



# Scoop

July 29, 2005

THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON

## Events to Know

### August

- 10 New Student Orientation
- 12 New Student Retreat Camp Allen

### September

- 5 Labor Day Holiday
- 13 Deadline to register for Baylor's Medical Terminology, Anatomy and Physiology Course. Course runs Sept. 20-Nov. 15. The cost on or before Sept. 13 is \$125. Details: <http://www.hcoa.org/medterm>
- 14 Deadline for hotel registration for Conference on Innovations in Medical Education: Physician Competencies and Professionalism. Conference to be held Oct. 6-7 in Austin. Details: [www.utsystem.edu/hea/symposiumoct2005](http://www.utsystem.edu/hea/symposiumoct2005)

## UT Most Interest

**Dr. James T. Willerson**, president of the health science center, was quoted in two recent *Houston Chronicle* articles (July 22, July 20) regarding stem cell research. **Dr. Jon Tyson**, Pediatrics, wrote an accompanying editorial for an article in *JAMA* about the health and educational needs of children born with extremely low birth weight.



## DON'T FORGET

The UT Bookstore, Quick Copy, UT Supply Mall, and Office of Communications (formerly Graphics) are located in the newly renovated Medical School basement and are open for business.

## TEAM DISCOVERS GENETIC LINK TO AORTIC ANEURYSMS

Scientists have identified the first genetic mutations that cause the aorta – the body's main artery – to widen, tear and rupture.

Published online by *Circulation: Journal of the American Heart Association*, the findings of a team led by Medical School researchers shed new light on the molecular causes of thoracic aortic aneurysms and dissections. They also provide a new route for early warning of the condition, which builds slowly, usually with no symptoms, then often kills swiftly.

"We found that mutations in the Transforming Growth Factor Beta Receptor Type II (TGFBR2) caused aortic aneurysms and dissections in four families. This gives us a molecular pathway to study for development of therapies and for biological markers of the disease," said **Dianna Milewicz, M.D., Ph.D.**, director of the Division of Medical Genetics and senior author of the paper.

Finding biological markers that flag aneurysm, a bulging of the aorta that leads to dissection, a lengthwise separation of tissues in the artery wall, is critically important for early diagnosis.

Aneurysms can be managed initially with medication and then successfully repaired to prevent catastrophic dissection and rupture, said Milewicz, holder of the President George Bush, Sr. Chair in Cardiovascular Medicine.



Dr. Dianna Milewicz

(Cont'd. on back)

## LANDRY NAMED DIRECTOR OF U.S. HEAD START COMMITTEE

The U.S. Department of Health and Human Services has appointed **Susan Landry, Ph.D.**, director of the State Center for Early Childhood Development at The University of Texas Health Science Center at Houston, as chairman of the newly formed Secretary's Advisory Committee on Head Start Accountability and Education Performance Measures.

The committee will help assess progress in developing and implementing the Head Start National Reporting System (a school readiness rating system for early childhood education) and make recommendations for integrating the system with other broader, ongoing assessments of Head Start.

Landry, chief of developmental pediatrics and the Michael Matthew Knight Professor, will lead the 10-member committee for the next two years. The first meeting was held June 15 in Washington, D.C.

In December 2002, Texas Gov. **Rick Perry** chose Landry's Center for Improving Readiness of Children for Learning and Education (CIRCLE) to help implement the governor's Early Start Initiatives.

-M. Hillis



Dr. Susan Landry



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## TB RESEARCH MAKES COVER OF SCIENTIFIC JOURNAL

When the *Journal of Interferon & Cytokine Research* called **Dr. Jeffrey Actor** recently to tell him that his group's research on tuberculosis was going to be featured as the cover art of the June 2005 issue, he was pleasantly caught off guard.

"It just came out of the blue," said Actor, associate professor of pathology and laboratory medicine. "The journal actually published this research one year ago and decided to print our colorful images on the cover last month to draw people to the publication."

The article, "Failure of CD1D  $\pm$  Mice to Elicit Hypersensitive Granulomas to Mycobacterial Cord Factor Trehalose 6,6'-Dimycolate (TDM)," was written by his graduate student **Tera V. Guidry**, Pathology; **Dr. Robert Hunter**, chair of Pathology; **Dr. Yong-Jian Geng**, Cardiology; and Actor. The research is a result of two National Institutes of Health-funded grants that both focus on a granulomatous response to tuberculosis.



Tuberculosis results in approximately 2.9 million deaths worldwide each year.

"We're investigating TDM, which is a glycolipid present on the mycobacterium of tuberculosis," Actor explained. "During tuberculosis, a portion of lung failure is due in part to an immune response directed toward this virulence factor, which in essence modulates disease and pathology."

Although the research was published a year ago, the work in the lab is ongoing. "We are looking at how the granuloma response is initiated, how a T cell response is developed to the surface lipid, and what other cell types play an active role during infection," Actor added.

### *Milewicz, cont'd.*

Many patients never have a chance at treatment because they go undiagnosed, even when they go to emergency rooms with severe chest pain because diagnostic tests for heart attack do not uncover aortic defects. Actor **John Ritter**, for example, died in September 2003 from an undiagnosed dissection that ruptured.

Aortic aneurysms and dissections kill some 18,000 Americans every year. Research shows that 20 percent of those victims have close relatives who've had the disease.

Inherited aortic disease takes an unpredictable path, with some family members dying of a dissection in their 20s, others in their 70s. Study authors recommend that family members at risk of inheriting the defective gene undergo lifelong routine imaging of their aortas.

"Families with multiple members who have had thoracic aortic aneurysms and dissections should consider undergoing evaluation for these mutations," Milewicz said.

People carrying the TGFBR2 mutations should be advised to have their aorta routinely checked with advanced imaging techniques such as magnetic resonance or echocardiography. Preventive surgical repair should be undertaken when the ascending aorta's diameter approaches 5 centimeters, the study recommends.

Milewicz had earlier mapped this genetic variation to a portion of

chromosome 3. In the present paper, researchers pinpointed the culprit gene as TGFBR2 by analyzing 80 families with a history of aneurysm and dissection. Four unrelated families had variations in the TGFBR2 gene that altered the structure of the protein and were connected to aneurysms, dissections, and fatalities.

Structural analysis of the mutant TGFBR2 protein showed changes in a portion of the protein that hinder its ability to send and receive signals in its molecular pathway, said co-author **C. S. Raman, Ph.D.**, assistant professor of biochemistry and director of the Medical School's Structural Biology Research Center.

"There are many proteins that turn this pathway off and regulate it," Milewicz said. "We are studying how the mutation changes the cell biology of the cells in the aorta."

Co-authors on the *Circulation* paper include, first author, **Hariyadarshi Pannu, Ph.D.**, **Van Tran Fadulu, Jessica Chang, Andrea Lafont**, and **Sumera N. Hasham, Ph.D.**, all from Internal Medicine, **Anthony Estrera, M.D.**, Cardiothoracic and Vascular Surgery, and **Hazim Safi, M.D.**, chair, Department of Cardiothoracic and Vascular Surgery.

-S. Merville

## MCAT to convert to computer-based format

The Medical College Admission Test (MCAT) will be converted to an entirely computer-based format by 2007. The format upgrade will provide examinees and medical schools with more test dates each year, faster score results, a more controlled testing environment, and a shorter test day. As the exam is converted to the new format, the number of exam questions will be significantly reduced.

The AAMC has signed a contract with Thomson Prometric to deliver the computer-based MCAT to locations in the United States and around the world. Thomson Prometric currently administers the MCAT in computer format at selected test centers as an alternative for examinees who prefer a computer-based test to the "fill-in-the-bubbles" paper version.

Information: Go to <http://www.aamc.org/newsroom/pressrel/2005/050718.htm>

-AAMC

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