A&M System Quest

For excellence in education, discovery and service

VOL. 1, ISSUE 1 NOVEMBER 2007

INSIDE

Foster, Huffines, Wilson Named A&M System Regents

In July, Gov. Rick Perry announced the appointments of Morris Foster, J.L. Huffines and Jim Wilson to six-year terms on The Texas A&M University System Board of Regents.

The new regents, all graduates of Texas A&M University, are respected leaders in their professions and communities. All have provided service leadership to Texas A&M in various capacities.

To date, the three new appointees have participated in two full Board of Regents meetings. Pending confirmation by the Texas Senate, they replace outgoing regents Phil Adams, Wendy Gramm and Lowry Mays. About the new regents:

Morris Foster

Morris E. Foster of Houston is president of ExxonMobil Production Company and vice president of Exxon Mobil Corporation. He received a bachelor of science degree in mechanical engineering from Texas A&M University in 1965 and was inducted into the Academy of Distinguished Graduates in 1993. Foster serves on the board of Texas A&M's International Programs and is a member of the Chancellor's 21st Century Council of Advisors for the A&M System. He is a member of the American Petroleum Institute, Society of Petroleum Engineers, and Texas Oil and Gas Association. Foster serves on numerous boards, including those of Scott & White Medical Institute, the Greater Houston Partnership, and United Way of the Texas Gulf Coast.

J.L. Huffines of Dallas is chairman and owner of Huffines Auto Dealerships in Lewisville. He received a bachelor of science degree in economics and accounting from Texas A&M University and is a member of the Class of 1944. He was in the U.S. Army and served during World War II and the Korean War. Huffines is a former board member of the Department of Mental Health and Mental Retardation and is past chairman of the Texas State Senior Colleges Board of Regents. Huffines received the Texas A&M Distinguished Alumnus Award and was inducted into the Corps of Cadets Hall of Honor. Also at Texas A&M, he served as president of the 12th Man Foundation and is an honorary life member of the Lettermen's Association. Huffines serves as a trustee of the Medical School Foundation Board at the University of Texas Southwestern Medical Center and director of the Salesmanship Club of Dallas. He also is a life member and board member of the State Fair of Texas and a life member and past chairman of the Cotton Bowl Athletic Association.

J.L. Huffines

Jim Wilson

Jim P. Wilson of Sugar Land is chairman of the board and CEO of JK Acquisition Corporation, a Houston-based investment firm. He is founder and managing partner of RSTW Partners, a private debt and equity firm. He served as chairman of the board of Supply ONE Holdings, Inc., a specialty packaging and distribution company, until July 2007. Wilson received a bachelor of business administration degree in accounting from Texas A&M University in 1981. He has served on numerous corporate and charitable boards, and currently serves on the boards of directors of Alpha Circuits, Inc. and First Community Bank Fort Bend. At Texas A&M, Wilson serves as a member of the Mays Business School Development Council and as a member of the 12th Man Foundation's board of trustees.

From Field to Fuel Tank: A&M System a Leader in Bioenergy

The first year of the Texas A&M University System's Agriculture and Engineering BioEnergy Alliance has been, well, a real barn burner.

Since July 2006, when the A&M System's two premier research agencies—the Texas Agricultural Experiment Station and the Texas Engineering Experiment Station—formed a strategic alliance to solve important problems in bioenergy research, significant progress has been made to respond to the growing global demands for clean, renewable alternative fuels.

In May, the Texas Legislature appropriated $4 million to fund bioenergy research within the Texas Agricultural Experiment Station (TAES) over the next two years. The research will support the creation of a bio-based economy involving the production, harvest and conversion of Texas-grown feedstocks to ethanol, biodiesel and other liquid fuels.

Chevron Technology Ventures, a division of Chevron USA, Inc., announced this spring that it will partner with the BioEnergy Alliance to accelerate the development and conversion of feedstocks for manufacturing ethanol and other biofuels from cellulose.

The top U.S. Department of Agriculture official for research, Undersecretary Gale Buchanan, toured feedstock development and chemical conversion bioenergy research underway on the Texas A&M campus.

The BioEnergy Alliance also showcased its capabilities to Jorge Lepra, the Uruguayan minister of industry, energy and mining, who visited in June at the invitation of the U.S. Department of Energy. The visit was in response to President Bush's March visit to Uruguay, where he encouraged cooperation between the two countries.

In July, Gov. Rick Perry awarded the A&M System's Bioenergy Alliance a $5 million grant from the state's Emerging Technology Fund (ETF).

Texas A&M chemical engineering professor Mark Holtzapple describes his invention, the StarRotor engine, which is three times more efficient than today's engines.

The grant will be used to promote bioenergy efforts by hiring new, commercially focused faculty to accelerate the path to market for their

see BIOENERGY pg. 4

Welcome to *Quest*

On behalf of The Texas A&M University System, welcome to the first issue of our *Quest* newsletter. We are launching this quarterly newsletter to keep you posted on exciting news from the A&M System's nine universities, seven state agencies and comprehensive health science center.

In this inaugural issue, you'll learn more about activities taking place at our campuses statewide, where we enroll more than 106,000 students. Perhaps you weren't aware that one of every five students in a public senior institution in Texas is enrolled at an A&M System university, and every year we graduate more than 22,000 students. Enrollment and programs at our centers in San Antonio and Killeen are increasing, meaning these centers are well on their way to becoming full-fledged, four-year institutions of higher learning.

As you may know, our state legislators made higher education a top priority during the last legislative session. We greatly appreciate the time and attention lawmakers gave to ensuring fair and equitable resources for the A&M System. We thought you should know how critical these resources are to our efforts to serve the citizens of our state, including our students, faculty and staff.

Engaging in groundbreaking research continues to be an area of key focus across the A&M System and one of my favorite things about being chancellor. Every day I learn about more research leading to breakthroughs in health, energy and related fields that will create a better-educated workforce and more jobs for Texans. A&M System universities and agencies frequently collaborate, and are shepherding many research projects that are shaping the future of our state, nation and world. Read more in this issue about our leadership in the field of bioenergy.

From the time Texas A&M University was established in 1876 as the state's land-grant university, our mission has been to improve lives through teaching, research and service. We hope you enjoy reading *Quest* and share our enthusiasm for spreading the good news about how the A&M System is making our world a better place.

Texas A&M University System Experiences Building Boom

by Amy Halbert
A&M System Communications

Construction is well underway on the new 220,000 square foot, $95-million Interdisciplinary Life Sciences Building at Texas A&M University.

New buildings are cropping up all across the Texas A&M University System, with nearly 60 construction projects totaling almost $1.4 billion underway. Half of those projects belong to Texas A&M University, which has almost $700 million in construction for its campus alone. The new projects are being funded, in part, with tuition revenue bonds (TRBs) and allocations from the Permanent University Fund (PUF).

For the last fiscal year, the System's capital plan was $460 million. In the span of a year, construction projects have more than tripled. Vergel Gay, managing director of Facilities Planning and Construction (FP&C), has reorganized the department to better handle this new challenge.

The northern sector includes West Texas A&M, Tarleton State University, Texas A&M-Commerce, Texas A&M-Texarkana and the campus in Killeen ($260 million in projects). The central area includes Texas A&M and the Bryan-College Station area ($700 million in projects). The south is comprised of Texas A&M International, Texas A&M-Corpus Christi, Texas A&M-Kingsville and the new San Antonio campus ($183 million in projects).

In 2006, the A&M System developed a master plan, which required that all System members submit plans. Gay has hired three program management firms to oversee construction in the northern and southern regions of the state and the Texas A&M Health Science Center. The FP&C staff will oversee many of the College Station projects.

"It is very difficult for one person to do a project anymore. There are so many specialists needed for the design and construction of a building, such as experts in information technology, energy control, acoustical and environmental. More people are needed in addition to architects and engineers," Gay said.

Many technically sophisticated buildings are in various stages of completion throughout the System including:

- Texas A&M-Texarkana
  - · $20-million science and technology building on the new campus at Bringle Lake
- Texas A&M-Commerce
  - · $25.4-million Sam Rayburn Memorial Student Center
- Texas A&M University
  - · $95-million interdisciplinary life sciences building
  - · $66-million physics building
  - · $100-million emerging technologies and economic development interdisciplinary building
- Texas A&M Health Science Center
  - · $130-million campus in west Bryan
- Texas A&M-Kingsville
  - · $12-million recreation sports center
- Texas A&M at Galveston
  - · $50-million science building
- Texas A&M-Corpus Christi
  - · $21-million wellness center

With all the new construction, Gay is quick to point out there is more to a university than bricks and mortar. "To me, there is a spirit to a campus and its buildings and all that goes on and has gone on there for years. We are building a piece of history," he said.

A preliminary draft of the new campus master plan of Texas A&M University-Texarkana at Bringle Lake. Construction has begun on the site's first building, the Science and Technology Building.

To see photos or real-time video of construction projects around the System, visit these web links:

Texas A&M Life Sciences Building
http://ilsb.tamu.edu

West Texas A&M Construction
http://www.wtamu.edu/administrative/ss/hous/newhall.html

Texas A&M-Commerce
www.tamu-commerce.edu/live

Texas A&M-Texarkana
http://www.tamut.edu/news/bringle/index.php

Quest is a publication of
The Texas A&M University System Office of Communications

Editors: Tina Evans and Amy Halbert
Graphic Design: Carolyn Miller
and HSC Communications

Volume 1: Issue 1

November 2007

San Antonio and Killeen Campuses Well on Track

by Tina Evans
A&M System Communications

The A&M System centers currently operating in Killeen and San Antonio are well on their way to becoming stand-alone campuses. This year, the Texas Legislature authorized additional funding to help the centers increase the number of course offerings, students and faculty, and begin creating master plans for the campus layouts.

Students at the growing A&M System center in San Antonio recently transitioned from classes held on the Palo Alto College campus to buildings the A&M System has leased from the South San Antonio ISD (pictured).

San Antonio

The Legislature authorized an additional $6.7 million in funding for the San Antonio center, which is currently operated by Texas A&M University-Kingsville. Most of the new funding will be used for faculty and staff salaries to expand academic programs. The funding brings the total operational support to $10 million from the Legislature for the eventual creation of Texas A&M University-San Antonio.

Since opening in 2000, enrollment at the center has grown to the full-time equivalent of 547 students (spring 2007). "We are going to build a campus that is planned from the very beginning to one day serve 25,000 students," A&M System Chancellor Michael D. McKinney said. "By the time we have 1,500 students, we'll be ready to break ground."

The center in San Antonio currently offers students 15 degree programs and one certification, with plans to add 10 more in 2008.

Until this fall, classes have been held on the Palo Alto College campus. A ribbon-cutting ceremony was held Nov. 7 at the new site for center classes, the former Olivares Elementary. In Dec. 2006, the A&M System entered an agreement with South San Antonio ISD for this space that more than doubles the center's classroom capacity and provides infrastructure for continued growth.

A&M System officials are working with developer Triple L Management and the City of San Antonio to finalize site details for the permanent campus. A 694-acre site owned by Triple L has been identified for the campus that is located south of Loop 410 between Zarzamora and Pleasanton roads. Most of the acreage will be used for the university's main campus, with additional acreage allocated for the A&M System's Irrigation and Technology Center.

Triple L Management also has committed $1 million toward an endowment supporting student scholarships through the recently established Texas A&M University-San Antonio Foundation.

The Texas Legislature authorized the creation of Texas A&M University-San Antonio in 2003, and if enrollment reaches 1,500 full-time equivalent students by Jan. 1, 2010, the Legislature has authorized $40 million in tuition revenue bonds for its development.

Killeen

The Texas Legislature authorized an additional $8.2 million for Tarleton-Central Texas, bringing total operational support from the Legislature up to $10 million. The funding will be used to create a master plan for a permanent, stand-alone university, and to expand existing courses and create new courses.

The center was established in 1999 to provide higher education opportunities for a growing population in the Killeen/Fort Hood area. Currently managed by Tarleton State University in Stephenville, the center is called Tarleton State University-Central Texas, and has a full-time student enrollment equivalent of 876 as of spring 2007. Its nearly 2,000 part- and full-time students include community college graduates, transfer students, working adults, active military service members and their family members, and students returning to higher education to pursue degrees, fulfill career educational requirements or for personal enrichment.

Tarleton-Central Texas currently offers undergraduate degrees in 38 areas of study, with graduate degrees available in 26. The center is working to increase full-time student enrollment to 1,000 to become Texas A&M University-Central Texas, and to 1,500 by January 2010 to become eligible to tap into $25 million in tuition revenue bonds for campus infrastructure.

Federal legislation in 2004 authorized the Secretary of the Army to convey a 662-acre site on Fort Hood to the A&M System on which a permanent campus can be built for the stand-alone Texas A&M University-Central Texas.

The main administration building in Killeen of Tarleton-Central Texas. Most classes are held at Fort Hood, Central Texas College, Temple College and Shoemaker High School in Killeen.

Legislative Highlights

Nearly six months after the close of the 80th Regular Session of the Texas Legislature, Stanton Calvert, the A&M System's vice chancellor for governmental relations, provides a look back at some highlights of the session affecting the System and higher education in general.

The Texas Legislature added approximately $1.4 billion in new funding for higher education for the 2008-09 biennium. This funding encompasses universities, health related institutions, Texas A&M University System agencies and public community colleges, the Texas Higher Education Fund (HEF), the Texas Higher Education Coordinating Board and benefit increases.

The following provides a snapshot of some of the major outcomes of the 80th Regular Session for the A&M System and its members. All data below refer to increases for 2008-09 over the current biennium.

Gov. Perry's Higher Education Initiative

The Legislature approved and funded a major element of Gov. Rick Perry's Higher Education Initiative, a Performance Incentive Fund. This initiative combined several funding items into the Incentive Funding Program; most importantly, $100 million in new incentive funding to be administered by the Texas Higher Education Coordinating Board, in conjunction with the governor's office, was appropriated to improve teaching, educational excellence and student graduation numbers among public universities.

A new Texas Competitive Knowledge Fund (CKF) was developed to support faculty for the purpose of instructional excellence and research. Institutions with at least $50 million in total research expenditures are eligible to participate. The Legislature added $27 million in new funding and redirected $66 million in existing funds to the CKF. This funding includes the continuation of $40 million for Texas A&M University that was previously appropriated for faculty reinvestment.

Universities

With respect to general funding, the Legislature added approximately $117 million to the formulas that support the basic programs and operations of all public universities. Together, A&M System universities received a biennial increase of $53.4 million in formula funding; $34 million of that was earned by Texas A&M. Also, $175 million was added to the HEF; the six A&M System members not eligible to participate in the Permanent University Fund share in the HEF. In addition, $241 million was included to service the debt for new tuition revenue bonds that were approved in spring 2006.

Key institution-specific items include one of the System's top priorities of the session:

Stanton Calvert

continuation of $25 million to support certain programs started under the now completed Office of Civil Rights Priority Plan. In addition, the Legislature added $4 million so that Prairie View A&M University will now qualify for federal matching funds for its agricultural research and extension programs.

Texas A&M International University was provided $2 million in new funding for faculty enhancement. Also, the funding methodology was changed for Texas A&M at Galveston to account for the higher costs of its special purpose marine sciences programs, resulting in an increase in formula funding of approximately $900,000.

System Centers

The Legislature added $6.7 million to support programs, faculty and operation of the Texas A&M-Kingsville System Center-San Antonio and $8.2 million for the Tarleton State University A&M System Center-Central

see LEGISLATIVE pg. 5

BIOENERGY continued from pg. 1

innovative research on the next generation of biofuels.

"We have the scientific expertise in agriculture and engineering to become a national leader in the development of clean, renewable energy through biofuels," said Dr. Mike McKinney, chancellor of the A&M System. "On top of that, we have a vibrant agriculture industry in Texas that can become a top supplier of biomass feedstocks for the nation. We also have a long legacy of partnering with energy companies to develop innovative technologies."

Nationally, biofuels are expected to play an increasing role in reducing U.S. dependence on foreign oil. The U.S. Department of Energy has set a goal for biofuels to supply 30 percent of the nation's transportation needs by the year 2030—a significant increase from an estimated 5 percent currently.

Ethanol is the most widely used biofuel found in gasoline, and it is commonly derived from corn. However, even if the entire U.S. corn crop—accounting for millions of acres — were converted to biofuels, it would replace only 15 percent to 20 percent of current U.S. gasoline consumption.

Clearly, other biomass sources must be tapped, and this is where Texas has an edge.

The next generation of biofuels will likely come from cellulosic conversion technologies; that is, they will come not just from the grain a plant produces, but from the cellulose fibers in its stalk, stem and leaves. Converting an entire plant into biofuel, while still technologically challenging, is considered a much more efficient use of biomass. And Texas has an outstanding candidate for the production of cellulosic biomass with new varieties of 15-foot tall sorghum, the product of decades of research by the Texas Agricultural Experiment Station.

"The development of biofuels from agricultural feedstocks requires a regional approach," said Dr. Elsa Murano, vice chancellor for Texas A&M Agriculture. "These giant sorghums being grown on experimental plots today are drought-tolerant and can be grown across much of the state."

She added that Texas is blessed with a wide variety of biomass choices beyond corn and sorghum grain. These include such diverse commodities as forest products, soybeans, sunflowers, sugarcane and such wastes as crop residues, livestock manure and other forms of cellulosic "trash."

"Cellulosic ethanol, as opposed to sugar- or starch-based ethanol, broadens the choice of feedstock without impacting food supplies," said Rick Zalesky, vice president of biofuels and hydrogen for Chevron Technology Ventures, which is making a four-year commitment to support research initiatives through the A&M System's BioEnergy Alliance.

"Making it commercially viable poses a number of scientific and technical challenges — challenges we know that the faculty, staff and students at one of the world's premier universities in agricultural sciences and engineering are well-equipped to overcome."

"Forming an alliance with Chevron fits well with our research initiatives," said Dr. G. Kemble Bennett, vice chancellor and dean of Texas A&M Engineering. "It allows us to leverage our strengths in biomass and biofuels to transfer new technologies from lab to the public, providing real solutions that are economical, sustainable and environmentally friendly."

For example, Texas A&M engineers are working on innovative conversion processes for a range of biofuels, developing processing safety and risk mitigation techniques, and designing advanced high-efficiency engines that are three times more efficient than today's. In one highly promising approach, called the MixAlco process, engineers are using organisms found in soil to create mixed alcohol fuels from practically anything biodegradable, from garbage to grass, from sewage sludge to animal byproducts.

For Texas to become a national leader in biofuels production, a sustainable Texas-based source of energy feedstocks must be developed as well as technologies that economically convert biomass to biofuels and "green" electricity.

"The U.S. has entered the 'era of the bioeconomy,'" declared Dr. Gale Buchanan, the USDA undersecretary, during his tour of bioenergy research on the Texas A&M campus in May. "This could have the most important impact on agriculture in 150 years," he said. "To fully meet the nation's needs for sustainable resources, we've got to look at all types of feedstock."

Buchanan was accompanied by Texas Commissioner of Agriculture Todd Staples, who was also impressed with the scope and vision of the Texas A&M effort.

"I'm excited about what I've seen (here)," Staples said. "We (Texas) can really capitalize and take advantage of this. For decades we have used what's underground, and now it's a reality to use what's above the ground."

Drought-tolerant tall sorghum has great potential as a source of biomass. Leading A&M System bioenergy initiatives are (left to right): Bill McCutchen, deputy associate director, Texas Agricultural Experiment Station; Kem Bennett, vice chancellor for engineering, Texas A&M System; John Mullet, professor of biochemistry & biophysics, Texas A&M University; Elsa Murano, vice chancellor for agriculture and life sciences, Texas A&M System; and Mark Holtzapple, professor of chemical engineering, Texas A&M University.

What Is Bioenergy?

Bioenergy is derived from biomass—organic matter that includes crops, trees and other forms of plants, and such waste products as cattle manure, sewage sludge and household garbage. Biomass is converted into systems that produce electricity, heat or liquid fuels such as ethanol and biodiesel.

In one sense, bioenergy is not that far removed from energy derived from petroleum. As Texas Agricultural Experiment Station scientist Dr. Michael Gould of Weslaco put it: "Plants are oil, just a million years younger." Texas, long a leader in the petroleum industry, stands poised to jump to the forefront of bioenergy research and production, moving from black gold to green gold.

Recent Appointments

Dr. Frank B. Ashley III joined the A&M System May 15 as vice chancellor for academic affairs. His duties include overseeing the academic program development process for System universities from inception to approval by the Texas Higher Education Coordinating Board. Ashley was previously interim provost and vice president for academic and student affairs at Texas A&M University-Commerce. For 18 years, he served in various positions at Texas A&M University in College Station, including interim assistant provost for enrollment (2002-04), director of admissions (2000-03), and associate dean for undergraduate studies and teacher education in the College of Education (1996-00).

Frank Ashley

Dr. M. Gayne Fearneyhough was named interim director on July 27 of the Texas Veterinary Medical Diagnostic Laboratory (TVMDL), an A&M System state agency. The lab is one of the world's largest and busiest, with some 192,000 requests per year resulting in 1.9 million individual tests. Since 2002, Fearneyhough has headed the lab's diagnostic services, informatics and testing for BSE (bovine spongiform encephalopathy). He is a longtime veterinarian, and from 1993-00 served as program director of the Oral Rabies Vaccination Program for the Texas Department of Health.

Gayne Fearneyhough

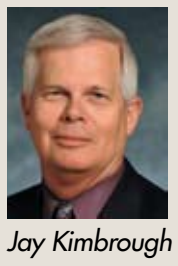
Mike Huddleston was named associate vice chancellor in the A&M System's Office of Academic Affairs and Office of Technology Commercialization on Oct. 1. His responsibilities include research, commercialization and graduate affairs. Huddleston previously was the assistant vice president for business development at Texas A&M University, where he helped establish the university's branch campus in Doha, Qatar. During his 20-year tenure, he has held positions within the A&M System and the Texas A&M Research Foundation. Huddleston earned his master's and Ph.D. from Texas A&M University.

Mike Huddleston

Dr. Mark Hussey was named director of the Texas Agricultural Experiment Station (TAES) on July 27. The 1,600-employee A&M System state agency is dedicated to research and technology development in food, agriculture and natural resources. Hussey was previously the agency's associate director of programs with oversight of developing agency objectives, progress and unit- and commodity-specific strategic plans. He is a professor and former head of the Department of Soil and Crop Sciences at Texas A&M University.

Mark Hussey

Jay T. Kimbrough was named deputy chancellor of the A&M System on May 25. Previously deputy general counsel, Kimbrough also serves as the System's general counsel. His leadership and strategic direction on multiple levels includes working to establish and implement system-wide initiatives and oversight of policy implementation and compliance, general counsel, human resources (including equal opportunity), real estate, aircraft, training and special projects. Kimbrough's experience includes serving both the public and private sectors in managing a variety of administrative and legal issues and in counseling agencies and public officials.



Jay Kimbrough

Dr. Lee Peddicord was named director on July 27 of the Texas Engineering Experiment Station (TEES). The A&M System state agency is a partnership of institutions, industries and communities working to strengthen engineering research and development across the state. Peddicord also is leading the development and implementation of a new Nuclear Power Institute. He most recently served as the vice chancellor for research and federal relations for the A&M System. He formerly headed the Department of Nuclear Engineering at Texas A&M University, where he is a longtime professor.

Lee Peddicord

Dr. George Chiou of the Texas A&M Health Science Center College of Medicine has been awarded $1.7 million to support MacuClear, a company he founded last year as part of his extensive research into therapeutic drugs for age-related macular degeneration.

Chiou, MacuClear Receive $1.7 Million in Funding

By Summer Morgan
Texas A&M Health Science Center
College of Medicine

Dr. George C.Y. Chiou of the Texas A&M Health Science Center College of Medicine, was recently awarded $1.7 million to support MacuClear, a company he founded last year.

MacuClear, born from Dr. Chiou's extensive research into therapeutic drugs for age-related macular degeneration (AMD), is the first company to receive a joint investment from the College of Medicine and The Texas A&M University System.

As founding editor of the *Journal of Ocular Pharmacology* and director of the Institute of Ocular Pharmacology, Chiou, professor of neuroscience and experimental therapeutics, worked with the Texas A&M System Office of Technology Commercialization to create MacuClear in August 2006. After six months of fundraising, MacuClear secured $1.7 million from private investors.

The funds will finance formulation of his AMD eye drops, which will be tested and submitted as an Investigative New Drug Application to the Food and Drug Administration. Once the drugs pass FDA regulations, MacuClear can proceed with clinical trials.

"Our next step is to find a partner who can help us bring our product to the market," Chiou said. "This is a very expensive process, so we'll be working with the pharmaceutical industry to make it happen."

AMD, which gradually destroys sharp, central vision, is the most common cause of vision loss in people over age 65. This progressive disease prevents seeing objects clearly and for routine tasks like reading and driving.

"Patients with AMD lose their central vision, and only the peripheral vision remains," Chiou said. "This is terrible because they cannot read or drive with central vision loss. Currently, approximately 7.5 million people in the United States alone have AMD, and as the Baby Boomers get older, there will be many more."

AMD has two forms—wet and dry. Currently, there is no cure or treatment for dry AMD. A fraction of cases of wet AMD can be treated with laser surgery, photodynamic therapy and/or vascular endothelial growth factor (VEGF) inhibitors. These treatments are expensive, invasive and, unfortunately, only slow vision loss but do not restore central vision.

However, Chiou's research has resulted in a breakthrough for those with AMD. The eye drops he has formulated will increase choroidal blood flow in the eye, effectively preventing and reversing damage associated with AMD progression.

"Right now, just one treatment for wet AMD costs around $3,000 per session, and patients have to get treated three to four times a year," Chiou said. "With our eye drops, we are predicting the cost will be somewhere around $100 a month. Not only will the treatments be much cheaper but they also will stop the progression of the disease so patients can still read, drive and live normal lives."

What is Macular Degeneration?

Age-related macular degeneration (AMD) has two forms—wet and dry. Dry AMD occurs when light-sensitive cells in the macula slowly deteriorate, blurring central vision in the affected eye. The most common symptom is slightly blurred vision, and while it usually affects both eyes, vision can be lost in one while the other seems unaffected.

Dry AMD has three stages—early, intermediate and advanced. It is much more common than the wet form, and all people who have the wet form experience the dry form first.

In wet, or "advanced," AMD, abnormal blood vessels behind the retina grow under the macula, often leaking blood and fluid. This raises and rapidly damages the macula, causing loss of central vision. An early symptom is when straight lines begin appearing wavy.

LEGISLATIVE continued from pg. 3

Texas, bringing total operational support funding for each system center to $10 million. Subject to meeting enrollment requirements, the Legislature also added $5.6 million in FY 2009 only to service debt for tuition revenue bonds that will allow campus construction to begin. Subject to meeting full-time student enrollment requirements by January 2010, the centers will be eligible to become Texas A&M University-San Antonio and Texas A&M University-Central Texas.

Research and Service Agencies

The agencies received an $8.9 million increase in base funding. Included in this increase is $6.6 million in General Revenue Funds to adopt formula funding for operation and maintenance of the agencies' facilities inside Brazos County.

The Legislature funded $6.85 million in new special items for the agencies in the Article III Special Provisions, including $4 million for the Texas Agricultural Experiment Station's Biological Energy Alliance and $850,000 for its Feedyard Beef Cattle Production, as well as $2 million for the Veterinary Medical Diagnostic Lab's Biosafety Lab in Amarillo.

Health Related Institutions

The Legislature provided a total increase of $87.2 million for the formulas that support the basic programs and operations of all health related institutions.

The Texas A&M Health Science Center received $12.5 million to fund the Irma Rangel School of Pharmacy. In fulfillment of one of the major objectives of the session, the Texas A&M Health Science Center was appropriated $33 million to expand its medical college class size at its anchor Scott & White Temple campus, now to include campuses in College Station and Round Rock/Williamson County.

Student Financial Aid

Another of the governor's major proposals was to increase funding for student financial aid. The Legislature added $140 million in new funds including $93 million for TEXAS grants, $37 million for B-on-Time, $5 million for Texas Educational Opportunity Grants and $5 million for Texas College Work Study. The $211.7 million Tuition Equalization Grant Program for financially needy students in independent universities was merged into the Student Aid Strategy.

Although not every institution received all it requested, the Legislature and governor treated the A&M System and its members fairly and well. Now it is our challenge to use this funding to achieve improved efficiency and excellence in teaching, research and service for our students and the citizens and economy of Texas.

Congestion in 2005, such as on this Houston freeway, caused the average peak-period traveler to spend an extra 38 hours of travel time and consume an additional 26 gallons of fuel, amounting to a cost of $710 per traveler.

Texas Transportation Institute's Annual Study Shows Traffic Congestion Worsening

By Richard Cole
Texas Transportation Institute

Traffic congestion continues to worsen in American cities of all sizes, creating a $78 billion annual drain on the U.S. economy in the form of 4.2 billion lost hours and 2.9 billion gallons of wasted fuel — that's 105 million weeks of vacation and 58 fully-loaded supertankers.

These are among the key findings of the Texas Transportation Institute's *2007 Urban Mobility Report*. Improvements to the methodology used to measure congestion nationwide have produced the most detailed picture yet of a problem that is growing worse in all 437 of the nation's urban areas. The current report is based on 2005 figures, the most recent year for which complete data was available.

"There is no 'magic' technology or solution on the horizon because there is no single cause of congestion," noted study co-author Tim Lomax, a research engineer at TTI. "The good news is that there are multiple strategies involving traffic operations and public transit available right now that, if applied together, can lessen this problem."

The 2007 mobility report notes that congestion causes the average peak-period traveler to spend an extra 38 hours of travel time and consume an additional 26 gallons of fuel, amounting to a cost of $710 per traveler. Along with expanding the estimates of the effect of congestion to all 437 U.S. urban areas, the study provides detailed information for 85 specific urban areas. The report also focuses on the problems presented by "irregular events" — crashes, stalled vehicles, work zones, weather problems and special events — that cause unreliable travel times and contribute significantly to the overall congestion problem. Worsening congestion, the study notes, is reflected in several ways: trips take longer; congestion affects more of the day, weekend travel and rural areas, and more personal trips and freight shipments; and trip travel times increasingly are unreliable.

Researchers spent two years revising the methodology using additional sources of traffic information, providing more — and higher quality — data on which to base the current study.

The report identifies multiple solutions to the congestion problem that, researchers say, must be used together to be effective. These range from adding road and transit system capacity in critical corridors to changing usage patterns.

"Congestion is a far more complex problem than is apparent at first glance," Lomax said. "The better the data we use to define the problem, the more successful we will be in addressing its root causes."

A Closer Look at Contracts and Grants

Focus: College of Education and Human Development, Texas A&M University

The following contracts and grants were funded by external sources during fiscal year 2006 for projects in Texas A&M University's College of Education and Human Development. These are just a few highlights of the many research projects taking place in the college and across the entire A&M System. The projects are listed by name of principal investigator, department, project name, funding source (if external), amount and duration.

Michael Benz
Department of Educational Psychology
Texas A&M University Center on Excellence in Developmental Disabilities
Department of Health and Human Services – Administration for Children & Families
$2.2 million over five years

Susan Bloomfield (and co-PI Harry Hogan, *Department of Mechanical Engineering*)
Department of Health and Kinesiology
Increasing the Efficiency of Exercise Countermeasures for Bone Loss
Baylor College of Medicine
$1.8 million over four years

Linda Castillo
Department of Educational Psychology
Gulf Coast Gear Up Partnership Project
U.S. Department of Education
$1.3 million over five years

Dominique Chlup
Department of Educational Administration and Human Resource Development
Texas Adult Literacy Clearinghouse
Texas Education Agency
$1 million in 2006

Jon Denton
Department of Teaching, Learning and Culture
An Online Alternative Certification Program at Texas A&M University
U.S. Department of Education
$1.8 million over five years

Cathy Ezrailson and Dennie Smith
Department of Teaching, Learning and Culture
Math TEKS Awareness Professional Development Project
Texas A&M University System
$4.7 million in 2006

B. Lee Green, Jeffrey Guidry and Ranjita Misra
Department of Health and Kinesiology
Texas A&M University/Prairie View A&M University Collaboration: Reducing Health Disparities
National Institutes of Health
$1.2 million over three years

Jan Hughes
Department of Educational Psychology
Project Achieve-The Impact of Grade Retention: A Developmental Approach
National Institutes of Health
$2.7 million over five years

James Kracht (and co-PI Larry Johnson, *Department of Veterinary Anatomy*)
College of Education and Human Development Dean's Office and Department of Teaching, Learning and Culture
Integrating Environmental Health Science in Rural Schools
National Institutes of Health
$1.5 million over seven years

Rafael Lara-Alecio
Department of Educational Psychology
Project ELLA (English Language/Literacy Acquisition)
U.S. Department of Education
$6.8 million over five years

John Lawler (and co-PI Markus Horning, Texas A&M University at Galveston)
Department of Health and Kinesiology
Collaborative Research: Aging in Weddell Seals: Proximate Mechanisms of Age-Related Changes in Adaptations to Breath Hold Hunting in an Extreme Environment
National Science Foundation
$449,358 over four years

Patricia Lynch, Linda Parrish and Laura Stough
Department of Educational Psychology
Master's Training Program for Special Educators and Transition Specialists of Students with Low-Incidence Disabilities
U.S. Department of Education
$1.5 million over five years

James McNamara and Carol Stuessy
Departments of Educational Psychology and Teaching, Learning and Culture, respectively
Policy Research Initiative in Science Education to Improve Teaching and Learning in High School Science
National Science Foundation
$2.5 million over five years

Doug Palmer
College of Education and Human Development Dean's Office
School Training and Support in Qatar
Supreme Education Council
$8.8 million over four years

Susan Pedersen and Carol Stuessy (and co-PI Eric Simanek, *Department of Chemistry*)
Departments of Educational Psychology and of Teaching, Learning and Culture, respectively
Track 1, GK 12: Building Understanding through Research Partnerships and IT
National Science Foundation
$1.9 million over three years

William Rupley and Deborah Simmons
Departments of Teaching, Learning and Culture and of Educational Psychology, respectively
Enhancing the Quality of Expository Text Instruction and Comprehension through Content and Case-Situated Professional Development
U.S. Department of Education
$1.5 million over three years

Texas A&M University-Kingsville Awarded $5 Million National Science Foundation Grant

Dr. Jianhong "Jennifer" Ren, assistant professor of environmental engineering, studies the movement of contaminants down rivers and streams in Texas A&M-Kingsville's water lab.

by Jason Marton
Texas A&M University-Kingsville

An environmental research center based in the Frank H. Dotterweich College of Engineering at Texas A&M University-Kingsville has garnered its second five-year, $5 million grant from the National Science Foundation's Centers of Research Excellence in Science and Technology (CREST) program.

A&M-Kingsville's Center of Research Excellence in Science and Technology-Research on Environmental Sustainability of Semi-Arid Coastal Areas (CREST-RESSACA) was one of only two established CREST programs in the nation to receive a $5 million renewal grant this year. The other is based at the University of Puerto Rico in Rio Piedras.

The A&M-Kingsville center was founded with the first $5 million grant in 2002. The CREST program helps minority-serving institutions enhance their research abilities. The program addresses the significant underrepresentation of minorities in science, technology, engineering and mathematics. A&M-Kingsville is classified as a Hispanic-serving institution, which is defined as a college or university with Hispanic enrollment of at least 25 percent; A&M-Kingsville's Hispanic enrollment is more than 60 percent.

A&M-Kingsville's CREST is the only one in the nation that focuses on maintaining natural resources in semi-arid coastal areas. Its work is carried out by a group of A&M-Kingsville faculty from the environmental engineering department, other engineering departments and faculty from other disciplines, such as physics and geosciences. Dr. Kuruvilla John, associate dean of the College of Engineering, is the director of the center.

"I was very excited when we got the news," John said. "In particular, I was excited for the students, the faculty and the staff who have been an integral part of CREST-RESSACA success. The continued funding acknowledges that the NSF recognizes our success at meeting our development goals."

The new grant furthers the center's efforts to be self-sustaining, John added. "We will build on the success we've had in the first five years to become a world-class entity that can sustain itself beyond the grant funding," he said. "In the next five years, we want CREST-RESSACA to be the first name people think of when it comes to research on environmental sustainability of semi-arid coastal areas."

Texas Institute for Preclinical Studies (TIPS) Established at Texas A&M

by Tina Evans
A&M System Communications

The new Texas Institute for Preclinical Studies (TIPS) at Texas A&M University was formally established May 25 by the A&M System Board of Regents.

The institute will help set the stage for Texas to expand its leadership role in biotech innovation. Along with companion activities at Texas A&M, including the Texas Institute for Genomic Medicine, currently under construction, TIPS is poised to elevate the A&M System's position as a major player in research and discovery leading to the commercialization of new technologies, products and start-up companies.

The institute will train veterinarians, physicians, scientists, technicians and engineers to meet the needs of Texas' biomedical industry, and it will serve as a key resource for training undergraduate and graduate students, and academic and industry personnel in regulatory issues.

"This institute is uniquely positioned to perform preclinical development and testing of drugs and devices leading to human clinical trials," said A&M System Chancellor Michael D. McKinney. "Faculty and students in the Texas A&M Health Science Center and Texas A&M's College of Veterinary Medicine and Biomedical Sciences, Dwight Look College of Engineering and Mays Business School will develop partnerships with major medical centers throughout the world to provide research and support services complementing institute activity."

By developing and creating new intellectual property, the institute will help new discoveries, particularly medical devices and therapies, move more quickly from concept to the marketplace to treat and prevent disease.

TIPS director is Theresa W. Fossum, D.V.M., a professor of surgery and holder of the Tom and Joan Read Chair in Veterinary Surgery at Texas A&M University's College of Veterinary Medicine and Biomedical Sciences. An internationally recognized veterinary surgeon and prominent leader in the field of heart research, Fossum also is the director for cardiothoracic surgery and biomedical devices in the Michael E. DeBakey Institute at Texas A&M.

Theresa Fossum

TIPS is supported with funding from a variety of sources, including $40 million in Permanent University Fund (PUF) bonding authority for its construction. In July, Gov. Rick Perry awarded a $6 million grant from the state's Emerging Technology Fund to support TIPS. Another $2.5 million has been committed for TIPS by the Research Valley Partnership. The 112,000-square-foot TIPS facility will be located in Texas A&M's Research Park. Construction is slated for completion in spring 2009.

News Briefs

Texas A&M University-Commerce scientists and students are developing a device that would detect bacteria and fungus under light emitting diode lights using fluorescence, in research funded by a grant from NASA and Texas A&M Engineering's Space Engineering Institute. The instrument would enable astronauts to obtain more accurate and complete information while in orbit, resulting in fewer contaminated stocks and reducing the need for ground-based analysis of microbiological samples.

Researchers with the **Texas Transportation Institute** have found that Texas teenagers taught to drive by someone other than professional driver education instructors are more likely to be involved in serious traffic crashes. In fact, the study found that parent-taught drivers are nearly three times more likely to be involved in a fatal crash than are young drivers taught by commercial or public school driving instructors. The study, conducted for the National Highway Traffic Safety Administration, analyzed 1.4 million driver records, a mail survey of young drivers and nine focus groups of teen drivers, their parents and driver education instructors.

Texas Engineering Extension Service (TEEX) has completed its annual summer fire schools, training more than 3,000 American and international firefighters. The three fire schools took place at Brayton Fire Training Field near Texas A&M University, which is the world's largest, live-fire fueled training facility.

Texas A&M University-Corpus Christi's "Students Today … NASA Tomorrow" team presented interactive lesson plans developed for students in grades 4-8 at the NASA Means Business student competition at the Kennedy Space Center. The program provides teachers with lesson plans, lesson agenda downloads and videos on science and technology for use in the classroom.

Guy Loneragan, assistant professor of animal science and epidemiologist at **West Texas A&M University**, has been named co-investigator of a project being funded by the USDA-Cooperative State Research, Education, and Extension Service that will focus on training feedlot personnel in methods to further reduce the likelihood that cattle carry bacterial pathogens. Funding for the two-year, multi-university project is almost $600,000, with West Texas A&M's share approximately $130,000.

Saddling Up With Tarleton's Therapeutic Riding Program

TREAT gives people with special needs the opportunity to challenge themselves physically and emotionally.

Photo by Chandra L. Orr

by Chandra L. Orr
Tarleton State University

The young boy ran toward the door with a wide grin and excitement shining from his eyes. Aaron O'Neill was on a mission—he wanted to be the first in line. Aaron was racing through the doors of the equine barn at Tarleton State University for his turn to ride a horse.

Aaron is a participant in the Tarleton Equine Assisted Therapy (TREAT), a therapeutic riding program that gives people with special needs and varying ability levels the chance to set goals to improve their quality of life via the horse.

"This program has been such a blessing to our family," said Glenda Bragg, Aaron's grandmother. "Aaron has bipolar disorder, ADHD (attention deficit hyperactivity disorder) and also has panic disorder. Riding a horse teaches him how to stay focused and to learn what he can and can't control."

Tarleton's program is premier

The North American Riding for the Handicapped Association (NARHA) was formed in the 1970s to provide oversight for therapeutic riding programs. Of the 43 therapeutic riding programs in Texas, TREAT is one of 16 considered by NARHA to be a Premier Accredited Center. TREAT coordinator David Snyder is a Tarleton professor of animal science.

The primary objective of the related classes at Tarleton is to train college students to work with people who have special needs and do it using horses. Each semester, approximately 15 students are enrolled in the basic course and an additional 50 students gain field experience in special education, adaptive physical education and nursing courses. Between 35 and 40 riders participate each semester.

Equine-assisted activities are an effective treatment for many people with special needs, such as bipolar disorder, autism, cerebral palsy, head injuries, stroke, emotional disturbances, developmental delay, spina bifida, muscular dystrophy, visual impairment, Down syndrome, multiple sclerosis, spinal cord injuries, amputations, attention deficit disorders and deafness.

Sixteen horses have been donated for use in the TREAT program. "The average age of our horses is 20," Snyder said. "Older horses tend to be calmer and more suited to our program. But even after we accept a horse donation, it can take up to a year of training before we place a rider on the horse."

TREAT also organizes a children's rodeo and participates in the Month of Military Childhood Festival at Fort Hood. TREAT is funded by Tarleton and Stephenville individuals, organizations and businesses, including Dr Pepper, HEB, Wal-Mart and Dodge trucks.

Quest
The Texas A&M University System
200 Technology Way
College Station, TX 77845