and we'll be happy to contact them about a career in osteopathic medicine. Premed students, health care professionals planning a career change, even high school students who show a special aptitude for science — they're all part of TCOM's comprehensive goals in enrollment management. Thank you!

Join Us!

TCOM has grown and prospered because the people who work and learn here, friends of the college, our alumni and our professional colleagues have insisted on the best. Please share in the personal satisfaction and recognition that comes from valuable support to a worthwhile endeavor.

Whenever you're ready to join us in supporting Texas College of Osteopathic Medicine, we will be happy to assist you. Please return the attached card or call us at (817) 735-2613.

Yes . . I would like to know more about contributions to the future of osteopathic medical education in Texas. Please send me information about supporting TCOM through:

- ☐ Annual Giving
- ☐ Estate Planning
- ☐ TCOM Foundation Membership
- ☐ Planned Giving
- ☐ Retirement Planning

Name _____

Address _____

City/State/Zip _____

Phone _____ (home)

_____ (business)

Yes, I do. . . . . . I recommend you contact this prospective student:

Name _____

Address _____

City/State/Zip _____ Phone _____

High School _____ Year graduated _____

College _____ Year graduated _____

Occupation if not in school _____

Please complete as much information as possible.

Your name _____

Address _____

City/State/Zip _____ Phone _____

TCOM graduate, Class of ____

☐ Notify me when TCOM is recruiting in my area. Perhaps I can assist.

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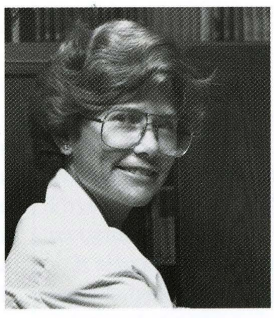
Student Opinions . . . After

Jayme Bork
First-year student

"The average age of students here is 28, so that means that there are a lot of older people here, like me, who didn't grow up with computers. We get here and we wake up to the fact that there's so much data we'll never keep it all straight. Now I know how to keep track of everything ...

"I can see how this will pay dividends not just while I'm a student, but also when I'm out practicing. Medicine may be an art and a science, but it's also a business. Computers are here to give me the ability to run my practice, not for my practice to run me. I can use it for accounting, government records, even a tickler file so I can send birthday cards to all my patients. It'll help me keep people, things and responsibilities from falling through the cracks ...

"Increased productivity and increased control over my life are the best reasons I know to have computers. Then maybe I'll have an extra three weekends a year to spend out at the fishing hole."



Beverly Land
First-year student

"I was a medical logistics officer at Martin Army Hospital in Columbus, Ga., and I had to keep track of a half-million dollars worth of linen and a construction budget of more than $2 million. It forced me to use a computer, but I really didn't know what I was doing. I only learned how to get in, how to make a change, then how to get back out ...

"The Army uses IBM-compatible computers, and I'll be going back to Georgia, so I went the PC route (through Computer Literacy I). Even though the course is set up in modules so we could go at any pace any time during the year, including the summer, I did it in two days ... over spring break. Having the chance to sit down with all these programs, play with them, really learn them, was great. I only wish it had happened years ago ...

"Word processing is most useful to me, and I think it will be throughout my practice. As secretary for the Student Government Association, I have to do minutes every month and I'm a lousy typist. So I use the PC, run the spell check and they look great. Now I love computers."

ON THE LEADING EDGE

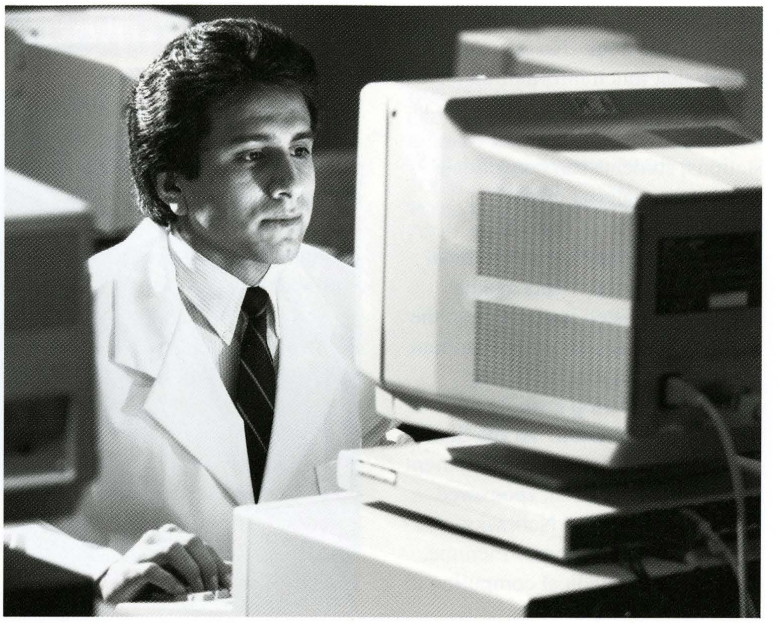
by
Warren Anderson, Ed.D.
and
David J. Barker, Ph.D.

The history of medical informatics at TCOM is relatively short but remarkably impressive.

Medical informatics encompasses the application of computers and information technology to medical education, medical research and medical practice. It was six years after TCOM opened for business in 1970 that the first computer appeared (a Motorola 6800 microcomputer, built from a kit by pharmacology's Michael Emmett-Oglesby, Ph.D. — it's now part of the library's memorabilia collection). TCOM's second computer, purchased for the neurophysiology lab with a grant from the American Osteopathic Association, came in 1978 and kicked off a period of micro- and minicomputer acquisition for automating data collection and analysis in the research labs of all basic science departments. This polymorphic 8080-based microcomputer—with monochrome display, 32,000-character memory and floppy disks that held 88,000 characters each — cost about $6,000 in 1978. Today that amount would buy an Apple Macintosh II computer with high-resolution color display, a 5 million-character memory and a disk system that will store 40 million characters.

The Health Sciences Library has been an integral part of the development of medical informatics at TCOM. Early in the 1980s, the library decided to completely computerize its operation and adopted the Library Information System developed at Georgetown University. When the library moved to more spacious quarters in Medical Education

By the year 2000, physicians will rely more than ever on the personal computer to keep them in touch with the most current information.



Building 3 in 1986, a sophisticated minicomputer system was brought to life. The first computer literacy program at TCOM was offered by the library when they replaced the traditional card catalog with computer terminals. The library continued its leadership role in computer technology by pioneering telefacsimile services to TCOM-affiliated hospitals and to other library systems within Texas. Today physicians can dial into the library computer system and do literature searches from their desktop computers, either from the office or at home.

Seven IBM-compatible computers were installed in the library's new computer-assisted instruction room in 1986. Today the Computer Lab is equipped with nine Packard Bell PC-AT computers, 15 Macintosh II computers, six printers, a large-screen video projector with inputs from PCs, Macintoshes or VCRs, a 72-inch screen, an audio system, a network linking all the computers, and a token ring network and file server for the PCs (used primarily for staff training).

From the Student's Point of View

It is indisputable that computers will be an integral part of medical education, research and practice in the next century, and that physicians will need to be computer literate. "Physicians for the 21st Century," the American Association of Medical Colleges Report of the Panel on the General Professional Education of the Physician ("The GPEP Report") recognized this fact in 1984.

It also is apparent that the knowledge base of medicine has increased exponentially over the last 20 years. By the year 2000, physicians will rely more than ever on the personal computer (whatever form it may be) to keep them in touch with the most current information. This also applies to the curricula of medical schools. The amount of information medical students are asked to learn is staggering. Yet most schools still rely on the lecture format to deliver this torrent of information. The GPEP Report recommended a reduction in lecture hours by one-third to one-half, recognizing that this format is no longer effective in the face of an increasing volume of information.

Most AMA-affiliated medical schools are seriously trying to implement the GPEP recommendations. One obvious solution to the information explosion is to make some or all of the components of the medical curriculum available on computers. At the University of Nebraska, the anatomy department eliminated many lecture hours in favor of small group sessions and computer-assisted instruction. Cornell Medical School has placed the first two years of its didactic curriculum on Macintosh work stations that are available throughout the school as well as in the dormitories. The University of Miami also is putting its curriculum on computer to make it available to all students at all times.

This makes sense when you consider the problem from the student's point of view. In a typical pathology lecture, the

instructor may show 50 or more slides in one hour. No one can absorb that much information on the first pass. If that information is available at computer work stations, students can consolidate the lecture material more effectively or even learn it by themselves if they are so inclined.

One of the arguments against computer-assisted instruction in the past has been the enormous amount of time it takes for one faculty member to develop a single hour of computer instruction. At the Sixth National Symposium on Computers in Medical Education, sponsored by the University of Nebraska, keynote speaker Thomas Piemme, director of biomedical computing at George Washington University, reported that the time to develop one hour of computer-based instruction had decreased from 2000 hours in the 1960s to 10 hours in 1989. By 1990 this will have decreased to five hours of development for one hour of instruction. By the year 2000 this ratio will be 1:1.

Warren Anderson, Ed.D., is executive assistant to the president and associate dean for medical education. David J. Barker, Ph.D., is an associate professor of medical education and physiology, co-course director for computer literacy and chairman of the TCOM Computer Council. As program/project coordinator in medical education, he and Learning Resource Center librarian Moira Hocevar oversee development of the Health Sciences Library Computer Lab.

Rather than use a trademark symbol with every occurrence of a trademarked name in our Academic Report and Perspective, we state that Macintosh and HyperCard are trademarks of Apple Computer Inc.; Motorola is a trademark of Motorola Inc.; IBM is a trademark of International Business Machines Inc.; LIS is a trademark of Georgetown University.

Investing in the Future

In the fall of 1988, entering freshmen were the first TCOM students required to become computer-literate by graduation. TCOM is one of the first medical schools to require computer literacy of its graduates. We are fortunate in having an administration supportive of these efforts and willing to invest in the future of our college. But what is that future? We have a vision that includes:

- A computer-based medical curriculum that has each element tied to objectives and key words that can be cross-referenced to the National Library of Medicine's MeSH (Medical Subject Headings) codes. The NLM MeSH codes are the "gold standard" for indexing all medical literature.

- A curriculum that uses the medical record as the ultimate lesson plan.

- A 100-computer classroom that provides every student access to the entire medical curriculum 24 hours a day, seven days a week.

- An evaluation system that allows faculty members to ask the computer to select questions for any given exam from a data bank that they have provided. An enormous amount of faculty time is currently used in inefficient testing procedures. Computer-based exams can free faculty to be more productive in research and patient care.

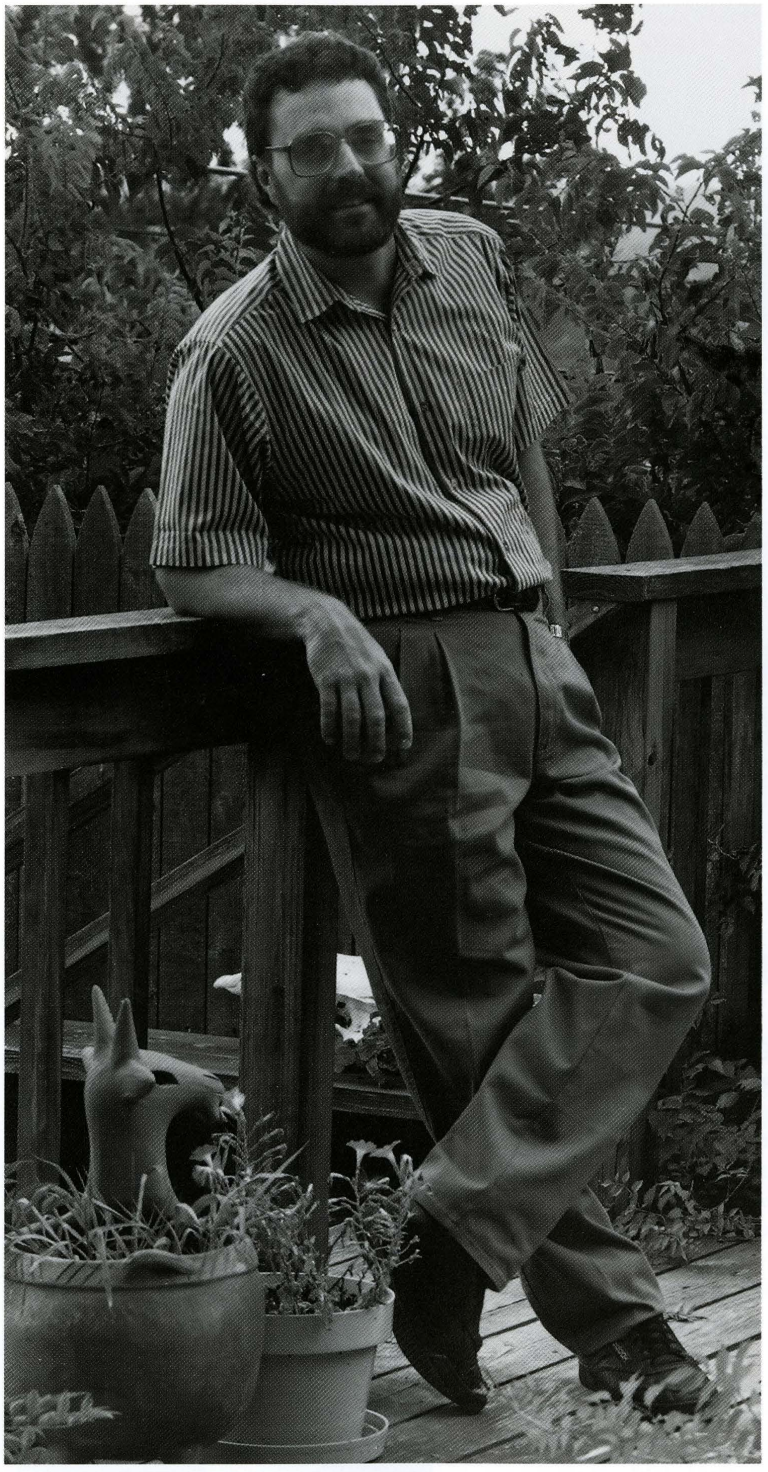
- Using interactive videodisc applications for clinical simulations. Clinical faculty members can use the computer-based applications to make sure students on clerkships have been exposed to all relevant clinical problems and then assess a student's clinical skills objectively in a way not possible with current paper-and-pencil exams.

- A statewide network, based at TCOM, that will provide our graduates as well as other physicians instant access to medical literature, expert systems and continuing medical education through the facilities of our Health Sciences Library.

This vision is shared by other medical schools, not only in Texas but also nationwide. TCOM is currently on the leading edge of computer technology in the medical curriculum and can use this advantage to attract good students. We already are ahead of many of our rivals. We must maintain this advantage in order to survive the 1990s.

– W.A., D.B.

Pride makes it possible.



Glenn M. Calabrese, D.O., FACEP
Emergency Medicine Physician
Executive Director, OPEM Associates, P.A.
TCOM Clinical Assistant Professor
TCOM Foundation Member
TCOM Recruitment Team Member
TCOM Alumni Association
Life Member, Past President

When it comes to time and money, I'm probably a lot like you. After 60 hours a week in emergency rooms, 24 more in the office, professional activities and some sort of personal life, there's not much left to share.

That's when pride makes it possible. Pride in my profession, and the difference we make in health care. Pride in the students who follow in our footsteps, and their determination to succeed.

So I get involved in political and professional issues. I offer my opinions and services to the school that trained me. And once a year or so I write out a check to support scholarships, student activities and community outreach efforts at TCOM.

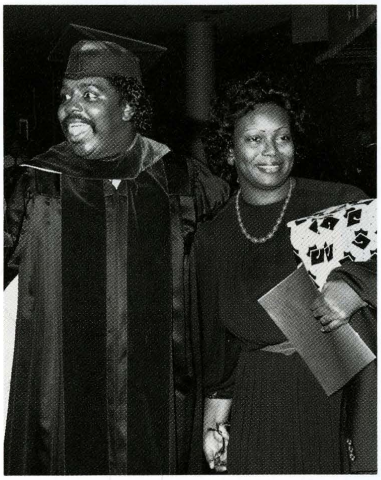
All things considered, it's not that much time, not that much money. If you wonder how you can afford such an investment in the future, let me assure you ... pride makes it possible.

Show your pride.

Texas College of Osteopathic Medicine Office for Development
3500 Camp Bowie Boulevard Fort Worth, Texas 76107-2690 (817) 735-2613

Congratulations

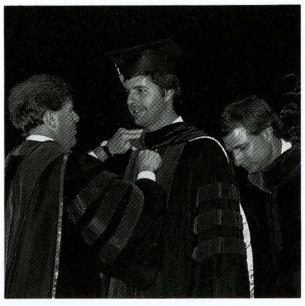
Class of '89



On May 20, TCOM passed a milestone as its 1,000th graduate was hooded. The 78 men and 25 women of the sixteenth graduating class are now preparing themselves and their families for the new challenges of internships and residencies, specialty training and practices. In time, they will make 103 individual impressions on the delivery of professional health care in America. We wish them good fortune!

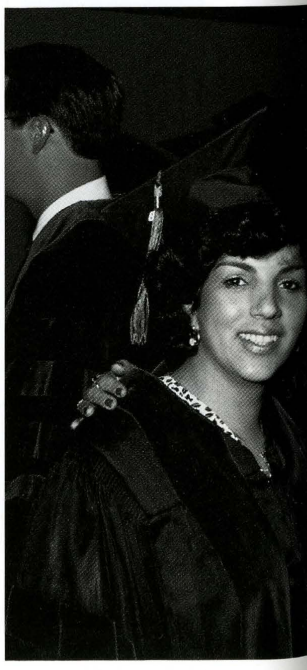
"You are starting a journey of service to others that is demanding and rewarding. The journey is demanding of your skills, your time, your commitment and your dedication. The journey is rewarding in its healing, both in the physical sense and the emotional sense. You will have the satisfaction of knowing that you have done your part to leave this world a better place in which to live than you found it. I am confident that the Class of 1989 will make a difference, and that you will be successful."

David M. Richards, D.O.
TCOM President



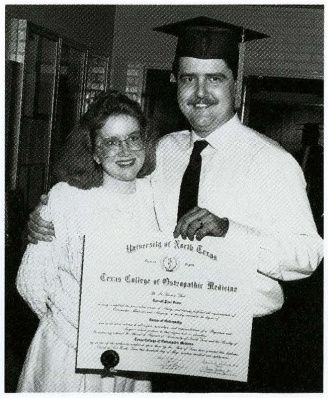
"Excellence is measured by faculty ... and research ... but above all, it is measured by your performance. You are graduating today from a relatively new institution that has begun to make its mark. The challenge to you is to live up to all that this implies."

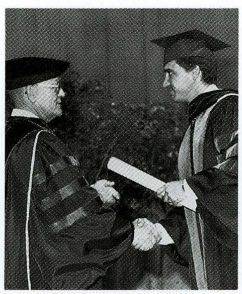
Afred F. Hurley, Ph.D.
Chancellor
TCOM/University of North Texas

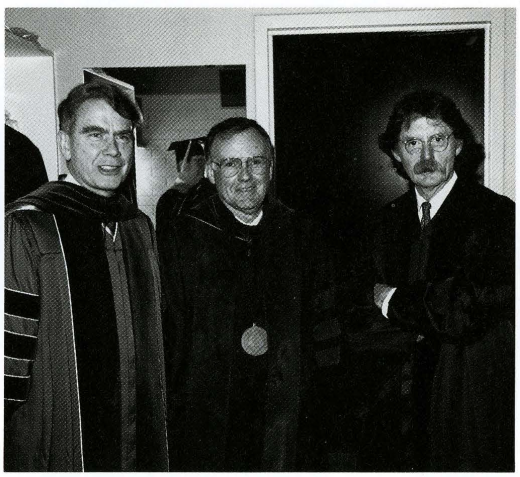


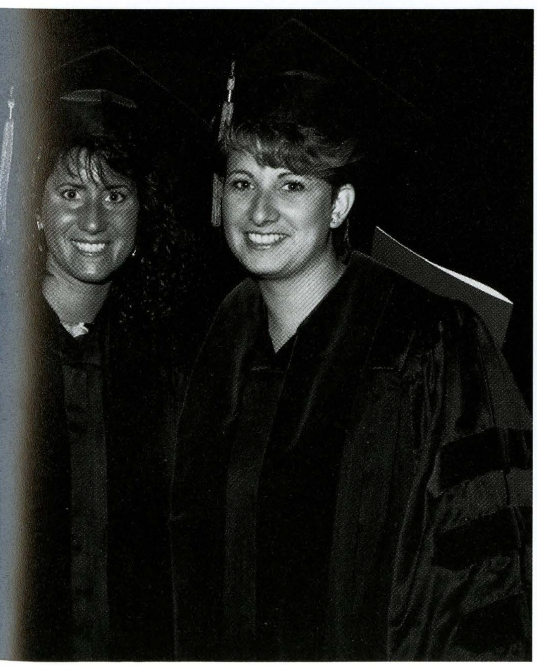
"It is a pleasure for me to recognize and salute the graduating class of Texas College of Osteopathic Medicine. With the completion of your work here, the citizens of Texas will gain another professional who will contribute to the physical quality of their lives. For your steadfastness of purpose in reaching your goal, we are grateful."

William P. Clements Jr.
Governor
in a telegram to the Class of 1989









"There's an old West Texas saying: 'Take a deep seat and a short rein, cowboy, 'cause you've got a long way to ride.' What this means to you is ... Life is more than being a physician. There's a real risk that we can get too focused on achieving the most, the best and the fame of this good life. Learn to deal with these pitfalls, and deal with them every day. Find a balanced life. There are a few things I would suggest to you, and that I try to apply to my own life: One, I accept myself as a frail human being; two, reduce all problems to the simplest common denominator; and, most of all, strive to be honest— and I mean honest with yourself, because only then can you be honest with others."

James H. "Red" Duke Jr., M.D.
Commencement Speaker

HBOT

Hyperbaric Oxygen Therapy

Its similarity to a giant test tube, lying on its side and capped at each end, does not go unnoticed. Hoses connect the clear acrylic chamber to an immense silver tank of pure oxygen a few feet away. Though primarily a research facility, this is also a clinic, a source of hope when the body needs help in healing itself.

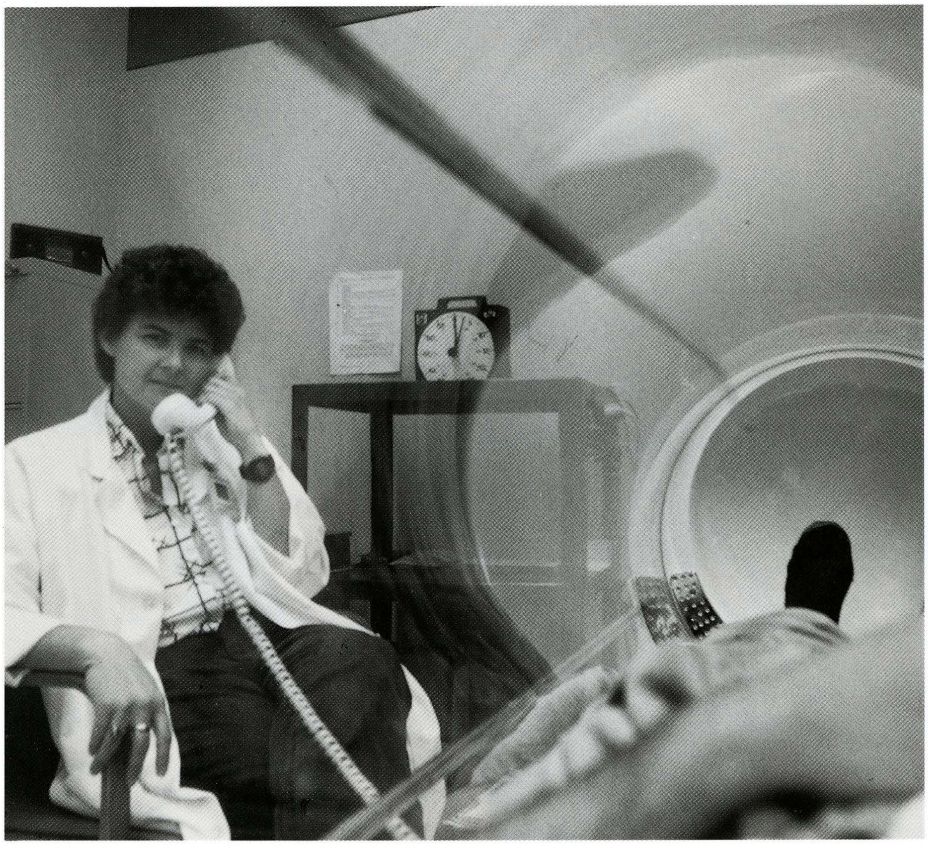
(Ed. Note: Bill Hix, TCOM's news and information manager, experienced hyperbaric oxygen therapy firsthand to bring us this report.)

In a sense, the hyperbaric oxygen chamber in TCOM's Hyperbaric Oxygen Therapy (HBOT) Facility *is* a test tube, 7 feet long and 25 inches in diameter, used for research into the mechanism and potential benefit of delivering pure oxygen to the body at higher than normal atmospheric pressures.

"I 'm not aware I 'm breathing 100 percent oxygen. There is no heaviness, no sense of increased pressure, no difference in how I breathe, even when I take deep breaths. And, there is no odor, though the air does 'smell' clean. There is some ear discomfort, but it is quickly relieved by swallowing or holding my nose and mouth closed, and blowing."

The HBOT project, a rapidly growing clinical and research program in hyperbaric medicine, will mark its third anniversary in August 1989. TCOM has the only hyperbaric chamber in Tarrant County and is the only osteopathic medical school with one, a gift from a Fort Worth couple in 1986.

"In comparison to other scientific fields, little research is being done in the field of hyperbaric medicine. The exceptions are in Japan and the Soviet Union," said Peter Raven, Ph.D., professor of physiology and research director of TCOM's HBOT facility. "I have tried to guide our efforts more to basic science research, rather than clinical or case-study research. However, basic science research supports the idea of clinical application. What we have to do is provide the clinician the scientific evidence that hyperbaric medicine is valid to use."



HBOT Technical Director Judy Wilson, Ph.D., uses an intercom to stay in touch with patients inside the acrylic chamber.

Although increased atmospheric pressure has been used for quasi-medical or entrepreneurial promotions since the mid-1600s, it wasn't until the 1930s and '40s that practical applications of higher-than-normal air and oxygen pressures were discovered.

Hyperbaric therapy was used to treat deep-sea divers suffering decompression sickness (nitrogen in the tissues and joints, or "the bends") or gas embolism (air in the blood vessels) and carbon monoxide poisoning. With pure oxygen at three times the normal atmospheric pressure, the body absorbs from 10 to 15 times the amount of oxygen assimilated naturally. Hyperbaric oxygen therapy remains the treatment of choice for these conditions.

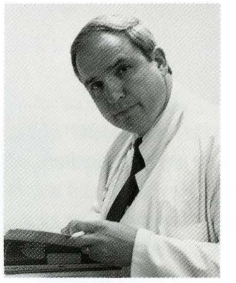
"There is no feeling of claustrophobia since the clear acrylic lets me see just about everything. I couldn't see Keith (Hardeman, technician) as he shut the door and turned its screws to form an air-tight seal, but now I can see him open the valve on the large silver tank of oxygen. I hear a hiss as the pure oxygen flows into the chamber. The acrylic starts fogging up after several minutes. Keith tells me that this is normal with most men in the chamber, but less of a problem with women. Curious."

In 1950, a Dutch medical researcher, I. Boerema, discovered that hemoglobin and red blood cells are not needed to keep a person alive if there is enough atmospheric pressure to dissolve oxygen in the plasma. To test this, he removed all the blood from pigs under three atmospheres of pressure and then returned the blood with no ill effects to the animals. (He later sold the pigs back to the farmer from whom he had bought them, with no mention of the experiment.) Based on this knowledge, some hospitals built hyperbaric operating rooms for cardiac surgery. The increased oxygen pressure allowed the physician more time to stop the patient's heart during the operation, a technique that was made obsolete by development of the heart-lung machine.

"It is still warm and humid, although not uncomfortable. There's really not much to do. Some people read, sleep, watch TV or listen to the radio. I look at the clock on the wall since you can't wear jewelry in the chamber. No hair spray, cologne or deodorant either. No petroleum-based products of any kind. Nothing that could trigger a spark or create static electricity. Not in 100 percent oxygen. Only cotton clothes, too. I'm wearing the hospital scrubs that are provided."

Although hyperbaric oxygen therapy has been found to benefit a number of medical problems, "you don't use it if the body will heal itself under a regular course of medical treatment," said Judy R. Wilson, Ph.D., HBOT technical director. "We often get patient referrals from physicians when traditional medical treatment has failed. All hyberbaric oxygenation treatments must be approved by a physician. Side-effects are few. The patients must clear his ears as the pressure changes. However, we have found that if we change the pressure only as fast as the patient can tolerate, there is no problem."

Wilson said the usual course of treatments is once a day, from one to two hours each, for 20 days. Since HBO does not work overnight, but is a therapeutic treatment, the patient must be committed to the daily regime. Oxygen pressures range from 1.5 to three times normal atmospheric pressure. Three "atmospheres" is equivalent to being 66 feet under water. Treatment costs $100 for the first hour and $50 for each succeeding half-hour, with treatments averaging about one and



"In certain applications, it does look promising."

Robert Garmon, D.O.
HBOT Clinical Director

one-half hours. TCOM's chamber averages about 20 treatments a month, though it has been as high as 98 treatments a month. Patients come from as far away as Abilene.

"I can't really move around too much since I'm a fairly big man. However, there is room for me to turn on my side or even onto my stomach. The noise of the air is continuing because the chamber is fully ventilated. There are two blankets, in case I get chilly. Maybe I'm still warm because of my apprehensions as a 'first-timer'. Plus, I'm moving around a lot, trying to get room to write."

Raven said there have been some "remarkable results" in using hyperbaric medicine to treat diabetic ulcers and infections of the leg that were so severe that amputation was being considered. "People with multiple sclerosis also seem to be helped by this therapy," said Raven. "The disease itself is not cured, but whenever an incident of heightened MS occurred, the use of hyperbaric medicine seemed to allay the symptoms."

According to Robert Garmon, D.O., HBOT clinical director, hyperbaric medicine also offers a mode of treatment not widely available in North Texas for a number of serious or life-threatening conditions such as sinus infections in which fungus invades the brain, chronic osteomyelitis and massive tissue damage or infection.

One of the most famous patients benefiting from hyperbaric oxygen therapy was Jessica McClure of Midland. During her 50-plus hours wedged in a narrow well in October 1987, the blood supply was cut off to one foot, resulting in fears that several of the young girl's toes, perhaps her foot, might have to be amputated. "She had three 90-minute treatments a day for the first week to get a tremendous amount of oxygen back to her foot and help re-build any lost capillaries," Wilson said.

TCOM physicians also credit HBO therapy with saving the big toe of a 10-year-old Fort Worth girl. The toe had been re-attached after being partially amputated in an accident, and doctors initially thought the damaged tissue of the toe would have to be cut away. "There was remarkable improvement after two weeks of hyperbaric therapy," Wilson said. "She took 20 treatments. Three months later, she had lost the toenail, but the last time I saw her she was running down the street with a fully functional toe."

Wilson said hyperbaric medicine also can benefit car-wreck victims and others suffering from crush-type injuries to muscles, tendons and bones in which the blood supply has been reduced or cut off. HBOT helps the tissues continue to survive until surgery can re-establish the full blood supply.

" Keith is sitting beside the chamber so I can see him and he can see me. He asks on the intercom several times how I'm doing and tells me when the pressure reaches certain levels. Otherwise, I can't tell when the pressure reaches two atmospheres. It takes about 10 minutes and stays at that level for about 10 minutes. I have to remind myself that when Keith talks about 'taking me down' he means increasing the pressure. 'Bringing me back up' means lowering the pressure."

"What we have to do is provide the clinician the scientific evidence that hyperbaric medicine is valid to use."

Peter Raven, Ph.D.
HBOT Research Director

One of the most famous patients benefiting from hyperbaric oxygen therapy was Jessica McClure of Midland.

Technical director Judy Wilson, Ph.D., and technician Keith Hardeman administer all of TCOM's physician-approved hyperbaric treatments – from 20 to 98 a month. Patients range in age from 10 to 80, with the majority being over 50 and suffering from diabetic ulcers.

TCOM's hyperbaric oxygen facility, however, while emphasizing research, remains primarily a clinically oriented program. One major research project is investigating the effect of hyperbaric oxygenation on the body's defense mechanism, the immune system. It is an *in vitro* study in which lymphocytes (white blood cells, the body's primary defense against infection) are cultured under various conditions of hyperbaric oxygen — different percentages of oxygen purity and pressures.

"We found that, depending on the pressure, we can either suppress or enhance the growth of the lymphocytes," Wilson said. "However, much more work is needed in this area."

Raven agrees. "This area of research really does have significant potential. At the right level, it may activate the immune system to help the body itself fight the infections. So, in that respect, it is a good osteopathic tool," Raven said.

"The pressure is back to normal now. Keith turns the knob on the giant oxygen tank and the noise of the air stops. I hear the metallic noise of the screws on the chamber door being loosened. There's no 'pop' or 'smacking' as the door opens, just Keith's cheerful voice asking, 'How'd you enjoy your trip?' "

The HBOT program at TCOM is expanding in both research and clinical applications. Wilson, Raven and Garmon are helping TCOM reach into its community to provide a service that has not been available before. "And, we will continue our basic research to explore the mechanisms of hyperbaric oxygen therapy and the ways in which it can help the body heal itself," Garmon said. "In certain applications, it does look promising."

Support for HBOT

In February 1989, it was announced that TCOM had received an endowment gift of $150,000 for continued support of its hyperbaric medicine and basic science research program. The donors, a Fort Worth family, wish to remain anonymous. The donation allows TCOM to expand its program to include a chamber, with life-support equipment, in Fort Worth Osteopathic Medical Center. Both emergency and nonemergency HBO care will be possible. Judy Wilson, Ph.D., HBOT program technical director, said the goal is to establish a $500,000 endowment to continue their research and clinical work.

Accepted Conditions for Hyperbaric Oxygen Therapy *

Air or gas embolism (acute)
Carbon monoxide poisoning, acute smoke inhalation and assumed carbon monoxide/cyanide poisoning
Crush injury, compartment syndrome and other acute traumatic ischemias
Cyanide poisoning (acute)
Decompression sickness
Enhancement of healing in selected problem wounds
- Diabetic wounds
- Venous stasis ulcers
- Decubitus ulcers
- Arterial insufficiency ulcers
- Clinical management

Exceptional blood loss (anemia)
Gas gangrene (clostridial)
Necrotizing soft-tissue infections (subcutaneous tissue, muscle, fascia)
- Crepitant anaerobic cellulitis
- Progressing bacterial gangrene
- Necrotizing fasciitis
- Fournier's disease
- Miscellaneous necrotizing infections in the compromised host

Osteomyelitis (refractory)
Radiation necrosis: osteoradionecrosis and soft-tissue radiation necrosis; caries in radiated bones
Selected refractory anaerobic infections: actinomycosis
Skin grafts or flaps (compromised)

*Accepted by the Undersea and Hyperbaric Medical Society

ALPERN CHOSEN '89 OUTSTANDING ALUMNUS

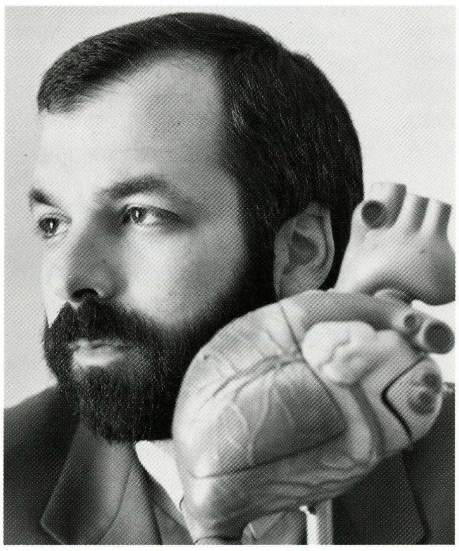
TCOM's Alumni Association has given its second annual Outstanding Alumnus Award to the first and only osteopathic physician in the world to perform heart transplant operations.

Jeffrey Alpern, D.O., Class of '79, assistant professor of surgery at Philadelphia's Osteopathic Medical Center and Temple University School of Medicine, received the award during this year's Texas Osteopathic Medical Association convention in Arlington. Alpern was recognized for his "impressive achievements, presentations, publications and contributions to the science and art of cardiovascular surgery."

Alpern has been a heart-lung and cardiac transplant team surgeon at Temple and an attending cardiothoracic surgeon at the medical center since he returned to his hometown of Philadelphia in May 1986. Just a week before he returned to Texas to accept his award, he was named director of cardiac transplantation at Temple.

While in the Metroplex, Alpern toured the TCOM campus, most of which was undeveloped when he was a student, and spoke to about 200 students, faculty and staff during an informal luncheon. He reminisced with fellow alumni and shared pictures of his 2-year-old daughter with college employees who remembered him from clinic rotations of more than a decade ago.

Alpern said he had been to north Texas only once since his graduation — he flew in a few years ago to "harvest" a donor heart for a transplant recipient back north. "It was in the middle of the night," Alpern said. "I felt rather goulish." But, timing is indeed everything for the transplant team surgeons, one of whom always charters the fastest possible transport to personally obtain the donated organ because, Alpern said, "I don't trust anyone else to do it." At Temple, that means a lot of emergency travel since half of Alpern's donors are outside Pennsylvania.



Jeffrey Alpern, D.O.

In his half-hour presentation at TCOM, Alpern concentrated on the technical aspects of "what I do for a living," describing recipient selection criteria, donor suitability, post-operative strategies and the surgical procedures themselves. He astonished some audience members by describing a heart transplant as a relatively simple procedure. ("It takes about 10 minutes to remove a heart, about 40 minutes to sew in a heart.")

The most difficult part comes after the operation, Alpern said, when the physician must walk a fine line between rejection and infection, balancing medications. Alpern is able to release most of his patients after about two weeks in the hospital, encouraging them to resume work and lead a normal, healthy lifestyle. "The cure should never be worse than the disease," he said.

After graduating with honors from TCOM, Alpern served a one-year internship at New Jersey's Cherry Hill Medical Center and a three-year general surgery residency at John F. Kennedy Memorial Hospital (Cherry Hill), where he was chief surgery resident. During his residency, Alpern also worked with Denton Cooley, M.D., the first physician to implant an artificial heart, on some 2,000 heart operations at the Texas Heart Institute in Houston . It was there that Alpern decided to focus on transplantation.

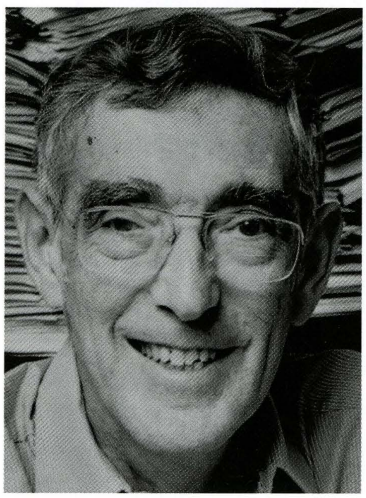
Alpern's advanced training also includes a two-year fellowship in cardiothoracic surgery at Cleveland Clinic Educational Foundation. He was selected to serve an additional year as an associate staff member of CCEF's department of cardiothoracic surgery. Twenty cardiac transplants and more than 1,500 bypass operations were performed during Alpern's association with CCEF.

Berkeley Biochemist Honored for Cancer Research

Cancer-causing agents are much more common, but much less dangerous, than most people think, contends Bruce N. Ames, Ph.D., internationally known cancer researcher who received TCOM's Roger J. Williams Award in Preventive Nutrition for 1989.

Ames, professor and chairman of the biochemistry department at the University of California at Berkeley, is the developer of the "Ames Test," a simple and inexpensive way to search for possible cancer-causing agents in food and drugs. The test, which is used in more than 3,000 laboratories and by almost every company dealing with the development of drugs or chemicals, is based on the detection of agents that cause damage to the genetic material DNA.

In the fifth annual E. Bruce and Virginia Street Lecture in Preventive Nutrition at TCOM on April 10, 1989, Ames said that toxic chemicals and pollution "don't have much to do with cancer at all." He told about 200 TCOM students and faculty members that 99.99 percent of chemicals occur in nature and that tests indicate about half of the natural chemicals are carcinogenic. That ratio of carcinogenesis, he said, is about the same as the ratio found in man-made industrial chemicals tested on rats.



Bruce N. Ames, Ph.D.

And, Ames said, we cannot escape them. For instance, plants in nature produce toxic chemicals in large amounts as a primary defense against insects and other predators. He said that the plants we eat as part of our daily diets are no exception, and that we should be concerned about the increased natural pesticides produced by today's insect-resistant farm crops. He pointed out that a person's daily diet includes about 150 micrograms of man-made pesticides, of which 100 micrograms are known non-carcinogenic. "So, at most, we're eating 50 micrograms of (man-made) carcinogens per day," Ames said. "But, we're eating 10,000 times more of nature's pesticides every day."

Ames emphasized that no human diet can be entirely free of mutagens (a chemical or physical agent that induces genetic mutations) and carcinogens, but he believes the amounts are too small to be overly concerned about. "The main thing is to eat a balanced diet and not worry," he said.

According to Ames, most people also are overly concerned about the cancer-causing potential of polluted water supplies. Yet, he said, ordinary drinking water that comes out of the kitchen tap probably is more dangerous than most polluted wells. He explained that the primary chemical in polluted water wells is trichlorethylene, the main chlorinated solvent used in the United States, but that trichlorethylene is 10 times less carcinogenic than the chloroform produced when municipal water supplies are purified by chlorination.

Ames also believes that air pollution is not as dangerous a cause of cancer as most people believe. Because any burned material is full of mutagens and carcinogens, a cigarette smoker inhales as much cancer-causing "pollution" in a day as a Los Angeles non-smoker does in a year, he said. Although most burned material consumed by humans comes not from smoking but from cooking our food, that doesn't mean cooking our food is worse than smoking. "There is one epidemic of cancer in the U.S. and it is lung cancer, overwhelmingly caused by smoking," Ames said.

Ames' research has involved identifying the important mutagens that damage human DNA, the natural defense mechanisms protecting us from them, and the consequences of DNA damage for aging and cancer. His work has helped to provide major support for the idea that damage to DNA is likely to be a major cause of not only cancer but genetic birth defects, heart disease and aging.

Ames was the fifth recipient of the award commemorating the pioneering nutritional research of the late Roger J. Williams, Ph.D., founding director of the Clayton Foundation Institute at the University of Texas at Austin. The award includes a cash prize of $5,000, made possible through a gift from E. Bruce and Virginia Street of Graham, Texas. Street is a member of the Board of Regents of the University of North Texas/ Texas College of Osteopathic Medicine and of TCOM's Advisory Council.

Harris Poll Assesses Tarrant County Health Care

TCOM and its graduates are aggressively addressing some of the more serious needs cited in a recent survey on health care in Tarrant County, according to President David M. Richards, D.O.

From May to July 1988, more than 2,250 residents and 800 health care professionals and policymakers were interviewed at length concerning their use of, satisfaction with, and attitudes about health care services by the nationally respected research firm of Louis Harris and Associates Inc. The survey was commissioned by the Amon G. Carter Foundation, the Sid W. Richardson Foundation, and the Anne Burnett and Charles Tandy Foundation, all of Fort Worth.

"Although this major survey was conducted in Tarrant County, the problems are not unique to our area," Richards said. "Drug abuse, alcoholism, teen pregnancy, two tiers of medical care, lack of medical insurance, not enough emphasis on preventive medicine. We all recognize these as statewide problems."

Not surprisingly, the survey found health problems to be concentrated among the lowest-income groups and reported that "large numbers of people in Tarrant County with low incomes and without health insurance are in danger of falling through the safety net of the health care system."

"The importance of disease prevention in improving the quality of life and reducing health care costs was driven home to us by this poll," Richards said. "But where do the poor turn to learn how to stay healthy? How is it that people go without medical care when we hear there is a doctor surplus? I think the answers lie in providing more community physicians who are committed to serving the underserved, physicians who practice preventive medicine and who teach practical self-care to their patients. Our clinics, our physicians and students, and our alumni are trying to aggressively address these problems. I believe we're making a difference in our own community and throughout Texas."

Survey responses indicated that policymakers and health care professionals agree that the system's single most urgent problem today is health care for the indigent and uninsured. Looking ahead five to 10 years, they felt AIDS would head the list.

Survey Highlights

- Only 80% of those surveyed say their health is excellent or good — compared with 87% for the nation — while 19% report fair or poor health, compared with 12% nationwide.
- About 93,000 adults (11%) and 45,000 children (15%) are without health insurance; in all, 22% of adults are without insurance at some time during the year.
- More than one in five adults (nearly 170,000 people) have unpaid medical bills, and more than half of these say they will not be able to pay. People over 65 are the least likely to owe.
- Almost two-thirds of the public and three-fourths of professionals think the cost of medical malpractice insurance is a major cause of the increased cost of care. Four of five people favor county or state government action to reduce malpractice costs.
- 10% say that at some time in the last year they were unable to get needed health care — mainly because of cost.
- 58% of adults do not recall getting unsolicited advice from their doctors in the past five years about nutrition, exercise, weight loss, alcohol or smoking — but more get such advice than the national average.
- Drug and alcohol use and abuse by teens are ranked at the very top of the county's health problem concerns.
- Six in 10 claim they have made a lifestyle change to improve their health, with 60% of these people trying to improve their diet, 40% getting more exercise, 16% stopping smoking and 13% losing weight.
- Four of five professionals believe health plans should provide substantial coverage for preventive care.

Source: Louis Harris and Associates Inc., January 1989.

New Division A Resource For Clinical Research

Steve Fedorko, Ph.D., Mark McKinney, Ph.D., Elaine Jacobson, Ph.D.

In less than a year after its formation, the Department of Medicine's Division of Clinical and Educational Research has coordinated the submission of more than $2 million in grants, and has developed innovative courses in health promotion, geriatrics, human nutrition and clinical research that are being integrated throughout TCOM's four-year curriculum.

"It's busy," said division director Mark McKinney, Ph.D. "I think our biggest problem now is deciding what projects to say yes to."

The division was created in July 1988 by department chairman Michael Clearfield, D.O. His directive to McKinney was two-fold: stimulate clinical research within the medicine department, and serve as a resource and guide for interdisciplinary research teams; and assist in the development and program evaluation of curriculum geared toward what Clearfield believes are the three areas of medical education likely to grow most rapidly — health promotion/disease prevention, geriatrics and human nutrition.

The division has been working on two major grants that would allow the medicine department to not only expand their training programs in these areas but also demonstrate how research and clinical practice can go hand in hand. In October they will submit a grant request for about $500,000 to the Health Resources and Services Administration to finance residency rotations in geriatrics, preventive medicine and human nutrition, and to open a continuity-of-care clinic in which residents could track patients throughout the three-year training period. The division's request to the National Heart, Lung and Blood Institute for a Preventive Cardiology Academic Award grant of $626,000 involved 21 faculty members from eight different TCOM departments. It demonstrates the kind of interdisciplinary collaboration between basic and clinical sciences that McKinney believes is necessary for successful primary care clinical research. The PCAA grant would allow students to begin continuity-of-care experiences in their first year, tracking patients over four years — seeing a progression of risk factors, evaluating intervention tactics — then incorporating all into research papers in their senior year.

"One of our jobs is to help physicians understand that research is not in competition with clinical practice," McKinney said. "A physician does research every day in one of the best laboratories available — the clinic. He gathers data each time he sees a patient, then he acts upon his hypothesis. That's research. It gives his practice a new dimension, beyond original humanitarian, service-oriented goals. It's intellectually stimulating. The physician gets all these benefits just by collecting his data systematically. We want our students to understand this, too."

McKinney said that a related division goal is to be a resource for faculty physicians who have to divide their time between seeing patients, teaching, doing research and learning the mechanisms of getting their research funded. "We offer to do some of the front-end work, investigate what funding sources are out there and how to apply. Then we help put the best research team together to take advantage of the opportunities," he said.

Though the division primarily is a resource for the rapidly growing Department of Medicine, McKinney said Clearfield encourages them to assist other departments in submitting clinical research grants "if there's a win in it for the college." So far, they have worked with the Department of Public Health/Preventive Medicine on a grant dealing with substance abuse prevention and with the Department of Biochemistry in preparing a grant for heart disease prevention in the elderly.

The division is staffed by McKinney, Steve Fedorko, Ph.D., and Elaine Jacobson, Ph.D., all of whom also have their own ongoing research projects. McKinney came to TCOM from the University of Nebraska Medical Center, where he was an associate professor in pediatrics and family practice, adjunct assistant professor in psychology and director of the Division of Preventive Medicine. Fedorko, who has experience in curriculum development and both clinical and experimental psychology, had been an assistant professor in TCOM's Office of Medical Education. Jacobson, internationally known for her research on the link between nutrition (specifically niacin) and cancer with fellow biochemist and husband Myron Jacobson, Ph.D., had been an associate professor in TCOM's Department of Biochemistry.

TCOM Goes on the Air

TCOM has begun production of a 30-minute monthly television program on a variety of health-related topics. The series, called "TCOM Presents ... ," is broadcast on cable TV in Fort Worth.

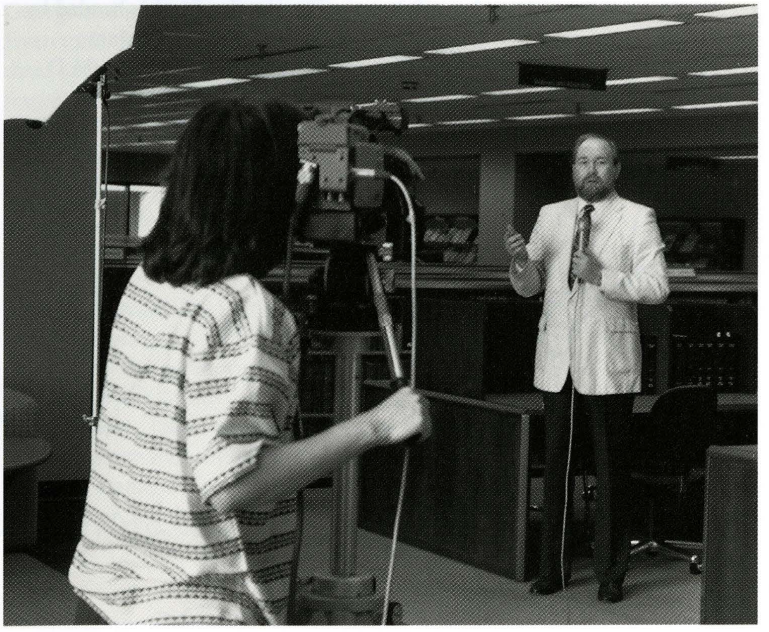
The programs spotlight what TCOM is doing in medical education, patient care, research and community service. They are broadcast twice each Sunday and three times each Thursday on the CityVideo-45 community program channel.

The first show, which aired in March, included a brief history of the college and an interview with President David M. Richards, D.O., about TCOM's mission, the osteopathic philosophy of medicine and the student doctors enrolled at the college. Another segment featured a remarkable senior citizen who, though legally blind, maintains a busy schedule of activities as a result of a positive outlook that keeps her physically and emotionally healthy.

The program for April, concentrating on physical fitness, contained an interview with Stanley Weiss, D.O., public health and preventive medicine, on what information a physician is seeking during a physical examination or fitness assessment. Scott Taylor, D.O., public health and preventive medicine, discussed the proper way to begin and participate in a physical activity such as jogging or marathon running. Video clips from the 1989 Cowtown Marathon and 10K Race, cosponsored by TCOM, were shown.

Future programs will include a series on alcohol abuse and alcoholism, Alzheimer's disease, TCOM's Hyperbaric Medicine Research Program, nutrition and healthful cooking, cholesterol screening and smoking cessation.

The programs are produced by TCOM's Department of Biomedical Communications. Bill Hix, TCOM's news and information manager, is host for the shows.



"TCOM Presents . . ." host Bill Hix and producer/director Michele Grauerholz tape a segment for an upcoming show.

Medical Mission: Journey to Juarez

Forty student doctors from TCOM spent their spring break not basking at the beach, but working across the border in the barrios of Juarez, Mexico, providing medical care to more than 550 patients in four days.

"One of the most heartening things was to watch the students' attitudes change, and see how much more confident and positive they became even by the end of the first day," said sophomore Student Doctor Tony Hedges, president of TCOM's Student Government Association, who served as pharmacist for the group. "That first day they were kind of apprehensive, not sure what to do or even what to say or ask. It was a good experience for all of us," Hedges said.

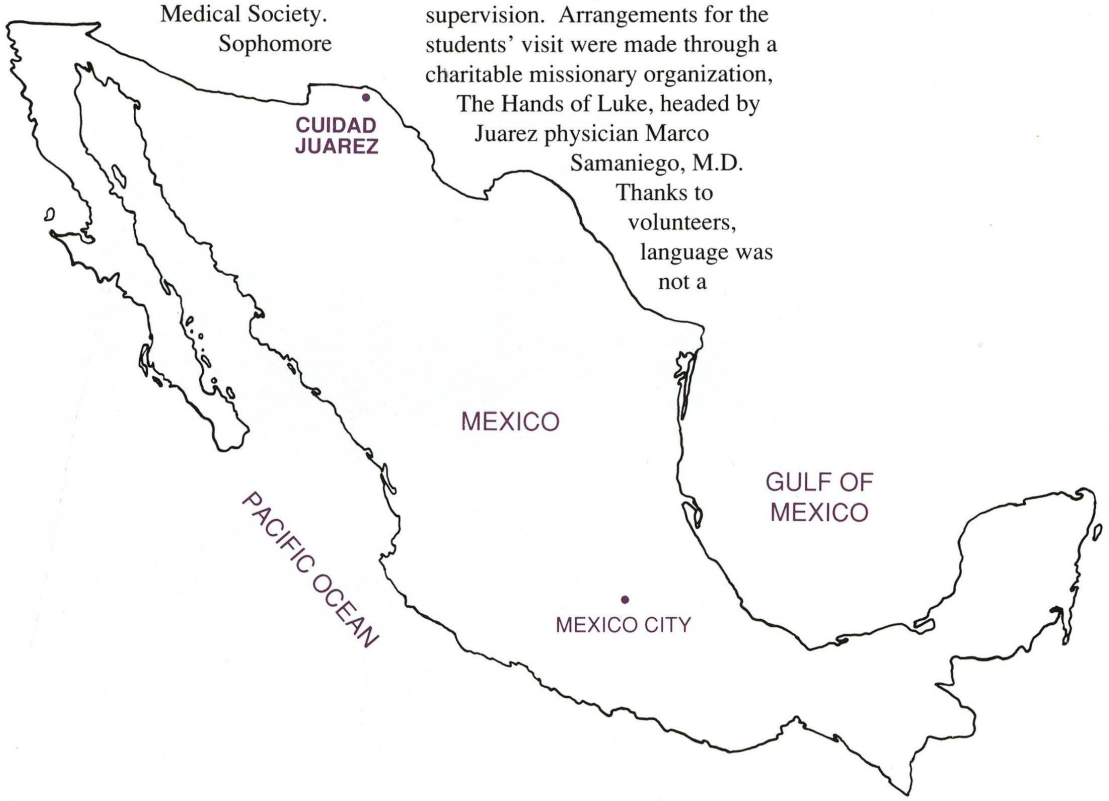
The trip was sponsored by the TCOM chapter of the Christian Medical Society. Sophomore Student Doctor Walter Simmons, president of the local chapter, said transportation costs and other expenses were paid with donations from Fort Worth-area members of the national society.

The student doctors — four freshmen, 34 sophomores and two seniors — worked 10-hour days tending to ear infections, upper respiratory infections, diabetes, colds, hypertension, gynecological problems and several parasitic infections not usually seen in the United States. "We did a lot of initial evaluations, " Hedges said. "Most of the patients had received little, if any, medical care."

The student doctors were housed in a community center in El Paso and traveled the dirt streets and paths of Juarez's barrios every day, setting up operations at churches and clinics amid wooden and concrete-block shacks. Two or three student doctors worked together, with physicians from El Paso and Juarez providing supervision. Arrangements for the students' visit were made through a charitable missionary organization, The Hands of Luke, headed by Juarez physician Marco Samaniego, M.D. Thanks to volunteers, language was not a problem, according to Hedges. The father, mother and other El Paso relatives of freshman Student Doctor Andy Morales took off from their jobs to help, as did local alumnus Tim Brady, D.O., Class of '86. Another TCOM graduate in El Paso, Hector Lopez, D.O., Class of '81, donated supplies and equipment.

"We had mixed feelings about returning home," Hedges said. "Many of us would like to have stayed longer and done more to help. But, we also knew we had two exams the next week, and we needed to do at least a little studying."

Plans already are being made for another mission next year.



TCOM, Faculty, Alumni Honored For Homeless Clinic Work

TCOM, several faculty members and a number of alumni in private practice were honored last November by the Fort Worth/ Tarrant County Public Health Department for their volunteer work at the Homeless Health Clinic at Fort Worth's Presbyterian Night Shelter.

Department of Medicine faculty members who received awards were: Francis Blais, D.O., Gregory Friess, D.O. (Class of '79), Janice Knebl, D.O., and Bernard Rubin, D.O. Department of Public Health/ Preventive Medicine faculty members receiving recognition were Stephen Weis, D.O., and Robert Woodworth, D.O. Eight D.O.s in private practice, five of whom are TCOM graduates, also were honored: Ann Adamo D.O., Class of '85, Grand Prairie; Mike Adamo, D.O., Class of '80, Bedford; Michael Bell, D.O., Class of '87, Bedford; and Stephen Taylor, D.O., Class of '85, and James Poplawsky, D.O., Class of '85, both of Fort Worth; Phil Cohen, D.O., Fort Worth; Ruth Carter, D.O., Bedford; and William Griffith, D.O., Arlington.

The Health Department theorizes that nearly one-fourth of the estimated 8,000 homeless people in Fort Worth suffer acute medical conditions caused, in part, by environmental exposure and personal neglect. The Health Department opened the clinic Feb. 1, 1988, in response to those needs.

The volunteer physicians provide evaluation, diagnosis and basic medical treatment at no charge for the homeless staying at the Night Shelter. Physicians, nurses and auxiliary personnel serve in the clinic for four hours each evening Monday through Thursday.

TCOM History to Highlight 20th Anniversary Celebration

Even though 1989 is only half over, plans already are underway for the 1990 celebration of the 20th anniversary of the opening of TCOM to its first class of 20 students in 1970.

As part of the observance, President David M. Richards, D.O., has appointed TCOM's first employee, Ray Stokes, as college historian and has commissioned him to write the history of TCOM. Stokes will retain his current title of curator of special collections until his retirement in September 1990 but will phase out his responsibilities as administrative secretary to the TCOM Alumni Association during 1989.

Richards, in consultation with Stokes, also has appointed a College History Editorial Board. Among its members are Mary Schunder, Ph.D., and Elizabeth Harris, Ph.D., two of TCOM's original six faculty members; George Luibel, D.O., and Carl Everett, D.O., two of TCOM's three founders; Roy Fisher, D.O., founder of Fort Worth Osteopathic Medical Center; Kim Korr, Ph.D., manipulative medicine; Craig Elam, library; Mark Baker, D.O., Class of '76, and Diana Finley, Texas Osteopathic Medical Association.

Stokes already has marked his 20th anniversary as a TCOM employee. He began work on April 16, 1969, as director of development. Other positions he has held since then include business manager, registrar and loan officer, earning him the title of "Man of Many Hats." Over the years, Stokes has been compiling information about TCOM's history, has drafted two chapters of a possible history, and has recorded audio and videotape interviews as part of an oral history of TCOM.

The book will be published in time for September 1990's convocation, homecoming and reunion.

Only two of the nation's 15 osteopathic colleges have published similar histories in book form, according to Stokes: University of Health Sciences-College of Osteopathic Medicine in Kansas City, Mo., and Chicago College of Osteopathic Medicine.

Ed. Note: Alumni and friends of TCOM, if you have photographs or other memorabilia that you would like to share with the College History Editorial Board or the planners of other 20th anniversary activities, contact Stokes at (817) 735-2593 or write him c/o TCOM Health Sciences Library, 3500 Camp Bowie Boulevard, Fort Worth 76107.

Positive Impact Reported In Economic Study

The people who work, teach and learn at TCOM make significant contributions to the health and prosperity of Fort Worth and Tarrant County, according to a January 1989 economic impact study.

The report, prepared by the Bureau of Research at the University of Houston-Clear Lake, describes in monetary, social and cultural terms the positive influence of TCOM on local business, individuals and government. Houston researchers Robert F. Hodgin, D.A., and Roberto Marchesini, Ph.D., summed up their findings by reporting that "In all, the desired outcome between TCOM and the community is that it provides more value than it uses to operate in all respects."

Some of the findings included in the report are:

- Local business volume is enhanced by more than $50 million.
- Some 2,000 to 2,300 people are employed directly or indirectly due to the presence of the college.
- Total personal income in the area is increased by more than $30 million, resulting in more than $1 million in purchases of durable goods such as automobiles and televisions annually.
- Local banks enjoy more than $11 million in additional deposits with which to conduct business.
- The college contributes more than $330,000 to government coffers than it extracts in the form of governmental services.
- TCOM physicians and student doctors see more than 90,000 patients each year.

The researchers pointed out that TCOM provides many other benefits that are difficult to quantify and that are beyond the scope of the methodology utilized in the study. They reported that the social benefits from research, outreach programs, professional associations and community services combine to enhance the quality of life in Fort Worth, Tarrant County and the state. In addition, about 70 percent of TCOM graduates remain in Texas to further distribute the gains from their training to the citizens who helped support them via tax allocations to public higher education.

To receive a copy of TCOM's "Economic Impact: A Report to our Community," contact the Office of Fiscal and Administrative Affairs at (817) 735-2525.

Campus Newsmakers

John Deagle, Ph.D., D.O., emergency medicine, has been elected to a two-year term as president of the National Alumni Association of the University of Osteopathic Medicine and Health Sciences.

Jerry L. Dickey, D.O., chairman of manipulative medicine, has been elected to the American Academy of Osteopathy Board of Trustees.

H. Fred Downey, Ph.D., physiology, was elected a Fellow of the Cardiovascular Section of the American Phhsiological Society.

John H. Harakal, D.O., manipulative medicine, was selected to deliver the Thomas L. Northup Lecture at the1988 AOA convention in Las Vegas. Harakal was presented with a life membership in the American Academy of Osteopathy.

Elizabeth Harris, Ph.D., microbiology and immunology, was certified as a diplomate in medical microbiology of the American Society for Microbiology.

Carl Jones, Ph.D., associate dean for basic sciences and physiology chairman, has been named to the Veterans Administration Merit Review Program, which evaluates grant applications to the V.A. He also has been named a grant reviewer for the Wellcome Trust Foundation in London.

Robert L. Kaman, Ph.D., public health and preventive medicine, has been appointed associate editor of the Journal for Fitness in Business for the Association for Fitness in Business.

David Ostransky, D.O., medicine, has been appointed chairman of the Tarrant County Chapter of the American Lung Association.

President David M. Richards, D.O., was invited to testify about medical education in the United States before committees of the U.S. House and Senate in early May 1989. Richards appeared in his capacity as chairman-elect of the American Association of Colleges of Osteopathic Medicine Board of Governors. He assumes the AACOM post in July 1989. The AOA board also appointed Richards to a task force for expansion of AOA postdoctoral programs. He recently was elected to the Fort Worth Osteopathic Medical Center Board of Directors. Richards was also presented the Alumni Merit Award as a distinguished alumnus of Baldwin-Wallace College, from which he received his B.A. degree in 1954. In April, he delivered the commencement address to the U.S. Air Force Hospital and Clinic Administrators Symposium at Keesler Air Force Base in Mississippi. The symposium was for Air Force Medical Service Corps administrators preparing to assume command of a military hospital or clinic. Richards cited TCOM's clinical affiliation with

Carswell Air Force Base in the operation of the CHAMPUS clinic as a "creative solution" involoving military and civilian cooperation.

Ralph L. Willard, D.O., clinical professor of surgery and president of TCOM from 1981 to 1985, has been named associate dean of clinical affairs/postdoctoral training at West Virginia School of Osteopathic Medicine in Lewisburg.

T. Eugene Zachary, D.O., vice president for academic affairs and dean, was named General Practitioner of the Year by the American College of General Practitioners in Osteopathic Medicine and Surgery.

New UNT/TCOM Board of Regents appointments: As of press time, July 1, Governor Bill Clements had appointed **R.L. Crawford Jr.** of Northwestern Mutual Insurance Company in Lewisville and **Joe Kirven** of ABCO Corporation in Dallas to new six-year terms. Two more appointments will be made this summer.

New TCOM Advisory Council appointments: **Tom Hanstrom,** executive director of the Texas Osteopathic Medical Association; **Eddy Herrera,** executive director of the Tarrant County Chapter of the American Red Cross; **Richard Hochberger, D.O.,** president of the TCOM Alumni Association; **Joseph Montgomery-Davis, D.O.,** president of the Texas Osteopathic Medical Association; **Robert L. Peters, D.O.,** president-elect of the Texas Osteopathic Medical Association; and **Wayne Stockseth,** Corpus Christi businessman and former chairman of the University of North Texas/ Texas College of Osteopathic Medicine Board of Regents; Council Chairman **Jay Sandelin** also was reappointed.

New faculty positions: **Rafael Alvarez-Gonzalez, Ph.D.**, previously with the Samuel Roberts Noble Foundation Inc. in Ardmore, Okla., is now an assistant professor in microbiology. **Deborah L. Blackwell, D.O.**, a 1982 TCOM graduate and former clinical director of the Laredo-Webb County Health Department, is now an assistant professor in pediatrics. **Carole Brown, D.O.**, a 1986 TCOM graduate previously in private practice in Burleson, is now an assistant professor in general and family practice. **Egeene O. Daniels, D.V.M.,** previously at Louisiana State University School of Veterinary Medicine, is now TCOM's new director of animal facilities and also an adjunct assistant professor in microbiology. **Gary Earp, D.O.**, previously in private practice in Fort Worth, is now an associate professor in general and family practice. **Brian H. Foresman, D.O.**, previously on the faculty of Michigan State University College of Osteopathic Medicine and Senior Pulmonary Fellow at Ingham Medical Center (Lansing, Mich.), is now an assistant professor in medicine. **John C. Licciardone, D.O.**, TCOM public health and preventive medicine, has been appointed vice chairman of that department. **John G. Mills, D.O.**, a flight surgeon in the U.S. Army, will become associate professor and chairman of the Department of Public Health and Preventive Medicine on Aug. 1, 1989. **Raymond M. Pertusi, D.O.**, previously an assistant professor of medicine at Seton Hall University School of Medicine, is now an assistant professor in medicine. **Craig Whiting, D.O.**, a 1979 TCOM graduate previously in practice in Euless, is now an assistant professor in general and family practice. **Winter B. Wilson, D.O.**, previously a Gastroenterology Fellow at Chicago Osteopathic Medical Center, is now an assistant professor in medicine. **H. Stan Wood, D.O.**, previously in private practice in Port Arthur, is now an assistant professor in medicine. **Denise Zanecchia, Ph.D.**, previously associate professor and chairman of the Community Health Nursing Council at Texas Christian University Harris College of Nursing, is now a research associate professor in medical education and research nurse/ clinical trials coordinator in TCOM's Research Office.

New staff positions: **Al Cross**, director of staff training and development, is now also director of TCOM's Office of Continuing Medical Education. **James K. Dzandu, Ph.D.**, anatomy, is TCOM's new Equal Employment Opportunity officer. **Frank Forney**, previously director of the computer center at Texas Christian University, is TCOM's new director of computing/ telecommunications. **Brent Jones, Ph.D.**, who joined TCOM last summer as minority retention advisor, has been appointed assistant director for special opportunities in the Office of Admissions. TCOM's new physical plant director is **Harry J. Marek,** formerly director of building management at Lone Star Gas in Dallas, where he had been since 1972.

In memoriam: **Hugo J. Ranelle, D.O.**, a former trustee of TCOM and recipient of the TCOM Founders' Medal in 1985, who died Jan. 17.

CALENDAR

August 4-6	Texas State Society of ACGP 16th Midyear Clinical Seminar/Symposium	Arlington Hilton
August 25	TCOM/UNT Board of Regents meeting	UNT
September 8-10	Office of Student Affairs: Regional Student Osteopathic Medical Association Convention "Public Health Awareness Through Osteopathy"	TCOM
September 22-24	TCOM Office of CME and Department of Medicine: Primary Care Update VI	Hyatt Regency Fort Worth
September 22	TCOM Fall Convocation, Founders' Medal Presentations	TCOM Main Auditorium
September 23	TCOM Homecoming, Class of '79 Reunion	
November 3-4	TCOM Office of CME and Department of Manipulative Medicine: Manipulative Medicine Conference	TCOM
November 12-16	AOA 94th Annual Convention and Scientific Seminar	Anaheim (Calif.) Hilton

DISCOUNT NOTICE

TCOM Alumni Association active members receive a 10 percent discount on registration fees for all programs sponsored by the TCOM Office of Continuing Medical Education. For more information, or to verify that you are on the TCOM CME mailing list, contact Al Cross, CME director, (817) 735-2539.

Texas College of Osteopathic Medicine's Office of Continuing Medical Education is supported by Dallas Southwest Osteopathic Physicians, Inc.

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