



College of Engineering Today

April 2007 Edition

WELCOME TO THE COLLEGE OF ENGINEERING E-NEWSLETTER!

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NEWS

The 2007 **Distinguished Engineers** were honored on March 30. **David H. Barr**, group president of drilling and evaluation for Baker Hughes; Dr. **G. Kemble "Kem" Bennett**, vice chancellor of the Texas A&M University System and dean of its Dwight Look College of Engineering; **William "Will" B. Hagood**, senior vice president of HDR Engineering, Inc.; and **Harold R. Inman**, retired president and general manager of Mobil Exploration Norway, Inc. This was the 41st annual recognition of alumni who have made significant contributions in their specialized engineering fields.

<http://www.depts.ttu.edu/communications/news/stories/07-03-engineering-alumni.php>



Left to right:
David Barr ('71 BSME); **Will Hagood** ('69 BSCE); **Harold Inman** ('50 BSPE); **Kem Bennett** ('70 PhD IE)

During the ceremony, Dr. Gary B. Wood, 1983 Distinguished Engineer, led a tribute to the former dean of the College of Engineering, Dr. **John R. Bradford**, who passed away in January. It was an honor to have Dr. Bradford's wife Betty in attendance along with daughters Penny and Heather. "Dr. Bradford helped shape the definition of academic excellence at TTU, and was a 'bold dreamer' for the college, its students, and faculty," said Provost William Marcy.



Left to right:
Chancellor Kent Hance,
ConocoPhillips Executive Vice President Philip Frederickson,
President Jon Whitmore

On March 30, **ConocoPhillips** representatives presented a \$400,000 gift to Texas Tech for student and program support for the College of Engineering, the President's office, the Rawls College of Business, the Career Center, and initial funding of the ConocoPhillips SPIRIT scholars program. SPIRIT is an acronym for Safety, People, Integrity, Responsibility, Innovation, and Teamwork. The SPIRIT scholarship is for students majoring in engineering, geosciences, and business administration. Its primary objective is to prepare students for success in the modern business world by providing them with leadership and public service opportunities throughout their college career. ConocoPhillips is initiating the SPIRIT scholars program at Texas Tech and Kansas State this year, making a total of eight universities. Texas Tech is honored to be one of the universities included in the ConocoPhillips SPIRIT scholars program.

<http://www.texastech.edu/development/news/ConocoPhillips.php>

Dr. **Randy Burkett** has been named chair of the Engineering Technology department effective June 1. He has his BS, MS, and PhD in civil engineering from Lamar University, Texas A&M, and the University of Texas, Austin, respectively. Burkett joined the Engineering Technology department in 1993; he joined the graduate faculty of the Civil Engineering department in 1994, and has served as the construction engineering technology coordinator for 13 years. Burkett replaces **Dr. Larry Masten** who is retiring on May 30. Dr. Masten contributed most of his professional life to TTU. His years of service to the College of Engineering and TTU are greatly appreciated, and we wish him well in retirement.



Burkett

The Texas Tech student chapter of the American Institute of Chemical Engineers hosted the 2007 Southwest Regional Student Conference in late March. Over 100 students from the region attended along with 50 alumni and corporate participants. The TTU team won the Chem-E-Car competition; seniors **Alisha Bloodworth** won the paper competition with **Christopher Seman** placing second. They will compete at the national level this fall.

TTU's College of Engineering has the seventh highest number of **doctoral degrees** awarded to women in the nation, according to *Prism* magazine's March 2007 issue featuring statistics on engineering doctoral degrees (pgs. 20-21). In their ranking of the top 20 universities with the highest percentage of doctoral degrees awarded to women, TTU ranked seventh at

29 percent. *Prism* is published by the American Society for Engineering Education.

Texas Tech University is part of a coalition known as the **Lone Star Wind Alliance** that submitted a proposal to the Department of Energy (DoE) to design, construct, and operate an advanced wind turbine test facility. The bid was in response to DoE's announcement last May that it was looking for partners to build a new facility capable of testing blades up to 70 meters long. Texas is one of the finalists, with the winner to be announced midyear. Dr. **Jamie Chapman**, a member of the senior research faculty in the Wind Sciences and Engineering Research Center, coordinated the College of Engineering efforts.

Faculty Recognition



A plaque honoring Civil and Environmental Engineering Horn Professor Dr. **Kishor Mehta** was unveiled in the Engineering Center on March 30. Mehta is recognized internationally as an authority on wind engineering. He has chaired the American Society of Civil Engineers's task committee on wind loads and organized the 11th International Conference on Wind Engineering, bringing the event to Lubbock in 2003. He also is past chairman of the National Research Council Committee on Natural Disasters, is a member on the prestigious National Academy of Engineering, and spearheaded an initiative that recently led the National Weather Service to adopt a revised version of the Fujita Scale it uses to rate tornadoes.

Electrical and Computer Engineering Associate Professor **Tim Dallas** was recognized at the Faculty Convocation on April 10 with the President's Excellence in Teaching Award and the Spencer A. Wells Award for Creativity in Teaching from the Texas Tech Association of Parents.



At the same convocation, Industrial Engineering Assistant Professor **Iris Rivero** received the Texas Tech Alumni Association New Faculty Award. She was nominated for the award based on student evaluations, innovative teaching activities, initiation of research and creative activities, and interaction with students.

Also at the April convocation, Electrical and Computer Engineering Associate Professor **Sergey Nikishin** received an Outstanding Researcher Award from the Texas Tech Association of Parents. He was a nominee for the Bernie E. Rushing Jr. Faculty Distinguished Research Award. Dr. Nikishin's expertise is design and fabrication of semiconductor devices, photonics, and nanoelectronics.



Jordan Berg, PhD, mechanical engineering associate professor, has been selected as a 2007-2008 Fulbright Scholar. This honor represents the flagship academic exchange program of the U.S. government, supporting about 800 U.S. faculty and professionals annually to lecture and conduct research in a foreign country. Dr. Berg will spend the spring 2008 term based at the University of Ruhuna in Galle, Sri Lanka. His teaching activities will center on the development and implementation of an undergraduate robotics competition, while his research will address novel modeling and control techniques applied to thermal behavior at the nanoscale. While in Sri Lanka, Dr. Berg will work closely with Dr. Sanjeeva Maithripala of the University of Ruhuna, who received his PhD from the TTU Mechanical Engineering department in 2003.

For the second year, Mechanical Engineering Assistant Professor **Alexander Idesman** has been selected as a Faculty Fellow for the 2007 10-week Air Force Summer Faculty Fellowship Program at Eglin Air Force Base, Florida in the program "Continuum Mechanics."





Civil and Environmental Engineering Assistant Professor **Chuck Newhouse** is the recipient of the 2007 American Society of Civil Engineers's ExCEED New Faculty Excellence in Teaching Award.



Industrial Engineering Assistant Professor **James Simonton** was voted 2006-2007 Outstanding Industrial Engineering Professor by members of the TTU Institute of Industrial Engineers student chapter.

Promotion and Tenure

At its March meeting, the Board of Regents approved tenure and/or promotion to these faculty members:

- **Lenore Dai**, Chemical Engineering department, promoted (with tenure) to the rank of associate professor.
- **Sanjaya Senadheera**, Civil and Environmental Engineering department, promoted (with tenure) to the rank of associate professor.
- **Eric Sinzinger**, Computer Science department, promoted (with tenure) to the rank of associate professor.
- **Yu Zhuang**, Computer Science department, promoted (with tenure) to the rank of associate professor.
- **John Mankowski**, Electrical and Computer Engineering department, promoted (with tenure) to the rank of associate professor.
- **Associate Professor Mohammad Saed**, Electrical and Computer Engineering department, received tenure.
- **Jordan Berg**, Mechanical Engineering department, promoted to the rank of professor.

Introducing



Kyle Edgington is the new development officer for the College of Engineering. He replaces Kevin Ludlum, who joined the health sciences center development team as managing director for Institutional Advancement. Kyle joined the TTU side of Institutional Advancement last summer as a major gifts officer. He received his BBA in management information systems from TTU and his MBA from Wayland Baptist University. Kyle is married with a one-year-old son and is training to run a marathon.

Grants and Contracts

Proposals Submitted:

Chemical Engineering:

Dr. **Naz Karim** submitted a proposal to the National Science Foundation in the amount of \$352,722. The title is "Transformation of Variable Site-Occupancy Glycosylation of N184 in Recombinant Tissue-Type Plasminogen Activator Protein to Homogeneous Site-Occupancy."

Drs. **Mark Vaughn** and **Brandon Weeks** submitted a proposal to the National Science Foundation in the amount of \$267,998 for "Pre- and Post-blast Taggants for Forensics Studies of High Explosives."

Drs. **Binbing Han**, **Naz Karim**, and **Rajesh Khare** submitted a proposal to the National Science Foundation in the amount of \$448,733 for "Multi-particle Interaction, Protein Loss and Residual Flocculant in the Flocculation of Biological Cultures."

Civil and Environmental Engineering/Center for Multidisciplinary Research in Transportation:

Dr. **Hongchao Liu** submitted a proposal to the Texas Department of Transportation in the amount of \$30,000 for "Development of Field Performance Evaluation Tools and Program for Pavement Parking Materials."

Drs. **Andrew Budek**, **William Burkett**, and **Charles Newhouse** submitted three proposals to the Texas Department of Transportation: one in the amount of \$225,270 for the "Study of Elastomeric Bearings for Superelevated U-Beam Bridges," another for \$733,099 for "Bursting and Shear Behavior of Prestressed Concrete Beams with End Blocks," and the third for \$1,531,043 for "Structural Assessment of D-Regions Affected by Premature Concrete Deterioration."

Drs. **Andrew Budek** and **Charles Newhouse** submitted a proposal to the Texas Department of Transportation in the amount of \$75,201 for "Best Practices for Concrete Curb and Gutter."

Drs. **Mario Beruvides**, **Phillip Nash**, and **James Simonton** submitted a proposal to the Texas Department of Transportation in the amount of \$344,525 for "Planning and Financing Tools for Rural/Urban Area Projects."

Drs. **Mujahid Akram**, **Mukaddes Darwish**, and **Clifford Fedler** submitted a proposal to the Texas Department of Transportation in the amount of \$320,303 for "Bioretention of Stormwater Quality Improvement in Texas."

Drs. **John Kobza** and **Sanjaya Senadheera** submitted a proposal to the Texas Department of Transportation in the amount of \$76,644 for a "Synthesis Study of Programs Used to Reduce the Need for Inspection Personnel."

Electrical and Computer Engineering/Center for Pulsed Power and Power Electronics:

Drs. **James Dickens** and **Andreas Neuber** submitted a proposal for the Center for Pulsed Power and Power Electronics to BAE Systems Bofors, Sweden, in the amount of \$201,892. The title is "Compact Pulsed Power Supply."

Dr. **Michael Giesselmann** submitted a proposal on behalf of the Center for Pulsed Power and Power Electronics, to NASA/Eltron Research, Inc. in the amount of \$29,895. The title is "STTR Development of a Battery Diagnostic System for Navy Aircraft."

Dr. **Kris Kristiansen** submitted a proposal to HEM Technologies in the amount of \$47,967. The title is "Mobile Emag and RF Source Neutralizer."

Industrial Engineering:

Dr. **Patrick Patterson** submitted a proposal for the Center of Multidisciplinary Research in Transportation to the Texas Department of Transportation in the amount of \$292,970. The title is "0-5911: Driver Workload, Human Error, and Safety at High Speeds."

Mechanical Engineering:

Drs. **Stephen Ekwaro-Osire** and **Javad Hashemi** submitted a proposal to the National Science Foundation in the amount of \$299,499 for "Non-contact ACL Injury: Relation to Anterior Knee Laxity and Tibial Slope-in-Vitro Analysis in a Dynamic Knee Simulator."

Dr. **Seon Han** submitted a proposal to the Texas Space Grant Consortium in the amount of \$20,000. The title is "Launching of a Space Elevator."

Awards:***Electrical and Computer Engineering:***

Dr. **Tim Dallas** is the PI on an award from the National Science Foundation in the total amount of \$89,481, titled "REU Site: Micro and Nano Device Engineering." Co-PIs are Drs. **Ayrton Bernussi** and **Richard Gale** and Mechanical Engineering **Dr. Jordan Berg**.

Mechanical Engineering:

Dr. **Michelle Pantoya** was awarded \$162,695 from Idaho National Engineering Laboratory for the proposal, "Examining Nanocomposite Thermite Combustion in Aqueous Environments."

Student Accomplishments

As part of our effort to attract excellent doctoral students to the College of Engineering, the **Dean's Fellowship Awards** have been established. Recipients of the first annual awards for the 2007/2008 academic year are as follows:

Department	Name	Home Country
Chemical	Div a Brandy opadhy ay	India
Civil and Environmental	Fabio Oliveria	Brazil
Computer Science	Sheng Bao	China
Electrical and Computer	Asif Anwar	Bangladesh
Industrial	Hao Peng	China
Mechanical	Luthfi Luthfi	Indonesia
Petroleum	Rakibul Sarkar	Bangladesh

Congratulations to these deserving students, and thank you to those who participated in the nomination process. Nominations for the 2008/2009 academic year will be next spring.

Amy Cannon, a graduating senior in Civil and Environmental Engineering, is the recipient of the first annual American Society of Civil Engineers (ASCE) Outstanding Civil Engineering Student Award, sponsored by Freese and Nichols, Inc. She was nominated by Drs. Audra Morse and Sanjaya Senadheera. Amy was recognized at the ASCE Texas Section spring meeting on April 13 in Tyler, TX. Freese and Nichols, Inc., a full-service professional consulting firm in Fort Worth, TX, has been in operation for over one hundred years.

Simeon Eburi Losoha, president of the Engineering Ambassadors, has been selected to receive a Student Academic Citizenship Award by the Texas Tech Association of Parents. He will also represent the College of Engineering at the Society of Petroleum Engineers Regional Student Paper Contest, where he was second place winner in the master division of the TTU paper contest.

A Goldwater scholarship has been awarded to **Kevin McBride**, a third-year chemical engineering student. The two-year scholarship based on academic merit is from the Barry M. Goldwater Scholarship and Excellence in Education Program, designed to foster and encourage outstanding students to pursue careers in the fields of mathematics, the natural sciences, and engineering. It is the premier undergraduate award of its type in these fields. Kevin plans to pursue a doctorate in chemical engineering/physics and to conduct research in an academic setting in the areas of chemical/nuclear interactions for detection of manufactured nanoparticles and their subsequent destruction. **Julie Rice**, a computer science major, was one of four TTU students nominated for the scholarship after a very competitive process.

The TTU student chapter of the **Society of Plastics Engineers** has been named "Outstanding Student Chapter for 2007." Congratulations to the students and faculty advisor, Dr. **Raj Khare**, assistant professor of chemical engineering, for their dedication in attaining this national recognition for their two-year old chapter.

<http://www.4spe.org/awards/index.php>

Senior industrial engineering students **Chase Bubenik**, **Sarah Chowdhury**, **Philip Hunter**, **Michael Lewis**, **Gemma Smith**, and **Garrett Vick** are recipients of a summer internship from Burlington Northern Santa Fe Railway Company (BNSF). They were chosen for their strong academic performance, class standing, personal qualities, extra-curricular participation, and potential career interests, with final selection by BNSF staff after a personal interview. The internship can lead to a full-time position following graduation. BNSF's confidence in TTU's engineering curricula and students is of great value to the college.

Meet Shah, a freshman mechanical engineering student, was nominated for one of the TTU President's Excellence in Diversity and Equity Awards.

Alumni Recognition

Julie England ('79 BS ChE) was interviewed by the Texas Instruments Radio Frequency Identification (TI-RFid[®]) Systems features editor for *RFid Connections*. She is a member of the COE Dean's Council and vice president of Texas Instruments Incorporated and general manager of Texas Instruments RFid Systems. The subject of the interview was solving business pain points in terms of product visibility, deterring theft, cost of labor, and customer service. <http://www.ti.com/rfid/>





Left to right:
Harold R. Inman, Denny
Bullard, Ray Mikolajczyk,
George Slaughter, Tommy
Lent, William "Bill" Jones

On March 29, Texas Tech's **Academy of Petroleum Engineers** held a ceremony to induct six new members into its ranks in recognition of their achievements. The six new members are: **Denny Bullard** ('70 BSPE); **Harold R. Inman** ('50 BSPE); **William "Bill" P. Jones**; **J. T. (Tommy) Lent Jr.** ('75 BSPE); and **Raymond F. Mikolajczyk Sr.** ('60 BEPE). The academy was formed in 1994 to recognize TTU graduates and other industry professionals who have made significant contributions to their discipline, and to encourage and inspire current students.

<http://www.dailytoreador.com/>

<http://news.ttu.edu/browse/newsRelease/1269>

Bryan Scott Canada ('96 chemical) of Arizona Public Service Company was the construction project manager for a 1-MW concentrating solar power, organic Rankine cycle plant on a parcel adjacent to its Saguaro gas-fired power plant. The project received the 2006 Renewable Energy Project of the Year distinction from the Association of Energy Engineers and was named one of the top twelve power plants of 2006 by *Power* magazine. It was also a finalist for Global Energy Project of the Year in the 2006 Platts Energy Award category and the ENR/McGraw-Hill Construction Energy Construction Project of the Year. [[Learn More](#)]



Industrial Engineering faculty and staff welcomed its oldest living alumnus, **Carl W. Bechtold** ('38 BSIE) and his wife, Virginia ('39 BA, Business Administration), representing half of the department's first graduating class, when he returned to TTU to for a banquet on the evening of March 30, in conjunction with the department's academy meeting. Mr. Bechtold was inducted into the academy in 1996. After a distinguished career including being a pioneer in teaching computer graphics, Bechtold and his wife retired in Colorado.

Events of Interest

The **WE CAN** (Women in Engineering: Curriculum, Applications, and Networking) summer camp is planned for June 3-15, with an eye toward recruiting more female students to the Electrical and Computer Engineering department. Faculty members Drs. Mary Baker and Tanja Karp will provide a stimulating and confidence-building environment to up to 14 high school junior girls who are academically qualified to pursue careers in engineering. This year, the camp will include hands-on experience with the National Instruments ELVIS system, LEGO robotics, and Matlab computer visualization. Girls will learn about electrical and computer engineering as a major and as a career.

<http://www.ee.ttu.edu/ece2/wecan/wecan.html>

Calendar of Events

March 9 – Dr. **Eric L. Petersen** from Mechanical, Materials, and Aerospace Engineering, University of Central Florida (UCF), was the guest of Mechanical Engineering faculty for a presentation on "Combustion Research at UCF: Ignition Chemistry, Gas Dynamics, and Solid Propellants."

March 23 & nash; Dr. **Tetsuji Yamada**, one of the world's leading experts in atmospheric airflow research and modeling, gave a presentation on "Numerical Simulations of Air Flows and Transport and Dispersion in and around Building Clusters Taking Thermal Effects of Buildings into Consideration," as a Wind Science and Engineering Research Center special seminar.

March 26 – Dr. **Anirudha Datta** from Texas A&M gave a talk on how engineering and biology merge, "Modeling and Control in Cancer Genomics," as part of the College of Engineering's Colloquium.

March 28 – Professor **Alan P. Jeary** from the School of Engineering at the University of Western Sydney (Australia) and a director of Structural Survey Hong Kong spoke on "Hail Research: Incident in Sydney, Australia," as part of the Wind Science and Engineering Research Center Brown Bag Seminars.

March 30 – Dr. **Arvind Varma**, R. Games Slayter Distinguished Professor and head of the Purdue University School of Chemical Engineering, presented a talk on "Some New Applications of Heterogeneous Combustion," at the invitation of the TTU Chemical Engineering department.

April 16 – Dr. **Kenneth Ford** from the Institute for Human and Machine Cognition in Pensacola, FL, will address "Toward

Cognitive Prostheses," in Lankford Lab. Dr. Ford had held numerous science advisory roles for the U.S. government as well as state agencies.

April 27 – Chemical Engineering faculty will host Professor **D. Ranjan** from the New Mexico State University Computer Science department. His topic will be "Methods and Tools for Identifying Ciselements in Promoter Regions," held in Lankford Lab.

June 20–22 – The Wind Science and Engineering Research Center (WISE) in conjunction with TTU's Division of Outreach and Distance Education will sponsor a short course in Wind Power Systems: Technology and Economics at the Abilene teaching site. The course is intended for those interested in obtaining a general overview of wind energy technology and its associated issues. Instructors are **Jamie Chapman**, senior research faculty member in WISE and **Andrew Swift**, director of WISE. For more information, go to <http://www.depts.ttu.edu/ode/wind-power-conference.asp>

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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