



Engineering Our Future

Winter 2014-2015

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



International Engineering Program

A first for a state school engineering program, and in response to industry's requests, all undergraduate engineering students at Texas Tech will be required to have an international experience before graduation. The Whitacre College of Engineering is committed to providing our students with quality international engineering experiences that prepare them to work in a global environment.

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Community
of
Scholars



Engineering Our Future

Winter 2014-2015 Issue

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Dean's Report

The 2014-2015 academic year is off to a great start! We set a record for the number of students enrolled in the college, with 4,700 undergraduates and 875 graduate students. Additionally, more than 1,000 students are in our PreEngineering program. Our U.S. News and World Report undergraduate ranking is improving, we have hired great new faculty members, and our Fall Engineering Job Fair was one of the largest that we have hosted.

At the beginning of August, in an effort to strengthen two of our departments, I decided to merge the Department of Civil and Environmental Engineering with the Department of Construction Engineering and Engineering Technology. This new combined department, which will be called the Department of Civil, Environmental, and Construction Engineering, will provide an opportunity for our construction engineering faculty to develop a graduate program, while helping the civil and environmental engineering programs with course offerings.

David Ernst is the interim chair of the new combined department and he will preside over this integration for the next two years. David has been a member of the Texas Tech faculty for more than 20 years, serving as the associate chair in the Department of Construction Engineering and Engineering Technology for the last several years.



Dean Al Sacco Jr., Ph.D.

This issue of the magazine aims to provide more information on our International Engineering Program and the International Experience Initiative, our innovative requirement for all undergraduate students to study abroad before graduation. This initiative has been the talk of the nation's engineering programs. You can read more about the specifics on the next page, and we have included faculty, student, alumni, and company representative perspectives as well. Dr. Jeff Hanson, an instructor of mechanical engineering tells of his experiences as an instructor in our faculty-directed program in Seville, Spain (pages 6-7). Chaeun (Elizabeth) Kim, a petroleum engineering student, relates her experience as a "double" study abroad student. Originally from Korea, she studied abroad in the U.S. in high school and is studying abroad here at Texas Tech. While at Texas Tech, she studied abroad in Norway (pages 8-9). Finally, David and Janis King reveal why they have a passion for supporting students as they study abroad and why they established an endowment for that purpose (pages 10-11).

Our students are receiving external recognition for their scholarship and research. The Lubbock Chapter of the Achievement Rewards for College Students (ARCS) selected Avik Basu and Alejandro Bilbao, mechanical engineering doctoral students, Paula Monaco, a second year civil engineering doctoral student, and James A. Schrock, an electrical engineering doctoral student, as ARCS Scholars (page 4). Michael Wurmstein, an undergraduate student in the Department of Chemical Engineering, won first place in the Computing and Process Control Division at the 2014 Undergraduate Student Poster Competition at the AIChE Annual Student Conference (page 4). Haoyu Zhao, a chemical engineering doctoral student, won first place in the Student Poster Competition at the North American Thermal Analysis Society meeting (page 4). Shehan Haputhanthri, a graduate student in the Department of Mechanical Engineering, won the Best Graduate Student Poster Award at the ASME 8th International Conference on Energy Sustainability and 12th Fuel Cell Science, Engineering and Technology Conference (page 4).

Dr. William Lawson, an associate professor of civil and environmental engineering, has been named the Texas Society of Professional Engineers (TSPE) 2013-2014 Outstanding Engineer of the Year (page 5). Dr. Changzhi Li, associate professor of electrical and computer engineering, has been named a recipient of a 2014 Institute of Electrical and Electronics Engineers (IEEE) - Eta Kappa Nu (HKN) Outstanding Young Professional Award (page 5). Dr. Yong Chen, an assistant professor of computer science, has been named a 2014 Institute of Electrical and Electronics Engineers (IEEE) Technical Committee on Scalable Computing (TCSC) Young Achiever in Scalable Computing (page 5). Dr. Kishor C. Mehta, P.W. Horn Professor of civil and environmental engineering, is the recipient of the American Society of Civil Engineers (ASCE) Jack E. Cermak Medal (page 5).

James Baumgartner, a 2009 graduate with a B.S.M.E., has been named the inaugural Whitacre College of Engineering Young Distinguished Engineer of the Year (page 12). Aaron Phillips, a 2007 graduate with a B.S.I.E. and a 2008 graduate with a M.S.I.E., has been named the inaugural Whitacre College of Engineering Entrepreneur of the Year (page 12). Dr. Kancheepuram N. Gunalan, a 1986 graduate with a Ph.D. in civil engineering, has been appointed to a two-year term to the American Society of Civil Engineers (ASCE) Geo-Institute (G-I) Board of Governors (page 13). Andrew Ickert, a 2000 graduate with a B.S.C.E., has been named vice president and manager of the Fort Worth, Texas office of Halff Associates (page 13). David McCalla, a 1980 graduate with a B.S.E.E., has been named the CEO of Lubbock Power & Light (LP&L) (page 13). Richard L. Patrick, a 1971 graduate with a B.S.C.E., has been given a Texas Section-ASCE Award of Honor (page 13).

Our alumni are excelling in their careers, and we have featured a few of their highlights on pages 12 and 13. From recent graduates to graduates with years of experience, Red Raiders are leading organizations of great impact and are receiving recognition for their talents and skills. There are also additional alumni updates on pages 14 and 15. Feel free to let us know about your updates at www.TTUEngineering.com or at www.coe.ttu.edu/info. We look forward to hearing about your careers and how you are impacting the world!

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Community
of
Scholars

International Experience Initiative



A First: All Undergraduate Engineering Students to Study Abroad

A first for a state institution, the Whitacre College of Engineering is requiring all undergraduate students to go abroad through study, research, service, and/or internship opportunities. Many students, upon first entering industry, are given their first assignment overseas or will be immediately expected to work effectively and efficiently with other cultures.

The college's new initiative, the International Experience Initiative, allows students to conduct studies and research in the furthest reaches of the globe. Students now have the opportunity to develop an acute awareness of global business practices, cross-cultural communication skills, language fluency, and the ability to thrive in any environment. Texas Tech students will now have an even more profound impact not only on a national, but an international scale. This in-field experience will give students exposure, appreciation, and confidence, allowing them to develop a global perspective and open-mindedness, both of which are priceless in the eyes of future employers. This experience will also open students' eyes to the possibilities of industry and the larger-than-life size of their dreams becoming a reality. Compared to peers who may have been limited to a traditional university campus alone, students who participate in the International Experience Initiative will be more prepared to dive into new opportunities, ask big questions, and find their niche in this increasingly global world.

The specific skills, unique philosophies, and varied experiences these students will gain will have a significant

impact on the way they think and the quality of their work. Whether abroad or on U.S. soil, students will be working with foreign business interests, and a thorough understanding of other points of view and cultures is essential to successful engineering projects. Overall, this initiative will enhance students' attractiveness to global employers, giving them the tools they need to successfully devise strategies and network with foreign partners in a global environment.

Through global partners, the program provides a state-of-the-art education while enhancing students' intercultural competencies and global citizenship. Traditionally, travelling and studying abroad is an opportunity out of reach for many students. However, Texas Tech is committed to allowing and providing the resources necessary for students to go abroad and is working to ensure that the price attached to studying abroad is as reasonable and comparable as possible. For those that qualify, this will include supplying resources to cover the cost of airfare as well as additional cost of living expenses abroad.

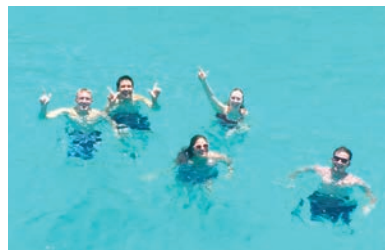
The international experience requirement is fulfilled by a minimum of three hours of coursework taken abroad, an internship abroad, a co-op abroad, a research project abroad, or a service project abroad.

In addition to Texas Tech faculty directed programs offering courses in foreign countries taught by Texas Tech professors, the college has partnered with universities throughout the world through reciprocal exchange agreements. These are unique, semester or yearlong opportunities where Texas Tech students trade places with incoming international students. Students also have the opportunity to go abroad through the Global E³ (Global Engineering Education Exchange), an exchange program with nearly 60 member universities in 20 countries. **E**

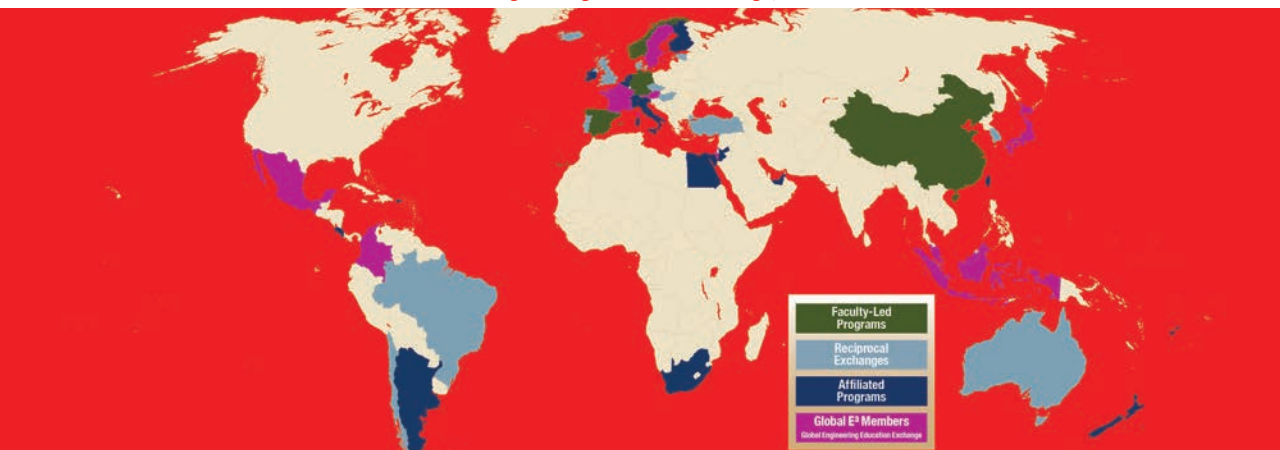
The college has more than 30 reciprocal exchange agreements in 20 countries. Additionally, the college is a participant in the Global Engineering Education Exchange, a consortium of more than 60 universities worldwide.



Dr. James Yang and Texas Tech students in Wilhelmshaven, Germany.



Texas Tech students enjoying a break from studying abroad in Puerto Rico.





Student News

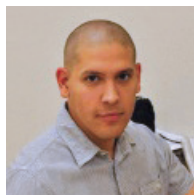
Basu, Bilbao, Monaco, and Schrock Named ARCS Scholars

The Lubbock Chapter of the Achievement Rewards for College Students (ARCS) has selected Avik Basu and Alejandro Bilbao, mechanical engineering doctoral students, Paula Monaco, a second year civil engineering doctoral student, and James A. Schrock, an electrical engineering doctoral student, as ARCS Scholars for the 2014-2015 year.

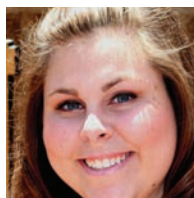
The Lubbock chapter was founded in 1972. The ARCS Foundation is dedicated to helping meet the country's need for scientists and engineers by providing scholarships to academically outstanding students who are United States citizens in need of financial assistance to complete their higher education, thereby contributing not only to the advancement of science, but also to the material and intellectual welfare of all people. **E**



Basu



Bilbao



Monaco



Schrock

Zhao Wins First Place in NATAS Poster Competition

Haoyu Zhao, a chemical engineering doctoral student, won first place in the Student Poster Competition at the North American Thermal Analysis Society meeting held in Santa Fe, New Mexico in September 2014.



Zhao

His poster, titled "Methyl Methacrylate Polymerization in Nanoporous Matrix: Reactivity and Resulting Properties," was coauthored by Fatema Begum, Ziniu Yu, Dr. Ronald Hedden, and Dr. Sindee L. Simon. **E**

Wurmstein Wins First Place in AIChE Undergraduate Student Poster Competition

Michael Wurmstein, an undergraduate student in the Department of Chemical Engineering, won first place in the Computing and Process Control Division at the 2014 Undergraduate Student Poster Competition at the AIChE Annual Student Conference in November in Atlanta, Georgia. The poster was titled "Simulated Annealing Polymerization: A General Algorithm for Preparing Atomistic Model Structures of Amorphous Polymers." Wurmstein is supervised by Dr. Rajesh Khare, an associate professor of chemical engineering.



Wurmstein

More than 200 students participate each year, and the session is open for any undergraduate student to present results from projects that they have carried out as undergraduate researchers at their university or during internships/co-ops. The poster session covers all key areas of chemical engineering, including sustainability, catalysis and reaction engineering, computing and process control, environmental aspects of chemical engineering, food, pharmaceutical, bioengineering, fuels, petrochemicals, energy, materials, and separations. **E**

Haputhanthri Wins Best Poster Award at ASME ICES/Fuel Cell Conference

Shehan Haputhanthri, a graduate student in the Department of Mechanical Engineering, won the Best Graduate Student Poster Award at the ASME 8th International Conference on Energy Sustainability and 12th Fuel Cell Science, Engineering and Technology Conference held in Boston, Massachusetts in July 2014.



Haputhanthri

His poster was titled "Ammonia as an Alternate Transport Fuel: Emulsifiers for Gasoline Ammonia Fuel Blends and Real Time Engine Performance." **E**



Faculty News



Lawson Named TSPE State Engineer of the Year

Dr. William Lawson, an associate professor of civil and environmental engineering, has been named the Texas Society of Professional Engineers (TSPE) 2013-2014 Outstanding Engineer of the Year.

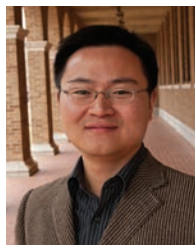


Lawson

The TSPE Outstanding Engineer of the Year Award is the highest honor given to an individual TSPE member. Eligibility is restricted to engineers whose sustained and unusual contributions have improved the public welfare and the advancement of the profession. Since the inception of the award at the state level, only two previous winners earned engineering degrees from Texas Tech University. Dr. Earnest Gloyna, a 1946 civil engineering graduate who served as dean of engineering at the University of Texas at Austin, and Dr. Jimmy Smith, a 1962 and 1963 civil engineering graduate who served as professor of civil engineering at Texas Tech, previously received the award. **E**

Chen Named IEEE TCSC Young Achiever in Scalable Computing

Dr. Yong Chen, an assistant professor of computer science, has been named a 2014 Institute of Electrical and Electronics Engineers (IEEE) Technical Committee on Scalable Computing (TCSC) Young Achiever in Scalable Computing. The IEEE TCSC selection committee selected five recipients and the award was presented at the 2014 International Conference on High Performance Computing, Networking, Storage and Analysis (SC14) conference in New Orleans, Louisiana in November.



Chen

The IEEE TCSC annual Young Achiever in Scalable Computing Award recognizes up to five individuals who have made outstanding, influential, and potentially long-lasting contributions in the field of scalable computing within five years of receiving their Ph.D. **E**

Li Receives IEEE-HKN Young Professional Award and ASEE Terman Award

Dr. Changzhi Li, associate professor of electrical and computer engineering, has been named a recipient of a 2014 Institute of Electrical and Electronics Engineers (IEEE) - Eta Kappa Nu (HKN) Outstanding Young Professional Award. The award has been presented annually since 1936 to exceptional young engineers who have demonstrated significant accomplishments in their career.



Li

Li has also been named the 2014 recipient of the American Society for Engineering Education (ASEE) Frederick Emmons Terman Award. This award is given annually to an outstanding young electrical and computer engineering educator in recognition of the educator's contributions to the profession. The award was presented at the 2014 Frontiers in Education Conference in October 2014 in Madrid, Spain. **E**

Mehta Receives ASCE Jack E. Cermak Medal

Dr. Kishor C. Mehta, P.W. Horn Professor of civil and environmental engineering, is the recipient of the American Society of Civil Engineers (ASCE) Jack E. Cermak Medal. He was recognized for outstanding contributions to wind engineering, particularly for systematic studies of structural damage caused by windstorms and leadership in the development of structural design standards for wind loads.



Mehta

A member of the National Academy of Engineering, Mehta was the first to study tornado damage from an engineering perspective and develop techniques for estimating tornado wind speeds by structural analysis of damaged and undamaged structures. He has developed guidelines for above-ground shelters for tornadoes and led the development of the EF-scale for tornado intensity rating. **E**





International Engineering Program

Faculty Profile: *Making the Classroom Come to Life*

"Why would students not want to study abroad?" asks Dr. Jeff Hanson, instructor of mechanical engineering at Texas Tech. "It's exciting to go places you've never been."

Hanson has been a member of the faculty-led study abroad program in Seville, Spain for several years. During trips overseas, he has taught and led field trips for participating engineering students.

In Hanson's view, few experiences can have the same effects and yield the same rewards as a trip abroad. Spain, for example, offers beautiful scenery, a rich cultural history, excellent food, and friendly people willing to welcome students and help them feel right at home. And to Hanson, three distinct characteristics in particular make Summer in Seville all the more worthwhile.



(L-R) Amy, Jeff, Jacob, and Madison Hanson at the Plaza de Toros during the 2014 Summer in Seville.

First, teaching in Seville allows Hanson to work with much smaller classes. His Lubbock courses usually fill up quickly with a cap of around 45 students, but in Seville, Hanson's courses have had around 20 students. This allows Hanson to work with each student as an individual and to make his course much more interactive. Increasing student participation and one-on-one study time helps Hanson to prevent any one student from falling behind while giving each student the personal attention they want and need in order to be successful. Hanson proudly admits it was in Spain that for the first time he achieved a passing rate of 100%; he attributes this to the interactive and personal nature of the smaller classes abroad.

Second, being in Seville allows Hanson to incorporate the environment into the classroom—or rather, to take students out of the confines of classroom walls and into the world that surrounds them. In his statics course, for example, Hanson discusses trusses, frames, and machines, and then takes the students on a walking tour to view a variety of bridges in Seville.

(L-R) Dr. Jeff Hanson, Kathryn Johnson, Warren Meredith, Cameron Love, Chanh Nguyen, Billy Dougherty, Jake Donaho, Annabelle Johnson, and Robert Rude study bridge construction along the Guadal-quivir River in Seville.





As a part of the learning exercise, Hanson asks students to draw an artist's rendition of one of the bridges, demonstrating that manufacturing and architecture can be aesthetically pleasing and artistic in their own right. Next, Hanson encourages students to perform different calculations to discover actual measurements of these large-scale bridges in order to connect theory to practice. Hanson watches students begin to see the applications of their knowledge and the real-life ways they can make a positive impact on the world.

The students also go on other field trips to see manufacturing and engineering in action in Seville. For example, students see firsthand the equipment and processes for manufacturing olive oil on a large scale. They also visit the Abengoa solar array and observe solar energy being converted to electrical energy to power residences without using exhaustible resources. Students visit the port and lock of Seville and discover the challenges of raising, lowering, and loading ships efficiently and effectively.

Field trips are also taken to view various cathedrals and basilicas for students to see the effects and longevity of successful engineering techniques utilized centuries ago. Hanson notes that these trips give meaning to the pages in the students' textbooks and that students begin to look at the world differently as a result. "The classroom comes to life, and [students now] have been there and seen it," something that cannot always occur on the campus of a large university.

Third, Hanson recognizes that trips to Seville push students out of their comfort zones. Students are thrown into environments where it is necessary to learn a new language, to connect with new people, to explore a new country, and to be exposed to new ideas they may not have been accustomed to before. This experience can encourage students who previously were shy, reserved, or hesitant to thrive and grow to develop confidence and communication skills, and to blossom into young engineers with even greater potential. Hanson enjoys watching the student growth



The PS10 and PD20 Solar Power Plants, producing approximately 30 MW and located near Seville, Spain.

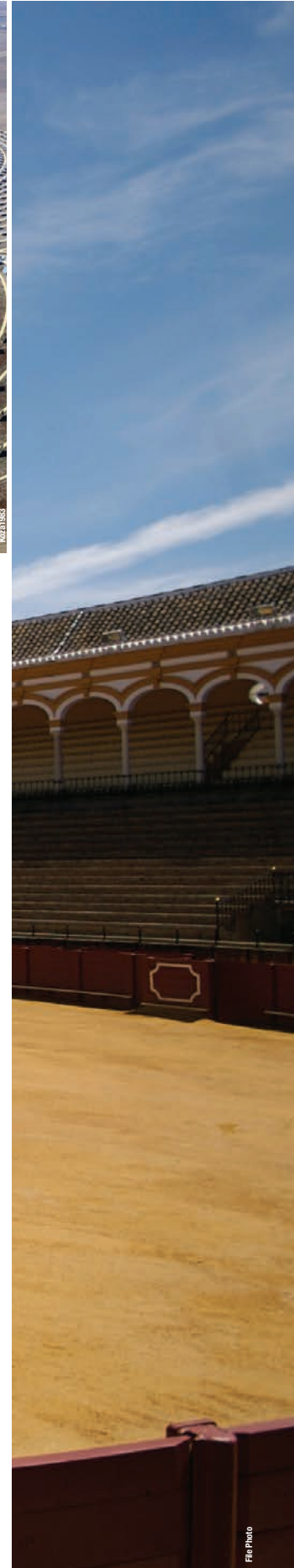
that can occur abroad. He also knows the value these experiences can have to future employers. Students will be graduating to enter a global industry where it may be necessary to live or work abroad. More and more companies are hiring and then sending their employees abroad. For students who have already pushed the boundaries of their abilities and their knowledge in Seville, adaptability will become a refined skill available for their future challenges and success.

While Hanson enjoys trips to Spain for their beauty and excitement, the most rewarding component of leading these trips abroad remains experiencing student growth and maturation. As a faculty member, Hanson recognizes that his ultimate goal is to help and encourage students to learn. Lecturing and assigning homework can achieve this in many ways; however, accompanying and teaching students during Summer in Seville has allowed Hanson to realize firsthand the enormous and priceless benefits of studying abroad—above all, the individual potentials that cannot be reached within the walls of the traditional classroom or laboratory. **E**



Jeff Hanson and students at the Electricity Museum (Museu da Electricidade) in Lisbon, Portugal.

abroad—above all, the individual potentials that cannot be reached within the walls of the traditional classroom or laboratory. **E**





International Engineering Program

Student Profile: *From Korea to West Virginia to Texas to Norway*

Chaeun (Elizabeth) Kim is among a small group of Red Raiders that have chosen to study abroad - while studying abroad. After deciding only six years ago to study abroad in the United States during high school, this adventurous woman, originally from Korea, chose to continue her international experience at Texas Tech University.

After completing her high school degree in West Virginia, she arrived in Lubbock to study petroleum engineering and pursue minors in math and geology. After her first year at Texas Tech, Kim took on a new challenge: studying abroad during the summer in Norway. This drastically different yet rewarding experience allowed her to earn a Certificate in International Entrepreneurship, while also solidifying for her the value studying abroad can have for a student's education as well as future career.

One of the best reasons Kim cites for studying abroad is the prospect of developing strong interpersonal skills and business contacts. While in Norway, Kim pushed herself to meet as many new people as possible. As a result, she made many new friends and professional connections. The other students participating in this program, however, were not all Texas Tech students; they were from all corners of the globe.

Through stretching her communication skills and meeting with other students from other countries, Kim was able to gain valuable networking skills and to build connections with future business partners and professional peers. Now, for example, if Kim finds herself in Paris, France, she has several people she can contact for help or advice, resources she would not have otherwise acquired if it were not for her study abroad experience. Working with a diverse group of people with different backgrounds and many majors allowed Kim to begin the process of professional networking and building a foundation of personal resources available for her to utilize in the future.

Another beneficial effect of studying abroad for Kim was gaining a new perspective. Kim has noticed that many Texas Tech students are originally from Texas and have rarely - if ever - ventured out of the country or even the state. While Kim has learned to love Texas and Lubbock specifically, she knows that in the future there may come a day when she is asked to leave the state or the country in order to benefit her company or the industry as a whole.

Increasingly, engineering companies are hiring and immediately sending employees abroad. Many students will encounter a culture shock shortly after graduation if they have been unable to experience going abroad as part of their education.

With this in mind, Kim wanted to prepare as much as possible through an early experience studying abroad. Through her time in Norway, she was able to gain a broader perspective on business, engineering, and life. There is so much more than what one can learn in a textbook or from the

same type of people. Through venturing to a foreign country, Kim established a richer, global perspective, an appreciation for other cultures, and a strong sense of adaptability to many different situations.

While many great classes and professors provide students with a strong background in engineering on the Texas Tech campus, that is not what makes a great engineer, says Kim. What makes a great engineer is the courage to challenge oneself, especially to gain a global perspective which will be an expectation in the future of this industry, and Texas Tech is making great strides for the success of its engineering students by motivating them to go abroad.

Lastly, Kim would highly recommend a study abroad experience to other students because of the resulting personal growth. "Studying abroad," claims Kim, "is one of the fastest ways to see something you would never otherwise encounter, but it also forces you to get out of your comfort zone and grow up, fast.



Elizabeth Kim in Hønefoss, Norway.





Elizabeth Kim at the summit of Mt. Ulriken, overlooking Bergen, Norway.

Although many students may be scared to venture abroad, it was my experience that it was one of the best choices I could have made in order to further my education and strengthen my own potential.”

Studying abroad naturally forces students into new situations, provides various challenges, and results in more personal growth than comes about from traditional classroom learning. Studying alongside Norwegian students, immersing herself in a new culture, and interacting with local merchants in shops was a way for Kim to encounter something new while improving her own skills in the process.

Taking on personal responsibility to succeed in another country while confronting many different challenges and stepping outside of her comfort zone allowed her to learn and to become a stronger prospective engineer. These experiences ultimately

allowed Kim to build leadership and communication skills, the confidence to confront new and different situations in the future, and the ability to work with many different types of people. “I realized that in today’s industry no one person can do it all alone,” says Kim, “but I can start by becoming the best that I can be and by being unafraid to approach others for help and collaboration.”

Since first becoming a student at Texas Tech, Kim has recognized that this large and highly ranked university has something to offer everyone. However, for her, one of the most treasured and unforgettable experiences so far has been her trip to Norway. With the skills and knowledge she gained from studying abroad, Kim will go forward a strong competitor in her field and a confident student prepared to become a professional who makes a global impact in her industry. **E**

Elizabeth Kim and a group of Texas Tech students in the Certificate in International Entrepreneurship program stand on the summit of Mt. Ulriken, near Bergen, Norway.





International Engineering Program

Alumni Profile: *David and Janis King Study Abroad Scholarship*

David King earned a Bachelor of Science in mechanical engineering at Texas Tech in 1974, and since that time, he has enjoyed a long and successful career, spending several years at CB&I, working more recently as president of CB&I's Lummus Engineered Products, and gaining extensive engineering and construction industry experience. Looking back on this career, however, David recounts that much of it included working in the international field. "Overall," says David, "the more I went overseas, working with other nationalities and other international companies, the more I gained a new perspective on engineering as well as business." David is now the COO of Primoris Services Corporation and his wife Janis was previously a registered nurse in the Cardiac Critical Care Unit at Trinity Mother Frances Hospital. Through their experiences abroad, they both gained new insights into their respective careers and life. They realized the value of understanding and appreciating cultural differences while discovering the fact that our society is increasingly favoring an international, global market over exclusively domestic companies and services. Now, David and Janis hope to help provide students with the same experiences they gained over the course of their lifetimes and careers. They are supporting Texas Tech's International Engineering Program through the David and Janis King Study Abroad Endowment in Engineering.

After learning about the college's initiative for all engineering students at Texas Tech to study abroad as a part of their undergraduate education, David explained it has been his experience that the kind of exposure an international experience can provide simply makes for a more well-rounded engineer and businessperson. David notes that companies looking for graduates with an engineering degree will often rank candidates with significant experience abroad more highly and will offer them more opportunities. Employers want to hire students who have experience working with other cultures and understanding the global marketplace. "We want to help this program get going and grow in order to benefit our

graduates," David and Janis explained, "so that Texas Tech graduates can better differentiate themselves. We want them to have an opportunity to gain what we did through living and working abroad."

If we are isolated from other cultures, we can often jump to conclusions about customs or business practices different from our own. We have the natural tendency to assume certain things about words or even tone of voice between people of our own culture. However, having worked with other cultures, David and Janis have learned among other things not to jump to conclusions.

For example, King explained, in Chinese to say hello is "nǐ hǎo," however there is a variation "nǐ hǎo ma" which is a more personal way to ask "how are you?" Being from the United States and an English speaker, "ma" and the tone used, might sound as though someone is raising their voice or excited, when in fact, it is the more personal way of greeting a friend. King also commented that what has made our country so great is the diversity of cultures and taking advantage of that diversity through exposure and understanding. The study abroad

program gives Texas Tech students that opportunity.

The Kings also spent time in The Netherlands, and gave another example. David worked with a cultural psychologist who explained an important consideration for managing Dutch employees. If an American manager asked an employee to move a coffee cup from the front of a desk to the side of a desk, he or she might simply say, "my coffee cup is here, move it over there." The manager might even add "please" or "would you." However, many Dutch employees would see the request in an entirely different way, perhaps interpreting the explanation of such a simple task as an insult to their intelligence or capability. Being of an older, even proud culture, the Dutch would act more readily if presented with the task as a challenge instead of a command. The psychologist explained to David that a better way to address the situation would be to explain that this task is at hand and allow the employee to find a solution to the problem themselves. These are, of course, simple examples that demonstrate minute, but important aspects that one can only experience in physical exposures to other cultures.



David and Janis King



Through studying abroad, students would be exposed to other cultures in similar ways. They would begin to see and understand other ways of life, and in a broader sense, be unafraid of accomplishing the same goal in different ways. Just as individuals can make a cross-country trip on various routes, yet arrive at the same destination, engineering and business projects can be completed through different resources and methods. No single way is necessarily better or more superior, and a lot can be learned from listening, watching, and attempting to understand others. Students who are adaptable in this way through studying abroad will be better prepared to become leaders in their field and to stand out to future employers.

Lastly, David sees a studying abroad experience as a way for students to ultimately become more self-sufficient and appreciative of what they have. Here in the United States and other well-developed countries, we sometimes underappreciate readily available consumer merchandise, internet access to broad arrays of information, and overarching presence of instant gratification. In other countries, it may not be as easy to acquire things, gain transportation to different places, or find answers to questions. Through studying abroad, students learn to be more self-sufficient, gaining the confidence to make the contacts necessary to solve a problem and begin establishing the self-discipline to study, live, develop external relationships, and succeed in a complex and sometimes unfamiliar environment. Self-sufficiency and the ability to not have to depend on others is valuable in the market place. These traits contribute to leadership skills and allow students to become more diverse professionals in their career.

Overall, David and Janis King recognize that beginning to interact in different cultural settings is a crucial educational experience they believe should be made available to undergraduates. From noticing language and verbal communication subtleties to gaining self-sufficiency and confidence, there is much to be learned through an international experience that the traditional classroom cannot offer. Today, we find ourselves in an international, competitive society in which there are very few companies that do not touch the international realm in the products they buy, business they conduct, or services they render. The Kings believe that Texas Tech is on the cutting edge of higher education by encouraging students to go abroad early in their careers. Through their support, they hope that Texas Tech graduates will become even stronger, more competitive, and more well-rounded engineers in the future. **E**

Perspectives on the International Engineering Program

“Engineering has become an ever-increasing international profession where employers seek applicants who possess an awareness of global business practices, cross-cultural communication skills, language fluency and the ability to thrive in any environment. The Whitacre College of Engineering is committed to providing our students with quality international engineering experiences that prepare them to work in that global environment.”

Al Sacco Jr.

Dean, Whitacre College of Engineering

“With operations in over 100 countries around the world, it is critical that Chevron recruit students that recognize the many cultural diversities in our areas of operations. We find that Texas Tech students that have participated in the study abroad program are an excellent fit for our organization based on the experiences gained living and studying in other countries. Chevron is proud to support Texas Tech students through our University Partnership Program.”

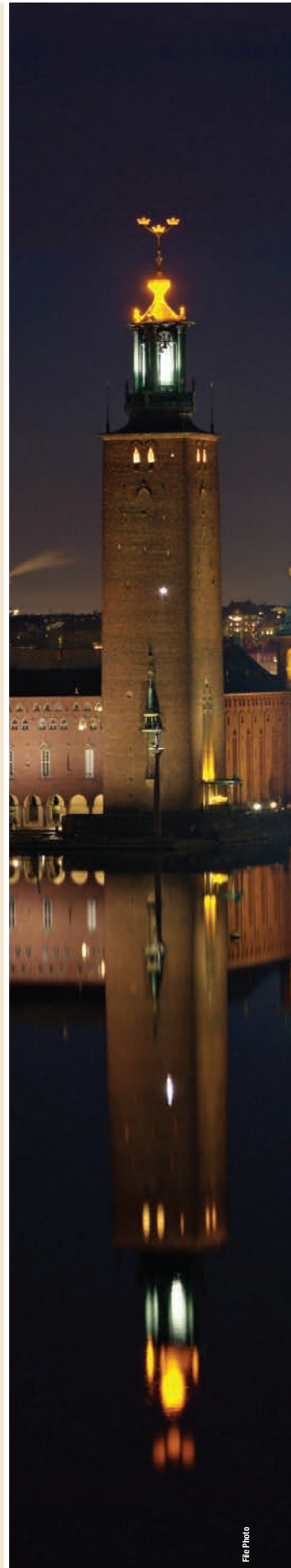
Bill Hunter

Manager of University Affairs at Chevron

“Engineering was an easy choice to make because it gave me the opportunity to use all of the skills and talents I was blessed with, but also open the doors to a world of knowledge that I was eager to know. I would love to visit and be educated in Nigeria. This choice is based on a combination of my heritage and its relation to my career path. Nigeria is a developing nation with a strong petroleum history, and as an aspiring petroleum engineer it would be a great opportunity to not only learn there, but a chance to dive into the world of international natural resources.”

Raphael Akinsipe

Senior Petroleum Engineering Major





Alumni News

Baumgartner Named Young Distinguished Engineer of the Year

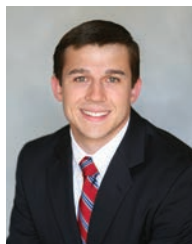


James Baumgartner receives the Young Distinguished Engineer of the Year Award at the 2014 Engineering Homecoming Dinner.

James Baumgartner, a 2009 graduate with a Bachelor of Science in mechanical engineering, has been named the inaugural Whitacre College of Engineering Young Distinguished Engineer of the Year.

The Young Distinguished Engineer of the Year Award has been established to honor a young Whitacre College of Engineering alumnus who represents the college in an outstanding way through their professional and civic achievements and through their overall involvement with the college.

Originally from San Antonio, Baumgartner has already established a successful career with ExxonMobil. He has acquired experience on four continents and more than 12 countries in a variety of areas, including government and national oil company negotiations, large-scale contract development and bidding, contract management, offshore/onshore execution planning, and general project engineering. He is currently working in St. John's Canada on the Hebron Project, but returns to Lubbock on a regular basis as part of the ExxonMobil Recruiting Team.



Baumgartner

One year after graduation, he started a scholarship endowment in the college that has provided scholarship funding to two engineering students. Baumgartner is one of the founding members of the Young Guns young engineering alumni board and serves on the Young Guns executive committee. Since graduation, he has also been involved with a number of civic and philanthropic organizations including Compassion International, United Way, the Boys and Girls Club, and Habitat for Humanity. **E**

Phillips Named Entrepreneur of the Year

Aaron Phillips, a 2007 graduate with a Bachelor of Science in industrial engineering and a 2008 graduate with a Master of Science in industrial engineering, has been named the inaugural Whitacre College of Engineering Entrepreneur of the Year.



Phillips

The Entrepreneur of the Year Award recognizes a Whitacre College of Engineering graduate that has taken personal risks and sacrificed himself or herself to pursue a dream of new and better products and services that benefit society. The award criteria include a thorough assessment of recent financial performance, strategic direction, product or service innovation, company leadership including personal integrity and risk-taking, values and key employee initiatives, and community involvement.

Phillips attended Texas Tech University to study industrial engineering, where he received his bachelor's and master's degrees, as well as completing all of his Ph.D. coursework, before he decided to forgo his academic research in favor of starting AmpliSine Labs. He is the founder, president, and CEO of AmpliSine Labs in Lubbock, Texas. His background includes leading a broad array of development and research projects ranging from the creation of AmpliSine's patented next-generation SitePro automation software, to in-depth work with groups such as the United States Nuclear Weapons Complex, Penn State University, the National Science Foundation and many others. **E**

Aaron Phillips addresses a group of students, faculty, staff and alumni at the Dean's Council Entrepreneurship Seminar.





Gunalan Appointed to ASCE Geo-Institute Board of Governors

Dr. Kancheepuram N. Gunalan, a 1986 graduate with a Doctor of Philosophy in civil engineering, has been appointed to a two-year term to the American Society of Civil Engineers (ASCE) Geo-Institute (G-I) Board of Governors. The G-I is a specialty membership organization with more than 11,000 individual members and more than 60 organizational members interested in improving the environment, mitigating natural hazards, and economically constructing engineered facilities.



Gunalan

Gunalan also recently chaired the 2014 ASCE Global Engineering Conference in Panama. More than 1,200 current and future civil and other engineers from around the globe came together in Ciudad de Panama (Panama City), Panama, for the ASCE and EWB-USA Global Engineering Conference 2014 – celebrating the 100th Anniversary of the Panama Canal. **E**

McCalla Named CEO of Lubbock Power & Light

David McCalla, a 1980 graduate with a Bachelor of Science in electrical engineering, has been named the CEO of Lubbock Power & Light (LP&L). He previously served LP&L as the assistant director of electric utilities. Before coming to LP&L, he worked as the general manager for Greenville Electric Utility System and served as president of the Texas Public Power Association. He has more than 34 years of experience in the electric utility industry.



McCalla

As general manager of Greenville Electric Utility System, McCalla oversaw all aspects of their operation, including power plants, power supply, engineering operations, accounting, customer service, and cable and internet services. McCalla procured, constructed, and successfully operated new generation resources for the utility. **E**

Ickert Named VP and Manager of Halff Fort Worth Office

Andrew Ickert, a 2000 graduate with a Bachelor of Science in civil engineering, has been named vice president and manager of the Fort Worth, Texas office of Halff Associates. He is responsible for leading operations and expansion of the Fort Worth office through its civil engineering, water resources, transportation, land development, planning, environmental, and surveying services.



Ickert

With more than 12 years of experience at Halff, Ickert has served in the role of project manager on a wide variety of engineering projects for the public and private sectors. He is a member of the American Society of Civil Engineers, the Texas Floodplain Management Association. He is also a Certified Floodplain Manager and Licensed Professional Engineer in the state of Texas. **E**

Patrick Receives Texas Section-ASCE Award of Honor

Richard L. Patrick, a 1971 graduate with a Bachelor of Science in civil engineering, has been given a Texas Section-ASCE Award of Honor. The award is presented to a limited number of members “in recognition of service to the Texas Section and outstanding professional achievement in civil engineering.”



Patrick

After graduation, Patrick joined the Texas Department of Transportation in the Dallas area. In 1976, he moved to Houston and joined the consulting engineering firm LIA, working in residential development designing streets and utilities for subdivisions and municipal utility districts. Patrick later led a design team that designed two sections of the Sam Houston Toll Road. From 1988 to 1995, he designed streets and utilities for public works clients. Since 1996, he has focused on business development responsibilities for consulting engineering firms. **E**

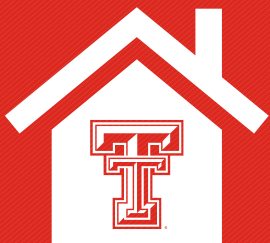




Alumni Updates

Save
the
Date

Friday,
October 9,
2015



Whitacre College of Engineering Alumni Updates

2014

Brendan Flower, a 2014 graduate with a B.S.E.E., is an operations engineer for the Billings Division for Phillips 66 and lives in Billings, Montana.

2013

Eunbae Lee, a 2013 graduate with a B.S.PE., lives in Pearland, Texas.

Ryan Murphy, a 2013 graduate with a B.S.M.E., previously worked for Jacobs Engineering as a global lifting and rigging engineer and now works as an engineer for Alltec Lifting Systems and lives in Pearland, Texas.

John Vacek, a 2013 graduate with a B.S.PE., works for Apache Corporation and lives in Lake Jackson, Texas.

Yugendra Guvvala, a 2013 graduate with a Ph.D. C.S., is an HPC Engineer for RAID Inc. and lives in Methuen, Massachusetts.

2012

Alfonso Eseng-Nzang, a 2012 graduate with a B.S.PE., lives in Malabo, Bioko Norte, Equatorial Guinea.

James Dunn, a 2012 graduate with a B.S.C.E., works for Scientific Drilling International and lives in Big Spring, Texas.

2011

Zachary Plinario, a 2011 graduate with a B.S.C.E., is a bridge design engineer for HNTB Corporation and lives in Carrollton, Texas.

Amjad Abdelrahman, a 2011 graduate with a B.S.PE., works for Anadarko Petroleum Corporation and lives in Midland, Texas.

2010

Daniel Bach, a 2010 graduate with a B.S.PE., lives in Houston, Texas.

2010

(continued)

Robert Brueckman, a 2010 and 2012 graduate with a B.S.I.E. and M.S.S.E.M., is now the Surface Systems Project Coordinator for North and South America for Cameron International Corporation and lives in Houston, Texas.

2009

Amanda Gordon, a 2009 and 2011 graduate with a B.S.M.E. and M.S.M.E., works for ExxonMobil Refining and Supply and lives in Houston, Texas.

2008

Tyler Thompson, a 2008 and 2010 graduate with a B.S.M.E. and M.S.S.E.M., was recently promoted to plant manager at Cameron Surface Systems, a division of Cameron International Corporation and lives in Houston, Texas.

2004

Femi Olubunmi, a 2004 graduate with a B.S.E.E. and B.S.C.S., works for AVEVA Inc. and lives in Houston, Texas.

2002

Steven Myles, a 2002 and 2004 graduate with a B.S.I.E. and M.S.I.E., is a forecasting and planning analyst for Apple Inc. and lives in Austin, Texas.

1999

Satyaki Guha, a 1999 graduate with an M.S.M.E., is a technical service manager for the Mid-Canada Region of Caterpillar Global Construction and Infrastructure, a division of Caterpillar Inc. and lives in Richmond Hill, Ontario, Canada.

1997

Natalie Harvill, a 1997 graduate with a B.S.C.E., joined JQ in May to lead the firm's new Lubbock office and is the first female principal in the organization's 30 year history. She lives in Lubbock, Texas.



1993

Abidur Khan, a 1993 graduate with an M.S.C.E., works for the City of Dallas: Dallas Water Utilities and lives in Dallas, Texas.

1992

Scott Flathouse, a 1992 graduate with a B.S.Ch.E., received credentials as a Certified Lubricant Specialist through the Society of Tribologists and Lubrication Engineers and works for Phillips 66 and lives in Fulshear, Texas.

1990

Brian Manning, a 1990 graduate with a B.S.C.E., is executive vice president and chief development officer of Sterling Construction Company, Inc, where he has worked for the past 20 years. He is also the technical region director of ASCE for 2014-2015 and he lives in Kingwood, Texas.

Darren Peterson, a 1990 and 2001 graduate with a B.S.M.E. and M.D., has recently accepted a position as an associate professor of surgery at the Texas Tech University Health Sciences Center at Amarillo in the Department of Surgery. He will be working to build the Division of Minimally Invasive, Laparoscopic, and Robotic Surgery. He has been living in Flagler Beach, Florida.

1987

Stephen Harmon, a 1987 graduate with a B.S.M.E., is the director of Factory Services and Environmental, Safety, and Health at Triumph Aerostructures and lives in Flower Mound, Texas.

1985


Don Stull, a 1985 graduate with a B.S.C.E., was issued U.S. patents 8,679,401 and D692,114 as the co-inventor of Microwave Disinfection and Sterilization and Microwave Disinfection Slotted Radiator. He is the CEO and director of MicroZap, Inc. and lives in Lubbock, Texas.

1977

Dan Christenson, a 1977 graduate with a B.S.E.E.T., is the chair of the IEEE North East Area of Region 6 (Idaho, Montana, and Utah). He is the director of engineering for the 748th Supply Chain Management Group in the United States Air Force and lives in Clearfield, Utah.

1972

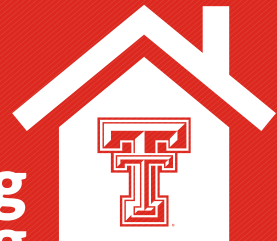
Clifford Parten, a 1972 and 1979 graduate with an M.S.E.E. and Ph.D., works for Adaptive Devices, L.L.C. and lives in Signal Mountain, Tennessee.

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Save the Date

Friday,
October 9,
2015

engineering homecoming dinner



Save the date for a
special dinner in
Lubbock during
homecoming weekend
on October 9
for engineering
alumni and friends.

hosted by:

YOUNG GUNS



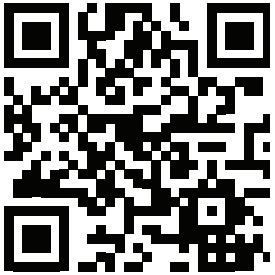
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Winter 2014-2015



In October, the Whitacre College of Engineering hosted 950 high school students and teachers for a day of interdisciplinary exploration of the wonder of Earth and outer space.

Joseph Acaba (Left), a NASA astronaut, Al Sacco Jr. (Center), a former astronaut and dean of engineering at Texas Tech University, and Jose Francisco Salgado (Right), an astronomer and visual artist, made special presentations to encourage students to explore studies and careers in Science, Technology, Engineering, Art and Mathematics.

Acaba, formerly a science teacher, shared his experiences about science, space, and his time on both the Space Shuttle and International Space Station. Salgado presented his audiovisual "Science thru Art" film presentation. He is an Emmy-nominated astronomer, experimental photographer, visual artist and public speaker who creates multimedia experiences that communicate science in engaging ways.

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