



Engineering *Our* Future

Winter 2009-2010

Texas Tech University - Edward E. Whitacre Jr. College of Engineering



**Texas Tech Engineering:
Laying the Framework for Tier One Status**

Inside

5 **\$42.5 Million Schlumberger Gift**

7 **CE Student Named Tau Beta Pi Laureate**

10 **ME Alum Carter Soars to New Heights**



Dean's Report

Engineering Our Future

Winter 2009-2010 Issue

MANAGING EDITOR
Jeff Sammons

CONTRIBUTING WRITERS
Jeff Sammons
Leslie Cranford
Sally Post
Laura Urquieta
Scott Self

PHOTOGRAPHY
Jeff Sammons
Artie Limmer
Joey Hernandez
James Bynum
Laura Lopez

COVER ILLUSTRATION
Laura Lopez
Jeff Sammons

Published by:

Texas Tech University
Edward E. Whitacre Jr. College of Engineering
Box 43103
Lubbock, TX 79409-3103

©2009 Texas Tech University

It is my pleasure to introduce you to the college's new alumni magazine, an overview of the college's news, events, and research, combined with student and alumni success stories.

It has been a busy six months since I arrived here in Lubbock to begin serving as the interim dean of the college. The progress that the college has been making in research and education quality over the last few years has been very impressive, and we will continue to grow in those areas. Here are some highlights:

The college experienced a record enrollment this fall, with 4,732 students, up 383 from 4,349 in the fall of 2008 (page 16). The college's *U.S. News* undergraduate ranking has improved again this year (page 16). The college continues to lead the way as the university seeks to gain "tier one" status. (page 3).

Students in the petroleum engineering department now have a distinct advantage in the job market through a \$42.5 million gift of reservoir simulation software presented by Schlumberger (page 5). Our Engineering Job Fair saw record numbers of students attending (page 14).

Dr. Greg McKenna, from our Department of Chemical Engineering, was recently given the Bingham Medal, a prestigious award from the Society of Rheology (page 4).

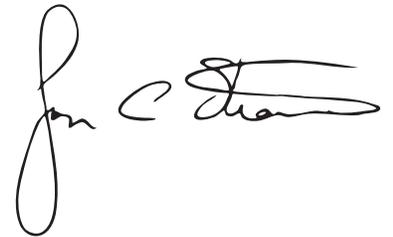
Our engineering technology department has recently been renamed the Department of Construction Engineering and Engineering Technology (page 5). The department added a new construction engineering degree to better reflect the needs of the construction industry.

Our students are receiving national attention through competitions and awards. Samantha van der Drift, a senior civil engineering student has been named a Tau Beta Pi laureate (page 7). Adam Doyle, a junior mechanical engineering student won the ASME Student Design Competition in Orlando, Fla (page 5).

We hope you enjoy reading about all of the exciting stories and events on the following pages and take time to send updates to publications.coe@ttu.edu for the alumni updates section that will begin in the next issue.



**Interim Dean,
Whitacre College of Engineering
Jon C. Strauss, Ph.D.**



In This Issue

News	4-6
Student Profile	7
Homecoming	8
Alumni Profiles	9-11
Solar/Partnerships	12-13
More News	14-15





Texas Tech Engineering: Leading the Way to Tier One Status in Texas

The Texas Legislature has set in place a framework and funding sources for Texas Tech and six other “emerging research universities” to earn the designation of “tier one,” or “national research university” through House Bill 51 (HB 51). Texas Tech and the Whitacre College of Engineering are leading the way to achieving tier one status. Tier one is used to describe the status associated with high-performing research universities.

When one of the emerging research universities achieves tier one status, it will have access to a permanent endowment fund valued at about \$500 million. This is similar to the Permanent University Fund that is available to the University of Texas at Austin, Texas A&M University and Prairie View A&M University.

To help emerging research universities reach tier one status, HB 51 also offered the Texas Research Incentive Program (TRIP). The program provided matching grants for private gifts. Texas Tech University received private gifts totaling \$24.3 million that were eligible for the TRIP funds. Of the \$24.3 million, \$10.55 million was donated to the Whitacre College of Engineering. Matching funds from the college will exceed \$10 million, providing the college more than \$20.6 million for future investments.

The college has experienced a 40% increase in research funding since 2005. Key research areas for the college are in pulsed power, advanced materials, nanophotonics, and energetics. These areas will be supported and strengthened to support this rapid

Tier One Framework Criteria

Criteria that Texas Tech must meet to gain Tier One status

Texas Tech must meet both:

- 1 Must have designation as an emerging research university.
 - Texas Tech has received the designation.
- 2 Must have at least two years of annual restricted research expenditures of more than \$45 million.
 - Texas Tech currently has approximately \$27 million per year.

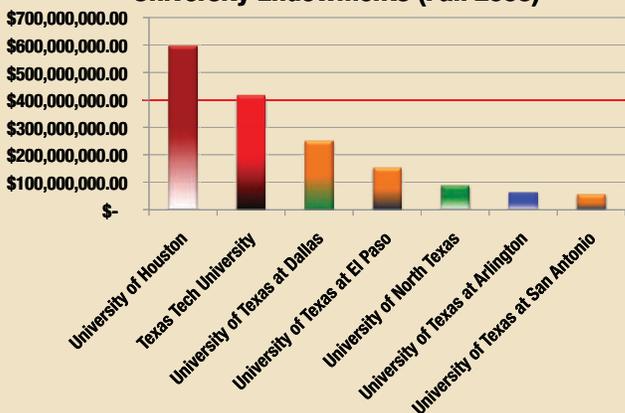
Texas Tech must meet four of six:

- 1 An endowment greater than \$400 million.
 - Texas Tech's endowment currently stands at about \$415 million.
- 2 Doctoral degrees awarded must exceed 200 in each of the previous two years.
 - Texas Tech awarded just less than 200 in each of the past two years.
- 3 Membership in the Association of Research Libraries or housing a chapter of Phi Beta Kappa.
 - Texas Tech meets both requirements.
- 4 High achievement of the freshman class for two years to be determined by the Texas Higher Education Coordinating Board (THECB).
- 5 High-quality faculty for two years, to be determined by THECB.
- 6 High quality graduate-level programs, to be determined by the THECB.

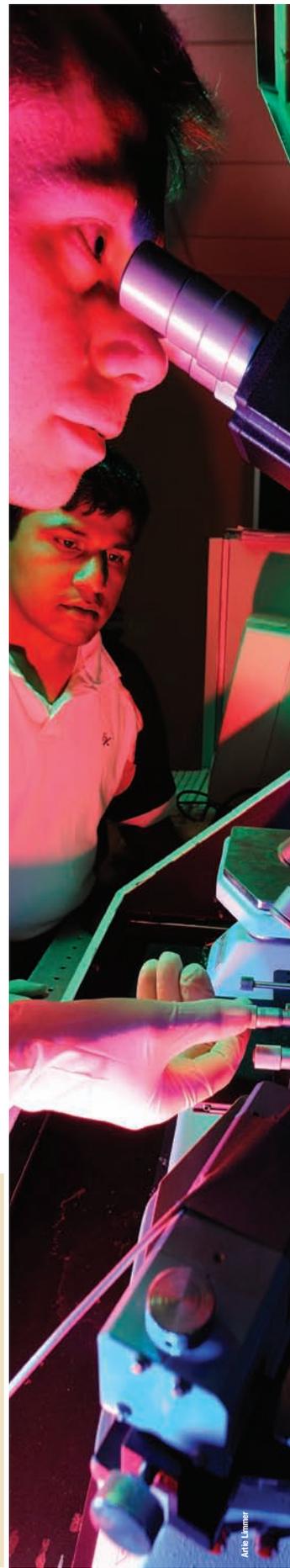
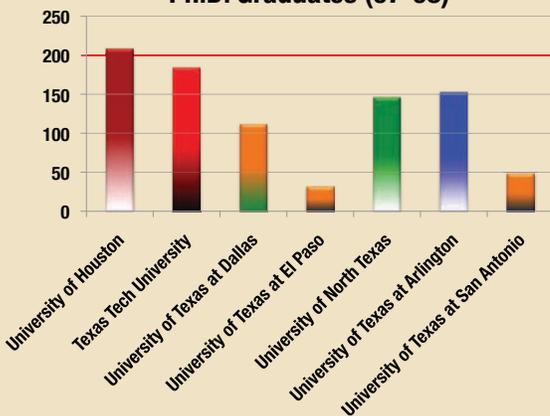
growth. In addition, initiatives in solar and sustainable energy, as well as nuclear engineering are currently being introduced and expanded. The college is committed to leading Texas Tech toward its goal of achieving tier one status. **E**

A comparison of fall 2008 endowments and academic year 2007-2008 Ph.D. graduates for the seven emerging research universities in Texas, as reported by the Texas Higher Education Coordinating Board.

University Endowments (Fall 2008)



Ph.D. Graduates (07-08)





News

Dr. Greg McKenna Receives Bingham Medal from the Society of Rheology

Dr. Greg McKenna, Paul Whitfield Horn Professor, John R. Bradford Chair, and professor of chemical engineering, is the 2009 recipient of the Society of Rheology's Bingham Medal. The Bingham Medal is an annual award for outstanding contributions to the field of rheology. It was instituted in 1948 by the Society of Rheology, commemorating Eugene C. Bingham, a pioneer in rheology theory and practice.

McKenna received the medal because of his development of novel rheological experiments and methods to interrogate the physics of polymers and complex fluids.



Dr. Greg McKenna

The Bingham Medal has been awarded annually since 1948 to a resident of the North American Continent or a member of the society who has made an

outstanding contribution to the science of rheology. The Society of Rheology is composed of physicists, chemists, biologists, engineers, and mathematicians interested in advancing and applying rheology, which is defined as the science of deformation and flow of matter."

McKenna received a Bachelor of Engineering Mechanics at the U.S. Air Force Academy, a masters degree in composite materials at the Massachusetts Institute of Technology, and a Ph.D. in Materials Science and Engineering at the University of Utah.

His contributions to rheology have been made in four areas:

- Nanorheology and surface rheological methods
- Nonlinear viscoelasticity and rejuvenation of polymer glasses
- Molecular rheology and rheological characterization of polymer heterogeneity
- Mechanics and thermodynamics of cross-linked rubbers **E**

Department of Construction Engineering and Engineering Technology

The college's Department of Engineering Technology has recently been renamed the Department of Construction Engineering and Engineering Technology.

The name change reflects the conversion of the Construction Engineering Technology program to a Construction Engineering program. Students that successfully complete the Construction Engineering program will earn a Bachelor of Science in Construction Engineering. Texas Tech University is one of approximately 14 universities in the U.S. that offer a construction engineering degree. This fall, 36 freshmen enrolled as construction engineering majors.

In addition, the department continues to offer the Bachelor of Science in Engineering Technology with a mechanical specialization. The electrical/electronics track of the engineering technology degree is being phased out. For more information on the department, contact chair Randy Burkett. **E**



The new Department of Construction Engineering and Engineering Technology has added a new construction degree.

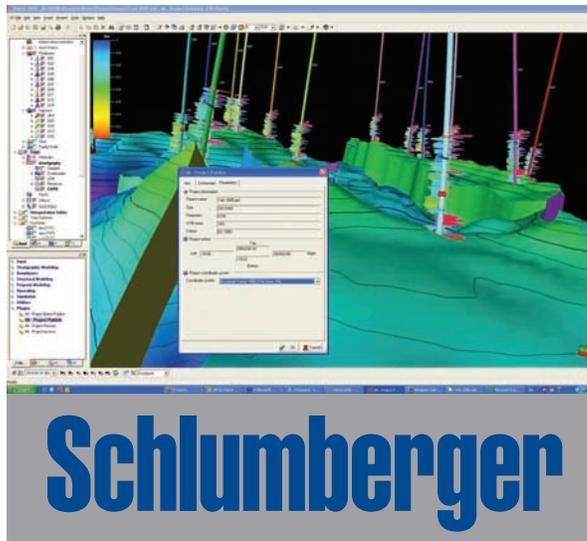


Petroleum Engineering Receives \$42.5 Million Software Donation

The Bob L. Herd Department of Petroleum Engineering has accepted a \$42.5 million gift of software presented by Schlumberger. The contribution includes 100 modules, licenses and maintenance of Petrel/Eclipse seismic-to-simulation software, a state-of-the-art geoscience and reservoir engineering interpretation and modeling package.

By having access to the Petrel package, students entering the job market will already be up to speed on the latest software being used in the industry. The software will also attract more research funding.

The Petrel software enables a model centric approach to reservoir characterization. It provides a unified workflow from seismic interpretation and well correlation through building detailed geologic models to creating reservoir models suitable for simulation, as well as submitting and visualizing simulation results.



Students will be able to use some of the best software in the petroleum industry giving them a head start at their first job.

Drs. Ravi K. Vadapalli, a research associate in the Texas Tech High Performance Computing Center; Shameem Siddiqui, assistant professor of petroleum engineering and Kerr-McGee Company Professor of Petroleum Engineering; and Lloyd Heinze, professor and department chair of petroleum engineering and Roy Butler Chair in Petroleum Engineering, played a key role in bringing the software to Texas Tech. **E**

Mechanical Engineering Student Takes First Place in ASME Design Competition

Adam Doyle, a junior in the Department of Mechanical Engineering, recently took first place in the American Society of Mechanical Engineers (ASME) Student Design Competition in Orlando, Fla.

The competition, called "Mars Rocks," challenged teams of ASME student members to design and build vehicles — inspired by the rovers used in NASA's Mars Exploration Program — that could retrieve rocks and deliver them to a designated spot. The vehicles also had to be able to surmount small obstacles and return to their starting locations to get ready for another run, all within four minutes.

Doyle's device was able to complete the task in just two-and-a-half minutes. He designed the lightest model with the most efficient battery, according to the contest's judges. Although Doyle's was the first-ever entry from Texas Tech in the competition, he said to expect future contest entries from the university. There is already a student team preparing for next year's competition, he added. **E**



Adam Doyle controls his entry in the ASME Student Design Competition Mars Rocks. Doyle's design took first place.

Courtesy of the American Society of Mechanical Engineers



News

College Begins New International Engineering Program

There is a growing demand for engineering graduates with international experience. Employers are seeking applicants with an awareness of global business practices, cross-cultural communications skills, and language fluency.

The new International Engineering Program will provide students with quality international engineering experiences that prepare them to work in a global environment.

In the summer of 2009, 30 engineering students studied abroad during the summer. For the summer of 2010, more than 65 students are expected to study abroad. The program's goal is to send 10% of the college's students abroad during future summers.

College faculty members lead study abroad programs in their area of expertise in environments outside the U.S. These programs allow students to enroll in Texas Tech courses with Texas Tech professors, but on foreign soil. Students have the opportunity to enhance their academic experience by participating in one of the following programs in 2010:

Winter Break in Chile

Santiago/Vina Del Mar, Chile
Hosted by: Universidad Adolfo Ibanez

Maymester in France

Nantes, France
Hosted by: l'École Centrale de Nantes

Summer II in Germany

Wilhelmshaven, Germany
Hosted by: University of Applied Sciences – Wilhelmshaven

Summer I in Seville

Seville, Spain
Hosted by: Texas Tech Center in Seville

Summer II in Seville

Seville, Spain
Hosted by: Texas Tech Center in Seville

Students in the college also have the opportunity to participate in exchange programs, work abroad programs through the International Association for the Exchange of Students for Technical Experience (IAESTE), and service abroad opportunities through student organizations. **E**



Chris White, a junior electrical engineering major, stands in Malaga, Spain. White was a part of the 2009 Summer in Seville.



Samantha van der Drift Named Tau Beta Pi Laureate

Samantha van der Drift, a senior civil engineering major from DeZilk, Netherlands, is like many engineering majors in the Whitacre College of Engineering — she wants to make a difference in her career. However, unlike many students at Texas Tech, she plans to make a real difference in her home country, the Netherlands, through renewable, sustainable, and green building techniques.

van der Drift is already making a difference here in the United States. She was recently named a laureate of Tau Beta Pi, the oldest engineering honor society in the United States, a society that seeks to honor engineering students who have shown a history of academic achievement as well as a commitment to personal and professional integrity.

Tau Beta Pi named van der Drift a laureate for her diverse achievements in tennis, her work as an athlete mentor to school children, and her work with an elementary school reading program

In high school, van der Drift was ranked fourth in the Netherlands' under-16 tennis rankings. She was recruited to come to the United States after her senior year of high school by then-Texas Tech tennis coach Cari Groce, who had made a recruiting trip to Europe. "When I met her, I had the impression that for her, tennis was really important, but academics and involvement in the community were just as important," said van der Drift, "I just got a really good vibe from her. It's been a really good choice."

At Texas Tech, van der Drift played on the tennis team for four years and was named to the All-Big 12 doubles and singles teams, the Academic All-Big 12 first-team and the ITA All-Academic team. She was named the captain during her senior year, and she is currently serving as an assistant coach and mentor to freshmen students on the team.

With the tennis team, van der Drift visited underprivileged schools and encouraged students to consider college. The team developed a strong relationship with Iles Elementary students in Lubbock, providing tennis instruction and reading programs to the students. "You get a good feeling as you watch these students learn to play tennis," she says. "The students are so passionate, and they enjoy tennis so much."



van der Drift was recently named a Tau Beta Pi laureate for her achievements in the classroom, in tennis, and as a mentor.

She is involved with Tau Beta Pi, the United States Green Building Council (USGBC), the American Society of Civil Engineers, and Engineers Without Borders (EWB).

With USGBC, she is helping to organize the event "Spring in the Green," a collaboration with 15 other student organizations to bring awareness on the Texas Tech campus to green energy and green technologies. The events include trips to wind farms and other activities. She also recently attended the Greenbuild 2009 conference, the world's largest conference and expo dedicated to green building.

As the fundraising officer of a project with EWB, she and the team worked to create an inexpensive and simple water filtration system for a remote tribe in Panama.

van der Drift plans to keep playing tennis when she returns to the Netherlands, but she will not pursue a professional tennis career.

After graduation, she will return to the Netherlands and to pursue a master's degree in a green engineering field. Her dream is to be able to apply her degree from Texas Tech to build renewable, sustainable, and green buildings in her home country. **E**





Homecoming 2009

Engineers Return to Campus for Homecoming 2009

On October 10, 2009, Texas Tech alumni, friends, and students celebrated Homecoming. The Texas Tech football team defeated Kansas State 66-14 on a cold weekend.

Earlier in the day, the Whitacre College of Engineering hosted two events, the Engineering Scholarship Breakfast and the Engineering Tailgate Party.

The Engineering Scholarship Breakfast is an annual event that brings together the students that receive scholarships with the individuals that have created scholarship endowments. More than 150 people attended the event. Chancellor Kent Hance, President Guy Bailey, petroleum engineering alum Terry Fuller, and chemical engineering senior Brent Palmer thanked the scholarship donors for their investment in the education of future engineers.

Later in the day, the college hosted the first annual Engineering Tailgate Party on the Engineering Key. The event featured free food, live music, and drinks. Engineering alumni and faculty stopped by the tents on their way to the game. Look for information about the 2010 Engineering Tailgate Party in the future. **E**

(Below) Terry Fuller (P.E. '82) speaks at the Engineering Scholarship Breakfast.



The Engineering Tailgate Party featured live music by Lone Prairie.



(Above L-R) Elizabeth Holland (I.E. '84) and Jim Lowder (M.E. '58) at the Engineering Tailgate Party.





Honesty and Integrity: A Reflection of Alumnus Ken Baker's Business

Kenneth Baker began his career in 1965 at Celanese Chemical Company after graduating with a degree in chemical engineering from Texas Tech. However, he actually began integrating the knowledge he learned in the classroom into real life projects even before he crossed the commencement stage.

During the semesters at Texas Tech, Baker had the opportunity to be involved with campus-wide organizations and departmental activities, giving him the ability to give back to the community. Baker recalls, "One of my fondest memories was seeing the excitement of a group of physically challenged boys, and the lessons that they learned, during the Alpha Phi Omega camp-outs." He and his friends taught the boys how to build a campfire and how to pitch a tent with the stakes and tie-down ropes at distances and angles necessary to secure the tent for windy days and nights. He also recalls two professors, Dr. Jules A. Renard, who taught him the importance of economical solutions to engineering problems, and Dr. A. G. Oberg, who led field trips to industrial facilities. Baker has fond memories of a few challenging courses, specifically, Physical Chemistry and Thermodynamics.

Once he joined Celanese, he worked on technical and economic problems for the petrochemical industry. A short time later, he and some colleagues discovered a mutual interest in a graduate degree program that could be completed off campus. They approached the management of several operating companies and a few colleges to explore options for such a program. In response, Texas Tech and a group of

Baker & O'Brien's consultants and analysts have worked in all aspects of the energy industry in over 100 countries.



Kenneth Baker

companies established an off-campus graduate degree program. Baker obtained the first Texas Tech Master of Engineering degree through this new program. According to him, "My two degrees from Texas Tech have enabled me to confidently compete with graduates from major universities across the U.S. and the world."

In 1972, Baker joined the Environmental Protection Agency where he managed research and development projects on the reduction of air pollution from petroleum refineries, chemical processes and power plants.

Three years later, he made a major career change and became an independent consultant. With this move, he began a new chapter in his career. He started investigating industrial accidents, preparing insurance claims, providing litigation support, appraising facilities, and assessing the technology and the feasibility of energy and chemical operations. He combined his practical engineering expertise with an economic and business background to achieve his goals. "The enormous variety of professions and jobs in which one can apply an engineering education allows one to work almost anywhere and contribute to society," Baker stated. Because of his accomplishments, he was recognized as the Dallas Area Outstanding Chemical Engineer during Professional Engineers Week in 1982.

In February 1993, Baker, along with his business partner John O'Brien, founded Baker & O'Brien, Inc. Their vision was to build a firm that would be known for holding the highest professional standards for their clients. For the past 17 years, the fundamental principles of the firm have been applied to every assignment. Baker & O'Brien, Inc. currently has offices in Dallas, Houston, and London, with clients around the globe.

He and his wife, Cara, continue to show their support to Texas Tech by hosting the "Rockwall Texas Tech Kick Off BBQ Party" for current and incoming Texas Tech students from Rockwall County.

"I would like to be remembered as one who has influenced a life and profession in a positive way. Helping others to achieve their ambitions and dreams is a very rewarding experience," says Baker, "Through a Texas Tech engineering education, one can reach for the sky, achieve anything, but stay grounded in practicality." **E**





Alumni Profile

Alumnus Jay Carter, Jr. Soars to New Heights With Unmanned Aircraft License

Many families have traditions of attending the same university or following the same career paths — the Carter family has both. In 1949, Jay Carter Jr.'s father unknowingly began a three generation tradition of attending Texas Tech University and graduating with a mechanical engineering degree. In 1968, Carter followed in his father's footsteps at Texas Tech, completed a mechanical engineering degree, and began a lifetime of achievements. Since that time, three of Carter's children, Jay Carter III, Matt, and Megan also graduated with mechanical engineering degrees. Megan also received her Law degree from Tech.

Throughout Carter's (Jr.) college years, he worked hard to balance school and extracurricular activities, including a football scholarship. There were no engineering majors with Carter on the football team, but he still recalls his fond experiences, "The camaraderie of being a part of the football team created a great bond with my teammates."

Carter was involved in a variety of organizations and



Jay Carter Jr.

groups, but his degree plan became more demanding and he realized he needed to shift his attention to his studies. "Although I loved football," Carter says, "I decided to focus on my degree." He was involved with student government as the engineering senator for 3 years. This eventually led to his election as

Vice President of the Student Body and President of the Senate. His involvement in sports never truly vanished, as he joined Phi Delta Theta fraternity where he was once again able to enjoy football, even though it was flag football, as a quarterback and a coach.

In 1966 he helped organize and became one of the founding members of the Texas Tech chapter of Pi Tau Sigma, an honor society for mechanical engineers.

With the support and help of his father during the summers, he worked on unique projects that related to his engineering curriculum. He built two autogyros and obtained his pilot license.

Following graduation, Carter joined Bell Helicopter as a research and development design engineer, where he contributed to the design of the V-15 tilting prop rotor.

After leaving Bell Helicopter, Carter and his father,

The CarterCopter Technology Demonstrator flies over the skies of North Texas.





Jay Carter Jr. (center), with Chief Test Pilot Larry Neal (left), and Co-Pilot Brad King (right) in front of the CarterCopter Technology Demonstrator.

founded Jay Carter Enterprises and began the development of a steam-powered automobile. He went on to present his work to the Environmental Protection Agency (EPA) in Michigan, producing the first car to meet the original 1976 EPA emission-level standards, something the auto industry said could not be done. Through this accomplishment, Carter had the opportunity to testify before committees from the U.S. Senate and the House of Representatives. “All this before I turned 30,” says Carter, “And thanks to this project, we made the front page of major newspapers nationwide. It challenged me as an engineer, I got to use almost everything I learned in school by applying it to that automobile.” The car made a cold start in 30 seconds, the controls were fully automatic, it traveled at more than 80 mph, and was featured on the front cover of several magazines, including *Popular Science*.

When Carter saw an opportunity in wind energy, he founded Carter Wind Systems, a wind turbine company. This gave him the opportunity to explore creativity through engineering design and see it develop into a useful product. He spent the next seventeen years as president and principal designer. By 1983, the company had grown to over \$7 million in national and global sales with more than 100 employees.

After selling his wind turbine company in 1994, Carter returned to aviation as the founder of Carter Aviation

Technologies, LLC (CAT). CAT’s primary focus has been the development of a slowed-rotor compound aircraft, a vertical takeoff and landing aircraft that can travel at speeds up to 500 mph. In 2005, their first prototype achieved an efficiency 1.5 times better than the best helicopter has ever achieved. The aircraft uses the rotor for takeoff and landing and a small, efficient wing for high speed flight. As of late 2009, Carter Aviation Technologies’ completed an exclusive 40-year licensing agreement with AAI / Textron Corporation for unmanned aircraft systems using their slowed rotor/compound technology.

Carter enjoys challenges and the opportunity to impact the life of those immediately close to him. Throughout his career, he has left impressions in his personal life as well as in his community. With every company he has founded he has managed to create new technologies that will further mankind — while creating jobs.

Considering all of his achievements and when asked about his legacy, Carter responds, “I would like to be remembered for

having helped my wife Carol raise three wonderful children, for developing a more cost-effective wind turbine design to help reduce our dependency on fossil fuels, and a hybrid aircraft design that could help change aviation and our transportation system. I like to be creative and make things that will benefit mankind.” **E**



An illustration of the scalability of the CarterCopter concept.

CarterCopters

CarterCopters

CarterCopters



Maddox Solar Energy Series

Maddox Solar Energy Series Begins This Fall, Continues Through Spring

In celebration of the announcement of the Donovan Maddox Distinguished Engineering Chair in Solar Energy and the Jack Maddox Distinguished Engineering Chair in Sustainable Energy, the Whitacre College of Engineering is hosting a series of speakers on solar energy entitled the Maddox Solar Energy Series.

The Whitacre College of Engineering at Texas Tech is committed to leveraging two exceptionally large endowed chairs at over \$7 million each, the Donovan Maddox Distinguished Engineering Chair and the Jack Maddox Distinguished Engineering Chair, to become one of the nation's leaders in finding solutions to the world's energy challenges.

Dr. Lawrence Kazmerski, Executive Director of Science & Technology at the National Renewable Energy Laboratory (NREL), presented "Solar Photovoltaics Technology: The Revolution Begins..." on Sept. 9.

Dr. Sarah Kurtz, Principal Scientist at the National



Maddox Solar Energy Series

Texas Tech University
Edward E. Whitacre Jr. College of Engineering

Renewable Energy Laboratory (NREL), presented "The science behind high-efficiency solar cells and why we might care." on Nov. 18.

The Maddox series continues on January 20, 2010 with Dr. Harry A. Atwater Jr. from the California Institute of Technology

For more information, visit www.coe.ttu.edu/maddox. 

Dr. Lawrence Kazmerski, Executive Director of Science & Technology at the National Renewable Energy Laboratory (NREL), presents "Solar Photovoltaics Technology: The Revolution Begins..." in the Lankford Lab in the Electrical and Computer Engineering Building.



Jeff Simmons

Partnerships



Partnerships, Gifts Can Transform the Future of the College

The Whitacre College of Engineering has recently received several transformational philanthropic gifts. The college has been fortunate to be named after one of its most distinguished alumni, Ed Whitacre (B.S.I.E '67), with a gift of \$25 million from AT&T and friends of Ed Whitacre. The college is also glad to host the only named department on campus, the Bob L. Herd Department of Petroleum Engineering. Bob Herd chose to make an investment in the educational experience of petroleum engineering students with a gift of \$15 million.

Gifts, however, are not always about naming opportunities. The college has received other transformational gifts that will greatly impact the university's effort to become the State of Texas' next tier one research institution. **The tier one race can be and is impacted by private gifts.** For instance, the J. F Maddox Foundation of Hobbs, New Mexico has established one of the nation's largest faculty chairs in the area of sustainable energy. The recruitment for a chair of this magnitude will allow Texas Tech to bring in a leading researcher, along with his or her team, which attracts external research investments. The race for tier one status also includes a metric for

Linda Fuller ('69) established a graduate fellowship endowment for graduate student scholarships. This new \$1.2 million endowment was eligible for the Texas Research Incentive Program (TRIP) and will provide the Whitacre College an estimated \$90,000 per year in annual graduate student scholarships. The lasting benefit of endowments is that they serve in perpetuity.

Texas Tech and the Whitacre College of Engineering have a long history and grand reputation of producing talented and work-ready engineers. This is a result of the excellent instruction that they receive in the classroom from internationally recognized faculty, from summer internships with practical experience, and through laboratory instruction. Well-equipped laboratories and facilities assist the college and university by improving instruction with industry equipment and software, attracting world-renowned researchers, and by keeping Texas Tech competitive with the other tier one-aspirant institutions.

Private gifts to the Whitacre College of Engineering are a key element in the university's pursuit of tier one status. Endowments vary in gift sizes and are a great way to leave your name, or honor a loved one, by establishing something that will last forever. Consecutive annual giving truly makes a difference when considering that more than 21,000 Whitacre College of Engineering alumni are asked to financially participate at various levels. In reality, all financial participation makes a difference, as alumni, corporate, and foundation giving is viewed and felt as a true partnership with Texas Tech. **E**



Tier One Private Gift Needs

How You Can Help Texas Tech in the Goal to Gain Tier One Status

Faculty Support
Discretionary Research Use Endowed Chairs, Professorships, and Fellowships
Graduate Fellowships
Endowed and Non-Endowed Gifts
Research Space
Renovations Equipment Operating Funds

graduate students. Tier one institutions will generally graduate more than 200 Ph.D. students each year and Texas Tech is close to reaching that mark. The national competition, however, is greater than ever for talented students wanting to pursue their graduate degree. Therefore, Texas Tech has a great need for financial incentives to attract high-caliber students to Lubbock. For instance, Terry (B.S.PE.'77) and

Endowments

Gifts to the College that have a Perpetual Impact

Levels
\$1,500,000 Chair \$500,000 Professorship \$250,000 Faculty Fellow \$100,000 Dean's Distinguished Scholarship \$50,000 Graduate Fellowship \$25,000 Scholarship \$10,000 Discretionary Endowment
Endowments are payable over three years with 1/3 needed to establish the fund. Only a portion of the interest is utilized ensuring that the fund will last in virtual perpetuity. The endowment can be named and others may contribute to the fund. There is flexibility on the use of the endowment as long as it meets the rules of the Texas Tech University System Board of Regents and the laws of the State of Texas.



More News

Students Receive Automobile for Eco-friendly Transformation

A team of Texas Tech University engineering students intend to prove that they are the next generation of automotive engineers. The team received a vehicle, donated by General Motors, which they will transform into a next-generation eco-friendly car.

EcoCAR: The NeXt Challenge, along with its headline sponsors, the U.S. Department of Energy and General Motors (GM), challenged 17 universities from across the U.S. and Canada to redesign and reengineer a GM vehicle to further minimize fuel consumption and reduce emissions while retaining its performance and consumer appeal. EcoCAR seeks to inspire the next generation of scientists and engineers by giving them the tools and experience necessary to design a more energy-efficient future.

In the first year of the competition, beginning in the fall of 2008, the 17 teams designed a virtual model of their vehicle using advanced software and computer modeling tools. This year, the second year of the competition, the teams are challenged to turn their cutting-edge simulations into reality. In the third year, teams will take the vehicles to the road for a series of challenges.

As the student engineers from Texas Tech embark on the second phase of the challenge, they will turn the vehicle into a two-mode hybrid powered by a 1.6L European GM 4 cylinder engine and fueled by Ethanol 85.

“EcoCAR gives students hands-on design and engineering experience,” said Tim Maxwell, professor of mechanical engineering and co-head of the advanced vehicle engineering lab at Texas Tech. “Our students have worked hard this past year, and they are excited for the opportunity to integrate their designs into the vehicle.” **E**



The Texas Tech EcoCAR team poses with their new vehicle.

Fall 2009 Engineering Job Fair Welcomes Record Number of Students

The Fall 2009 Engineering Job Fair was held in September, and saw a record number of students attend. More than 2,000 Texas Tech engineering students took advantage of the opportunity to meet and mingle with 140 companies and employment recruiters from Lubbock, the State of Texas and across the United States.

The one-day employment exposition has evolved from humble beginnings in 1999, with only 22 companies meeting outside in the campus Engineering Key.

The 2010 Spring Engineering Job Fair will be held on February 3, 2010. For more information, visit www.coe.ttu.edu/careers. **E**



More than 2,000 students attended the Fall 2009 Engineering Job Fair.



Engineering Kick-Off Event Celebrates the Beginning of the School Year

The second annual Engineering Kick-Off Event was held on Friday, September 11, 2009 on the Engineering Key. This event showcased the exciting world of engineering and brought students, faculty, staff and industry partners together for fun. The event was sponsored by El Paso Corporation and Spectra Energy. **E**



Students had the opportunity to meet with student organizations, honor societies, academic support offices, and service opportunities.



Senior Associate Dean John Kobza competes with a student on an inflatable bungee challenge.

Whitacre College of Engineering U.S. News Ranking Improves

The educational experience in Texas Tech University's Edward E. Whitacre Jr. College of Engineering is only getting better, according to *U.S. News & World Report's* 2010 college rankings.

In the magazine's yearly assessment of America's best schools, Texas Tech's undergraduate engineering program is now tied for 76, up from a 78 ranking for 2009, an 85 ranking for 2008, and from rankings in the 90s prior to that. The undergraduate program rankings are based on peer assessments only.

"As the Whitacre College of Engineering leads the way in Texas Tech's drive to become the nation's premier energy university, the *U.S. News* rankings validate the continued efforts of our faculty to further enhance the quality education that we provide," said Jon Strauss, interim dean of the Whitacre College of Engineering. **E**

University, College Set Enrollment Records This Fall

Texas Tech University has shattered enrollment records with more than 30,000 students enrolled this fall. Final enrollment stands at 30,049, up 1,627 from last fall's 28,422.

Enrollment in the Whitacre College of Engineering reached a new high at 4,732 students, up 383 from 4,349 in the fall of 2008. The previous record for the college was 4,379, and was set in the fall of 1983.

Texas Tech's previous record enrollment was 28,549 set in the fall 2003 semester.

There are increases in both undergraduate and graduate enrollment. Graduate enrollment continues to set records with 5,175 students enrolled, up from 4,670 last fall semester. Undergraduate enrollment is 24,236, up from 23,107 in the fall 2008 semester. **E**





TEXAS TECH UNIVERSITY

Edward E. Whitacre Jr. College of Engineering™

Engineering Our Future

Box 43103 | Lubbock, Texas 79409-3103

RETURN SERVICE REQUESTED

Winter 2009-2010



Industrial

Civil and Environmental

Petroleum

Students wear color-coded shirts that match their majors at the Engineering Kick-Off Event, a time to bring students, faculty, staff and industry partners together for fun.

Computer Science

Engineering Undecided

Chemical

Electrical and Computer

Construction Engineering
and Engineering Technology

Mechanical

Jeff Simmons