



College of Engineering Today

October 2006 Edition

WELCOME TO THE COLLEGE OF ENGINEERING E-NEWSLETTER!

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NEWS

The College of Engineering has formed an ad hoc committee to review the **first year experience** of its students. The committee members are charged to review the experience of the engineering, computer science, and undecided majors during their first year and suggest changes that can be made to the curriculum, student services, and supplemental programming that could improve student academic success, satisfaction with the college, and retention in these majors. The committee members will provide preliminary recommendations to the COE Executive Committee by May 2007, with the intention of implementation by the fall 2008 semester. Committee members are: Walt Oler, chair (mechanical), Per Anderson (computer science), Dave Ernst (engineering technology), Tanja Karp (electrical and computer), John Kobza (industrial), Jeremy Leggoe (chemical), Ken Rainwater (civil and environmental), Jeff Woldstad (dean's office), and Margret Ziaja (petroleum).

On September 29, President George W. Bush signed the Department of Defense Appropriations Act, 2007. This bill provides three appropriations that will greatly affect the College of Engineering. The **NanoTech Center** will receive \$1 million for its research in applied nanophotonics - the use of new behavior of materials at the nanoscale to generate and manipulate light. This new program builds on the current expertise of the TTU NanoTech Center in optical devices, microelectronics, and micro-electro-mechanical systems (MEMS). The TTU **Great Plains Wind Power Test Facility** will receive \$1.5 million to support existing wind research initiatives as well as give Texans access to more alternative energy sources. The wind test facility will build on the significant measurement and analysis capabilities of TTU and continue to serve as a national resource for the testing and analysis of grid-connected wind turbines. The **Center for Pulsed Power and Power Electronics** will receive \$1 million to strengthen the center's infrastructure and explore ways to defeat improvised explosive devices.



Williams

The College of Engineering hosted a two-day **Summit on Energy Sustainability** September 13-14. It addressed technical and scientific challenges and opportunities facing the region's energy industry including nuclear, coal, wind, and biofuels, as well as policy and economic development matters. Texas Railroad Commissioner Michael Williams put it succinctly, "This is not your grandfather's energy business." As growing world demand strains traditional oil and gas supplies, resources such as wind, sunlight, food crops, and coal have gained new notoriety as energy alternatives. Dr. Dan Arvizu, director of the National Renewable Energy Laboratory, highlighted the hard truth that the U.S. has 5 percent of the world population and consumes 25 percent of the world's energy. To access a sampling of the presentations, visit the Web site: www.depts.ttu.edu/coe/energysummit.

The **BioEnergy Texas** Conference 2006 will be held October 24-26 at the United Spirit Arena on the TTU campus. The conference, hosted by the Lubbock Economic Development Alliance, will provide a forum for the exchange of ideas and information about renewable energy, with an emphasis on policy and finance. Dean Pamela Eibeck serves on the conference coordinating committee. www.bioenergytexas.org

The college received the results of its recent accreditation visit by the **Accreditation Board for Engineering and Technology** (ABET, Inc.). The results are very positive. ABET accredited the following programs to September 2012: chemical, civil, computer, electrical, environmental, and petroleum engineering. After submitting an interim report in summer 2007, the mechanical and industrial engineering as well as the construction engineering technology, electrical engineering technology, and mechanical engineering technology programs should receive their accreditation to 2012 as well.

ABET is the recognized U.S. accreditor of college and university programs in applied science, computing, engineering, and technology.

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FACULTY AWARDS



Dan Cooke, computer science professor, is serving as the program committee chair for the 2007 Conference on Software Engineering and Knowledge Engineering to be held in Boston next summer.



Alexander Idesman, assistant professor mechanical engineering, was selected as a Faculty Fellow for the 2006 Air Force Summer Faculty Fellowship Program at Eglin Air Force Base in Florida. The title of his proposal and research for the Continuum Mechanics program is "Advanced Computer Modeling of Elastodynamics Problems."

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DONATIONS

A donor who wishes to remain anonymous donated \$2 million to establish an endowment for College of Engineering graduate student **fellowships**. The **fellowships** are for entering engineering master of science students.

Burlington Northern Santa Fe Railway (BNSF) has announced a four-year, \$750,000 scholarship fund to support senior TTU engineering majors who have worked as interns for the company. The gift will provide scholarships of \$12,500 to 15 seniors in the College of Engineering, targeting especially first generation and low-income students. Students must work as interns for the company the summer of their junior year to be eligible for the support. BNSF representatives will demonstrate their locomotive simulator at the Mechanical Engineering building on October 6 from 10:00 a.m. to 2:00 p.m.

Yahoo! recently announced that it will donate \$250,000 to the TTU Center for Engineering Outreach over the next two years. The donation, which will fund K-12 outreach activities, is made in honor of Edward E. Whitacre Jr. ('64 industrial engineering), chairman of the board and chief executive officer of AT&T.

The College of Engineering was the recipient of \$70,000 from companies who participated in the October 3-5 Job Fair for scholarships and to support student organizations. They include **Chevron Phillips Chemical, Fluor, Dow Chemical, and Exxon Mobil**. John Barkley, facility engineer for **Chevron's** Midland plant, presented a \$75,000 check to support the College of Engineering scholarship program as well as to support student organizations including student chapters of professional associations, *Tau Beta Pi*, and the Engineering Ambassadors.

Texas Instruments, Inc. donated \$186,000 to support the Advanced Electronics System Engineering Development program and \$160,000 to support the Program for Semiconductor Product Engineering, in the form of student scholarships and other support.

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GRANTS AND CONTRACTS



Karlene Hoo, chemical engineering professor, received a National Science Foundation grant for the proposal "Partnership of Women in Engineering, Research, and Science - PoWERS." She shares this award with co-PIs Caryl Heintz (arts and science; biology) and Charlotte Dunham (sociology).



Bill Lawson, civil and environmental assistant professor, received a National Science Foundation grant to study "Ethics Instruction for International Graduate Students in Engineering."

Hamed Sari-Sarraf, electrical and computer science engineering associate professor, is the recipient of a National Library of Medicine grant for the "Development of a Shape Segmentation System."

Faculty from the **Center for Multidisciplinary Research in Transportation** (Hongchao Liu, David Thompson, John McEnery, Priyanth Jayawickrama, Andrew Budek, Jimmy Smith, Chris Letchford, Audra Morse, Bill Lawson, Sergey Smirnov) received funding totaling \$739,000 from the Texas Department of Transportation for several projects.

The **Computer Vision and Image Analysis Laboratory** (CVIAL) has acquired two high resolution imaging systems worth \$300,000 from Kestrel Corporation in Albuquerque, NM. The CVIAL research team is developing advanced image analysis methodologies to be used with this equipment to make these devices generate superior quality, automated, and three-dimensional color representation of structures in the acquired images in a cost-effective way for diverse applications.

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STUDENT ACCOMPLISHMENTS



Jason Kincaid, SPE Student Chapter President

In late September, 50 petroleum engineering students attended the annual technical conference and exhibition of the Society of Petroleum Engineers (SPE) in San Antonio. At that meeting, the TTU chapter once again won the Outstanding International SPE Student Chapter designation. Congratulations to students and faculty!

www.dailytoreador.com/home/index.cfm?event=displayArticle&uStory_id=e6dfd9b-a57b-44ba-9ee1-0cb5bbef07fc

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ALUMNI RECOGNITION



Samuel H. Huang ('95 PhD industrial), associate professor of industrial engineering at the University of Cincinnati, received the 2005 Robert A. Dougherty Outstanding Young Manufacturing Engineer award from the Society of Manufacturing Engineers. One of only 10 recipients worldwide, Dr. Huang was recognized for his contribution to manufacturing research and education.

C. Clayton Yeager ('64 bachelor's; '65 master's civil) retired as president of Parkhill, Smith and Cooper, Inc. on October 1 after 41 years of dedication to the engineering profession. He has been president of PS&C for 20 years, and

during his tenure the firm grew to become the 30th largest design firm in Texas.

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EVENTS OF INTEREST

Chemical Engineering Seminar Series: Dr. Michael Deem from Rice University spoke on "Quantifying Influenza Vaccine Efficacy and Antigenic Distance," on September 15. Dr. Bob Nerem from Georgia Institute of Technology addressed "The Vascular Endothelial Cell: From Basic Research to Vascular Implants," on September 22. Dr. Doug Clark from the University of California, Berkeley spoke on "Organic-Soluble Proteins (and Other Extreme Applications): Biocatalyst Engineering Enters a New Phase" on September 29.

Civil and Environmental Engineering (CEE) hosted Dr. Alan Jeary from the University of Western Sydney (Australia) as he presented two seminars on September 12 and 13. The first, "Structural Integrity Assessment of Structures," was presented to students and faculty of CEE. The second, "The Implications of Field Data for the Development of Wind Engineering," was presented to students and faculty of the Wind Science and Engineering Research Center at Reese Technology Center.

Mechanical Engineering invited Dr. George Talia from Wichita State University to address faculty and students on "High Rotational Speed-Friction Stir Welding (HRS-FSW) and Non-Rotating Shoulder Tool Technology," on September 29. He reported on the promise of present findings to provide fundamental improvements needed in the FSW process in order to achieve high welding speeds, welding versatility, reduction of the process loads, and small, low-cost machines.

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PUBLISHED



"Emerging Research Fronts," an article co-authored by **Valery Levitas**, mechanical engineering professor, has been identified by *Essential Science Indicators* as one of the most cited papers in the research area of rate-independent phase transformations.

www.esi-topics.com/erf/2006/august06-Mielke_Theil_Levitas.html



Using the "world's smallest controlled heat source" - a tiny atomic-force microscope cantilever - scientists from TTU and Georgia Institute of Technology have developed a new way to study explosives that have nanometer-scale features. "We have shown that we can control the morphology of energetic materials on the nanoscale, and also measure nanoscale properties of these materials," said **Brandon Weeks**, an assistant professor in the department of Chemical Engineering, as quoted on the American Vacuum Society Web site:

www.av.s.org. Dubbed "nanodectonics," the research was described in the August 29 online issue of the American Chemical Society journal, *Nano Letters*,

pubs.acs.org/NanoLett/.

The Characterization/Reliability/Material and Surface Science category of the Sandia Design Competition, won by the leadership of **Tim Dallas**, electrical engineering associate professor, and student **Jay Friend**, was featured in the Summer 2006 issue of Sandia National Laboratories magazine, *Sandia Technology*. "The Sandia Design Competition is the centerpiece of our MEMS curriculum. We believe the educational benefits are excellent," said Dallas.

www.sandia.gov/news/publications/technology/

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CALENDAR OF EVENTS

- October 28: FE Exam
- October 28: Engineering Donor Breakfast
 - United Spirit Arena, Lubbock

- November 3: University Distinguished Alumnus - Dain Hancock
 - www.texastechalumni.org/olc/pub/TTAA/
- November 11: South Plains Math and Science Competition
 - www.engineeringoutreach.ttu.edu/spmsc/

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IS YOUR NEWS LISTED HERE?

If not, submit it through your department's editor:

Civil and Environmental	Andrews, Glenna
Petroleum	Blackmon, Joan
Computer Science	Digby, Mysti
Mechanical	Hernandez, Carmen
Chemical	Hudson, Jan
Engineering Technology	McMurray, Jodi
Electrical and Computer	Willingham, Sandi
Industrial	Wilson, Terry

The COE e-newsletter will be posted online on the first week of the month. News submission deadline is the 28th of the month for inclusion in the following month's e-newsletter.

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