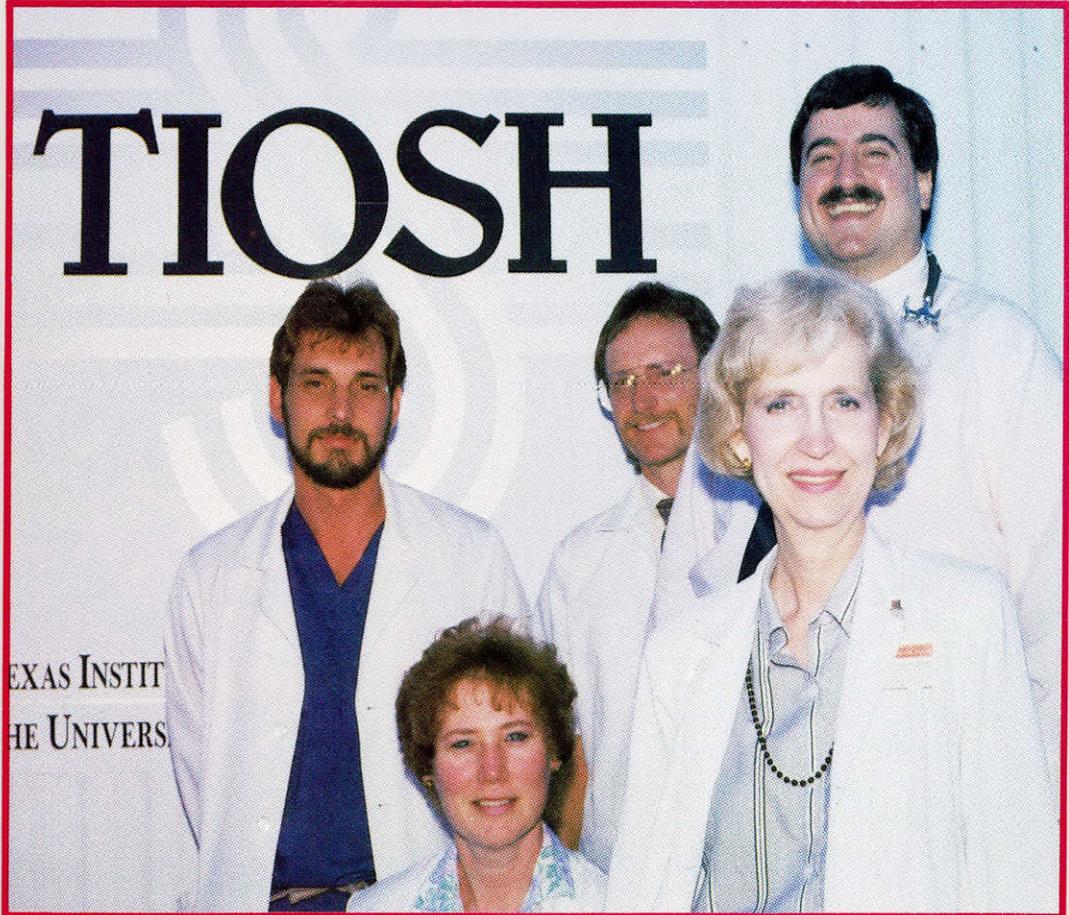


THE UNIVERSITY OF TEXAS HEALTH CENTER AT TYLER  
**capsule**



**Texas Institute of Occupational Safety and Health  
helps industries reduce health hazards.**

Fall/Winter 1990

90-195 MAY 07 1990

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**On the cover:**

The Texas Institute of Occupational Safety and Health offers a total program concept to assist companies and their employees in reducing health hazards in the work place, including making 'housecalls' in its mobile unit. The story begins on page 6.

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THE UNIVERSITY OF TEXAS HEALTH CENTER AT TYLER

# capsule

Fall/Winter 1990

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Molecular biology has made a tremendous impact on modern medicine within the past decade. Because many diseases originate in genetic abnormalities, a UTHC research team is looking for answers through genetic engineering.

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The University of Texas Health Center at Tyler is the state referral hospital and research center for cardiopulmonary diseases. It is accredited by the Joint Commission for Health Care Organizations and is a member of the American Hospital Association and the Texas Hospital Association.

# Gene Research an Important Link In the Chain of Medical Progress

**Molecular biologists hope their efforts will eventually aid in discovering how to overcome mistakes in DNA's genetic message, which determines what vital functions of an organism will work and which, unfortunately, will not.**

The secret of life processes are hidden away in the structure of the molecules, which cannot be seen even with the most powerful electron microscope.

But today scientists, such as those in the molecular biology laboratories at the University of Texas Health Center, are trying to unravel these secrets and eventually change the molecules for a better understanding of what is important in the life process.

Their goal is to fix the naturally occurring mistakes which cause serious and sometimes fatal diseases in the human body.

The department was established in 1987 to carry on basic research in genetic engineering, an important area that needed to be included in UTHC's research mission.

"Tools available through molecular biology application provide support to answer critical questions in many other areas of the sciences and provide unique areas for collaboration," says associate director for research Dr. Ron Dodson. "We're delighted to have such expertise available as another important part of our critical mass of research scientists."

Hopefully, the advances in basic research will translate into medical uses and that clinical needs will give basic research investigations a direction.

In the Tyler laboratory, molecular biologists Dr. Gokul Das and Dr. Christian Zwieb and their team of three postdoctoral fellows are trying to identify the "regulatory switches" of a number of genes as well as the "regulators" (cellular proteins), and to understand how the switches are turned on and off or regulated according to the developmental program of the cell.

DNA is the language of life. It pro-



*Dr. Gokul Das examines the genetic message of DNA.*

grams all of a living organism's characteristics, including what vital functions of that organism will work and which, unfortunately, will not.

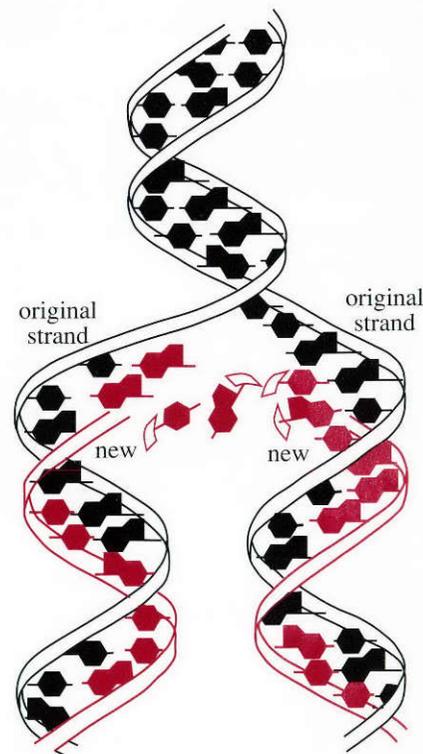
Mutation of a gene can change its regulatory switches or the structure of the protein it makes. The end result is that either too little or too much of the desired protein is produced or its function is altered, thus threatening the life of the organism.

Certain proteins that normally regulate or "switch on" a certain process—such as cell growth—sometimes do not switch on properly, thus making life difficult or impossible for that living thing containing the mutant gene.

The very first and most crucial step of gene regulation is the initiation of transcription. Transcription is the enzymatic process by which genetic information in one strand of DNA is used to define a complementary sequence of bases in an RNA molecule.

Just as each new strand of DNA is a complementary copy of an existing strand, each new RNA molecule is copied from one of the two strands of DNA by the same base-pairing principle. This RNA molecule is then translated into a protein molecule.

The research team is looking for the



*The DNA molecule shown here is in the process of replication, separating down the middle. Each of the original strands then serves as a template along which a new, complementary strand forms.*

factor in the transcription process that dictates what genes will and/or will not be expressed in an organism.

Recent advances in molecular biological research have led to the feasibility of somatic "gene therapy" for humans.

"Before using a particular gene as a candidate for gene therapy, the details of its regulation need to be understood by identifying and characterizing the regulatory switches as well as the regulatory protein factors. This is why basic research on gene regulation is so important in molecular biology," Das said.

UTHC's molecular biologists are studying a gene important in lung biology, Alpha-1-antitrypsin, made primarily in the liver and secreted in the plasma. As blood circulates, the secreted protein protects the lungs against elastase activity, which would otherwise degrade the connective tissue components.

Individuals with severe deficiency of this protein in the serum are more likely to develop emphysema. Therefore, it is important to understand the regulation of the gene making this protein, the basic mechanisms of protein secretion as well as the structure-function relationship of the protein.

In Zwieb's laboratory, the team is interested in uncovering the basic mechanism within the cell which controls protein translocation and secretion. This work will fill a vacuum in UTHC's molecular biology research.

"Proteins are prepared in the cytosol, the 'kitchen' of the cell, but must do their beneficial work in another part of the cell or body," Zwieb said.

"For example, a single mutation in the Alpha-1-antitrypsin protein prevents its secretion and causes serum deficiency. Just as people avoid sleeping in their kitchens or cooking in their bedrooms, proteins also need to know where to function."

Zwieb studies the sophisticated machinery which controls this sorting process, telling the proteins where to go.

A native West German, Zwieb received his undergraduate degree at the Julius-Maximilians University in Wurzburg, West Germany. He received a Ph.D. degree from the Max Planck Institut fur Molekulare Genetik in Berlin and later became a postdoctoral research fellow at Brown University in Providence, R.I. Prior to joining the health center's research staff, he was a staff scientist at the European Molecular Biology Laboratory in Heidelberg, West



*Dr. Christian Zwieb studies the molecular mechanism of protein secretion.*

Germany and a visiting scientist at the National Institutes of Health in Bethesda, Md. At the health center he is studying the molecular mechanism of protein secretion.

By contrast, Das earned his B.S. and M.S. degrees in physics and a Ph.D. degree in biophysics from Calcutta University in India. He became interested in molecular biology while studying the molecular structure of matter and started his research career in biophysics with the study of the biophysical properties of DNA and its interaction with different drugs. He spent two years of his postdoctoral training in France to study how DNA is organized in mammalian chromosome. He was a visiting scientist at NIH where he started working on gene regulation in DNA tumor viruses.

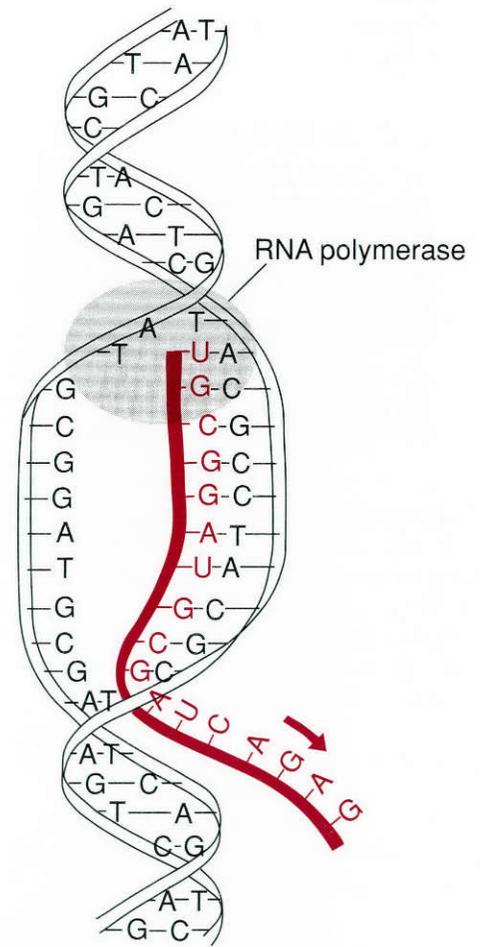
Das also trained at NIH, working in the biology of viruses laboratory at the National Institute of Allergy and Infectious Diseases. He has been studying gene regulation at UTHC since the molecular biology department was established two years ago.

"We are studying that which makes life possible, the factors that make each species unique and different. Of course, it is exciting," said Das, who often becomes quite animated when discussing molecular biology.

"Our studies have no direct applications in medicine yet," Zwieb said.

"But what we do is very important to medicine. We are one link in the chain of medical progress."

—Janna Casstevens



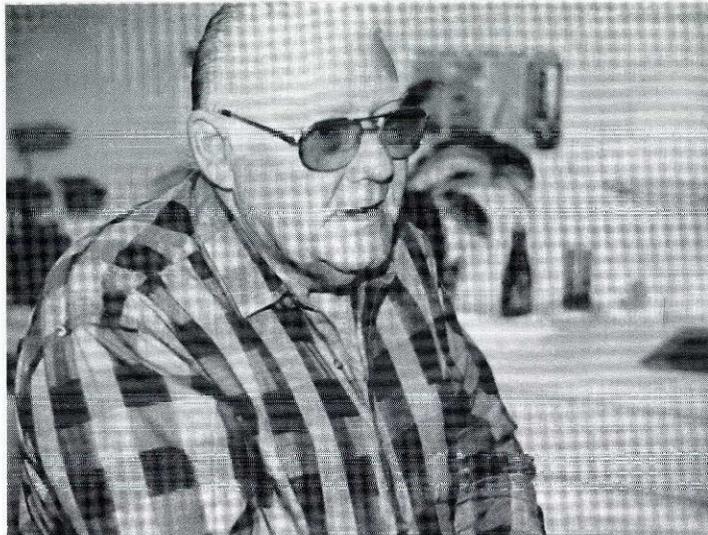
*Here is a schematic representation of RNA transcription, the process by which genetic information in one strand of DNA is used to define a complementary strand of RNA molecule.*

# Asbestos Workers Study Extended

**Tyler project receives \$2.8 million to continue examination of 600 former asbestos workers five more years and to recruit an additional 200 into the program.**

**T**he National Cancer Institute has awarded the University of Texas Health Center a \$2.8 million grant to continue a cancer prevention study of asbestos workers five more years.

The study, which began in 1984, involves more than 600 former asbestos workers in Texas, New Mexico, Arkansas and Louisiana to determine whether these people can reduce their chances of developing certain cancers by



*Murrell Woods of Gladewater is a volunteer for the study.*

200 persons will be recruited into the program, McLarty said. The UTHC research team will continue tracking more than 800 former asbestos workers, providing them either vitamin A compounds or placebo to randomly selected participants and conducting periodic medical evaluations.

McLarty said the cancer institute is pleased with preliminary findings of Tyler's cancer study because there has been a shift in national focus to cancer prevention. The survival rate of lung cancer has not improved in 20 years, he said.

"Since lung cancer is the number one cancer killer in America, the potential gain from these studies is enormous."

**"Since lung cancer is the number one cancer killer in America, the potential gain from these studies is enormous."**

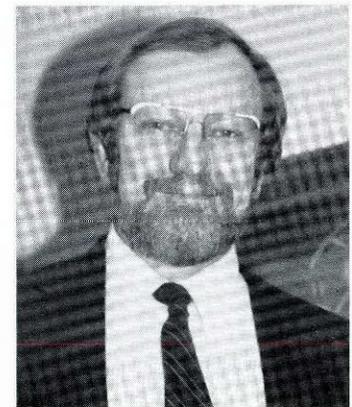
*Dr. Jerry McLarty,  
Principal Investigator*

"First, we were able to recruit participants in sufficient numbers to observe meaningful influences of an interfering element," McLarty said. "Second, we were able to get participants to comply with the clinical trial's regimen for several years. Getting participants to comply with the required regimen has been a significant problem for many clinical trials," he said.

In 1984, NCI awarded the health center \$1.7 million to begin a cancer prevention study among workers exposed to asbestos on their jobs. Inhaling the microscopic fibers produced by asbestos — once used in construction, insulation, shipyard and other industries for years before it was banned — is known to have significant effect on the incidence of lung cancer, especially among cigarette smokers.

McLarty said 637 people are currently enrolled in the clinical trial. Many of the volunteers were formerly employed by a nearby East Texas plant closed in 1972 and were previously examined in a 1974 federally-funded Tyler asbestos workers program. Additional participants have been recruited from throughout Texas and from New Mexico, Arkansas and Louisiana. Workers exposed to asbestos' damaging fibers may not develop lung cancer or other asbestos-related disease until 10 to 40 years after the initial exposure, McLarty said.

With the extended funding, another



*Dr. Jerry McLarty*

taking daily doses of vitamin compounds. Similar studies are being funded by the cancer institute at other research centers.

For the past five years, a UT Health Center group of scientists and physicians has been trying to determine if these vitamins can improve abnormalities of lung cells found in workers occupationally exposed to asbestos, a known carcinogen.

Principal investigator Dr. Jerry McLarty, chairman of epidemiology and biomathematics, says research conducted so far is promising.

"Although it's too early to tell if these vitamin compounds can prevent lung cancer, we were able to achieve two very important factors essential to any clinical trial's success — recruitment and compliance," he said.

**For those who might be interested in participating in UTHC's cancer prevention study, please call (214) 877-7966 for more information.**

# Group Protects Rights of Patients

As the University of Texas Health Center continues to expand its biomedical research mission, an important aspect of that work is conducting clinical trials involving patient volunteers.

These studies help determine whether specific drug therapies can improve their medical conditions or,

said.

Consent forms are also required, informing the patients of the study's objectives, the risks involved and confirming that they know participation is totally voluntary.

"We let each patient know that they can choose not to participate and that their decision will not jeopardize their

and biomathematics, and microbiology. The majority of the protocols involve Southwest Oncology Group chemotherapies to treat cancer patients.

The clinical trial involving the most participation by far is the cancer prevention study among asbestos workers funded by the National Cancer Institute.

More than 650 former asbestos workers at high risk for developing lung cancer are enrolled in the project, taking daily doses of either vitamin compounds or placebos. (See story page 4).

"Our group— as are institutional review boards around the country — is committed to retaining the highest integrity and concern for patients to ensure that their rights are protected," Girard said.

"Patients volunteering for clinical trials are providing an invaluable service to benefit not only themselves but others," he added.

**Our group— as are institutional review boards around the country — is committed to retaining the highest integrity and concern for patients to ensure that their rights are protected."**

*Dr. William Girard,  
Committee Chairman*

as in one study, prevent disease.

UTHC's institutional review board, called the Human Subjects Investigation Committee, works to protect the rights of UTHC patients participating in clinical studies and to ensure that research projects are conducted not only scientifically but also ethically, says Dr. William Girard, a pulmonary physician who chairs the committee.

Since 1974, the committee of professionals and laypersons from UTHC and the Tyler community has approved 235 research studies or protocols involving human subjects. Seventy-one of these are currently active.

"The Human Subjects Investigation Committee wants to ensure that the research conducted at this institution follows the ethical guidelines developed by international and national organizations," Girard said. The committee follows guidelines established by the U.S. Department of Health and Human Services and the Federal Drug Administration.

Every researcher or physician conducting a protocol must present a detailed account of their projects' rationale and objectives.

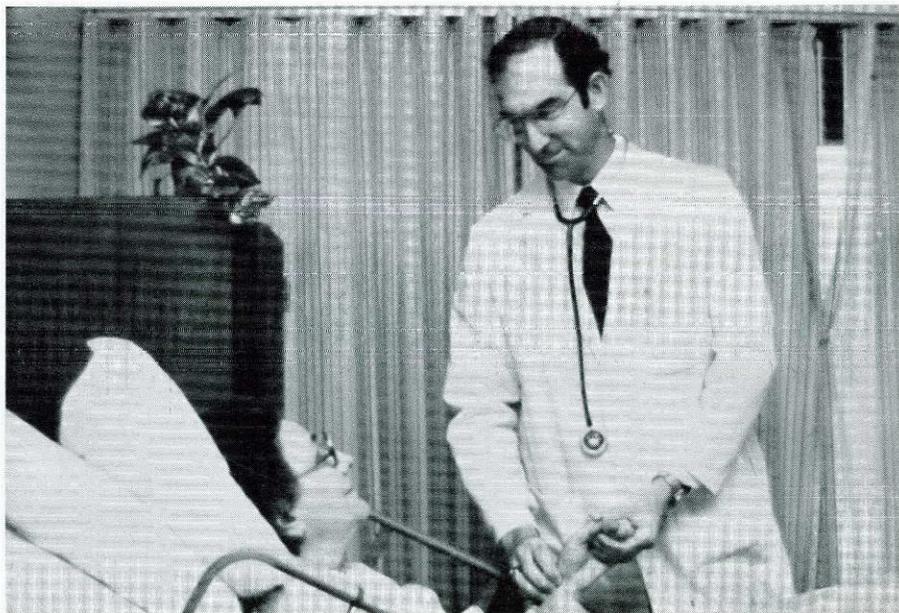
"We also assess potential risks to subjects and weigh the benefits," he

standing here as a patient," he said.

Failure to comply with any of these guidelines could imperil continued funding from an outside granting agency, such as the National Institutes of Health.

Protocols are now underway in several departments, including oncology, cardiology, biochemistry, epidemiology

*—Rita Nute*



*Dr. William Girard chairs the Human Subjects Investigation Committee.*

# Helping Keep the Work Place Safe

By Janna Casstevens

**T**wo hundred years ago, shortly after Italian physician Ramazzini wrote *Diseases of Workers*, linking the origins of some diseases to the workplace, British surgeon Percivall Pott noticed a significant number of chimney sweeps suffering from a "superficial, painful, ragged, ill-looking sore with hard and rising edges." He aptly dubbed the complaint "chimney sweep cancer."

This was the birth of occupational medicine.

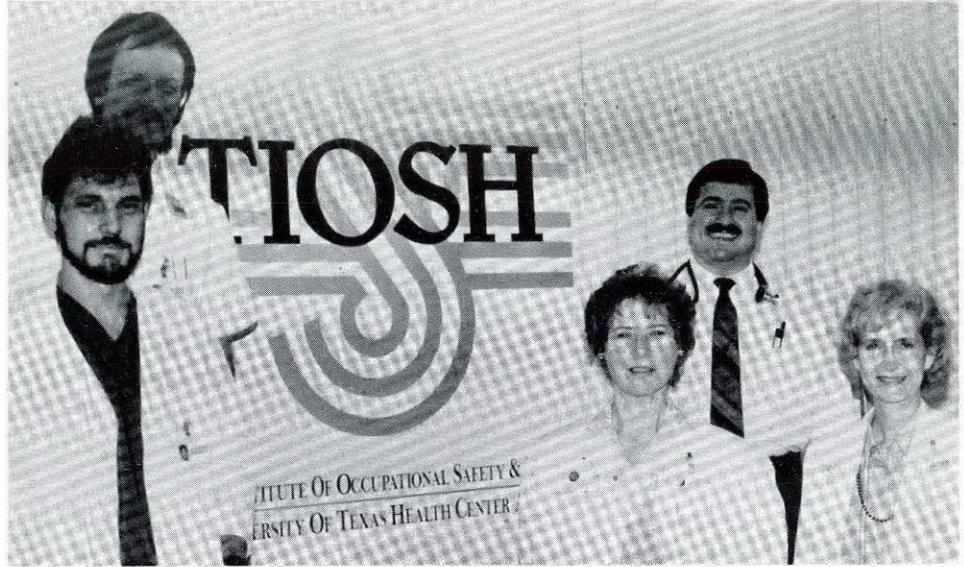
However, the pursuit of occupational medicine did not take off immediately. Although Ramazzini's and Pott's studies heightened physicians' awareness of work-related disorders, no one in the medical community devoted themselves to the thorough contemplation of the subject until the Industrial Revolution around the turn of the 20th Century.

As the industrial labor force swelled, so did the demand for doctors involved in what was then known as "industrial medicine" to look after the growing number of sick and injured.

Now, as the turn of the 21st Century approaches, the emphasis of occupational medicine is on prevention, the main goal of the University of Texas Health Center's Texas Institute of Occupational Safety and Health (TIOSH), according to Dr. Jeffrey Levin, medical director of the Occupational Medicine Clinic, a TIOSH component.

The Occupational Medicine Clinic, specializing in lung disorders in the East Texas area, was established in 1986 to provide independent medical evaluations and treatment for patients with occupational and environmental pulmonary problems. As the clinic services expanded to include occupational health, the concept of a local organization inspired by the National Institute of Occupational Safety and Health (NIOSH) evolved.

TIOSH offers a total program providing businesses and industries services like radiology, safety and health education,



Among the TIOSH staff assisting patients are front row, pulmonary technologist Sam Fields, Linda Deemer, R.N., Barbara Pruitt, R.N., back row, radiologic technologist Ron Jung and Dr. Jeffrey Levin.

analytical microscopy, tissue analysis, and occupational/preventive medicine.

In the heat of the worker's compensation insurance crisis in Texas, it is imperative that companies make the work environment safe for their employees, Levin said.

TIOSH, staffed by specialists in occupational medicine, radiology, pulmonary disease, and internal medicine, assist employers in their efforts to reduce occupational hazards such as heavy metal poisoning, pesticide exposure, occupational skin diseases and musculoskeletal injury. TIOSH features plant walk-throughs by specialists to pinpoint a com-

**"Our mobile unit really helps save time and aggravation in reaching companies and their employees."**  
**Dr. Jeffrey Levin**

pany's specific needs. Other services are hearing and vision tests, X-rays, drug screening, spirometries and educational classes designed to help employees protect themselves.

These programs include hearing conservation training, a smoking cessation program and back injury prevention.

Analytical microscopy and tissue analysis are also offered to determine the quantity of dust burden in tissue and body secretions.

All of these services can be conducted on the job site via the TIOSH mobile unit, relieving employees of the burden of missed work days.

"Our mobile unit really helps save time and aggravation in reaching companies and their employees," Levin said.

"With the unit, we can go to the people in need rather than making the people in need come to us. The mobile unit is more or less a modified 'housecall' for area companies," Levin said.

The mobile unit contains no permanently installed medical equipment because each call the unit goes on is different. Only the equipment needed for a specific call gets loaded on the unit, giving



the medical staff room to move around without equipment getting in the way.

The mobile unit can facilitate employee drug screening, physical examinations and hearing and vision testing.

In December, the TIOSH mobile unit and staff went to Amarillo, Big Spring, Borger and Beaumont to conduct health screenings for electricians exposed to asbestos on their jobs.

The most frequently referred cases to TIOSH are asbestos-related disorders, such as asbestosis or scarring of the lung tissue. Many of these patients are former employees of a Pittsburgh Corning plant which closed its doors in 1972.

"Once in a while, we see a case of lead poisoning or pesticide exposure. But more often than not, the complaint is something resulting from past asbestos exposure," Levin said.

Back and musculoskeletal injuries are also common cases that come through TIOSH.

As for medical problems like headaches or backaches due to computer terminal exposure or during prolonged work periods, none have been seen at the clinic yet.

But as more careers require computer literacy, it is likely computer-related complaints will surface, he added.

An on-the-job site smoking cessation program is a key service of TIOSH.

"Most people do not realize how



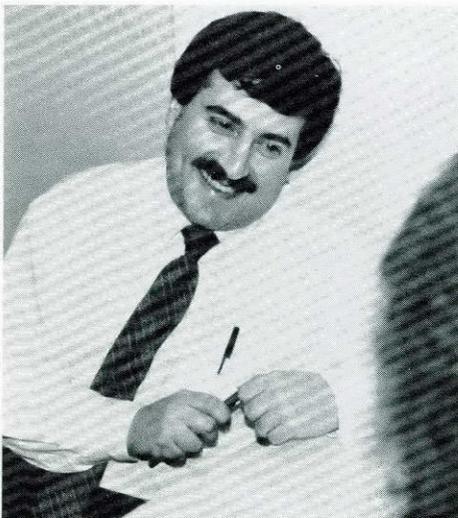
*Linda Deemer, R.N. conducts hearing test.*

smoking aggravates respiratory problems," Levin said.

When people who smoke work with coal or cotton dust or have worked with asbestos they increase their risks of respiratory diseases multifold.

Employees who do not smoke or have stopped smoking reduce not only their

risks of getting cancer, they protect themselves from work-related respiratory problems that intensify due to tobacco use. TIOSH brings the smoking cessation program to companies not only as a service to employers, but to employees who really want to quit smoking.



*Dr. Jeffrey Levin says TIOSH offers a total program to help patients.*



*TIOSH mobile unit goes to the job site.*

# On-the Job Smoking Cessation

Although smoking is the number one controllable cause of disease and death in America, many people cannot seem to kick the habit. Smokers say quitting is the hardest thing they face.

That's why the University of Texas Health Center's Texas Institute of Occupational Safety and Health (TIOSH) is offering a new approach which features an on-the-worksite smoking cessation program for area businesses and industries.

"The fact that smoking has such a large impact on the development of many occupational diseases indicates the need for intensive smoking cessation programs on the job site," said program director Dr. Jeffrey Levin. "TIOSH hopes to fill that need by traveling directly to companies and conducting the program at the workplace."

This presentation of the program creates the potential of meeting a greater number of smokers who want to quit but do not have the time or the energy to drive out to the UT Health Center or other area hospitals offering similar programs.

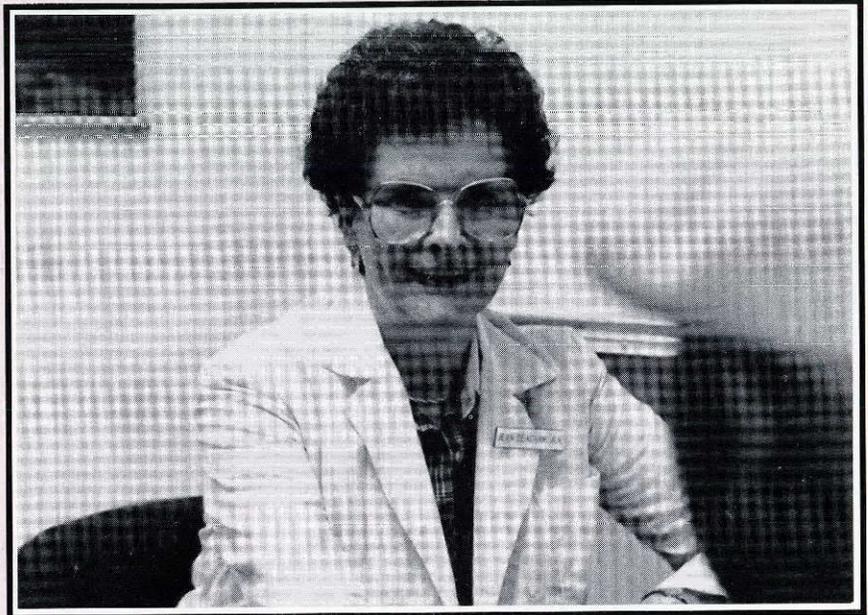
For the majority of American workers, cigarette smoking represents a greater cause of death and disability — for the non-smoker as well as the smoker — than their workplace environment, Levin said.

TIOSH's smoking cessation program is designed to provide help to people who have the sincere desire to stop smoking, Levin said. Generally completed in four counseling sessions offered at convenient times, the program gives each person individual counseling because everyone's smoking habit is unique.

"Every individual's smoking history and personal smoking records are used to determine his or her smoking habits," Levin said. "So counseling focuses on changing behavior patterns," he added.

Levin and training specialist, Jean Beacham, conduct the cessation program aimed at area businesses and

industries, and medical education coordinator Betty Tirey coordinates the in-house program for employees, patients and others.



*Jean Beacham counsels a patient about the benefits of smoking cessation.*

Levin offers these facts to smokers who may need reasons for quitting:

- Tobacco use causes more than 350,000 deaths a year.
- The risk of heart disease and lung cancer is higher among smokers than non-smokers and ex-smokers.
- Cigarette smoke aggravates asthma and other respiratory problems.
- Because the body is capable of healing itself quickly, a person who has smoked 40 or even 50 years can still benefit from quitting.
- Those who quit can expect to lose their smoker's cough, find it easier to climb stairs, experience improvement in their sense of taste and smell and prevent premature aging.

—Janna Casstevens

# Texas Chest Foundation & UTHC Development Board

## Regent Chairman Encourages UTHC's Regional Expansion

The University of Texas Health Center should increase its efforts in becoming recognized as a regional East Texas medical resource and not just a Tyler or Smith County facility, said UT Board of Regents chairman Louis A. Beecherl Jr. during the Nov. 16 annual meeting of UTHC's Development Board and Texas Chest Foundation trustees.

Observing the recent competitiveness of health care in the marketplace, the regent encouraged the health center to improve its patient mix by attracting more paying patients and increasing its marketing efforts.

"As you mobilize legislative delegations, marketing programs, cooperative hospital efforts and private fund development programs, your vision must be geographically expanded," the Dallas regent said.

He spoke of the health center's need for a new ambulatory care facility, with an estimated cost of \$11.3 million, to handle outpatient visits which have doubled in the past five years.

The board of regents has allocated \$5 million from the Permanent University Fund (PUF) for the project, but the remaining costs must come from hospital



Chairman Louis A. Beecherl Jr. addresses UTHC's need for expanded services.

and physician income and from gifts and grants.

As a regional resource, the health center has an increasingly important role in health care programming for East Texas and beyond, providing occupational medicine and environmental safety programs, management of heart and lung related diseases, biomedical research projects with significant peer review grants and other services.

"As you serve the region, the region should be asked to serve you as well," he said.

Beecherl said the Tyler health center, as well as UT's M.D. Anderson Cancer Center at Houston and John Sealy Hospital at Galveston, must find ways to reduce the amount of uncompensated health care provided for the state. He noted the Tyler facility, a cardiopulmonary referral and

teaching hospital and research center, receives \$14.8 million in state appropriations, but provides more than \$18 million in indigent care.

"Quite frankly," he said, "the problem for the future of this institution is directly tied to the national problems associated with the economics of health care delivery and the reimbursement patterns which seem to be developing."

Beecherl said the health center also is authorized by statute to make contracts with referring counties for indigent care. "Indigent care is a shared responsibility," he said.

Beecherl encouraged the Development Board's continued support to ensure the health center enhances its mission of patient care, research and medical education. "Without your involvement, it will not be possible," he added.

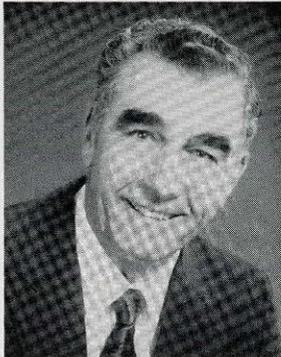


Dr. Allen B. Cohen confers with TCF chairman Isadore Roosth.

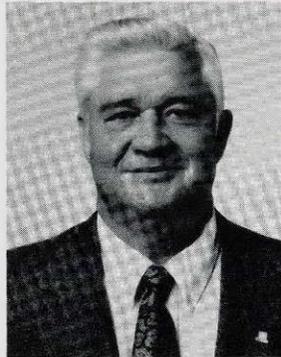


Peyton McKnight discusses proposals with Louis Beecherl Jr.

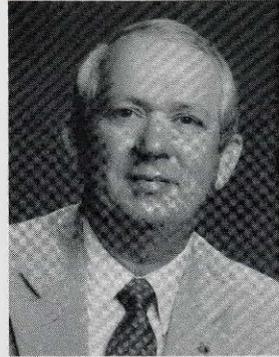
# Texas Chest Foundation



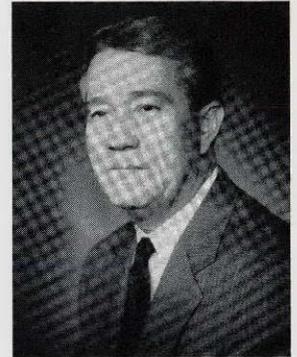
Dr. Bob Glaze



Larry Hickman



Gene Meier



James E. Russell

## New Members Appointed to Board

The University of Texas System Board of Regents has approved the appointment of five new members to the University of Texas Health Center Development Board, announced health center director Dr. George A. Hurst.

The new members are Dr. Bob Glaze, a chiropractor from Gilmer; Mrs. Leon Gibson of Kilgore, who is filling her deceased husband's unexpired term; Larry Hickman, district manager of Texas Power and Light Co., Tyler; Gene Meier, regional manager of external affairs for Southwestern Bell, Tyler; and James E. Russell, president and chief executive officer of Tyler Pipe Industries, Inc.

Their appointments also make them trustees of Texas Chest Foundation, a non-profit support organization for the health center.

Both Hickman and Meier have been actively involved for the past several years in raising money for the foundation by serving as chairmen of its annual benefit golf tournament.

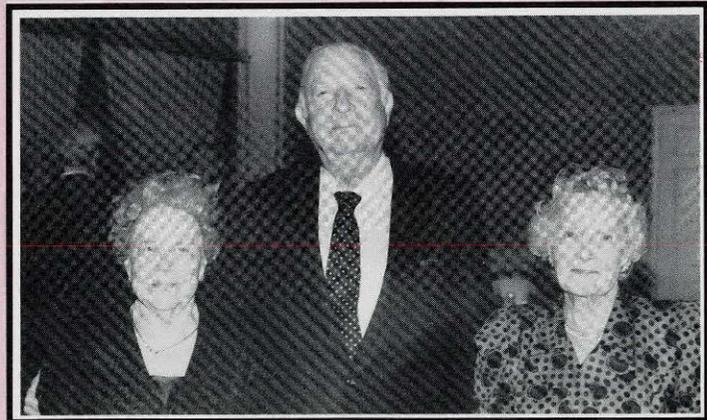
The regents also approved reappointments of members who will serve through 1992. They are Harold C. Beaird, Tyler; Henry M. Bell Jr., Tyler; Mrs. D.K. Caldwell, Tyler; Charles L. Childers, Tyler; Dr. Earl C. Kinzie, Lindale; Judge Thomas B. Ramey Jr., Tyler; Richard Ray, Tyler; Dr. C. Fagg Sanford, Tyler; Ralph Spence, Tyler; and Mrs. Rose Strong, Longview.

Eleven members are serving terms that expire in 1991. They are Dr. John F.

Adcock, Tyler; Allen M. Burt, Tyler; Buck Florence, Longview; Mrs. D.R. Glass, Tyler; Bob L. Herd, Tyler; George Oge, Tyler; Jack L. Phillips, Gladewater; Dr. Jim Vaughn, Tyler; Dayton H. Walkup, Kilgore; John A. Warner, Tyler; and Sam Wolf, Tyler.

Sixteen members are serving terms that expire in 1990. They are Jud Adams, Tyler; James Arnold, Tyler; Henry Bell

III, Tyler; Frank Burke, Dallas; Mrs. R.L. Gibson, Kilgore; Bill Hartley, Tyler; Will A. Knight, Tyler; Sen. Peyton McKnight, Tyler; Dr. B.H. McVicker, Lufkin; Dr. Blanche Prejean, Tyler; Edwin Rasco, Tyler; Bill Ross, Tyler; Norman Shtofman, Tyler; Dr. Tom Smith, Dallas; Dr. John C. Turner Jr., Tyler; and Royce E. Wisenbaker, Tyler.



Isadore Roosth presents plaques to Mrs. Leon Gibson, left, and Mrs. Watson Wise honoring their late husbands who served on the board.

### Board Members Wise, Gibson Were Contributors

The University of Texas Health Center appreciates the generous support of two board members, Watson W. Wise and Leon Gibson, who died during 1989.

Mr. Wise, a long-time Tyler businessman and civic leader, helped establish the health

center's biomedical library, which bears his name, with contributions of several journals.

Mr. Gibson, a Kilgore oil producer, was a longtime supporter and a charter member of the Director's Associates, a gift giving club.

# & UTHC Development Board

## Youngsters Enjoy Fifth Asthma Camp

For the past five years, Texas Asthma Camp, sponsored by Texas Chest Foundation at Camp Tyler in cooperation with the University of Texas Health Center, has given youngsters a chance to enjoy traditional camping despite their asthmatic conditions.

The 67 youngsters, ages 7-14, from the East Texas area and several cities in North and Central Texas enjoyed swimming, canoeing, fishing, rifle shooting, archery, nature walks, music, martial arts, photography and arts and crafts during the summer camp, one of only two asthma camps in Texas.

"Camping is such a wonderful experience for any youngster. These children are able to enjoy physically taxing activities and be confident that their asthma need not be a debilitating condition," said the camp's medical director Dr. Michael Green, also an assistant professor of pediatric pulmonary.



## Gift Planning Director To Help in Fundraising

Wayne Archer, formerly director of planned giving at LeTourneau College in Longview, has been appointed director of planned giving at the UT Health Center, announced director Dr. George A. Hurst.

In a newly created position in UTHC's Office of Development, Archer will direct a variety of gift-giving plans — including deferred gifts — and will act as a liaison between donors, attorneys and UTHC.

"With more than 20 years successful experience in fundraising and organized planned giving, Mr. Archer will make a tremendous contribution to the support of the health center's mission of patient care,



Wayne Archer

medical education and research," Hurst said.

Director of development John Anderson added, "Wayne Archer will help meet our organizational goals of further developing our annual gift giving efforts and increasing our potential sources of funds in the private sector."

Archer received a B.A. degree in sociology from Olivet Nazarene University in Bourbonnais, Ill., and a master's in education from Seattle Pacific University.

# Texas Chest Foundation & UTHC Development Board

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\* Texas Chest Foundation  
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# Sarcoidosis:



## The Great Imitator is Often Misdiagnosed

sarcoidosis. Although many people may have never heard of it, as many as one of every 2,000 individuals may suffer from sarcoidosis syndrome.

Often called the “great imitator” by the medical community, sarcoidosis’ symptoms mimic other diseases —such as tuberculosis, flu or even allergies— and are often misdiagnosed.

Often misdiagnosed symptoms may include:

- Respiratory Infection
- Fever
- Weight Loss
- Chronic Cough
- Shortness of Breath
- Chest Pains

“Unlike many other diseases, the most common way sarcoidosis is diagnosed is as an incidental finding such as during an employee physical when a chest X-ray indicates an abnormality,” says Dr. Brooke Nicotra, professor of medicine at the University of Texas Health Center which specializes in the treatment of sarcoidosis and other pulmonary diseases. “The person may feel perfectly fine, but the abnormal X-ray patterns may suggest a disease.”

“Of course, some people have symptoms with sarcoidosis — respiratory infection, fever, weight loss and generally feeling lousy,” Nicotra said. Other symptoms include chronic cough, shortness of breath, night sweats and chest pains. Sarcoidosis patients may even have an enlarged liver or spleen or lupus-like scars above the nose or cheeks.

These symptoms could be caused by any number of diseases, and further testing may be necessary to confirm a diagnosis of sarcoidosis.

Although not usually fatal, sarcoidosis in its severity can be a debilitating condition.

“Some 3 to 4 percent of patients with sarcoidosis will die from it over a period

of years. It’s not a disease like cancer or AIDS that kills a person in a fairly predictable short amount of time,” she said.

“One of the most serious problems resulting from sarcoidosis and one which we find almost always in people who die from sarcoidosis is excessive scar tissue or fibrous tissue in the lung,” Nicotra said, indicating that progressive damage to the lung eventually becomes fatal.

“About a third of sarcoidosis patients have chronic problems and develop severe manifestation of the disease,” she said.

For 42-year-old Helen Lucas of Jacksonville, her 66-pound weight loss, chronic cough and shortness of breath was a cause for concern -- especially since she was a smoker.

“I couldn’t sleep at night because I had such a hard time breathing. I would prop three or four pillows on the bed to try to breathe. I was missing a lot of days off from work.

“The fear I couldn’t shake was that I had lung cancer,” she said.

“My physician referred me to the UT Health Center. That’s where Dr. Nicotra diagnosed my sarcoidosis. I had never heard of it.”

Although its cause is unknown, sarcoidosis was initially thought to be a



*Sarcoidosis patient Helen Lucas of Jacksonville*

hereditary condition found especially among individuals with Scandinavian backgrounds or with African and Carib-

bean Islands ancestry. Persons under 40 appear to be especially susceptible to this medical condition, and Blacks apparently experience more severe forms of the disease, Nicotra said.

At the UT Health Center, patients symptomatic of sarcoidosis can undergo a series of sophisticated lung function testing, including a bronchoscopy— the examination of the lung’s air passages — or a mediastinoscopy — an examination of the mediastinum which contains the heart, trachea, esophagus, thymus and other tissues.

In sarcoidosis, chest X-rays reveal enlarged lymph nodes or lymph glands in the middle part of the chest.

“The lung itself has some extra fluid that drains to the middle part of the chest where it is collected in the lymph gland,” Nicotra said. “Frequently, these lymph glands are in an unusual pattern — an enlargement where the vessels and bronchial tubes come out and a ball of enlarged lymph nodes right above it. This unusual pattern is called a pawn broker’s sign,” she said.

Currently, the most successful treatment for sarcoidosis is steroid cortisone which often causes dangerous side effects for some patients.

“But steroids can make a dramatic improvement in a patient’s condition and may have to be continued for months or years at a time to manage the condition,” Nicotra said.

Respiratory treatments, including inhaled bronchodilators and steroids could help other patients manage their conditions.

Mrs. Lucas is currently taking the steroid prednisone to manage her condition which has vastly improved.

“I feel like a different person since coming to the health center,” she said. She underwent a series of tests, including pulmonary function tests, bone marrow testing and a bronchoscopy.

“We could do better testing for sarcoidosis and the tendency for the disease if we knew the cause. If it’s an infection, drugs may be developed which can cure it,” Nicotra said.

—Rita Nute

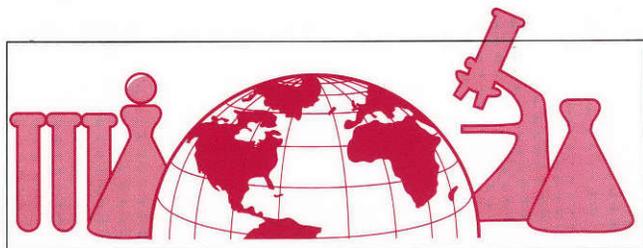
# Research Attracts Global Interests

Basic research at the University Texas Health Center-- which today involves some 24 staff scientists and outside grant funding of more than \$2 million annually-- is attracting global interests with scientists from around the world pursuing postdoctoral studies in Tyler.

When the health center began developing a postdoctoral fellowship program, recent Ph.D.'s were given an opportunity to train with its established investigators working on various cardiopulmonary projects.

Because the health center's work has been recognized at the international level, 12 postdoctoral fellows from China, England, Finland, India, Japan, as well as the U.S., have chosen UTHC's laboratories to pursue further studies and enhance their careers.

"Since the UT Health Center is not a degree granting institution, a lot of the education we provide has to be on the postgraduate level," says executive associate director Dr. Allen B. Cohen, who began coordinating development of UTHC's research program when he came to Tyler nearly six years ago.



"We clearly have the scientific depth to provide postdoctoral training," Cohen said. "We have a \$9 million biomedical research facility, and all of our principal investigators are nationally competitive with funding from the National Institutes of Health, the American Heart Association and other granting agencies. No doubt these postdoctoral fellows can get good training here," he added.

Cohen said postdoctoral fellows are valuable people to have around because they can work relatively independently.

UTHC biochemist Dr. Daryl Fair agrees.



Dr. Daryl Fair with postdocs Dr. Anuradha and Dr. Chattopadhyay.

"Most of our work here is fairly sophisticated and requires a high level of intellectual input," he said.

Fair said postdoctoral fellows have the formal education required to understand the concept of a project and the training needed to design experiments so they are capable of functioning independently.

"After they design an experiment, we discuss and interpret the data," he said. "Part of our responsibility as advisors is to see that they receive training in interpreting data and see that their work is published," Fair said.

Their salaries are supported by the research grants.

Dr. Kumar Anuradha came here last summer from India because he wanted to conduct research that would lead toward development of drug therapies in treating diabetes.

"I chose to come here because of Dr. Fair's work with molecular interactions of proteins," Anuradha said.

"It would take much more time to get this experience in our laboratories in India," he said, citing funding limitations and lack of equipment.

By working here for two years, Anuradha hopes to have his findings published in biochemical journals.

Dr. Aruna Chattopadhyay, another postdoctoral fellow from India, recently submitted an article to the *Journal of Biological Chemistry* for publication. And when she presented her initial results at the American Heart Association meeting last fall, she had the opportunity to meet scien-

tists working in her specialty.

Dr. Ronald F. Dodson, associate director for research, said the health center's postdoctoral fellowship program got started in the early 1980s when two Japanese physicians came to Tyler to study ultrastructural pathology and techniques in completion of their pathology residency programs in Japan.

"But now that we are receiving international recognition, more postdoctoral fellows are wanting to come here for further study," Dodson said.

—Rita Nute

## Researchers Make Presentations in Japan

While the University of Texas Health Center's research program continues to attract international interests and postdoctoral fellows, countries are inviting UTHC scientists to share their work.

This fall biochemists Dr. Donald Blumenthal and Dr. Karleen Callahan made presentations in Japan at an international conference of scientists examining signal transduction which is relevant to a variety of medical problems, including hypertension, cancer, obesity and diabetes.

The meeting covered the most important topics in signal transduction and the understanding of problems facing such medical sciences as pharmacology, physiology, biochemistry, molecular biology and other fields.

Blumenthal spoke on interactions between the enzyme, phosphorylase kinase and the protein, calmodulin. Callahan spoke on calmodulin-regulation of vessel

# Newsbriefs



*CF patient Chelsey Werchan visits clinic.*



*Dr. G. Harrison and genetics nurse Susan Fernbach, both of Houston, with UTHC's Dr. Philip Black.*



*CF patient Caleb Bidy with his father, Alan Bidy, visit the clinic.*

## Cystic Fibrosis Gene Discovery Offers Hope to Patients

With the discovery of the cystic fibrosis gene and the main genetic mutation causing CF, researchers and physicians can now offer better screening to identify carriers, said a genetic nurse from Baylor College of Medicine in Houston visiting CF patients and their families at UTHC in October.

Susan Fernbach, who works for Baylor geneticist Dr. Arthur Beaudet, was invited to share information about the discovery with parents of CF

patients treated at UTHC.

She said the discovery and continued research offer hope for development of better treatment and eventually a cure.

More than 30,000 children and young people in the U.S. have CF, an inherited disorder which affects the lung and digestive system. CF is the most common fatal genetic disease in the U.S. Some 35 young people now receive CF care in UTHC's pediatric pulmonary clinic, one of 125 satellite centers nationwide.

Prenatal testing, done in cases where a

sibling or other family member has CF, is 98 to 100 percent accurate, Fernbach said.

Although carrier testing has less accuracy, couples planning to have children may opt for the tests to help in their decisions, she said.

The parents asking Fernbach questions said they are hopeful these new discoveries will make a cure possible.

## NIH, American Heart and Lung Associations Award Study Grants

In addition to the National Cancer Institute renewal grant of \$2.8 million, the University of Texas Health Center has received additional awards—totaling nearly \$700,000—to fund two studies of white blood cells and a study of a bacteria which can cause a fatal pneumonia.

The National Institutes of Health has awarded the UT Health Center a \$502,886 grant for a study of the function of white blood cells in inflammatory diseases such as arthritis and emphysema.

Dr. Richard Painter, chairman of biochemistry, heads the five-year study aimed at understanding the way white blood cells or leukocytes migrate from the blood stream — where they normally reside — to sites of inflammation or infection within body tissue, causing chronic damage.

The grant from NIH's National Institute of Allergy and Infectious Disease will help Painter's team focus

on the way in which the receptors transmit the signal that an inflammatory agent is present outside the white blood cell and how the signal triggers the internal cell machinery to move toward the source of the inflammation.

"Ultimately it is hoped that therapeutic drugs can be developed that will interfere with the process so certain inflammatory conditions such as arthritis can be more selectively controlled," Painter said.

The American Heart Association, Texas Affiliate has awarded the UT Health Center a \$54,300 grant to examine the role of neutrophils or white blood cells in acute lung injury.

"The neutrophil serves as part of our body's defense system," says principal investigator Dr. Jon Connelly, a research instructor in the Department of Physiology.

"The results of this study will contribute to our knowledge of the role of the neutrophil in acute lung injury, sometimes called Adult Respiratory Distress Syn-

drome (ARDS) or shock lung which has a high mortality rate.

"Ultimately we hope to be able to find clues as to what triggers the syndrome and identify those patients that are at high risk in order to take preventive measures," he said.

The American Lung Association has awarded a \$17,500 grant to the UT Health Center for a study of bacteria which often causes fatal pneumonia in patients with underlying diseases such as cystic fibrosis and cancer.

Dr. Ali Azghani, the principal investigator, is examining the role of the bacteria, *Pseudomonas aeruginosa*, in acute lung injury.

While fighting immunosuppressant diseases such as AIDS, the body often becomes susceptible to infection by this bacteria, Azghani said.

The study would focus on the mechanics of the pathogenesis of this bacteria and how it injures cells in the lung, he added.

# Newsbriefs

## \$11.3 Million Expansion Project Announced

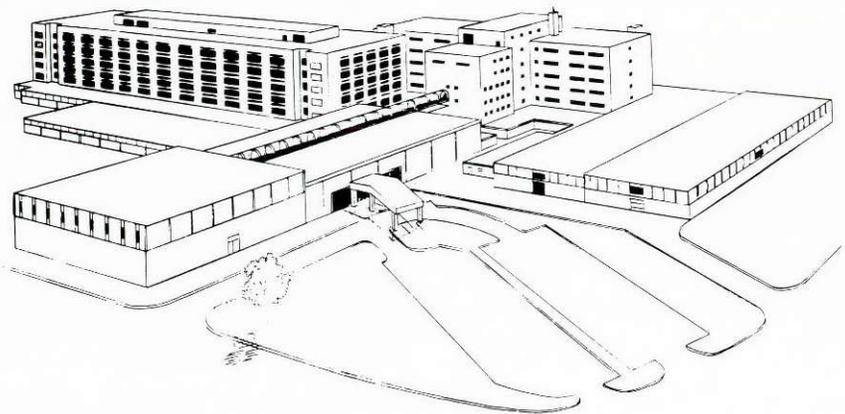
The University of Texas Health Center plans an \$11.3 million building program to expand outpatient and ancillary services, announced health center director Dr. George A. Hurst.

The UT System Board of Regents approved partial funding for the project by earmarking \$5 million from UT's Permanent University Fund (PUF) to help finance the expansion, which is expected to begin in the 1991 fiscal year.

The ambulatory care expansion will consist of a three-story, 45,500 square foot addition to the original outpatient clinic annex built in 1970, and an additional 15,000 square foot, one-story expansion of radiology and surgery space at the rear of the hospital.

The additions will allow relocation and expansion of other support services, such as library services and the biomedical information resource center, and provide space for clinical research programs.

Hurst said the health center's outpatient volume has increased 76 percent since 1985. He said this has caused ambulatory services to be scattered in make-shift areas of the



*The ambulatory care expansion will provide more convenient access for patients.*

hospital which are not conducive to efficient and convenient patient flow.

The new addition would provide outpatients with an integrated ambulatory care facility complete with convenient access to clinic and support services. It will also provide a more suitable location for the family practice residency program and help fulfill its accreditation requirements.

The additional 6,000 square feet to expand the surgery area will provide two additional operating rooms, four day-

surgery rooms for outpatients, plus offices and storage rooms.

The 9,000 square foot addition to the radiology department will provide permanent quarters for offices and the computed tomography (CT) scanner presently housed in a temporary annex, and expand the area for mammography services. New equipment purchases also will allow the conversion from film to electronic imaging.

## Faculty Appointed to Several Committees

Several University of Texas Health Center faculty members serve on statewide and national committees.

Dr. Richard Kronenberg, professor and chairman of medicine, was selected chairman of the National Asbestos Council's safety and health committee during the group's annual meeting in Indianapolis.

Dr. Allen B. Cohen, executive associate director, has been appointed to the editorial board of the nationwide publication, *The American Journal of Physiology: Lung Cellular and Molecular Physiology*.

Dr. Ron Dodson, associate director for research and chairman of cell biology and environmental sciences, has been appointed to a state committee developing objectives for health pro-

motion and disease prevention for the year 2000.

The Texas Department of Health has asked Dodson to help propose and develop the objectives and implementation plan by the end of 1990.

Dr. Ragene Rivera, director of oncology service, has been appointed medical director for District 21 of the American Cancer Society for 1989-90.

As medical director, Rivera is responsible for developing professional education and physician's activities for the district's 11 East Texas counties.

Physicians Dr. Ben Bridges and Dr. Gary Huber, and Dodson are members of the editorial board for the new medical journal *East Texas Medicine*.

## PUF Monies Allocated For Facility Upgrades

The UT System Board of Regents has allocated almost \$1 million in Permanent University Funds (PUF) for facilities enhancement at the University of Texas Health Center, announced health center director Dr. George A. Hurst.

A major portion of the PUF monies — \$529,000 — will be used to upgrade systems to comply with life safety codes, to integrate proposed facilities expansions, to enhance emergency communications and to improve patient education.

The expected completion date of these projects is the summer of 1991.

# Newsbriefs

## Doctors Receive Honors

A 1988 National Hospital Tobacco Smoking Policy Survey, conducted by assistant professor of family practice Dr. Roger Holland, garnished President George Bush's Citation for Private Sector Initiatives for the Pennsylvania Academy of Family Physicians.

Holland completed the survey of 2,165 Joint Commission on Accreditation of Healthcare Organizations reporting facilities while at Lancaster General Hospital in Pennsylvania.

The survey is credited for prompting hundreds of institutions to restrict tobacco use by staff and patients.

Dr. Gayl Gustafson, a third-year family practice resident, has been honored by the American Medical Association for her community service.

Gustafson was awarded a monetary award and the opportunity to participate in the AMA policy-making process at the group's annual meeting in Chicago.

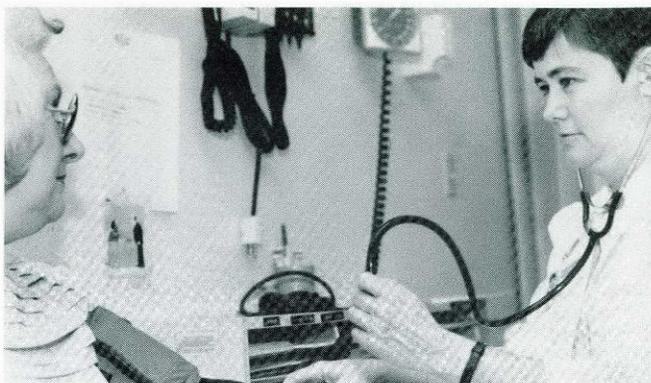
She was selected for her community service involvement in Tyler, providing AIDS and sex education programs to area students, and for her contributions in Beaumont where she worked with an indigent health care program.

## Lung Cancer Studies Presented to Oncologists

The University of Texas Health Center was represented at the 25th annual meeting of the American Society of Clinical Oncology by reports presented on three studies directed by Dr. Ronald Yanagihara, associate professor of medicine.

The studies, funded by the National Cancer Institute, were presented by Yanagihara, Dr. David B. Holiday, assistant professor of epidemiology, and former nurse care coordinator Lynda Riley. They discussed several aspects of the lung cancer prevention trials.

Other co-authors of the studies were Dr. Jerry McLarty, chairman of the epidemiology and biomathematics department; Dr. Marian Fagan, assistant professor of clinical and anatomic pathology; cytotechnologists Linda Mabry and Larry O'Donnell; and histotechnologist Loraine Newsom.



*As many as 40-50 patients per day are seen in UTHC's primary health care clinics, providing various medical services to qualifying Texas residents.*

## Primary Health Care Offered in Two Counties

The Texas Department of Health awarded the University of Texas Health Center a \$350,000 grant to maintain clinics in Tyler and Gilmer for qualifying East Texans.

The UT Health Center's Family Practice Residency Program will operate the one-day clinics, providing various medical services to Texas residents who qualify for primary health care funds, says project director Dr. Roger Holland, an assistant professor of family practice.

The program also offers resident physicians in specialty training at UTHC opportunities to examine and treat patients with a wide variety of medical conditions and to practice in rural health care environment, Holland added.

"The reception to these services has been very positive," Holland said.

To date, the medical staff sees as many as 40 to 50 patients per day, providing

examinations, health screenings, pediatric and adult care, pharmaceuticals and laboratory work.

## Nurse Aide Program Helps Recruit Grads

In the grip of a nationwide nursing shortage, which has hospitals competing vigorously for nurses, the University of Texas Health Center has initiated a program which officials hope will inspire more area nursing students to work at UTHC after graduation.

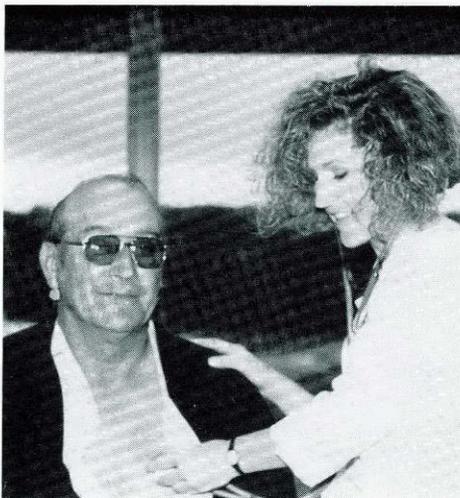
The program offers nursing students, who are currently enrolled in an accredited nursing program — such as Tyler Junior College, Kilgore College and UT Tyler — an opportunity to earn money as hospital aides while acquiring valuable clinical experience. Already several area students are participating in the program.

Marti Ives, the health center's nursing director, said the hospital aide/student nurse program is mutually beneficial to the student and the health center.

"By establishing a professional relationship with our staff, the student nurses may want to continue their work here as registered nurses after graduation day," Ives said.

"In addition, these student nurses are receiving valuable clinical training that some recently graduating nurse may not have experienced during their limited clinical rotations," she said.

*Student nurse Gina Huff checks a patient's vital signs.*



# Appointments

Among the recent appointments at the University of Texas Health Center are Dr. Roger Holland as assistant professor of family practice and Dr. Kent Davis and Dr. Gerald Mazurak as assistant professors of medicine.

Dr. Christian Zwieb joined the UT Health Center's research staff as an assistant professor of molecular biology.

Holland, formerly director of urgent care at Guam Memorial Hospital, received an M.D. degree and a Ph.D. degree in pathology from the University of Chicago and a B.S. degree in electrical engineering from the University of Pennsylvania.

After completing postdoctoral work at the University of Chicago, Holland completed his internship at Duke University Medical Center and residency at Lancaster General Hospital in Pennsylvania.

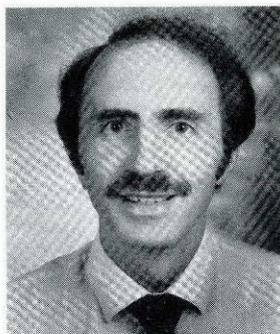
He is certified by the American Board of Family Practice and the National Board of Medical Examiners. He is the author of several journal articles and was principal investigator of the national hospital tobacco smoking policy, a survey of over 2,000 hospitals which recently received a presidential citation.

Davis is an assistant professor of medicine and a staff physician in the general internal medicine clinic.

He was formerly chief of internal medicine at Claremore Comprehensive Indian Health Facility in Oklahoma. He received his M.D. degree from the University of Colorado School of Medicine, following graduation from Colorado State University where he was Phi Beta Kappa.

Davis completed his internship and residency training in internal medicine at Maine Medical Center in Portland. He is certified by the American Board of Internal Medicine and is the author of a number of journal articles.

A molecular biologist, Zwieb was formerly a scientist with the National Institutes of Health. A native West German, he received an undergraduate degree in biology from Julius-Maximilians University in Wurzburg, Germany, and a Ph.D. degree from Max Planck Institut fur Molekulare Genetik in Berlin. Zwieb was a postdoctoral



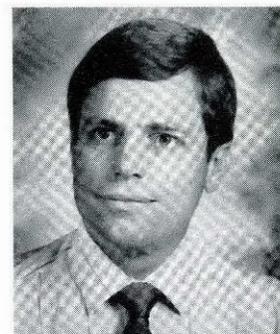
*Roger Holland, M.D., Ph.D.*

research fellow at Brown University in Providence, R.I., and the European Molecular Biology Laboratory prior to joining the NIH staff.

The author of several journals and publications, Zwieb is interested in molecular mechanisms of protein secretion.

Mazurek, who will be conducting research in molecular genetics as well as treating patients, is formerly a pulmonologist at Brookwood Medical Center in Birmingham, Ala.

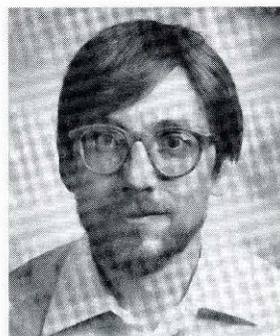
He obtained a B.S. degree in chemistry and biology from the University of



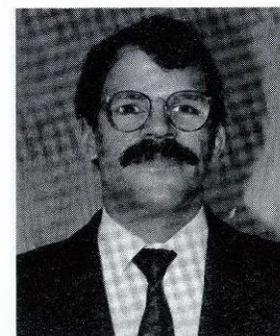
*Kent Davis, M.D.*

Arkansas. In 1981, he received his M.D. degree, with honors in pathology, from the University of Arkansas for Medical Sciences in Little Rock where he also finished his internship and residency.

He is board certified in internal medicine and the subspecialty of pulmonary medicine. The author of several journal articles, Mazurek will continue his research efforts in the microbiology laboratory of Dr. Richard Wallace, applying molecular techniques to the study of mycobacteria.



*Christian Zwieb, Ph.D.*



*Gerald Mazurek, M.D.*

## Human Resources, Physician Relations Staff Named

Michael L. Wilson was appointed assistant director for human resources, a newly created position.

Formerly a human resource consultant from Atlanta, Ga., Wilson directs personnel management, equal employment opportunity and affirmative action. He also oversees the employee training and development programs.

He is a graduate of Alabama State University in Montgomery where he received a B.S. degree in sociology and did graduate work in counseling and personnel services at Georgia Southern College. He has special certification in personnel and labor relations.

Jo Williford has been appointed manager of physician relations to coordinate hospital activities with referring physicians.

Williford was formerly administrative assistant to State Rep. Allen Hightower of Huntsville.

# Published Research

The following are recently published or to be published research papers written by research and clinical faculty at The University of Texas Health Center at Tyler. Health center authors are in bold.

**Advances in Second Messenger and Phosphoprotein Research** (ed. A. Robinson and P. Greengard) "Tissue factor expression in human endothelium is regulated by Ca<sup>2+</sup>/Calmodulin." Callahan KS, Blumenthal DK, Fair DS. Invited to prepare manuscript.

**American Journal of Pathology** "Abnormalities of pathways of fibrin turnover in lung lavage of rats with oleic acid and bleomycin-induced lung injury support alveolar fibrin deposition." Idell S, James K, Gillies C, Fair D, Thrall R. 1989. 135:387-399.

**American Review of Respiratory Disease** "A modified bronchoalveolar lavage procedure that allows measurement of lung epithelial lining fluid volume." Peterson BT, Idell S, MacArthur SA, Gray LD, Cohen AB. Accepted.

**American Review of Respiratory Disease** "Alveolar macrophages from patients with asbestos exposure release increased levels of leukotriene B<sub>4</sub>." Garcia JGN, Griffith DE, Cohen AB, Callahan KS. In press.

**American Review of Respiratory Disease** "Asbestos exposure primes alveolar macrophages to release leukotriene B: Role of inflammatory cell influx in asbestos." Garcia JGN, Griffith DE, Cohen AB, Callahan KS. In press.

**American Review of Respiratory Disease** "Asbestos-induced endothelial cell activation and injury. Demonstration of fiber phagocytosis and oxidant-dependent toxicity." Garcia JGN, Gray LD, Dodson RF, Callahan KS. 138:958-964, 1988.

**American Review of Respiratory Disease** "Local abnormalities of coagulation and fibrinolysis and alveolar fibrin deposition in sheep with oleic acid-induced lung injury." Idell S, Peterson BT, Gonzales KK, Gray LD, Bach R, McLarty J, Fair DS. 138:1282-1294, 1988.

**American Review of Respiratory Disease** "Noninvasive diagnosis of accelerated silicosis." Nugent K, DeVillier J, Idell S, Dodson R. Accepted.

**American Review of Respiratory Disease** "The utility of bronchoalveolar lavage and transbronchial lung biopsy combined with energy dispersive x-ray analysis in the diagnosis of silicosis." Nugent KM, Dodson RF, Idell S, DeVillier JR. In press.

**Annual Saudi Medicine** "Family with factor X variant defect only in factor VII activation (X+Riyadh)." Al-Hilali AM, Lawson AM, Fair DS. 9:48, 1989.

**Antimicrobial Agents and Chemotherapy** "BRO B-lactamases of *Branhamella catarrhalis* and subgenus *Moraxella*, including evidence for chromosomal B-lactamase transfer by conjugation in *B. catarrhalis*, *M. nonliquefaciens*, and *M. lacunata*." Wallace RJ Jr, Steingrube VA, Nash DR, Hollis D, Flanagan C, Brown BA, Labidi A, Weaver R. November, 1989.

**Biochemical and Biophysical Research Communications** "Detection and analysis of neutral endopeptidase from tissues with substrate gel electrophoresis." Sullivan J, Johnson AR. 162:300-307, 1989.

**Biochemical and Biophysical Research Communications** "Synthetic peptides based on the calmodulin binding domain of myosin light chain kinase inhibit activation of other calmodulin dependent enzymes." Blumenthal DK, Charbonneau H, Edelman AM, Hinds TR, Rosenberg GB, Storm DR, Vincenzi FF, Beavo JA, Kerbs EG. 156:860-865, 1988.

**Biochemical Journal** "Connective tissue in rabbit right ventricular pressure overload." Low B, Stirewalt W, Hultgren P, Low E, Starcher B. In press.

**Biochemistry** "Changes in the structure of calmodulin induced by a peptide based on the calmodulin-binding domain of myosin light chain kinase." Heidorn DB, Seeger PA, Rokop SE, Blumenthal DK, Means AR, Crespi H, Trehwella J. 28:6757-6764, 1989.

**Blood** "Isolation and characterization of the factor X Friuli variant." Fair DS, Revak DJ, Hubbard JG, Girolami A. 73:2108, 1989.

**Breast Cancer Research Treatment 1989** "An evaluation of six monthly mammographic follow-up of an inde-

terminate radiographic finding." Yanagihara R, Gustafson G, Richards-Carty C. 1989

**British Journal of Haematology** "Acquired factor VII deficiency associated with aplastic anemia: correlation with bone marrow transplantation." Weisdorf D, Hasegawa D, Fair DS. 71:409, 1989.

**British Journal of Industrial Medicine** "Differences in lung function and pneumoconiosis prevalence between workers in two coalmining processing plants." Baser M, Kennedy TP, Dodson RF, Rawlings W, Rao NV, Hoidal JR. In press. 1989.

**Chest** "Comparison of light and electron microscopy for defining occupational asbestos exposures in transbronchial lung biopsies." Dodson R, Hurst G, Williams M, Corn C, Greenberg S. 94:366-370, 1988.

**Chest** "Platelet specific a-Granule proteins and thrombospondin in bronchoalveolar lavage in the adult respiratory distress syndrome." Idell S, Maunder R, Fein A, Switzlska H, Tuszynski G, McLarty J, Niewiarowski S. Accepted, 1989.

**Clinical Pharmacy** "How many subjects are required for a study?" McLarty J. September, 1988.

**Communications in Statistics** "The estimation of derivatives of a nonparametric regression function when the data are correlated." Holiday D. Accepted, A18, 1989.

**Cytobios** "A comparison of asbestos burden in nonurban patients with and without lung cancer." Dodson RF, Williams MG, Corn CJ, Rankin TL. 56:7-15, 1988.

**Cytobios** "The use of a semiautomatic image analyzer in directly determining mean linear intercept." Ford J, Davis M, Zinkgraf S, Dodson R. 53:107-112, 1988.

**East Texas Medicine** "The expanding spectrum of systemic lupus." Bridges, BF. 1:12-18, 1989.

**Emergency Medicine Special Issue.** "The deadly danger of ARDS." Idell S. April 15, 1989, p. 67-72.

**Experimental Lung Research** "A search for drugs which may reduce the load of neutrophil A zuphophilic granule enzymes in the lungs of patients with emphysema." Stephens M, Miller E, Cohen AB. In press.

**Experimental Lung Research** "Bronchoalveolar lavage desmosine in bleomycin-induced lung injury in marmosets and patients with adult respiratory distress syndrome." Idell S, Thrall R, Maunder R, Martin T, McLarty J, Scott M, Starcher B. In press.

**Experimental Lung Research** "Monoclonal antibodies specific for antigens expressed by rat type II alveolar epithelial and non-ciliated bronchiolar cells." Miller YE, Walker SR, Spencer JS, Kubo RT, Mason RJ. Accepted.

**Experimental Lung Research** "The beige mouse: role of neutrophil elastase in the development of pulmonary emphysema." Starcher B, Williams I. In press.

**International Journal of Sports Medicine** "Hydroxylsine excretion does not indicate collagen damage with downhill running in young men." Wheat M, McCoy S, Barton E, Starcher B, Schwane. In press.

**Journal of Aerosol Medicine** "Pulmonary clearance of aerosolized <sup>99m</sup>Tc-DTPA and the lung epithelium." Peterson BT. Accepted.

**Journal of American Academy of Dermatology** "Disseminated *Mycobacterium chelonae* ssp. *abscessus*: A case report occurring in an immunocompetent host and with a known portal of entry." Nelson BR, Wallace RJ Jr, Rapini RP, Tschen JA. 20:909-912, 1989.

**Journal of Applied Physiology** "Comparison of three tracers for detecting lung epithelial injury in anesthetized sheep." Peterson B, Dickerson K, James H, Miller E, McLarty J, Holiday D. 66:2374-2383, 1989.

**Journal of Biological Chemistry** "Cooperative dependence of the actin-activated Mg<sup>2+</sup>-ATPase activity of *Acanthamoeba* myosin II on the extent of filament phosphorylation." Atkinson MAL, Lambooy PK, Korn ED. 264:4127-4132, 1989.

**Journal of Biological Chemistry** "Down-regulation and inactivation of neutral endopeptidase 24.11 (enkephalinase) in human neutrophils." Erdos EG, Wagner B, Harbury CB, Painter RG, Skidgel RA, Fa X-G. 264, 24, 1989.

**Journal of Biological Chemistry** "Molecular recognition in the activation of human blood coagulation factor X." Chattopadhyay A, Fair DS. 264:11035, 1989.

**Journal of Biological Chemistry** "The effects of deletions in the central helix of calmodulin on enzyme activation and peptide binding." Persechini A, Blumenthal K, Jarrett H, Klee C, Hardy D, Kretsinger R. 264:8052-8058, 1989.

**Journal of Biological Chemistry** "The  $\gamma$ -subunit of skeletal muscle phosphorylase kinase contains two non-contiguous domains that act in concert to bind calmodulin." Dasgupta M, Honeycutt T, Blumenthal DK. In press.

**Journal of Cell Physiology** "Thrombin-induced prostacyclin biosynthesis in human endothelium: Role of guanine nucleotide regulatory proteins in stimulus/coupling responses." Garcia J, Painter R, Fenton J, English D, Callahan K. Accepted.

**Journal of Clinical Investigation** "Alveolar fibrin deposition and local abnormalities of the procoagulant-fibrinolytic balance in baboons with diffuse alveolar damage." Idell S, Peters J, Gonzalez K, Fair DS, Coalson J. 84:181-193, 1989.

**Journal of Clinical Investigation** "Local abnormalities in coagulation and fibrinolytic pathways predispose to alveolar fibrin deposition in the adult respiratory distress syndrome." Idell S, James KK, Levin EG, Schward BS, Manchanda N, Maunder RJ, Martin TR, McLarty JW, Fair DS. 84:695-705, 1989.

**Journal of Immunology** "Analysis of recognition in the alternative pathway of complement. Effect of polysaccharide size." Pangburn M. 142:2766, 1989.

**Journal of Immunology** "Analysis of the mechanism of recognition in the complement alternative pathway using C3b-bound low molecular weight polysaccharides." Pangburn M. 142:2759, 1989.

**Journal of Immunology** "Analysis of the natural polymeric forms of human properdin and their functions in complement activation." Pangburn M. 142:202, 1989.

**Journal of Infectious Disease** "Diversity and sources of rapidly growing mycobacteria associated with infections following cardiac bypass surgery." Wallace RJ Jr, Musser JM, Nash DR, Silcox VA, Hull SI, Steele LC, Forrester GC, Labidi A, Selander RK. 159:708-716, 1989.

**Journal of Infectious Disease** "Heterogeneity among isolates of rapidly growing mycobacteria responsible for infections following augmentation mammoplasty despite case clustering in Texas and other southern coastal states." Wallace RJ Jr, Steele LC, Labidi A, Silcox VA. 160:281-288, 1989.

**Journal of Protein Chemistry** "Sequence similarities between chicken intestinal 110-kDa ATPase and myosin I-like enzymes." Atkinson MAL, Collins JH. 8:497-500, 1989.

**Journal of Rheumatology** "Fibrinopeptide A - reactive peptides in bronchoalveolar lavage in rheumatoid interstitial lung disease." Idell S, Garcia JGN, Gonzales K, McLarty J, Fair DS. 16:592-598, 1989.

**Journal of Toxicology and Environmental Health** "Hydroxyl radical generating activity of hydrous but not calcined kaolin is prevented by surface modification with dipalmitoyl lecithin: implications for toxicity in man." Baser M, Kennedy TP, Dodson RF, Rawlings W, Rao NV, Hoidal JR. In press.

**Laboratory Animal Science** "Blood collection and intravenous injection in the guinea pig via the medial saphenous vein." Carraway J, Gray L. Accepted.

**Laboratory Animals** "Intratracheal instillation of endotoxin into the lungs of mice." Starcher B, Williams I. 23:234-240, 1989.

**Laboratory Investigation** "Effect of environmental particulates on cultured human and bovine endothelium: cellular injury via an oxidant-dependent pathway." Garcia JGN, Dodson RF, Callahan KS. 61:53-61, 1989.

# Published Research

**Modern Pathology** "Usefulness of combined light and electron microscopy evaluation of sputum samples for asbestos to determine past occupational exposure." **Dodson RF, Williams MG, Corn CJ, Idell S, McLarty JW.** 2:4, 1989.

**Molecular and Cellular Biology** "Identification of HeLa cell nuclear factors that bind to and activate the early promoter of BK virus *in vitro*." **Chakraborty T, Das GC.** 9:3821-3829, 1989.

**NEJM** "Mycobacterium chelonae causing otitis media in an ear-nose-and-throat practice." **Lowry PW, Jarvis WR, Oberle AD, Bland LA, Silberman R, Bocchini JA Jr, Dean HD, Swenson JM, Wallace RJ Jr.** 319:978-982, 1988.

**Proceedings American Society of Clinical Oncology** "Bronchial reactivity with the tumor-associated monoclonal antibody in ITD12 (Mab ITD 12): Potential intermediate endpoint for epidermoid lung cancer." **Yanagihara R, Newsom L, Fagan M, Ranken R.**

**Proceedings American Society of Clinical Oncology** "Micronucleated sputum bronchial cells: Potential intermediate endpoint for lung cancer." **Yanagihara R, Holiday D, Riley L, O'Donnel L, Mabry L, Fagan M, McLarty J.**

**Proceedings American Society of Clinical Oncology** "A Phase II trial of beta carotene in advanced non small cell lung cancer." **Yanagihara R, Rivera R, Ruud C.**

**Proceedings American Society of Clinical Oncology** "Methotrexate, vinblastine, doxorubicin, and cisplatin in combination for inoperable non small cell lung cancer." **Yanagihara R, Rivera R, Ruud C.**

**Proceedings American Society of Clinical Oncology** "Factors favoring enrollment and compliance in a cancer chemoprevention trial." **Yanagihara R, Riley L, McLarty J.** **Proceedings International Congress Support Care Oncology** "Morphine sustained release suspension for treatment of cancer pain." **Yanagihara R, Faust L, Persinger R, Rivera R, Ruud C, Kush R., Brewer T., Shepard K.**

**Seminar in Respiratory Infection** "Pneumonia due to *Moraxella (Branhamella) catarrhalis*." **Wright PW, Wallace RJ Jr.** 4:40-46, 1989.

**Seminars in Respiratory Medicine** "Mechanisms of smoking induced lung injury." **Idell S, Garcia JGN.** Accepted.

**Seminars in Respiratory Medicine** "Smoking, statistics and epidemiology." **McLarty J.** Accepted.

**Seminars in Respiratory Medicine** "Tobacco and the heart: mechanisms of disease and modification of the risk." **Brockie R, Shafer DR.** 11(1). In press, 1990.

**Seminars in Respiratory Medicine II** "Tobacco and the heart: Mechanisms of disease and modification of the risk." **Brockie R, Shafer DR and Huber GL.** In press, 1990.

**Seminars in Respiratory Medicine** "America and its appetitive dysfunctions." **Huber GL, Pandina RJ.** In press, 1990

**Seminars of Respiratory Medicine** "Tobacco smoking, hypertension, stroke, and cardiovascular disease: The importance of smoking cessation." **Belt Jr. WT.** 11(1) In press, 1990.

**Seminars in Respiratory Medicine** "Tobacco smoke exposure in occupational lung disease." **Garcia JGN, Griffith DE, Idell S, Huber GL.** Accepted.

**Seminars in Respiratory Medicine** "On the sliver anniversary of the first report on the health consequences of smoking-tobacco use and smoking cessation 25 years later." **Huber GL, Petty TL.** 10:271-277, 1989.

**Seminars in Respiratory Medicine** "Its history, economics, political influence." **Huber GL.** In press 1989.

**Seminars in Respiratory Medicine** "The physical, chemical and biological properties of the tobacco cigarette and other tobacco products." **Huber GL.** 10:297-322, 1989.

**Seminars in Respiratory Medicine** "Tobacco use, health and smoking cessation: Is the world flat, round, or upside down?" **Huber GL.** 10:269-270, 1989.

**Seminars in Respiratory Medicine II** "American and its appetitive dysfunctions." **Huber GL, Pandina RJ.** 11(1). Inpress,1990

**Seminars in Respiratory Medicine II** "Tobacco and the heart: Mechanisms of disease and modification of the risk." **Brockie R, Shafer DR, Huber GL.** 11(1): In press, 1990.

**Seminars in Respiratory Medicine II** "The health effects of involuntary smoking: Impact on tobacco use, smoking cessation, and public policies." **Mahajan VK and Huber GL.** 11(1): In press, 1990.

**Seminars in Respiratory Medicine II** "Tobacco, nicotine, and the question of addiction: What to do about a difficult problem." **Pandina RJ and Huber GL.** 11(1): In press, 1990.

**Seminars in Respiratory Medicine II** "Tobacco smoking, smoking cessation, nutrition, and metabolism." **Huber GL, Shafer DR, Pandina RJ.** In press, 1990.

**The American Journal of Medicine** "The possible association of cutaneous telangiectasia with cardiac myxoma." **Bridges BF, Hector DA.** 87:483-485, 1989.

**Thrombosis Research** "Monoclonal antibody analysis of purified and cell associated tissue factor." **Morrissey JH, Fair DS, Edgington TS.** 52:247, 1988.

## ABSTRACTS PUBLICATIONS

**ACSM** (Accepted) "Detection of the anaerobic threshold  $O_{2m}$  by indices of ventilatory drive." **Carter R, Williams J, Wiley J, Cairns J, Blevins W.**

**American Review of Respiratory Disease** "Abnormalities of pathways of fibrin turnover in lung lavage of rats with oleic acid and bleomycin-induced lung injury support alveolar fibrin deposition." **Idell S, James K, Gillies C, Fair D, Thrall R.** 139:A275, 1989.

**American Review of Respiratory Disease** "Aerosolized pseudomonas elastase increases lung epithelial permeability to albumin in anesthetized sheep." **Peterson B, Collins M, Azghani A.** 139:A294, 1989.

**American Review of Respiratory Disease** "Hyperoxia-induced disorders of fibrin turnover in the lungs of adult and prematurely delivered baboons." **Idell S, James K, Fair D, Coalson J, DeLemos R.** 139:A40, 1989.

**American Review of Respiratory Disease** "Pathways of fibrin turnover in the human pleural space." **Idell S, James K, Girard W, Fair D.** 139:A275, 1989.

**American Statistical Association** (Accepted) "Inter- and intra-rater agreement for ordered categorical endpoints in longitudinal studies." **Holiday D.** Joint Statistical Meetings, Washington, D.C.

**Biochemistry** "Changes in the structure of calmodulin induced by a peptide based on the calmodulin-binding domain of myosin light chain kinase." **Heidorn D, Seeger P, Rokop S, Blumenthal D, Means A, Crespi H, Trehwella J.** 28:6757-6764, 1989.

**Biophysical Journal** "Phosphorylation and regulation of macrophage myosin by myosin light chain kinase isolated from avian smooth muscle." **Atkinson MAL, Trotter JA.** 55:42, 1989.

**Chest.** "The beta-lactamases of *Branhamella catarrhalis*." **Wallace RJ Jr, Hollis D, Weaver R, Steingrube V, Flanagan C, Libidi A, Nash D.** 95:197S-198S, 1989.

**Circulation** "Association of factor VII with stimulated human umbilical vein endothelial cells." **Fair DS, Callahan KS.** 78:II-315, 1988.

**Circulation** "Common amino acid sequences are involved in the activation of human factor X." **Chattopadhyay A, Fair DS.** 78:II-512, 1988.

**Circulation** "Exercise-induced ventricular tachycardia." **Hector DA,** 1989, abstracted, accepted.

**Clinical Research** "Guanine nucleotide regulatory protein (G-protein) involvement in endothelial synthesis of prostacyclin." **Garcia JGN, Painter RG, Callahan KS.** 36:6(855A), 1988.

**East Texas Medicine** (Accepted) "Factors influencing satisfaction for care received in a family practice clinic." **Wright PW, Holiday DB.**

**FASEB Journal** "FNLp-stimulated neutrophil migration into the lungs increases lung epithelial permeability to albumin in guinea pigs." **Connolly J, Peterson B.** 3:A1139, 1989.

**FASEB Journal** "FNLp-stimulated neutrophil migration into the lungs increases lung epithelial permeability to albumin in guinea pigs." **Connolly JC, Oeterson BT.** 3:A1149, 1989.

**Journal of Aerosol Medicine** "Comparison of three tracers for detecting lung epithelial injury in anesthetized sheep." **Peterson BT, Dickerson KD, James HL, Miller EJ, McLarty JW, Holiday DB.** 1:233, 1988.

**Journal of Cell Biology** "A proteolytically sensitive site in the tail of myosin II isolated from *Acanthamoeba castellanii* corresponds to the putative hinge region of the molecule." **Atkinson MAL, Korn ED.** 107:259, 1989.

**Journal of Cell Biology** "Cloning of the chicken intestinal brush border 110-dKa myosin-like protein." **Halsall DJ, Atkinson MAL, Hess P, Collins JH, Hammer JA III.** 107:471, 1989.

**Journal of Cell Biology** "Functional consequences of the proteolytic removal of regulatory serines from the non-helical tail piece of *Acanthamoeba* myosin II." **Sathyamoorthy V, Atkinson MAL, Korn ED.** 107:260, 1989.

**Journal of Cell Biology** "Identification of putative calmodulin-binding domain(s) in the gamma-subunit of phosphorylase kinase." **Dasgupta M, Honeycutt TA, Blumenthal DK.** 107:284a, 1989.

**Journal of Cell Biology** "Neutrophil activating factor (NAF) is secreted by human alveolar macrophages in the absence of added stimuli." **Miller EJ, Blumenthal DK, Cohen AB.** 107, 1988.

**Journal of Cell Biology** "Phorbol esters simulated the monocytic leukemia-derived cell line, THP.1, to secrete a peptide (ERP) which stimulates neutrophils to degranulate." **MacArthur CK, Cohen AB.** 107, 1988.

**Journal of Cell Biology** "Phosphorylation and actin-binding sites on the intestinal brush border 110,000-dalton protein-calmodulin complex." **Collins JH, Ballard T, Nanavati H, Swanljung-Collins H, Atkinson MAL.** 107:471, 1989.

**National Asbestos Council, Inc.** (Accepted). "Why are dusts toxic?" **Dodson, RF.**

**Physiologist** "Bacterial proteases increase the clearance of  $^{99m}Tc$ -albumin from the air spaces of guinea pig lungs." **Azghani AO, Connelly J, Johnson AR, Peterson BT.** 31(4):A124, 1988.

**Thrombosis Research** "Effect of platelet activating factor on leukocyte-endothelial cell interactions." **Garcia JGN, Azghani A, Callahan KS, Johnson AR.** 51:83-96, 1988.

7th International Congress of Immunology Society, Berlin, Germany. "Autologous EBV-B cells inhibit blast proliferation of varicella zoster virus (VZV) stimulated cell line." **Suez D, Shuttlesworth G.** 61-69, p.352, 1989

Annual Meeting of the Clinical Immunology Society, Arlington, Virginia. "Hyper IgE syndrome with no evidence for elevated interlekin 4 or interleukin 6." **Suez D, Warren J.** Nov. 1989.

## BOOK CHAPTERS

**Clinics in Chest Medicine** (Accepted) "Clinical presentation, diagnosis, and therapy of cutaneous and pulmonary infections due to the rapidly growing *mycobacteria (M. fortuitum and M. chelonae)*." **Wallace RJ Jr.**

**FEMS Microbiology Letters** "Does aminoglycoside-acetyltransferase in rapidly growing mycobacteria have a metabolic function in addition to aminoglycoside inactivation?" **Udou T, Mizuguchi Y, Wallace RJ Jr.** 57:227-230, 1989.

**Orthopedic Infections** "Bone and Joint Tuberculosis." **Wright PW, Wallace RJ Jr.** Edited by Robert D'Ambrosia and Robert L. Marier. Slack Incorporated Publishers, 1989.

**Sourcebook on Asbestos Disease** (Accepted) "High risk asbestos workers groups: Selected review with emphasis on the Tyler Asbestos Workers Program." **Hurst G, Dodson R, Griffith D, McLarty J.** Volume 3. Garland Publishing, Inc. New York, 1989.

**Sourcebook on Asbestos Diseases** "Analysis and meaning of asbestos burden in lung tissue and fluids." **Peters GA and Peters BJ** (eds). **Dodson RF.** New York and London: Garland Law Publishing, pp.35-71, 1989.

**Textbook of Internal Medicine** "Environmental mycobacterial diseases." **J. B. Lippincott Company publishers, Griffith DE, Wallace RJ Jr.** Vol. 2, pages 1578-1582, 1989.

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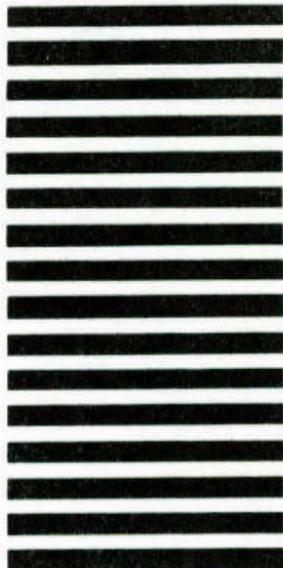
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