

Frontiers

The University of Tennessee Medical Center and The University of Tennessee Graduate School of Medicine

One Heart. One Hospital.

East Tennessee's
Dedicated Heart Hospital



For Alumni and Friends

About the cover

This issue's cover invites you to step inside the University of Tennessee Medical Center's new Heart Hospital. The beautiful waterfall-like feature, in the picture to the right, is the centerpiece of the atrium that serves as our new entrance. Like a waterfall, this academic medical center is constantly in motion, playing a vital role in the lives of our patients.





EXCELLENCE

INTEGRITY

PASSION

INNOVATION

COLLABORATION

About this photo

Beneath the waterfall-like feature, the values that characterize the medical center are on display.

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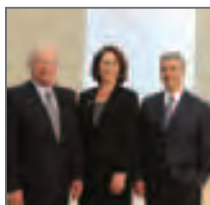
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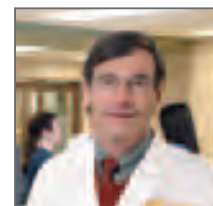
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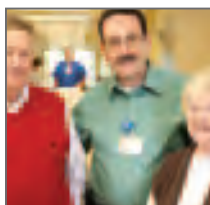
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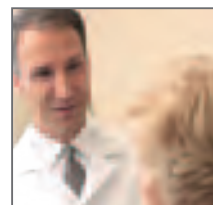
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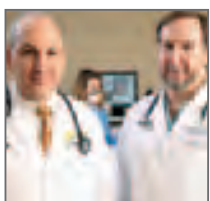
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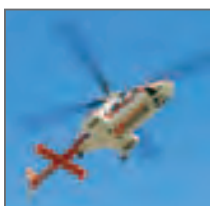
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University of Tennessee Medical Center

For the past 60 years, the University of Tennessee Medical Center has had a commitment to cardiology and cardiac surgery services.

As the region's academic medical center we are committed to providing access to facilities, medical specialists and services for such diseases. And as these diseases continue to be more prevalent in our community, we incorporated programs for screenings, prevention, and treatment. With cardiovascular disease being the nation's biggest health problem, we recognized having a hospital dedicated to caring for this population was vital to our community.

I am proud to present to you this special edition of *Frontiers* highlighting our new Heart Hospital, a one-of-a-kind facility in the region with physicians, staff and services solely dedicated for the care of cardiovascular disease.

As you will learn in this issue, our new Heart Hospital includes a state-of-the-art Cardiovascular Intensive Care Unit (CVICU) with private patient rooms. Families can remain with their loved ones during the most critical times while having expert medical professionals caring for them.

As the only facility in Knoxville to receive the Blue Cross Blue Shield Blue Distinction for Cardiac Care, we have demonstrated our commitment to high-quality care, resulting in better outcomes for our heart patients.

In 2010, the American Heart Association honored the medical center with the 2010 Get With the Guidelines Silver Performance Achievement Award for the treatment of heart failure. We are proud to be the only facility in Knoxville to receive this award.

As a STEMI referral center for heart attack, we are ready 24 hours a day, 7 days a week, partnering with local and regional emergency medical services and UT LIFESTAR Aeromedical Services to transport patients, getting them faster treatment for their symptoms.

We are proud of this new facility and the opportunity it offers to serve the people of the East Tennessee region. I hope you find these articles and stories interesting and informative as we continue to make advancements in patient care to those suffering from cardiovascular disease.



Joseph R. Landsman, Jr.
President & CEO
University Health System, Inc.



Words from the Heart

*T*his special edition of *Frontiers* is an excellent illustration of an academic medical center using “The Heart” as our focus. The new Heart Hospital is not only an example of superb architecture and construction but also of unsurpassed care, education, and research.

Our physicians and respective teams provide unparalleled clinical expertise sharing it with our physicians in fellowship programs in cardiovascular disease, pulmonology, and vascular surgery. These fellows, in turn, offer outstanding care while they are at our academic medical center and of course when they establish their own practice in communities throughout the United States.

Like other major academic medical centers, we are fortunate to have researchers who understand the complexities of disease and work everyday to discover ways to improve the care for our patients here and those around the world. In this issue, the relationship between hormone replacement therapy and outcomes after vascular reconstruction demonstrates how we impact clinical care through research.

There is no doubt that our region is privileged not only to have an incredible facility but also the academic team to take it to the next level.



James J. Neutens, PhD
Dean
UT Graduate School of Medicine



We put our heart



into everything we do.





THE HEART HOSPITAL:

DEDICATED TO EAST TENNESSEE

Cardiology and cardiac surgery services are nothing new at the University of Tennessee Medical Center. Since the day the hospital opened its doors in 1956, physicians, nurses, and staff have provided care to the people of East Tennessee. At the time, cardiac catheterization and open-heart surgery were in their infancy. Research by physicians and staff led to the development of the diagnostic and surgical techniques used in the medical center's first successful open-heart procedures during the early 1960s. Most cardiac surgeries of that era were done to repair congenital heart defects – but as more and more people have developed heart disease through the years, there has been a shift in the services, procedures, and types of surgery required to meet the cardiovascular needs of the community.

With the new millennium's arrival, the prevalence of cardiovascular and pulmonary disease continued to increase. The University of Tennessee Medical Center responded in 2000 by establishing the Heart Lung Vascular Institute, which focuses on the treatment and prevention of the nation's biggest killer. Using a multidisciplinary approach, clinical teams address the rapidly growing number of cardiovascular and pulmonary disease cases in the region. The medical center opened the 90,000-square-foot outpatient Heart Lung Vascular Institute building in 2004 – a move that centralized physician offices, diagnostic laboratories for cardiac and vascular testing, and cardiovascular and pulmonary rehabilitation facilities.



*John W. Mack, Jr., MD, medical
advisor for the Heart Lung
Vascular Institute.*

Now the Heart Hospital, built to meet the region's future need for heart, vascular, and lung care, expands and improves inpatient services for patients at the Heart Lung Vascular Institute. Multidisciplinary teams are available to provide care and help to patients and families facing diagnosis, intervention, or surgery. Coordinated, specialized patient care is delivered by staff dedicated to the treatment of patients with cardiovascular and pulmonary disease. Clinical protocols and pathways facilitate patient safety, infection-prevention strategies, and rehabilitation planning. The integration of technology puts caregivers at patients' bedsides and allows family members to be actively involved in the recovery of their loved ones.

The University of Tennessee Medical Center remains the only hospital in the region capable of providing cardiac catheterization and surgical correction for congenital heart disease in infants and children. But most of the cardiac procedures performed within its walls, as at other hospitals across the country, are aimed at treating patients with acquired cardiovascular disease.





THE DESIGN

Many new features have been incorporated into the Heart Hospital's design. Their primary purpose is to help provide excellent patient care, but they also create a welcoming space for patients, visitors, and families. As visitors enter the Heart Hospital's four-story atrium, now the new main entrance to the medical center, they see a 40-foot feature wall that uses lighting technology to simulate a waterfall. The atrium has a hospitable, elegant feel, with colors, patterns, and fabrics chosen for their classic appearance. Honey-colored wood and organic shapes and patterns make for an unexpectedly tranquil atmosphere.



Theresa Kidwell, an interior design student at the University of Tennessee, shows off her custom-made sculpture design.



The main information desk.

Hanging from the atrium's ceiling is a custom-made 25-foot sculpture designed by Theresa Kidwell. Her design produced the aluminum ribbons covered in wood veneer and the soft green globes of cracked glass that hang in this peaceful space.

The main information desk is located on a central thoroughfare that allows visitors easy access to the professional medical office buildings, emergency department, and main hospital. The space also showcases a beautiful new curved 30-foot wall that honors University of Tennessee Medical Center donors and features a panoramic scene of the Great Smoky Mountains at sunrise.

The curved 30-foot wall honoring the University of Tennessee Medical Center donors.

Still to come is a premier health information resource center that will provide the medical center's patients and their families with computer and Internet access, consumer-level health information, and the services of the Preston Medical Library. Other future additions include a new outpatient registration office and the completion of the Heart Hospital's third and fourth floors, which will provide private inpatient rooms for cardiovascular step-down patients. Long-term build-out plans call for the Heart Hospital's eventual expansion to an eight-story inpatient facility.

Melissa Winchenbach





THE CARDIOVASCULAR INTENSIVE CARE UNIT:

Private Rooms, Healing Atmosphere

How can a stay in a critical care unit be improved for both the patient and the family? At the University of Tennessee Medical Center, that question is answered by the region's newest and most innovative cardiovascular intensive care unit (CVICU). The new CVICU consists of 24 private rooms for medical cardiology, cardiac surgery, and vascular surgery patients, and is designed to provide comfort, tranquility, and excellent care for those patients and their loved ones.

The new unit offers more amenities than ever before. There is a family lounge attended by CVICU lounge ambassadors during the busiest parts of the day. It features televisions, wireless Internet access, and a coffee bar. The lounge provides a comfortable, welcoming space for family members. One of the unit's most appealing aspects is the cozy respite area in the second-floor hallway overlooking the lobby, with its view of the lighted feature wall and custom-made sculpture. The family lounge coffee bar is nearby, and bench seating in the respite area offers family members a change of scenery.

To no one's surprise, hospital patients report higher levels of satisfaction if they're in aesthetically appealing private rooms. Each room in the new CVICU has a window that admits natural light. Having exposure to natural light can reduce anxiety and confusion in critically ill patients. The colors, designs, and patterns displayed throughout the unit reflect warm tones and textures found in nature. These styles were chosen to create visual interest while providing a calm and peaceful environment.

These rooms offer a quieter environment, a lower incidence of hospital-acquired infections, and, of course, more privacy. The CVICU rooms have been designed with patients' and families' comfort and convenience in mind. An important element in overall care, the presence of family members is strongly linked to better medical outcomes. Each patient room has bath and restroom facilities and a sofa that converts to a one-person bed for overnight stays by a family member.



“The new unit allows a more patient and family centered focus. Our team takes tremendous pride in encouraging family involvement in the care of patients. We can better adapt to a patient’s individual and unique needs by providing a calm and private environment, where families are fully informed of what is going on with their loved one,” says Sandy Webb, MPH, RN, nurse manager, Cardiovascular Intensive Care Unit.

Centralized clinical staff stations, in combination with nurse-station alcoves located outside every patient room, provide an unbroken line of sight for caregivers and individualized care for patients. The rooms’ size and layout are designed to bring caregivers to the bedside. Current members of the CVICU staff played an important role in the planning and decision making that shaped the new unit’s design and construction, with the focus on creating an environment of patient- and family-centered care. The staff participated in decisions about the communications system, the new patient beds, and the Latitude™ Arm System found in each patient room, whose telescoping arm helps caregivers position patients and deliver services to them with complete flexibility. The Latitude enables a patient to get up into the chair or even walk into the bathroom while being monitored and the delivery of oxygen and IV fluids continue uninterrupted. Thanks to the Latitude, head-of-the-bed access is also easier than ever. Each room contains a nurse server, a cabinet that allows the nurse to keep supplies readily available.

“We have incorporated several elements from evidence-based design and patient care research to create a healing environment for patients and their families,” says Raymond A. Dieter, III, MD, cardiothoracic surgeon and medical director of the CVICU.

Raymond A. Dieter, III, MD, cardiothoracic surgeon and medical director of the CVICU, examines a patient.

The new CVICU includes six additional critical care beds, which have increased the unit’s capacity to 24. With healthcare advances that are leading to lengthened life spans and decreased mortality, one in three people will experience some form of cardiovascular disease in their lifetime. The 24 private rooms in the CVICU are helping the medical center serve residents of East Tennessee who need care for heart, lung, or vascular disease.

Melissa Winchenbach

Offering That Special Touch

Family Ambassadors

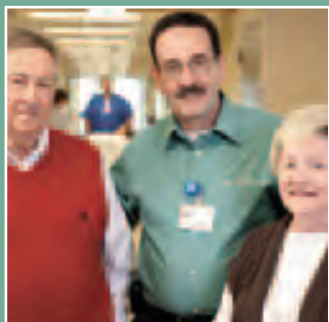
A team of volunteers serves as the medical center’s CVICU family ambassadors, who work to provide patients’ families with help and support. They are there to fulfill the special needs of these family members and to function as a resource in the

cardiovascular intensive care unit. Family ambassadors, acting as a liaison between medical staff and families, can provide information about the local area, suggest lodgings and eating places, and arrange for transportation services. They also partner with our Pastoral Care Department in offering resources to meet emotional and spiritual needs.

Pastoral Care

The University of Tennessee Medical Center’s Pastoral Care Department is an integral part of the healthcare team at the new Heart Hospital and its cardiovascular intensive care unit. Onsite and available 24 hours a day, medical center chaplains offer a wide range of spiritual and emotional support to patients, families, and staff of any or no denominational or religious affiliation.

The primary work of the medical center chaplains is to provide sensitive and inclusive ministry to those in crisis – a mission they carry out, in part, by helping people make use of their own spiritual resources. The team of chaplains and resident chaplains routinely visit with patients to provide counseling and to pray with and for them.





Jay Crook, MD,
cardiologist, discusses
progress with patient.



TACKLING CARDIAC & VASCULAR DISEASE

The prevalence of cardiovascular disease is growing rapidly – indeed, one of every three people in East Tennessee will develop some form of it. At the University of Tennessee Medical Center, we are committed to preventing and treating the disease.

The medical center's Heart Lung Vascular Institute tackles cardiovascular disease with a multidisciplinary approach that incorporates a variety of departments and specialties and puts all the cardiac, pulmonary, and vascular services under one roof. It's a primary care physician or cardiologist who takes on the mission of preventing coronary artery disease (CAD), monitoring cholesterol and blood pressure levels and recommending lifestyle changes or medication if necessary. Depending on family history and other factors, the doctor may suggest additional diagnostic tests to get a better understanding of the patient's risk of developing CAD. Cardiac imaging is often used in these tests; with more than 79 million Americans suffering from some form of cardiovascular disease, it's one of the fastest-growing areas in medical imaging.

A commonly recommended screening test is a cardiac CT scan for calcium scoring, a procedure that allows the cardiologist to detect calcium buildup in the vessels around the heart. Coronary CT angiography may be required for further evaluation. This test enables physicians to see exactly how much and what kind of plaque is building up, directly revealing whether blockages are forming in the arteries that supply oxygen to the heart muscles.

With this kind of information, physicians can address cardiovascular disease before the patient develops any

symptoms. "Prevention is key to a patient's cardiovascular health," says Dale Wortham, MD, medical director of the cardiac catheterization lab and cardiologist at the medical center. "Coronary calcium scoring by CT is a screening tool used to detect the early stages of coronary heart disease, before symptoms develop, and to provide important prognostic information. That allows a physician to plan an optimal treatment strategy and hopefully prevent the heart disease from progressing."

Other noninvasive diagnostic tests that a cardiologist might order:

- Transesophageal echocardiography
- Transthoracic echocardiography
- Stress test
- Nuclear imaging
- Tilt table study
- Event monitoring

The latest CT technology provides clear images of major blood vessels and coronary arteries of the heart. This advanced imaging tool can help physicians assess risk for coronary heart disease, as well as provide less invasive treatment options.



For patients who already have heart disease, the physicians at the Heart Lung Vascular Institute can provide a large number of treatment options, including surgical intervention. A cardiothoracic surgeon may perform coronary artery bypass grafting (CABG) surgery to help a patient with an artery blocked by CAD. In this procedure, the surgeon uses a healthy artery or vein from the body and connects, or grafts, it to the blocked coronary artery. The grafted artery or vein bypasses the blocked portion of the coronary artery, creating a new passage that allows oxygen-rich blood to flow around the blockage to the heart.

Where most cardiac diseases are concerned, preventive measures are crucial. Some of these ailments, however, cannot be foreseen or prevented. For instance, heart valve disease may be caused by birth defects, age-related changes, infections, or other conditions.

There are two types of heart valve disease, regurgitation and stenosis. Mitral regurgitation occurs when the two mitral valve leaflets do not close and seal properly, resulting in a flow of blood backward into the left atrium rather than forward into the aorta. The condition can develop suddenly or over time and treatment may include medications to control blood pressure and possibly surgery to repair the leaflets' seal.

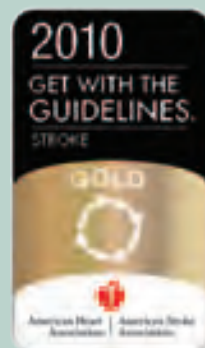
Mitral stenosis, also affecting the two mitral valve leaflets, is a condition in which the mitral valve does not open correctly, causing restricted blood flow and inefficient filling of the left ventricle. It can be treated with medications or a procedure that uses a catheter to open the mitral valve and allow enough blood to flow into the left ventricle.

Aortic stenosis occurs when the cusps of the aortic valve cannot open completely, which reduces the blood flow from the left ventricle to the aorta and subsequently to the rest of the body. Pressure builds up in the left ventricle over time, causing the heart muscle to thicken and eventually become enlarged as it works to pump the blood out. Most cases of aortic stenosis occur when calcium deposits gradually build up on the valve leaflets; this is usually seen in patients of advanced age. Younger patients with the condition may have inherited valve abnormalities. Surgery for aortic stenosis is performed using either minimally invasive techniques or a traditional open-heart procedure.

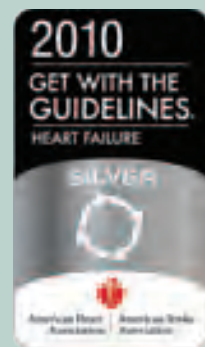
Jeffrey E. Everett, MD, cardiothoracic surgeon, discusses options with a patient.



Get With the Guidelines Stroke & Heart Failure Awards



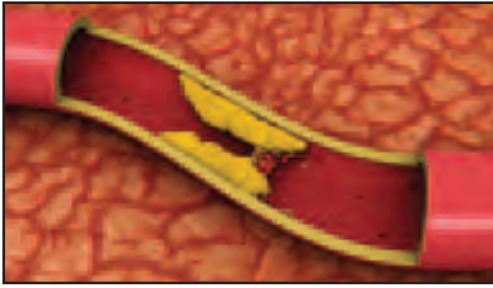
The University of Tennessee Medical Center continues to make great strides in caring for stroke and heart failure patients. This year the Stroke Center became the only certified primary stroke facility in the Knoxville region to earn the prestigious 2010 Get With the Guidelines Gold Performance Achievement Award, presented by the American Heart Association and the American Stroke Association. The award recognizes stroke care facilities for their adherence to Get With the Guidelines' rigorous standards in quality and performance improvement.



Also this year, the American Heart Association honored the University of Tennessee Medical Center with the 2010 Get With the Guidelines Silver Performance Achievement Award in the treatment of heart failure. This award is conferred on facilities that have demonstrated at least 85% compliance with the American Heart Association's stringent criteria for 12 months consecutively.

The University of Tennessee Medical Center is proud to be the only facility in the Knoxville region, and one of only three in Tennessee, to earn Get With the Guidelines awards for both stroke and heart failure care.





The narrowing of blood vessels due to the build-up of plaque.

Plaque often builds up in arteries around the heart, causing peripheral vascular disease, in which vessels outside the heart or brain that carry blood to the legs, arms, stomach, or kidneys become narrowed. The plaque may cause blockages or simply restrict blood circulation to essential organs and other areas of the body. In the early stages, there may be cramping or fatigue in the legs and buttocks during activity. To reduce the risks associated with the condition, a physician (specifically, a vascular surgeon) will ask the patient to make lifestyle changes, take prescribed medications, or both.

In some cases a procedure called an angioplasty is used to widen narrowed or blocked peripheral arteries. A catheter, a thin tube with a deflated balloon on its tip, is passed into the narrowed segment of artery and inflated. This compresses the plaque and dilates the narrowed artery, allowing blood to flow more easily. Then the balloon is deflated and the catheter is withdrawn. Often a cylindrical wire-mesh tube called a stent is positioned in a narrowed artery with a catheter and expanded. The stent remains in place, keeping the diseased artery open.

Surgery may be necessary if the narrowing involves a long portion of an artery. A vein from another part of the body or a synthetic blood vessel is attached above and below the blocked area to detour blood around it. “Vascular disease is on the rise as our population ages,” says Scott L. Stevens, MD, a vascular surgeon at the medical center. “A wide array of diagnostic tests and interventional procedures give the vascular surgeon a variety of treatment options.”

Other noninvasive diagnostic tests that a vascular surgeon might order:

- Arterial ultrasound
- Venous ultrasound
- Carotid ultrasound
- Segmental pressures
- Abdominal aortic ultrasound
- Renal artery ultrasound
- Transcranial Doppler
- Arteriography

*Thomas E. Gaines, MD,
cardiothoracic surgeon.*





David C. Cassada, MD, vascular surgeon, evaluates a patient's progress.



Vanessa Brabson, exercise specialist, works with a patient on her exercise routine.

After a patient is treated for cardiovascular disease, the physician may suggest cardiovascular and pulmonary rehabilitation. The rehabilitation team includes the patient, the family, physicians, nurses, exercise specialists, dietitians, respiratory therapists, psychologists, pharmacists, and

chaplains. Cardiovascular and pulmonary rehabilitation, consisting of exercise training, education, and counseling, enhances patients' quality of life and helps keep risk factors under control.

Jeromy R. Welch

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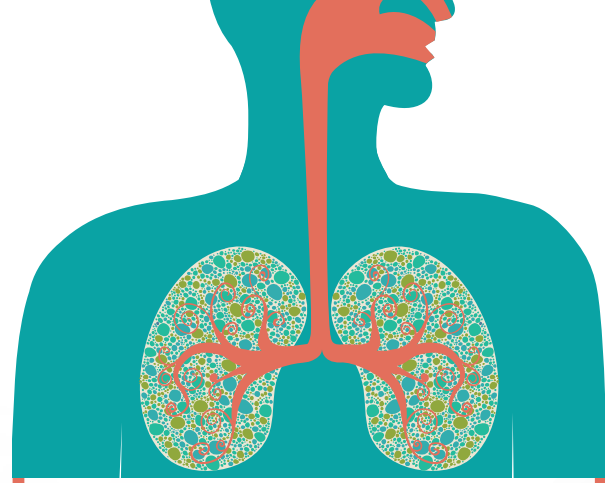
The Medical Center Receives Blue Distinction for Cardiac Care

The American Heart Association estimates that this year alone 1.2 million Americans will experience a heart attack. When you or someone you care about is in need of cardiac treatment, you want a facility you can trust – and that facility is the University of Tennessee Medical Center, which has received the Blue Distinction designation for cardiac care from Blue Cross Blue Shield. Blue Distinction is an innovative quality designation that helps consumers find medical facilities with demonstrated expertise in selected procedures.

The University of Tennessee Medical Center is the only entity in Knoxville to have received this coveted distinction and one of only 410 Blue Distinction Centers for Cardiac Care in the United States. Blue Distinction facilities demonstrate their commitment to high-quality care, which results in better overall outcomes for heart patients. The designation recognizes facilities that meet objective, evidence-based standards for clinical quality, developed in collaboration with expert physicians and medical organizations including the American College of Cardiology and the

Society of Thoracic Surgeons. It is subject to periodic reevaluation as criteria continue to evolve.

A Blue Distinction Center for Cardiac Care provides a full range of heart services, from inpatient cardiac care and cardiac rehabilitation to catheterization and surgery (including coronary artery bypass graft surgery). Becoming a Blue Distinction Center for Cardiac Care is just one more way in which the University of Tennessee Medical Center works to improve the lives of East Tennessee residents.



Interventional Pulmonology

ADVANCING DIAGNOSIS & TREATMENTS FOR LUNG & RESPIRATORY DISEASES

Interventional Pulmonology (IP) is an evolving specialty within pulmonary medicine that focuses on the use of advanced diagnostic and therapeutic techniques to treat patients with lung cancer, pleural diseases, and benign airway disorders. At the University of Tennessee Medical Center, an outpatient clinic dedicated to IP provides rapid help for symptomatic patients.

The IP program offers state-of-the-art procedures in diagnosing and managing malignant or benign central airway obstruction as well as symptomatic pleural effusion. The medical center is currently the only facility in the area equipped to evaluate mediastinal disease using real-time endobronchial ultrasound to guide needle biopsies. Additionally, very small lung lesions can be sampled by means of electromagnetic navigational bronchoscopy, a minimally invasive method of performing biopsies deep in the lungs that can sometimes replace the need for more invasive procedures like an intrathoracic needle biopsy and open surgery, and may increase the chance of diagnosing lung cancer at earlier stages. Airway dilation and stenting are available for patients with symptomatic airway narrowing. Complex airway problems such as tracheobronchomalacia are handled by a team that combines interventional pulmonologists and thoracic surgeons.

Michael T. McCormick, MD, interventional pulmonologist and Rebekah Newby, RRT, a registered respiratory therapist, prepare for a patient treatment.





Paul Branca, MD, FCCP, an interventional pulmonologist, and Michael T. McCormick, MD, interventional pulmonologist.

“While we see a lot of cancer diagnosis, we also receive a large number of benign diseases that affects the airways,” says Paul Branca, MD, an interventional pulmonologist at the medical center. “With technology continually developing, we have advanced tools that enable us to perform improved diagnostics and provide more comprehensive procedures for the management of these conditions.”

The procedures offered include:

Advanced diagnostic bronchoscopy

- Endobronchial ultrasound (EBUS)
- Rigid bronchoscopy
- Electromagnetic navigational bronchoscopy (ENB)

Pleural disease management

- Thoracentesis and pleural biopsy
- Chest tube with pleurodesis
- Tunneled pleural catheter
- Placement of bronchial valves for bronchopleural fistula closure

Artificial airways

- Percutaneous tracheostomy
- Transtracheal oxygen catheter

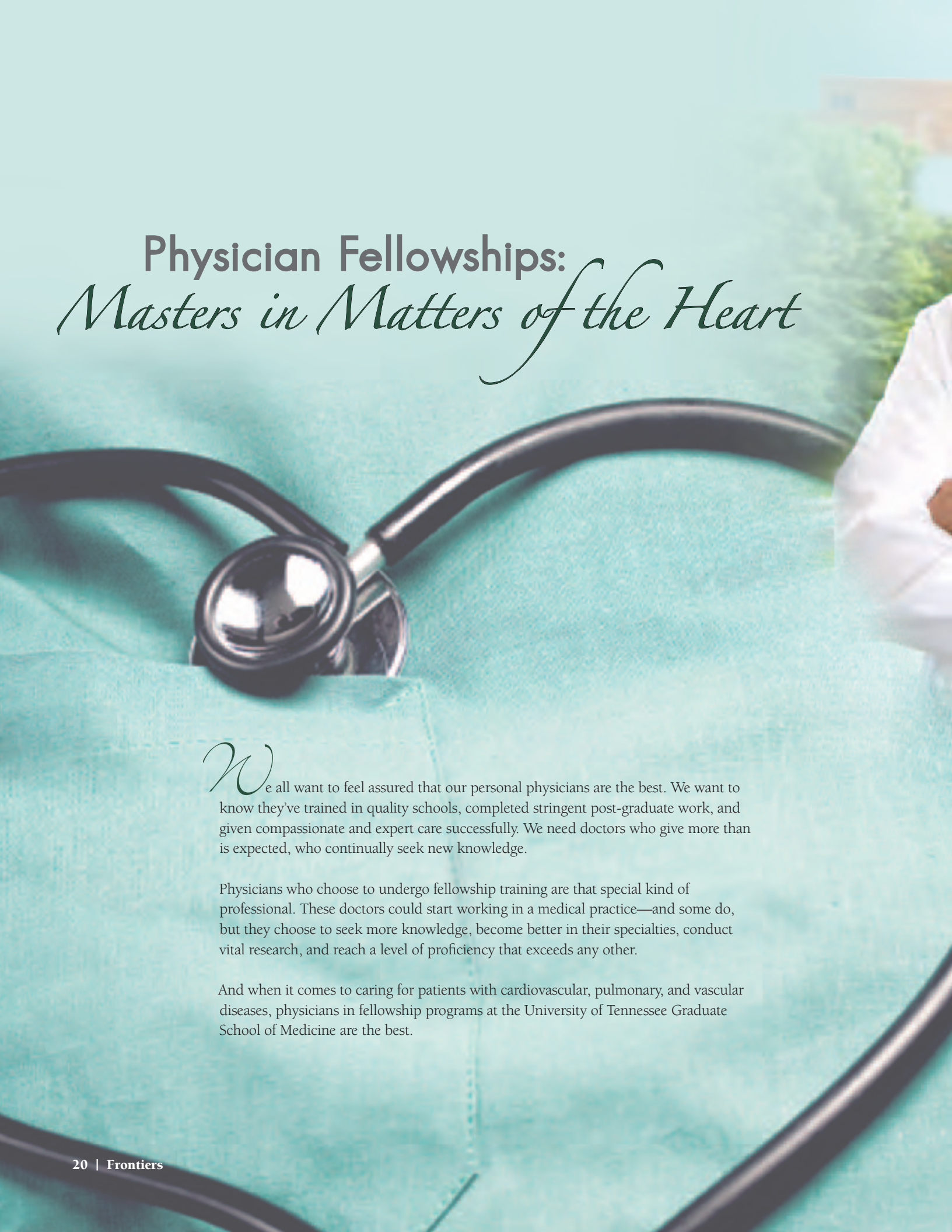
Therapeutic bronchoscopy

- Relief of central airway obstruction caused by tumor or foreign object
- Tracheal or bronchial dilation and stenting
- Treatment of carcinoma in situ
- Treatment of tracheobronchomalacia or other benign airway stenosis
- Placement of catheters for brachytherapy
- Placement of fiducial markers for CyberKnife
- Whole-lung lavage for pulmonary alveolar proteinosis

These highly advanced procedures help treat many conditions including asthma, bronchial stenosis, shortness of breath in cancer patients; the removal of tumors, tissue and foreign objects from airways; and help reduce the narrowing of airways through use of stent placement. The Interventional Pulmonology service at the University of Tennessee Medical Center remains at the forefront of this exciting field and serves its patients well with the healthcare team's knowledge, training, and experience.

Wendi Hope Hager





Physician Fellowships: *Masters in Matters of the Heart*

We all want to feel assured that our personal physicians are the best. We want to know they've trained in quality schools, completed stringent post-graduate work, and given compassionate and expert care successfully. We need doctors who give more than is expected, who continually seek new knowledge.

Physicians who choose to undergo fellowship training are that special kind of professional. These doctors could start working in a medical practice—and some do, but they choose to seek more knowledge, become better in their specialties, conduct vital research, and reach a level of proficiency that exceeds any other.

And when it comes to caring for patients with cardiovascular, pulmonary, and vascular diseases, physicians in fellowship programs at the University of Tennessee Graduate School of Medicine are the best.



Fellows are physicians who choose to seek more knowledge to become the best in their specialties. One such specialty education program at UT Graduate School of Medicine is the Cardiovascular Disease Fellowship, which provides specialty training in the fight against the nation's No. 1 killer. Led by Dale C. Wortham, MD, (foreground), fellows in the program include Rubinder S. Ruby, MD; Dev Venugopal, MD; W. Jeremy Mahlow, MD; V. Ram Aligeti, MD; and Gayathri Baljepally, MD.

Cardiovascular Disease

"As a resident [physician], I saw how diseases of the heart have the potential to cripple a person's life and sense of well being," says cardiovascular disease fellow, Jeremy Mahlow, MD. "I chose cardiology because I want to be part of this battle with our nation's number one killer."

Dale C. Wortham, MD, professor in the Division of Cardiology and director of cardiac catheterization laboratory at the University of Tennessee Medical Center, leads the Cardiovascular Disease Fellowship Program. He explains that the fellows undergo specialty training in all areas of cardiovascular disease diagnosis and treatment, complete rigorous research, and sharpen their expertise in many advanced procedures.

"The fellowship program has been a strong, positive influence in improving patient care and increasing research," says Wortham. "Our high-quality physicians have a positive impact on the care of cardiology patients in our region and bring national credit to this program."

With leadership from expert physicians like Wortham, the fellowship program develops fellows into expert consultative cardiologists.

Third-year fellow, Rubinder Ruby, MD, is anticipating the culmination of that process. "Now near the end of my fellowship, I feel confident to practice as a clinical cardiologist," he says, "well exposed to disease presentations, procedures and technical skills."



Pulmonary Disease

Fellows also train in the Pulmonary Disease Fellowship Program supported by the Mike Campbell Pulmonary Medicine Endowment, led by Tina Dudney, MD, associate professor in the Department of Medicine and division chief of Pulmonary and Critical Care Medicine at the University of Tennessee Medical Center. Top faculty physicians in the program provide advanced training and are required to conduct research in the subspecialty of pulmonary (respiratory and lung) diseases and disorders, including COPD (chronic obstructive pulmonary disease), lung cancer, pneumonia, asthma, chronic bronchitis, emphysema, cystic fibrosis, interstitial lung disease, and other conditions.

An increase in the prevalence of lung disease is occurring when the country is experiencing a shortage of physicians.

“Very few physicians in the state of Tennessee have additional

training in pulmonary medicine,” says Dudney. “The Pulmonary Disease/Medicine Fellowship provides the scholarship, research, and training in advanced technologies required to achieve the ultimate goal of innovative, compassionate care for our patients and the community we serve. Fellowship training at an academic medical center encourages higher degrees of understanding and skills at every level.”

Pulmonary disease/medicine fellow, Adeel Shibli, MD, experiences this exceptional training every day. “As a board-certified internist prior to beginning my pulmonary fellowship, I saw patients who struggled to breathe,” he says. “The high quality physicians leading my fellowship training provide me with the skills to help my very sick patients. What we’re doing here is comparable to the top programs in the country.”

Expertise gained through fellowship education at an academic medical center results in higher degrees of understanding and skills. This higher level of medical preparedness benefits each patient and the community. The Mike Campbell Pulmonary Disease/Medicine Fellowship at UT Graduate School of Medicine is led by Tina Dudney, MD, associate professor in the Department of Medicine and division chief of Pulmonary and Critical Care Medicine, who is flanked by two fellows, Kinnaresh Patel, MD, and Paramveer Bhugra, MD.





One of the best vascular surgery fellowship programs in the country is right here at UT Graduate School of Medicine. Michael Freeman, MD, (center) professor in the Department of Surgery, Division of Vascular/Transplant Surgery, directs the Vascular Surgery Fellowship Program. Dedicated doctors in the program, including (L to R) Brad Cook, MD, and James Chalk, MD, gain proficiency in treating all arterial and venous diseases outside the heart.

Vascular Surgery

Physicians in the Vascular Surgery Fellowship Program could have chosen to enter medical practice in general surgery after their five years of training in the field. But they didn't. They chose to seek additional training and conduct valuable research in vascular surgery.

"We have one of the best vascular surgery programs in the nation," says James Chalk, MD, MS, vascular surgery fellow. "Because of this program and the expert physicians who lead it, the people of East Tennessee are able to experience the newest and best technology first, right here."

"Productive vascular research has a positive impact on the community," adds vascular surgery fellow, Brad Cook, MD, in discussing the research required of physicians in all fellowship programs. "It produces excellent cutting-edge patient care that would otherwise be unavailable."

Through their work in the program, these dedicated doctors gain proficiency in treating all arterial and venous diseases outside the heart.

"There is a wide spectrum of vascular disease throughout our region, and we see the area's most complicated cases," says Michael Freeman, MD, professor in the Department of Surgery, Division of Vascular/Transplant Surgery, University of Tennessee Medical Center, and director of the Vascular Surgery Fellowship Program. "Without the help of vascular surgery fellows, it would be difficult to provide care for these patients through surgery and post-operative recovery. They would have to leave the region to seek other specialized vascular centers."

Physicians in fellowship programs listen and learn, hone and improve, care and help. They learn at the shoulder of some of the best specialists in the region, and because of the demands of the fellowship programs, they conduct research that improves the care we are able to give our patients. They share a higher level of expertise and an intense drive for knowledge and mastery. And when it comes to matters of the heart, isn't that just what you want in a physician?

Amanda E. Johnson

Heart, Lung, Vascular Conference Features UT Physicians

Ten faculty physicians from the University of Tennessee Medical Center and UT Graduate School of Medicine will lead the upcoming educational conference, Heart, Lung, Vascular Update for Primary Care Providers, on September 24-25. Represented will be areas of cardiology, vascular surgery, cardiac electrophysiology, pulmonary and critical care medicine, and endovascular surgery. (See page 32 for details about the conference.)





Help is on the Way:

Quick Response to a Heart Attack

The sound of propeller blades intensifies as the helicopter approaches. A patient is about to embark on a journey that will save his life.

For the last decade, the University of Tennessee Medical Center's Heart Lung Vascular Institute has been functioning as a regional STEMI referral center. "STEMI" is an acronym for ST elevation myocardial infarction, a type of heart attack that is caused by the sudden occlusion of a major coronary artery.

The STEMI referral center uses both multidisciplinary and collaborative approaches in providing emergency STEMI care. The program includes a cardiac catheterization laboratory with interventional cardiology capabilities and the round-the-clock skills of dedicated emergency department staff, physicians,

and other personnel. The team works closely with local and regional emergency medical services to get patients to the cardiac catheterization lab in the shortest possible time. For patients living in the areas surrounding Knoxville, the medical center's STEMI referral center offers swift transport by UT LIFESTAR Aeromedical Services. Once these patients reach the medical center, protocols are in place to guide their rapid, direct admission to the cardiac catheterization lab.

Time is of the essence, so it's imperative to give STEMI treatment immediately. For the last 25 years, clinical research has been focused on ways of quickly opening blocked coronary arteries to save patients' lives. The STEMI referral center has provided many patients with lifesaving care by restoring blood supply to the affected heart muscle with immediate or "direct" coronary angioplasty and stenting.

"It has been established for over a decade that immediate coronary stenting is the best way to treat a heart attack. Heart attack care has advanced again in a remarkable fashion in the last five years by improving the way we work together with pre-hospital and emergency room personnel to shorten times to treatment by as much as 50%, lowering mortality and improving the heart function of survivors," says Stuart J. Bresee, MD, cardiologist.

There is a growing need for more regional STEMI referral centers and programs across the country are being established to improve patients' access to interventional care. Taking a proactive approach, the medical center is the only facility in the region to be registered with the American Heart Association's Mission: Lifeline. This initiative focuses on the continuum of care for STEMI patients, from entry into the system, to treatment within it, to the return to local communities and providers.

At the University of Tennessee Medical Center, our systems are in place. Healthcare professionals stand ready to provide immediate care for STEMI, 24 hours a day, seven days a week.

Melissa Winchenbach



Stuart J. Bresee, MD, cardiologist,
at the medical center.

Back On My Feet Again:

Roger Farley

It was a normal day on the farm for Roger Farley. He was home with his two younger kids, working to remove fallen trees. Heather, his wife, was running errands with their eldest child. The family lives in Robbinsville, North Carolina, on a quiet piece of land that isn't near town or a hospital.

As Farley worked, he began to notice that his arms felt heavy, too heavy to lift. There was a sensation of tightness in his chest, and he grew nauseated. Thanks to his 12-year-old son's good judgment, a quick call went out for an ambulance. Farley was having a heart attack.

As the EMS crew worked to ready him for the journey to the hospital, emergency department staff and physicians at the University of Tennessee Medical Center were preparing for his arrival. The EMS personnel contacted the STEMI referral center, then worked with UT LIFESTAR Aeromedical Services to determine the exact location where Farley would be picked up by helicopter. He was immediately flown to the medical center and admitted directly to the cardiac catheterization laboratory. Working together, cardiologists

Bret Rogers, MD, and Chris Scott, MD, and the cardiac catheterization team opened Farley's blocked coronary artery only 23 minutes after his arrival at the medical center. "Cases like Roger's have happy endings because of two major factors," says Bret Rogers, MD: "the patient realizes that his symptoms are dangerous and need immediate evaluation, and the components of the care team—from EMS to LIFESTAR to the cath lab—work together without missing a beat."

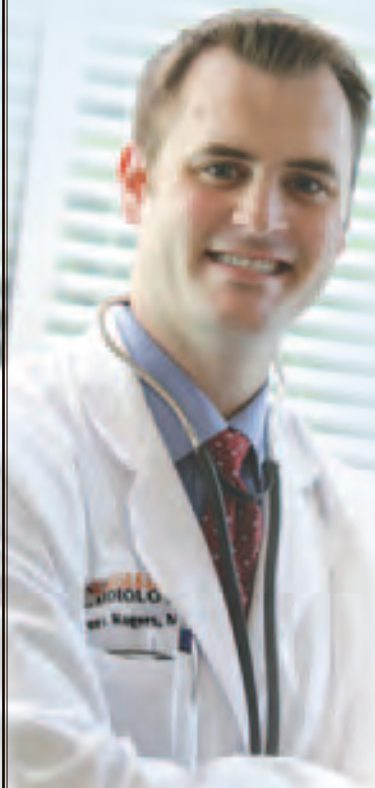
Heather Farley arrived a couple of hours later to find her husband in the cardiovascular intensive care unit, awake and hungry. "Dr. Rogers took great care of my husband," she says. "And the nurses in the CVICU, they were wonderful. They made sure they kept me informed and updated."

Now home and back at work, Farley is doing well. And his family? They're happy to have him back on the farm.

Melissa Winchenbach

"Cases like Roger's have happy endings because of two major factors," says Bret Rogers, MD: "the patient realizes that his symptoms are dangerous and need immediate evaluation, and the components of the care team—from EMS to LIFESTAR to the cath lab—work together without missing a beat."

— Bret Rogers, MD



HORMONES AND VASCULAR DISEASE

Scientists Study the Connection

Women who are receiving hormone replacement therapy (HRT) often experience more adverse outcomes after vascular reconstruction than women not taking HRT. Physicians at the UT Graduate School of Medicine Department of Surgery's Division of Vascular/Transplant Surgery found that these women were experiencing arterial wall thickening and closing of vascular grafts, which can lead to multiple surgeries or limb loss. That alarming discovery led them to begin intensive studies to determine the cause of these complications and develop preventive measures.

Deidra Mountain, PhD, assistant professor of vascular and transplant surgery, leads a research study in the Vascular Research Laboratory at UT Graduate School of Medicine to determine how hormone replacement therapy influences the cellular and molecular processes in women who undergo vascular interventions.

Deidra Mountain, PhD, an assistant professor of vascular and transplant surgery and a research scientist in the Vascular Research Laboratory, leads a team of investigators. They hypothesize that HRT promotes inflammation during vascular injury, influencing vascular cell mechanisms.

“If we can understand how cellular and molecular processes are influenced by HRT, we can begin to develop strategies aimed at their inhibition and ultimately provide a therapeutic option to improve outcomes for women,” says Mountain. “The collaboration between scientists and physicians to advance therapeutic methods and improve patient care is what’s gratifying about the work we do here.”

Mountain and her team are not alone in believing in the urgency of this research. The American Heart Association agrees and is funding the research with a four-year Scientist Development Grant.

Other projects in the Vascular Research Laboratory, directed by Oscar Grandas, MD, vascular surgeon and an associate professor in the Department of Surgery, Division of Vascular/Transplant Surgery, seek to document the chameleon-like effects of estrogen and progesterone and predict outcomes of vascular interventions in postmenopausal women taking HRT.

“We want to understand, protect, and appropriately treat postmenopausal women with vascular disease, based on discovery in the research laboratory and patient-care areas,” Grandas says. “This type of translational research—starting with critical observation of patient problems, taking questions to the laboratory bench, and bringing answers back to the patient—is what academic medicine is all about.”

Amanda E Johnson

Oscar Grandas, MD, vascular surgeon at the medical center and associate professor of vascular and transplant surgery, directs the scientists in the Vascular Research Laboratory at UT Graduate School of Medicine who investigate the impact of hormone replacement therapy (HRT) on women who undergo vascular reconstruction and predict outcomes of vascular surgery on postmenopausal women taking HRT.



The University of Tennessee Medical Center Teams With Coach Summitt for the Heart Lung Vascular Campaign



When Coach Pat Summitt puts her mind to something, we all know what happens – resounding success! So with Coach Summitt and a stellar campaign committee at the helm, the Heart Lung Vascular Institute is poised and ready to lead the Heart Lung Vascular Campaign straight toward its goal of \$15 million.

The Heart Hospital, which opened its doors on April 27, 2010, is a new four-story, 126,000-square-foot facility attached to the existing medical center that was built to meet the ever-expanding heart, lung, and vascular needs of people in the surrounding area. Tennessee ranks among the leading states in the nation in its incidence of diabetes, smoking, and cardiovascular disease.

With the volume of patients continuing to increase, and the University of Tennessee Medical Center and UT Graduate School of Medicine committed to providing and supporting opportunities for healing, student and community education, and scientific discovery, a capital campaign to raise an additional \$15 million is well under way. The funds raised will support the completion of inpatient units in the new tower, as well as endow academic fellowships in cardiovascular medicine, pulmonary medicine, and vascular surgery and support expanded community education and outreach efforts.

With the help of the community and of medical center physicians and employees, Coach Summitt and the campaign team have already raised more than \$2 million toward their goal.

“It is an absolute honor for me to be part of this campaign,” Summitt says. “I constantly remind my team about the importance of maintaining good health, not only for their efforts on the court but also for their journey throughout life. This campaign provides an excellent opportunity to take that message to the people of East Tennessee. Together we can build a facility that supports all of us in our desire to live full, healthy, active lives.”

For more information about the Heart Lung Vascular Campaign, please contact the Development Office, **865-305-6611** or development@utmck.edu

HEART LUNG VASCULAR CAMPAIGN COMMITTEE

Coach Pat Summitt, Honorary Chair
Dr. Joseph Johnson, Co-Chair
Steve South, Co-Chair
Stuart J. Bresee, MD,
Family Campaign Chair
Jim Bush
Raymond A. Dieter, III, MD

Bruce Hartmann
D. Russell Huntsinger, MD
Duane Johnson
Christy Phillips
Teddy Phillips
Bob Talbott
Wendy Wortham



500th Guardian Angel Honored



Though Jennifer and Matthew Kanuck live more than an hour from the University of Tennessee Medical Center, only the best was going to do for the birth of their first child, Arielle Marie.

"I wasn't expecting anything to go wrong, but we just wanted to be in a place that we knew was the most capable of handling it in case it did," recalls Jennifer. "We knew the University of Tennessee Medical Center would be there to provide the best medical care, and we were so impressed with the care provided by the staff during our stay for the birth of our daughter."

At a time that can be hectic and filled with emotions as well as unknowns, the Kanucks were put at ease by the comforting reassurance of the nurses and other staff who were with them. One nurse in particular, Jane Erwin, really made a big impact on their experience at the medical center.

"I just couldn't believe how responsive, encouraging, and confident Jane was. She's so young, yet she knew how to

anticipate my every need and to say all the right things at the right times. Jane's calming manner really took all my nerves away," remembers Jennifer.

Once they'd returned home with Arielle Marie, the couple were reminiscing about their experiences of the previous few days when Matthew mentioned that he'd seen a brochure about the Guardian Angel program.

"We knew exactly who we wanted to honor," says Jennifer. "Jane just went beyond the call of duty. She stayed after her shift to be with me through the birth, and she came back to visit me the next day even though I wasn't on her same unit. You could just tell that she really cared – it wasn't just a job to her.

"Matthew and I couldn't be happier to honor Jane with the 500th Guardian Angel awarded to the fantastic staff at the medical center."

For more information about the Guardian Angel program, please contact the Development Office, **865-305-6611** or development@utmck.edu



The fifth annual TEE UP for Trauma golf tournament, presented by University Orthopaedic Surgeons, was held May 21 at Landmark Golf Club at Avalon. It brought together golfers and volunteers from the area's businesses and healthcare community for a day of great fun in support of the University of Tennessee Medical Center's Trauma Center.

Emergency and Trauma Service at the University of Tennessee Medical Center is the only Level I Trauma Center for adults and children in East Tennessee. Trauma services also supports LIFESTAR, the aeromedical transport service for the University of Tennessee Medical Center, which transports about 200 patients each month.

Since TEE UP for Trauma's inception, approximately \$157,000 has been raised, with proceeds from the tournament benefiting the emergency and trauma programs. Those funds help provide training and certifications for our healthcare professionals, ensuring that our patients receive advanced, state-of-the-art medical care.

A special thank-you to University Orthopaedic Surgeons, University General Surgeons, University Anesthesiology, University Physicians Association, and Pilot Travel Centers, along with all the 2010 TEE UP for Trauma sponsors, golf teams, and volunteers, for a hugely successful year – one that positively impacts the lives of our community members and surrounding counties through your involvement and continued support.



Lifetime of Caring

"Just to see a smile or to know that I have provided comfort to someone is all the thanks I need."

-Fay McMahan
volunteer

Since her graduation from college in 1956, Fay McMahan has been giving back to the people of East Tennessee. She began work at the University of Tennessee Medical Center, where over a period of 10 years she was an operating-room nurse. The next step in her career was a position with the Tennessee Valley Authority as a certified occupational health nurse, where she remained until her retirement in 1991.

After the passing of her husband, Fay decided to return to the place where her career had begun. She is a volunteer at the medical center in the surgery lounge and also serves as a cardiovascular intensive care unit (CVICU) family ambassador. She is delighted to be back and states, "The medical center is such a special place to me; I couldn't wait to be a part of it again."

Fay has been with the hospital through many changes and has seen its dramatic advances firsthand. She was present on the monumental day when the medical center performed its first open-heart surgery, and now she has witnessed the opening of the new Heart Hospital. She is amazed at what she has seen here and how far the hospital has come with advanced technology.

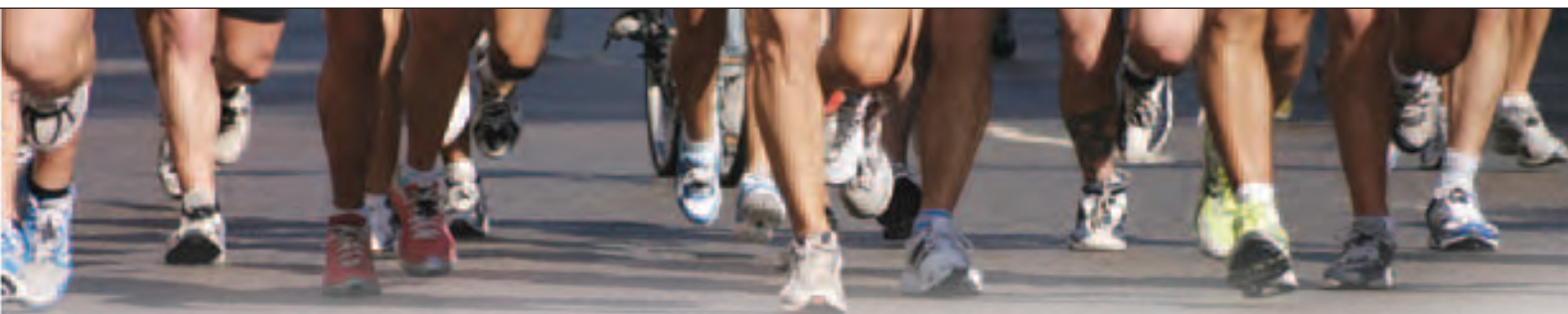
Having served for four years as the recording secretary and two years as the president of the Auxiliary, Fay has observed the positive impact volunteering has had, not only

for the patients and their families but for the volunteers as well. "We have people who come to the medical center from across the country to obtain the best medical care available," she says. "And while the patients are receiving first-class healthcare, it's also important to provide assistance to their families." Fay's role as a CVICU family ambassador allows her the opportunity to serve as a liaison for the patients' families by helping them with lodging arrangements, gathering information for them from the library, or simply sitting with them to help calm their anxieties and fears. "We are here to make things go more smoothly for them," she says.

As a volunteer, Fay feels the same positive impact the patients and their families do. She states, "Working with the patients and their families is the most rewarding thing I've done. I get so much more than I give. Just to see a smile or to know that I have provided comfort to someone is all the thanks I need; it makes me feel like I am truly making a difference. It is the highlight of my week."

Volunteers are people who offer their time freely, with no promise of compensation of any kind. They are compassionate, caring, understanding, and loyal. Anyone who knows Fay would say that she fits perfectly into this category and is truly a blessing to all she comes into contact with.

For more information about volunteer opportunities at the University of Tennessee Medical Center please contact **865-305-9515**.



The University of Tennessee Medical Center and UT Graduate School of Medicine extend their sincere appreciation to the organizers and participants of the Forget Me Not Race and the Nancy Prezioso Babich Run Against Amyloidosis.

The **Forget Me Not Race** was held in April and raised more than \$5,500 in support for Alzheimer's Disease programs at the Cole Neuroscience Center. Designed in honor of Reba McGinnis by her granddaughter, McKenzie Wampler, the race was organized by Lenoir City residents Angela Wampler, Rosemary Quillen and Steve Harrelson and is slated to become an annual running event.

The **Nancy Prezioso Babich Run Against Amyloidosis** was held in May in Youngstown, OH. With 192 runners turning out for the race, the run raised more than \$10,000 in tribute to Prezioso Babich and her battle with Amyloidosis. The race was organized by Prezioso Babich's niece, Jen Latell, and all proceeds benefit Dr. Alan Solomon's research endeavors in Amyloidosis.



Walgreens, recently presented the University of Tennessee Medical Center a check for more than \$68,400 for their corporate partnership in the OUTLIVE program. The Medical Center staff and patients extend their sincere gratitude to Walgreens for their commitment to OUTLIVE and its important mission of support for the medical center's Cancer Institute.



The University of Tennessee Medical Center invites you to join our HeartSaver effort supporting the Heart Hospital and its important mission of exceptional cardiovascular and pulmonary care. As East Tennessee's dedicated heart hospital, the hospital will provide multidisciplinary and integrated care in a state-of-the-art facility focused on the treatment of patients from the Heart Lung Vascular Institute.

Individuals purchasing a HeartSaver tile will be recognized in the lobby at the entrance to the new Cardiovascular Intensive Care Unit. HeartSaver tiles may serve as a tribute to a loved one or caregiver, or they may commemorate support of the Heart Hospital. Tiles can be purchased for \$1,000 and all proceeds benefit the Heart Hospital.

For additional information about becoming a HeartSaver or about the Heart Hospital at the University of Tennessee Medical Center, please contact the Office of Development at **865-305-6611** or **development@utmck.edu**



The University of Tennessee Medical Center and UT Graduate School of Medicine offers these educational courses this fall for physicians, researchers, allied health providers, and other healthcare professionals seeking continuing medical education.



September 17

AMA, AAPA, ACPE credits and CEUs will be available.

East Tennessee Dermatology Society Meeting

4:00-6:00 p.m., Knoxville Dermatology Group, Suite 209

University of Tennessee Medical Center, Knoxville, Tennessee

This interactive meeting allows dermatologists and their team members to observe patients and discuss unusual presentations of dermatologic disorders and diseases that are refractory to typical therapy. Case presentations highlight dermatologic disorders, their mimics, and treatment strategies.



September 24-25

AMA, AAPA, ACPE credits and CEUs will be available.

Heart, Lung, Vascular Update for Primary Care Providers

UT Conference Center, Knoxville, Tennessee

The Heart, Lung, Vascular Update will give the primary care provider tools to better understand, evaluate, and manage COPD, hypertension, and myocardial infarction. Regional and national experts also will address the deficiency in adherence to national guidelines and demonstrate improved patient outcomes when guidelines are followed.

Mark Your Calendar!

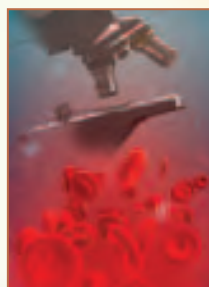


October 1, 2010

Third Annual Stroke Symposium

UT Conference Center, Knoxville, Tennessee

This CME course will present information for healthcare professionals practicing in family medicine and internal medicine, as well as pharmacists, advanced care nurses, staff nurses, therapists, and other professionals who work to prevent and treat stroke.



January 22, 2011

Seventh Annual Hematology Conference: An Update on Selected ASH Topics

UT Conference Center, Knoxville, Tennessee

This conference will provide updates on clinical trials and recent advances in the treatment of blood cancers, including hemostasis/thrombosis, chronic lymphocytic leukemia, multiple myeloma, and malignant lymphoma. Nationally known experts scheduled to speak include Thomas Habermann, MD, of Mayo Clinic; Michael Keating, MB, BS, of MD Anderson Cancer Center; Craig Kessler, MD, of Georgetown University; and Sagar Lonial, MD, of Emory University School of Medicine.

To register or for more information about these courses,
call 865-305-9190 or visit our website at
www.tennessee.edu/cme





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