The Changing Face of Petroleum Engineering

Computing the Recovery Code

Welcome Class of 2017

The Arctic Expedition
I

t’s difficult to believe that my fifth year as chairman of The University of Texas at Austin Department of Petroleum and Geosystems Engineering (UT PGE) has just passed. Thanks to UT PGE’s great faculty, staff, students and alumni, we have accomplished much more than I ever dreamt possible when I started. Thank you to our great UT PGE team: You are #1!

Farewell 2013, Welcome 2017
This past academic year, we graduated 119 undergraduate and 36 graduate students who will start their journey changing the world through industry, academia or even music, as you will learn in the 2013 graduation article. The department welcomed the 2017 class with its second annual Freshman Fall Retreat, sponsored by BP, which introduced students to the Longhorn spirit and pride. It also provided a great opportunity for students to connect with classmates, UT PGE faculty and staff and industry representatives.

Faculty Expansion and Promotions
UT PGE continues to recruit talented faculty to enhance the academic and research reputation of the department. Last fall we added two stars – Drs. Mark McClure and Hugh Daigle – as assistant professors. They are off to a great start, receiving positive reviews from our students and launching their updated labs to conduct innovative research. Drs. Matt Balhoff and David DiCarlo were both promoted in the fall of 2013 to associate professors. The department added another brilliant Assistant Professor, Nicolas Espinoza, this fall, increasing the total number of tenure-track faculty to 19.5, officially.

Interdisciplinary Research
The famous phrase “two heads are better than one” is a good description of the research conducted through UT PGE. Our faculty members are conducting interdisciplinary research with departments and colleges across the UT Austin campus to see challenges through a variety of lenses, leading to improved solutions. Dr. Eric van Oort is working with students and professors from other engineering disciplines, including mechanical engineering, to conduct research in his newly launched state-of-the-art drilling labs. Our partnerships with Statoil and Shell continue to thrive as we work closely with the Bureau of Economic Geology. UT Austin’s interdisciplinary research was showcased last spring at the inaugural Energy Summit in Houston, where I joined Scott Tinker (Director of the Bureau of Economic Geology) and John Butler (Clinical Associate Professor in McCombs School of Business) in a panel discussion to share UT Austin’s expertise in energy research and academics.

Student Lounge Makeover
One of the essential elements to student success is the opportunity to study in a technologically savvy and group work-friendly environment. The lounge with broken tables and chairs and minimal natural light was no longer making the cut for our top-rated petroleum engineering program. Thanks to alumni support, last November we dedicated the new study lounge to Professor Emeritus Ben H. Caudle, a professor who always ranked highly on students’ lists of favorite faculty members. Almost a year later, students are still talking about the positive impact of the updated space.

Changing Face
Engineering has long been a male dominated field, but women are gaining ground studying the subject and working in industry. This fall, UT PGE is welcoming a freshman class comprised of close to 30 percent women. I encourage you to read the article featured in the magazine highlighting women who are leaders in the industry, valued UT PGE faculty members and thriving students. They are all making an effort to introduce STEM education, particularly engineering, to young minds, fracturing the current myths and instilling confidence about women’s abilities to succeed in the field.

Making a Splash on the Big Screen
For almost a year, UT PGE worked with an award-winning film company, Alpheus Media, to create a documentary telling the robust and rich history of the department through the voices of a ‘44 UT PGE graduate who applied his petroleum engineering knowledge to assist the Allies with winning World War II, a father and son entrepreneurial team looking to strike it big in the Canadian oil fields and a current female student navigating her way through challenging curriculum and internships.

Thanks to the support of a few generous alumni, the documentary premiered at the 2012 UT PGE Distinguished Alumni tailgate. In March 2013 the film earned a primetime spot on the Longhorn Network, showcasing the UT PGE story to thousands of households throughout the region. To receive a copy of the DVD, please visit us on the UT Austin campus, at an alumni happy hour in Houston or Denver, or at the SPE ATCE alumni reception in New Orleans.

We appreciate your continued support in helping us remain a top ranked department. Hook ’Em!
I am very excited to take over the reins as Chair of the UT PGE External Advisory Committee (EAC) for the 2013-14 academic year.

The past few years have seen a lot of change in the industry and in the skills and knowledge base needed to be a successful petroleum engineer. We’ve watched crude prices rise and gas prices fall, making the challenge of balancing risk and reward ever-present. The students who are just starting a petroleum engineering education this year at UT PGE are also faced with tremendous challenges. Our department is well known for having one of the most difficult degree programs in the country, and often students enter the department with the expectation that simply making it through the program will launch them into great careers. Statistically, that’s true for a portion of this year’s incoming freshman class, but for many of them, the challenges found in Reservoir Engineering I and Thermodynamics will test their commitment to reaching their end goals. As the alumni know, even after conquering these courses, other accomplishments are required to ensure a rewarding job and career at the end of the academic studies. Most notably, it is critical to reach out to department resources to access “sage” advice.

The EAC and many alumni have spent countless hours working with UT PGE’s faculty and staff to ensure that the overall student experience remains the best in the country. Above and beyond teaching the fundamentals, UT PGE is working closer than ever before to build links to industry that will help today’s students understand the rapidly changing—and rewarding—field they’ll join when they graduate.

One of the most impressive new programs offered by the department is the Freshman Fall Retreat. The program, which launched last year, was a huge success in helping set up the Class of 2016 to graduate on time and to be prepared with the skills they need to be not only successful students, but successful future engineers.

This year, the department has added a new mentoring program in which seniors mentor freshmen students—not only to show them the ropes and keep their spirits up when the classes get hard, but also to help them begin building their professional networks. Called PenPals, these mentors will pave the path for freshman students.

I also want to put a spotlight on one of our UT PGE lecturers, Deborah Hempel-Medina. A 1993 graduate of the department, Deborah joined the faculty as a lecturer for the Engineering Communications course required for all undergraduate students. Deborah redesigned the entire course to bring in new communications topics that face today’s petroleum engineers based on her own experience working in industry for nearly two decades. Beyond teaching the basics of writing technical papers, Deborah brought in case studies from recent industry events, inviting her students to consider the ethical challenges they’ll face in industry. Through analyzing the communications strategies used by industry experts, Deborah’s students complete the course with the skill sets that can’t be taught in a traditional technical course.

As alumni and corporate partners, we should all be proud of the constant efforts of the UT PGE department to produce a superlative educational experience for its students. The department’s dedicated faculty and staff should be celebrated, because their efforts to remain relevant in their teaching will produce the workforce ready to tackle the immense technical challenges facing our industry in the years to come.

Hook ‘Em Horns!!
The scientific complexity of recovering oil and gas continues to grow as the “easy” hydrocarbons have been depleted. With millions of dollars at stake for each well drilled, it is critical companies receive strong intelligence from a technical perspective in order to optimize prediction and planning.

Enter UT PGE Professor Kamy Sepehrnoori, who has been with UT PGE for more than 30 years and has dedicated his career to improving the recovery prediction for oil and gas reservoirs through the development of simulators.

Recognized as a world leader in this area of petroleum engineering, Sepehrnoori contributes his success to his multidisciplinary background. He received his undergraduate degree in mechanical engineering and then switched to aerospace engineering for his master’s degree. After studying elements above the earth, he began researching what lies below the earth’s surface in UT PGE’s PhD program. After obtaining an assistant professor position in UT PGE, Sepehrnoori spent the last three decades developing reservoir simulators to assist engineers’ decision-making and planning for maximum hydrocarbon recovery. “Reservoirs are incredibly complex, so mathematical modeling is essential for predicting the production of resources,” said Sepehrnoori. “These are not problems that can be solved by hand.”

Sepehrnoori’s research is not focused on one area; he creates models for a variety of recovery processes and all his research works together to help discover new ideas. Sepehrnoori bases his research on the trends occurring in the oil and gas sector to meet our country’s energy demands.

“With the natural gas boom spreading throughout the U.S., my research group is focusing on simulation of unconventional resources such as shale gas and tight oil reservoirs,” said Sepehrnoori. “We are looking for methods to enhance the recovery from low permeability formations.”

Due to the importance of production from shale gas and tight oil reservoirs, three of Sepehrnoori’s PhD students’ dissertation research is devoted to this area.

Sepehrnoori’s graduate student, third-year PhD candidate Wei Yu, is currently working on a project to address the industry’s growing demands for solutions to optimize hydraulic fracturing in an environment where the price of natural gas remains fairly low. “There is a high cost and uncertainty with hydraulic fracturing due to unpredictable parameters including permeability, porosity and fracture spacing,” said Yu. “My research focuses on developing a user-friendly and efficient simulation framework to obtain the optimal hydraulic fracturing design for shale gas and tight oil production.”

Yu plans on completing the game-changing framework in the next year or two as part of his dissertation. “My end goal is to provide industry with the best recovery scenario by reducing uncertainty,” said Yu.

In order for Yu to successfully complete his research, he looks to another one of Sepehrnoori’s PhD students, Mahdi Haddad, for configuration and conductivity of optimized hydraulic fractures.

“There are a lot of pieces to the hydraulic fracturing puzzle,” said Haddad. “I’m collaborating with Wei to offer a comprehensive package to industry including a 3D hydraulic fracturing model and an optimizing tool.”

When Sepehrnoori is not supervising one of the largest research groups in the world in the area of reservoir simulation development and application or teaching in a classroom, he serves as the graduate advisor and an influential member of the Graduate Studies Committee. He strongly believes in the benefits of a diverse population of graduate students and travels all over the world to promote the program.

Learn more about Sepehrnoori’s research program, including his current projects, by visiting his dedicated page on the CPGE website.
After a major construction project, UT PGE Professor Eric van Oort’s real-time operations center and drilling automation and efficiency labs are up and running. This fall, students will have the opportunity to interact with the innovative technology from an academic and research perspective, better preparing them for a successful career in industry.

“The future of drilling will look nothing like its past — it will revolve around paying much more attention to well barrier design and its verification, to improved safety and environmental compliance, to exploration and production in unknown environments such as ultra-deepwater and the Arctic, and, above all, how to extract useful knowledge and follow-up actions from big data streams,” said van Oort. “The new, state-of-the-art drilling and completion laboratories at The University of Texas at Austin, created with the generous support by Baker Hughes and NOV, will prepare our students for this future and aim to make a meaningful, applied basic R&D contribution to it.”

The three labs will each focus on specific research and teaching topics:

**Zonal Isolation Improvement**
One of the key issues in today’s harsh offshore environments as well as onshore shale well construction is ensuring proper zonal isolation—a control method that ensures oil and gas do not migrate up the annular spaces of a well after a reservoir has been drilled. Future research discoveries could improve methods for deepwater drilling as well as resolve the current controversy on hydraulic fracturing.

**Real-time Operations Center**
The goal of this lab is to collect real-time data from participating drilling operations around the world in order to improve sensor failure analysis, complex data pattern analysis, develop automation control algorithms, etc.

**Drilling Automation and Efficiency Lab**
Students in this lab will use scaled-down rig equipment to try and automate the drilling process. Drilling dynamics and efficiencies will be studied as well. The lab will further enable advanced prototyping and research and development before wells are drilled.

To showcase the innovative labs, UT PGE is creating a short video, produced by Alpheus Media - an award-winning film company. The digital piece will highlight the advanced technology only found at UT PGE, the interdisciplinary research conducted in the labs, and how what starts here is changing the world. Look for the video on the department’s website this October.

To check out the labs, come to the Distinguished Alumni Tailgate on Saturday, November 2 at UT PGE, where alumni will receive guided tours of the three new spaces.
Since its inception five summers ago, the rigorous 10-week Summer Undergraduate Research Internship (SURI) Program has brought together some of the brightest minds from universities across the country, who have come to UT PGE to work alongside faculty and graduate students on pivotal research areas in petroleum engineering.

UT PGE Associate Professor Dr. Sanjay Srinivasan, who oversees the program, describes SURI as “a melting pot of students from various engineering disciplines, who have an innate desire to overcome research challenges to deliver energy efficiently and in an environmentally responsible manner to billions of people all over the world.” This year’s diverse group consisted of 14 interns from 10 universities including Cornell, Vanderbilt, Ohio State and Texas A&M. Carefully selected from a pool of nearly 200 applicants, the 2013 SURI students hailed from backgrounds in petroleum, aerospace, environmental, mechanical and chemical engineering, and have varying degrees of research experience. Their summer projects tackled some of the industry’s most complex research issues, such as safe geologic sequestration of CO$_2$, development of novel nanoparticles for improved hydrocarbon production and improved techniques for hydraulic fracturing.

For 2013 SURI student Alexis Steger, spending her summer in the lab was not new territory. When Steger was in sixth grade, her father was diagnosed with stage IV head and neck cancer. It was not until his cancer cells were grown in a lab that an effective treatment was found to stop the cancer cells from multiplying.

Inspired by the science that saved her father’s life, Steger secured an internship during the summer of 2010 with The University of Texas MD Anderson Cancer Center in Houston, the same care facility where her father underwent treatment.

“This intensive lab work sparked my interest in research and was the beginning of my desire to become an engineer,” said Steger.

Now a chemical engineering major in her second year at Carnegie Mellon, Steger wanted the chance to explore her interest in petroleum engineering, as her university does not have a petroleum engineering undergraduate degree.

Under the direction of UT PGE faculty Dr. Matt Balhoff, Steger performed a reservoir engineering study for a new, unconventional method to produce depleted reservoirs. Her work included...
SURI SUMMER UNDERGRADUATE RESEARCH INTERNSHIP

Alexis Steger – 2013 SURI student

reservoir simulation, developing new models, optimizing reservoir production, and performing economics.

“Our discipline is very new to her,” said Balhoff, “but she is an extremely fast learner and performed graduate-level research in just the first few weeks of work.”

Steger hopes to come back to graduate school at UT PGE so she can continue her research.

“Through my summer experiences working in a lab, I have learned what an engineer can do to improve people’s quality of life, and I am excited at the prospect of how my research will shape the future.”

In addition to spending 40 hours a week researching in the labs with UT PGE faculty and graduate students, SURI students participated in weekly “Lunch and Learns” devoted to various topics in petroleum engineering, attend workshops steered by the UT PGE faculty, and had the chance to explore geological sites around Austin and Pedernales Falls State Park on a field trip led by Drs. Hilary and Jon Olson.

In their free time, SURI students could be found soaking up the sun at Hamilton Pool, sampling food trailers on South Congress, and lounging hillside at Zilker Park.

Steger’s advice to future SURI students is: “Be ready to work—it’s a steep learning curve, but don’t let that scare you away. You’ll never regret spending your summer in Austin.”

The SURI program is made possible by the S.P. Yates Memorial Endowment for Student Projects in Petroleum Engineering, the Bob and Betty Agnew Endowed Excellence Fund in Petroleum and Geosystems Engineering, the George H. Sawyer Memorial Endowed Excellence Fund in Petroleum Engineering, the Aaron Cawley Endowed Excellence Fund in Petroleum and Geosystems Engineering, the Stephens Family Endowed Excellence Fund in Petroleum and Geosystems Engineering, and Friends of Alec Various Donors.

SURI students work on a variety of technical energy challenges alongside UT PGE faculty members.

A sample of this summer’s projects:

- The use of nanoparticles to prevent the leakage of stored CO₂
  Yoel Gebrai
  Louisiana State University
  Supervisor: Dr. Matt Balhoff

- Determining reservoir performance in water-flooding/CO₂ flooding operations through flow rates and bottom hole pressures obtained at each well
  Ebrahim Rasromani
  Cornell University
  Supervisor: Dr. Larry Lake

- The effect of temperature, time, and concentration on the size of PMMA Nanoparticles, and their efficacy in enhanced oil recovery
  Joe Gauthier
  The Ohio State University
  Supervisor: Dr. Kishore Mohanty

- Utilizing nanoparticles to reinforce foam to create stronger foam cement for applications such as CO₂ sequestration
  Stephen Reece
  North Carolina State University
  Supervisor: Dr. Steve Bryant

- Running simulations in order to figure out about how much oil remains trapped underground around the steam chambers formed by steam-assisted gravity drainage
  Matt Johnston
  Pennsylvania State University
  Supervisor: Dr. Sanjay Srinivasan
In geographic coordinates, Austin, Texas lays 17°N and 44°W – Longyearbyen, Svalbard, Norway rests at 78°N and 15°E, only 800 miles from the North Pole. This summer, UT PGE sent 20 students and five professors to this remote Arctic location to study the unique geology.
Living with almost 24 hours of daylight, UT PGE participants exchanged 100 degree temperatures for just above freezing, and the occasional campus squirrel for free roaming animals, which included polar bears and, appropriately, reindeer.

Statoil, an international energy company headquartered in Stavanger, Norway, invited professors, graduate students, and research scientists from UT PGE and the Jackson School of Geosciences on an expedition into a remote area of the earth that required special access from the Svalbard governor. The eight-day expedition provided an ideal teaching environment for introducing concepts important to petroleum systems worldwide.

The program participants took a boat from Svalbard into the Adventfjorden Bay to study the dramatic, varied and well-exposed rock formations. Whether it was sequence stratigraphy, sedimentology or structural geology, the accessible, large-scale rock exposures of Svalbard provided unique, world-class examples that informed subsurface interpretations in sedimentary basins around the world and furthered the education of students and researchers alike.

“I enjoyed the opportunity to work with professors and students from a variety of disciplines; it was a fantastic learning experience,” said Kyle Smith, a UT PGE graduate student. “The Arctic environment provided a great chance to see a plethora of outcrops, and analyzing them certainly helped improve my understanding of geology for my future career as a reservoir engineer.”

Participants were grouped in multidisciplinary teams with backgrounds ranging from geology, geophysics, drilling and petroleum technology. During daily geologic excursions, these teams worked to solve geology- and engineering-related problems.

“We have received positive feedback from Norwegian students who have participated in this trip in the past,” said Karl Johnny Hersvik, Statoil senior vice president of Research, Development and Innovation (RDI) in Technology, Projects and Drilling (TPD). “Many of the students have come to work for Statoil after graduation because of the complex and exciting projects they worked on during this trip. With our long term growth ambitions in the US and our energy partnership with UT, it seemed natural to partner with the university on such a unique opportunity to teach their students.”

Statoil and UT Austin developed a strong partnership with a $5 million, five-year interdisciplinary project that supports graduate student fellowships. Now in its second year, the program allows graduate fellows to expand innovation boundaries by exchanging data and research experiences with Statoil research teams in Houston. A reception was held at the UT Club in Austin last spring to recognize the successes accomplished in the first year of the partnership and honor the talented group of 13 fellows with an award. The event also highlighted Statoil’s important contributions to the university.

Drs. Tad Patzek and Scott Tinker, two of our nation’s prominent academic voices on energy, served as leaders on the Arctic journey.

“With the energy industry operating on an international scale, it’s critical for our students and faculty to receive exposure to formations across the globe,” said Patzek. “The department’s goal is to produce talented graduates who can go into industry to change the world with their diverse knowledge base and unique experiences.”

A reporter from The Alcalde, UT Austin’s official alumni magazine, snapped photos and wrote about the experience to capture the breathtaking geographical beauty and the participants’ discoveries. View the Arctic piece on The Alcalde’s website this fall and in the Nov. /Dec. issue of the magazine. The online article will feature a digitally interactive format allowing the reader to engage in the same experience as the professors and students on the trip.
Engineering has long been a field dominated by men, but a growing number of women are seeing this profession as a viable career path. Enrollment at The University of Texas at Austin Cockrell School of Engineering averages 23 percent women at the undergraduate level and 20 percent women at the graduate level. An average of 22 percent of the undergraduate engineering degrees awarded are earned by women, up from only 15 percent in 1990. UT PGE is actually ahead of the curve with 30 percent females.

While women are gaining steam in the Science, Technology, Engineering and Mathematics (STEM) fields, it’s important to note the disparity is still significant. At the national level, President Obama launched the “Educate to Innovate” initiative in 2008 to enhance students’ math and science skills and overall inspire a more diverse talent pool, including women.

To better understand the drivers for women entering engineering jobs and studies, UT PGE reached out to its female students, faculty and alumni to learn what inspired them to choose petroleum engineering, how they would describe their experience and how they are motivating the next generation of females to think STEM.

Destiny Arteaga, a UT PGE junior, discovered the major during her childhood due to her father’s affiliation with the industry. “Throughout my education I excelled in both science and math therefore, when it came time to pick a field of study, I knew I wanted to choose something that built on these subjects,” said Arteaga. “I grew up in Southeast Texas near a lot of oil refineries, so names like Shell, Exxon Mobil and Total were always familiar to me. My dad worked in these different refineries, giving me the opportunity to see the interesting and large-scale aspects of the oil and gas industry.”

While many women are influenced by a family connection to industry, others are persuaded by different factors. Carrie Colbert, a UT PGE alumna (BSPE ’99) and a 2013 Cockrell School Outstanding Young Engineering Graduate, saw petroleum engineering offered something unique to any other engineering degree. “Growing up, I naturally gravitated toward math and science, so as I was deciding what to study in college, I looked into the engineering field,” said Colbert, who serves on the UT PGE External Advisory Committee. “Frankly, what swayed me to petroleum engineering were the great scholarships I was offered. The generosity of industry partners and alumni truly shaped my future path.”

As a female, entering a male dominated field can be intimidating, but for Ngozi Lawanson, a petroleum engineering junior, and Dr. Hilary Olson, a UT PGE lecturer and research associate, the experience has been empowering. “I feel like a pioneer in shifting what people think of when they hear petroleum engineer,” said Lawanson. “I stand out as a woman, but because I’m a part of a great group of women studying petroleum engineering at UT Austin, I have met so many amazing women in the department and in the industry who make me proud of my gender.” Olson believes this is the perfect time for women to enter the field as their unique strengths are highly needed—and industry is hiring.

“I think it is an exciting time for women studying the profession of engineering,” said Olson. “Engineers are in demand and women have a great opportunity to help fill the shortage in the engineering professions. There are so many ways women can bring not only their engineering prowess, but a facility for collaboration, communication and creativity to the profession.”

Although it’s a ripe time for women to enter petroleum engineering, the number of women actually selecting the major is still low – less than one-
fourth. One way to attract females is ensuring they have strong role models – women who have conquered the degree and are now working in industry or are teaching the subject.

“...there’s no doubt that women faculty and researchers are important as mentors if we want to grow the number of women students in petroleum engineering,” said Olson.

Olson spends a lot of her time and energy introducing young girls, who likely have not chosen a career path, to the rewarding job options within the STEM fields.

“I have a real passion for middle school girls discovering STEM, and an interest in educating the general public on energy issues,” said Olson. “We have combined those interests into a collaborative program entitled GirlTalk. We bring hands-on activities, engineering and science faculty, graduate students and undergraduate students to local venues for Saturday morning informal programs geared towards middle school girls and their family mentors.”

In addition to academia, the oil and gas industry is making a strong effort to reach out to girls at a young age in order to introduce them to petroleum engineering and the benefit it can have on society. Lawanson, who is the president of the Women in Petroleum and Geosystems Engineering (WPGE) program housed in the Cockrell School’s Women in Engineering (WEP) program, launched a mentoring initiative last spring with Chevron.

“WPGE worked with Susan Howes (BSPE ’82) and Molly Laegeler of Chevron to create a remote mentoring program for students in petroleum engineering at UT Austin,” said Lawanson. “This program was geared towards younger students, so they would get a chance to meet and learn from industry professionals as well as gain more exposure to petroleum engineering.”

The pilot program was successful, so Lawanson hopes to expand the program into two separate semester long programs: one geared toward upperclassmen to create a technical project and one geared toward underclassmen to introduce them to petroleum engineering opportunities.

It’s hard to pinpoint the future for women in engineering, but Colbert hopes more talented women have the opportunity to rise to the top.

“It is an exciting time for women in petroleum engineering,” said Colbert. “As more women enter the field, I hope that we will see more women in leadership positions. Effective leaders know how to think analytically and understand people. And those qualities are not restricted to any particular gender, ethnicity or age.”
UT PGE is jazzing it up for this year’s Society of Petroleum Engineers (SPE) Annual Technical Conference and Exhibition (ATCE) alumni reception in New Orleans. The department is looking forward to hosting fellow Longhorns in the Big Easy at the end of the first official technical program conference day. Please join us for drinks, appetizers, giveaways and mingling with alumni, current students and faculty.

Monday, September 30, 2013
5:30 pm - 7:00 pm
Hilton New Orleans Riverside,
Jefferson Ballroom - 3rd Floor
2 Poydras Street

RSVP: http://links.utexas.edu/cdxgbu

TWO UT PGE ALUMNI RECEIVE COCKRELL SCHOOL DISTINGUISHED ENGINEERING AWARDS

Every year at spring commencement, The University of Texas at Austin Cockrell School of Engineering honors its alumni with the Distinguished Engineering Alumni Awards. The Distinguished Engineering Graduate and the Outstanding Young Engineering Graduate awards are the highest honors that the Cockrell School bestows on its alumni.

Established in 1957, the Distinguished Engineering Graduate Award (DEG) recognizes honorees as highly respected professionals, dedicated engineers and supporters of higher education. Including this year’s honorees, 255 alumni have been selected for this award. Established in 1991, the Outstanding Young Engineering Graduate (OYEG) Award recognizes rising stars of Cockrell School alumni under the age of 40.

Of the five honorees this year, two are highly successful UT PGE alumni, who have made a strong impact on the oil & gas industry with their leadership and Texas spirit. The recipients are: Forrest “Eddie” Harrell (DEG), and Carrie Colbert (OYEG).

FORREST E.
“EDDIE” HARRELL
BSPE ’58
Non-Executive Chairman,
Citation Oil & Gas Corp.

After graduating from The University of Texas at Austin in 1958 with a bachelor’s degree in petroleum engineering, Eddie Harrell joined Humble Oil & Refining Co. (Exxon) as a reservoir engineer. He left Exxon in 1964 to accept a position with Tenneco Oil Company. While at Tenneco he held a number of engineering and management positions, ending as manager of the Economics and Planning Department. He then joined TransOcean Oil, Inc. as financial vice president and, after a three-year tour with TransOcean’s parent, Vickers Energy, was named president and CEO. TransOcean was sold to Mobil in late 1980 and, rather than continue with an established company, he elected to form Citation Oil & Gas Corp. in 1981.

Under the leadership of Harrell and his sons, Curtis and Forrest, Citation has grown to become one of the largest...
privately held independent oil and gas companies in the United States. Since 1985, Citation’s success has resulted from a focused business strategy of acquiring and operating domestic oil and gas properties. Today, Citation has ownership interest in more than 14,000 wells in approximately 400 separately designated fields. The company is headquartered in Houston and has more than 500 employees in 13 states.

Harrell is a registered Professional Engineer in Texas, a member of the Society of Petroleum Engineers and a Friend of Alec. He has served in board positions and leadership roles in many corporate, professional, civic and charitable organizations. While at The University of Texas at Austin, Harrell had a lively student life. He was a member of Sigma Phi Epsilon fraternity and the Texas Cowboys, and he was an active participant in intramural sports.

CARRIE D. COLBERT
BSPE ’99, MBA’09
Senior Reservoir Engineer,
Hilcorp Energy Company

A native of the small Texas Panhandle town of Perryton, Carrie Colbert is the first college graduate in her family. Colbert graduated from The University of Texas at Austin in 1999 with a Bachelor of Science in petroleum engineering with highest honors. In 2009, she earned her Master of Business Administration from UT Austin while continuing to work full time. Colbert’s business passion begins at the intersection of technical analysis and business strategy. Colbert began her career at Anadarko Petroleum Corporation, where she held several production and reservoir engineering positions. Subsequently, Colbert accepted a position as the senior corporate reserves manager at Hilcorp Energy Company, which ranks seventh on FORTUNE Magazine’s 2013 “100 Best Places to Work For” list. In this capacity, Colbert oversaw oil and gas reserve estimations, reserve report preparations and reserve-based valuation of the company.

After earning her MBA, Colbert worked on the financial side of Hilcorp’s business. As head of investor relations, she facilitated interactions with the company’s bankers, bondholders and rating agency analysts, skilfully telling the Hilcorp story from both a technical and financial perspective. She was also very instrumental in developing the company’s five-year strategic growth plan. Colbert has recently transitioned back to the technical side of the business as a senior reservoir engineer, actively finding additional oil and gas production and reserves while optimizing cash flow from these fields.

Colbert, who resides in Houston, serves on the UT Petroleum and Geosystems Engineering External Advisory Committee, is a member of the Society of Petroleum Engineers and is involved in the Houston chapter of the Society of Petroleum Evaluation Engineers.

Robert M. Leibrock (BSPE ’43)
Thomas “Fred” Stephens (BSPE ’49)
Charles Simmons (BSPE ’48)
Jeff Hildebrand (MSPE ’85)
Harry Trueblood, Jr. (BSPE ’48)
Dr. Karen Hagedorn (BSPE ’86)

This year’s Distinguished Alumni Reception and Dinner is set for Friday, November 1, 2013, at The Driskill Hotel in Austin, Texas. The reception will begin at 6 p.m. and the dinner at 7 p.m. The UT PGE Alumni Reunion will take place on Saturday, November 2 at 11 a.m. in front of the CPE building. The football game kickoff is scheduled for 2:30 p.m. (CT).

As of press time, the UT PGE DA Reception and Dinner is underwritten by Anadarko, Chevron, and Chief Oil & Gas. Premier Sponsors include Marathon Oil, Ursa Resources Group II, Jerry & Cherry Windlinger, and John & Stephanie Broman. Sponsors include Sunflower Oil, Inc., Discovery Operating, Inc., Richard & Lois Folger, Pinkston Energy, LLC, Don Sparks and Jeff Sparks, and Stephen & Myra Skinner.

If you or your company is interested in sponsoring this year’s exciting recognition of these alumni and their accomplishments, please contact Heath Hignight (512-471-3208; heath@mail.utexas.edu), or visit www.utpgealways1.org/sponsor
In the spring of 2012, UT PGE lost a remarkable alumnus, Brian Jennings (BSPE ’84), at the young age of 52. He made quite an impact on the Forty Acres as a petroleum engineering student and alumnus - he stayed involved with the department as an industry advisor through the External Advisory Committee to ensure UT PGE students were well-prepared for the energy sector. In the spring of 2013, the Brian James Jennings Memorial Endowed Chair in Petroleum and Geosystems Engineering was established thanks to a generous $1 million gift by his wife, Lisa Jennings and their two children, Olivia and Brian II.

Lisa said, “The University of Texas at Austin was really important to Brian, actually ingrained in him, so he had been talking about setting up a chair for a while. I wanted to follow through with his idea to provide our children with a legacy at UT Austin.”

Endowed chairs represent one of the most powerful tools that UT PGE calls upon to recruit new faculty and provide a strong incentive for the best professors and teachers to stay at the university. Named faculty positions provide the resources necessary to underwrite new lines of research, upgrade lab space, cover travel costs, or support undergraduate or graduate assistants.

In the spring of 2013 at a reception in Dallas to celebrate the establishment of the chair, Brian’s daughter Olivia wrote a heartfelt speech honoring her father, “My dad’s years at UT Austin did not just stay with the person my dad was in the past, but continued to live in him. My family and I are so proud to underwrite a chair that will belong to a person specializing in giving students the tools to change the world.”

Brian Jennings led a successful career after receiving his diplomas from UT Austin and the University of Chicago’s Graduate School of Business (MBA ’89). He was the president and chief executive officer of Rise Energy Partners, a natural resource focused acquisition company. Before establishing Rise in February 2009, Brian served as the chief financial officer of Energy Transfer Partners, L.P. and prior to that he served as the senior vice president – corporate finance and development – and chief financial officer of Devon Energy Corporation, the nation’s largest independent oil & gas production company.

The faculty, especially Dr. Larry Lake, still remember Brian roaming the UT PGE halls.

“Brian was in one of the first undergraduate classes I taught – he was an excellent student, but more than that he was personable, alert and prone to asking challenging questions in class,” said Lake. “Years later we became close again when Brian served on our department’s External Advisory Committee. He had a deep and lasting commitment to UT PGE and always knew how to mesmerize a room with his stories and sense of humor.”

Lisa believes the chair is important to the department as it will allow UT PGE to remain a leading petroleum engineering program. She also wanted to share Brian’s vision with current and future students.

“Brian would want to give the students inspiration that you can always learn from your mistakes,” said Lisa. “It’s not about what you did, but what you do moving forward.”

Learn more about endowed chairs that support our faculty by contacting Heath Hignight at 512-471-3208 or heath@mail.utexas.edu.
The 2005 BCS College Football National Championship game went down in the record books as a milestone day in Longhorn history. It was also a game-changer for UT PGE.

Witnessing the Longhorns capture the coveted crystal football trophy in Pasadena, Calif., Shahid Ullah (BSPE ’82) was overcome with pride for his alma mater ranking #1 in the college football polls. In his athletic enthusiasm, he also realized UT PGE is “Always #1,” propelling his passion to ensure the department continues scoring big in academics and research.

Ullah is president of Afren Resources USA Inc. and executive director of Afren PLC, an independent upstream oil and gas exploration and production company. Prior to joining Afren, Ullah garnered many decades of experience in the international energy sector and investment banking. He has a strong education background as well. After receiving his bachelor’s degree in petroleum engineering from The University of Texas at Austin, Shahid received executive development training at the University of Oxford and London Business School.

In 1997, the Cockrell School of Engineering selected Ullah as an Outstanding Young Graduate. In 2012, he was recognized as a Distinguished Engineering Graduate for his major contributions to the oil and gas industry and service to the university. Ullah is the only engineering graduate to receive both honors from the Cockrell School.

One of the leading inspirational factors for his giving is supporting UT Austin students. He has done this through developing a gift from Baker Hughes for $500,000 in scholarships, establishing the Afren graduate student fellowship for $1 million and funding summer programs for engineering students in Africa.

His passion for UT PGE and philanthropy has played a large role in ensuring the department remains a respected and well-known program around the world. In 1999, he saw the opportunity to garner a star professor, Dr. Carlos Torres-Verdin, and brought his recruitment to fruition with the support of several corporate partners.

Ullah initiated a strategic partnership in 2004 between UT PGE and the University of Trinidad and Tobago (UTT), providing the department a stronger international presence while generating revenue. The program enhanced several key research projects hosted at UT PGE with contributions from UTT graduate students. In addition, the UT PGE faculty facilitated building the BS and MS curriculum at UTT and taught BS level courses.

Through his leadership and support, the production of the nationally broadcasted UT PGE documentary, “The Hunt,” was made possible. At the 2011 UT PGE Distinguished Alumni reception, he saw an incredible story in the department’s history that could be used as a valuable tool to expand the understanding of petroleum engineering to a broad audience and showcase UT PGE’s impact on ensuring an energy-secure future through its innovative research and alumni.

His most recent contribution was establishing the $2 million Shahid and Sharon Ullah Endowed Chair in Petroleum and Geosystems Engineering, honoring Dr. Larry W. Lake, one of Ullah’s beloved former professors.

“I am a big believer in giving back,” said Ullah. “A significant amount of my success is due to my degree – without it I would not be where I am today. A lot of the professors from the department, especially Dr. Larry Lake, served as my mentors helping me to prosper in my career.”

To celebrate Ullah’s support, the department hosted a surprise reception in April attended by the Ullah family and UT PGE faculty and staff. During the event, Dr. Larry Lake accepted the new chair.

“Shahid is an incredibly generous person,” said Lake. “I am honored to receive this chair from someone who is not just a former student, but a close personal friend.”

Learn more about endowed chairs that support our faculty by contacting Heath Hignight at 512-471-3208 or heath@mail.utexas.edu.
UT PGE is thrilled to welcome a new class of petroleum engineers to the Forty Acres! By the statistics we know the incoming freshmen make up a talented class. They are entering their petroleum engineering studies at an interesting time in our energy history. Oil is king, but with the abundant shale plays natural gas is emerging as a strong contender. The technology advances are occurring at a faster rate than ever before to meet the world’s growing energy demands. The department’s goal is to prepare the 2017 class to solve the industry’s future challenges.

To officially introduce the Class of 2017 to UT PGE, the department hosted the second-annual Freshman Fall Retreat, which was extended into an overnight event since last year’s one-day retreat on campus was so successful. Incoming UT PGE students flocked to the John Newcombe Tennis Ranch in New Braunfels, Texas two days before the start of classes to gain an introduction to the department as well as connect and socialize with classmates and professors.

Sponsored by BP, the retreat featured leadership, teamwork and communication activities such as ropes courses, swimming, basketball and a Hawaiian-themed ice cream social. Several guest speakers from BP joined the students to introduce them to the oil and gas industry.

Posada said that building these meaningful relationships was one of the things he most looks forward to in his time at The University of Texas at Austin.

“For my undergraduate experience, my goals are simple,” he said. “First, graduate with as much knowledge as possible to implement it in the ‘real world.’ Second, make as many connections with people as I can and lastly, enjoy my college experience.”
It doesn’t matter how bright you are if no one can understand your ideas,” Deborah Hempel-Medina tells the students in UT PGE Engineering Communication course. “How you communicate is a reflection of who you are, whether you are talking to a friend, responding to an interview question, or presenting in front of a group of your peers.”

A 1993 graduate of UT PGE, Hempel-Medina returned to her alma mater this past fall as a lecturer teaching PGE 333T, Engineering Communication, a class required for all undergraduate UT PGE students, and a traditionally dreaded course in the major sequence. With a Master’s of Business Administration from Southern Methodist University and 19 years of industry experience in tow, Hempel-Medina set to work reimagining the Engineering Communication course.

Unlike most classes in the UT PGE sequence, Engineering Communication is a non-equation based class. Commas link clauses, not strings of numbers. Not only is talking in class allowed, it’s encouraged—each lecture begins with a handful of short, impromptu presentations or “drills” on topics ranging from conversational to professional. These drills parlay public speaking fears into practical hands-on experience, allowing students to develop their confidence as public speakers before diving into graded technical presentations.

Hempel-Medina also integrates elements of professional development, engineering ethics, and technical writing into the curriculum, specifically gearing the course toward helping students market themselves as engineers.

“I try to incorporate as much real world knowledge into the classroom as possible, by bringing in speakers from industry who have had a significant impact on the petroleum engineering profession, or by facilitating ethics discussions about hot topics in the news related to energy,” said Hempel-Medina. “It is my goal that by the time the students leave my class, they are comfortable not only with all forms of technical communication, but expressing their thoughts to anyone, from a recruiter to a co-worker.”

Hempel-Medina’s practical and enthusiastic approach to teaching has made her a fast student favorite. “I wasn’t expecting much when I first started the Engineering Communication class,” said sophomore Brandon Hilts, who took Hempel-Medina’s class this past fall. “But it became clear early on how relevant Mrs. Hempel-Medina’s knowledge from industry was to the classroom.”

A non-traditional student, Hilts worked for 15 years as a roughneck in Midland before coming to the UT PGE department to pursue his bachelor’s degree. Without experiencing an office setting, he was unfamiliar with the business side of the oil and gas industry and had a self-declared fear of public speaking.

Over the 2012-2013 winter break, Hilts had the opportunity to participate in a three-week internship with Occidental Petroleum Corporation (Oxy). At the end of his internship he was asked to give a presentation to a room full of company executives. Hilts spent hours preparing for the presentation and applying the knowledge he learned in Hempel-Medina’s class. After completing the presentation, Oxy was so impressed by his skills they doubled the salary for his upcoming summer internship. The pay bump was crucial for Hilts, who juggles a family with going to school.

Within a few months of completing the Engineering Communication class, Hilts won first place in the Society of Petroleum Engineers (SPE) Gulf Coast Regional Paper Contest, a competition where participants present their research findings in front of a panel of industry professionals. He will be the first bachelor’s student from UT PGE to compete in the SPE International Contest since 2008. Hilts described his win at the SPE Gulf Coast Regional Contest as a testament to the value of Hempel-Medina’s class.

In the spring, Hempel-Medina won the 2013 Faculty Appreciation Week Award for UT PGE. Students in the UT PGE department submitted nominations for this award, with the winner determined solely by the student body, demonstrating that Hempel-Medina’s passion and experience are translating into students growing an affinity for the newly minted Engineering Communication course.
GLOBAL INTERNSHIPS PREPARE STUDENTS FOR FUTURE INDUSTRY CAREERS

By Katey Psencik

One of the most important experiences students can obtain while at UT PGE is an internship. UT PGE students gain essential petroleum engineering information in the classroom during the fall and spring semesters and then apply this important knowledge in the summer during their internships with industry to help solve the latest set of oil and gas challenges. Scoring an internship with industry is no easy feat and usually not achievable until after students’ sophomore year, so freshmen must get creative with their options. UT PGE touched base with two students, Patricia Renyut and David Rowe, to learn about their summer experiences in the U.S. and abroad.

Patricia Renyut, Junior
Patricia Renyut is spreading her experiences in the U.S. and abroad. She is an engineering intern assisting with water-use skills she learned her freshman year at UT PGE, specifically in Dr. Jon Olson’s introductory petroleum engineering class.

“Dr. Olson taught us about developing reservoirs, the tools used in drilling and all of the basic foundations of petroleum engineering,” Renyut said. “The petroleum engineers I worked with in Indonesia were impressed with what I knew. I think it’s great UT PGE teaches foundational knowledge to freshmen.”

Not only did the internship in Indonesia provide Renyut with the opportunity to put her academic training to practical use, it also helped her appreciate the value of her engineering education.

“I realized there is more to engineering than just numbers, charts and facts,” Renyut said. “You can have all the statistics about a well but if you don’t understand the geologic makeup surrounding it, it’s pointless. You have to learn how to pull different types of information together.”

Chevron’s culture is one of many reasons why Renyut chose to intern with the company a second time.

“Chevron’s focus on safety is very important to me,” Renyut said. “Also, the intern program is great. There were 86 interns in Bakersfield with me, and I knew everyone. They made sure we don’t feel overwhelmed - we worked hard when we’re supposed to, but they didn’t want us working overtime. They really cared about our work/life balance.”

When she’s not traveling the world, Renyut is passionate about educating women engineers as a member of SWE, the Society for Women in Engineering.

“I really believe there is a shortage of women engineers,” Renyut said. “I want to help educate female engineering students about stereotypes in the industry and help them to think differently about their positions.”

David Rowe, Sophomore
David Rowe also took his engineering talents overseas, but not with an engineering company – he interned in China with Premier Guard, a Houston based corporation that produces surgical equipment drapes and covers.

Rowe spent his summer helping develop and test a product called a viscera retainer, which is used to protect vital organs during surgery. Even though Premier Guard isn’t an oil and gas company, Rowe still put his UT PGE skills to work by using lessons learned in his freshman chemistry class.

“We had to make sure that certain compounds and elements, such as barium sulfate, used in the product were compatible with the human body and didn’t cause any kind of reaction,” Rowe said.

Rowe said that not only was Premier Guard an excellent work experience, but he also learned lessons that will help him in his future career as a petroleum engineer.

“The oil and gas industry is global,” Rowe said. “Working in China helped me learn how to communicate with people from another country when there is a language barrier or a difficult accent, which is going to be very useful in the oil and gas industry.”

Rowe gained his rare freshman internship through a family friend, who allowed him to bring a classmate to work with him. Rowe chose fellow UT PGE student Trent Wien.

“It was a great bonding experience,” Rowe said. “It was really nice to have someone my age to bounce ideas off of when we were working together.”

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Two of the most popular student organizations within UT PGE are the Society of Petroleum Engineers (SPE) and the American Association of Drilling Engineers (AADE). The talented seniors in charge of the student groups shared their goals for the upcoming year and what the organizations mean to them.

**SOCIETY OF PETROLEUM ENGINEERS - TARA SHARMA**

Email – taramsharma@gmail.com  
SPE Website – http://www.speut.com

What does it mean to you to be involved in SPE?
To me, students who are involved in SPE are those who are passionate about the oil and gas industry in a way that extends beyond coursework. These students who want to explore more and are committed to bettering the oil and gas industry can use SPE to help them accomplish that goal.

What would you like your presidential legacy to be?
I would like my presidential legacy to be that I was able to give SPE members every opportunity possible to succeed in the oil and gas industry. In order to accomplish that I plan to create a strong network within the student body through social events, a link to the industry through recruitment events, and many technical presentations, tutoring opportunities and community service opportunities to create a fulfilling experience.

What are you looking forward to most this year?
I am really looking forward to bringing together students in each class of the department. The camaraderie that develops in the department through SPE events is irreplaceable. I hope that by the end of the year freshmen recognize upperclassmen in the halls of CPE and can ask for help from people who have been there before them. There is a special bond within the department and I look forward to watching that form throughout the year.

**AMERICAN ASSOCIATION OF DRILLING ENGINEERS - MICHAEL DILLON**

Email – michaelgdillon@gmail.com  
AADE Website – http://utaade.org

Do you have any exciting trips or events planned for this year?
This fall, we have several tailgates as well as our annual Sporting Clays Shoot. In addition, we will have "Fridays in the Park" with SPE, so stay posted.

Why is AADE important to you?
I have seen how valuable organizations like AADE and SPE are to students and companies alike. The connections made during our meetings have led to countless internship and job opportunities. And that's why we are here at The University of Texas at Austin, right?

What would you like your presidential legacy to be?
I would like to see more involvement from all classifications of students. In the past, one or two classes (seniors and freshmen) seemed to dominate the meetings. I hope that I can encourage students from all classes, including graduate level, to attend meetings and events.
UT PGE is pleased to announce Drs. Matthew Balhoff and David DiCarlo received promotions to Associate Professor in fall 2013. Both Balhoff and DiCarlo joined the department in 2007 as Assistant Professors.

A native of Louisiana, Balhoff came to UT PGE shortly after earning both his BS and his PhD in Chemical Engineering from Louisiana State University. His research interests include chemical enhanced oil recovery, geological CO2 storage, and reservoir simulation. Balhoff describes his research as “creative” and said he is “looking forward to making an impact in the energy sector, which faces some of the world’s most complex problems.”

As a professor, Balhoff is known for his engaging teaching style and unique methodologies—he even learns all of his students’ names before the first day of class, which is no easy feat in a class of more than 100 students! In 2009, Balhoff won the UT PGE Departmental Teaching Award, in 2010 he was recognized by the Mortar Board Honor Society as a “Preferred Professor,” and in 2011 he won the ASEE Gulf Coast Southwest Outstanding Young Faculty Award.

On his promotion, Balhoff said, “I’m ecstatic to continue my tenure with the department, particularly educating our outstanding students and working with some of the best researchers in the area of petroleum and geosystems engineering. What starts here truly changes the world.”

DiCarlo earned his BS in Physics from Case Western Reserve University, and both his MS and PhD in Physics from Cornell University. In his six years with the UT PGE department, DiCarlo’s teaching methods have garnered much praise, and he has earned a reputation as an enthusiastic professor who truly cares about his students. Twice, he has been nominated for ‘Favorite Professor’ in the UT PGE Department, and in 2008, he won the UT PGE Departmental Teaching Excellence Award. DiCarlo believes “part of being an effective teacher is being an effective learner.” He values the “give and take” of being a professor to some of the brightest young minds in the nation, saying, “engaging with students and answering their questions has allowed me to understand concepts that I can take back to my research.” His research includes chemical enhanced oil recovery, gas enhanced oil recovery, and geological CO2 storage, with a focus on applying advanced experimental techniques to understanding fluid flow in hydrocarbon reservoirs. His research on saturation overshoot was spotlighted in the EOS Research Spotlight, EOS, 92, No. 21, May 24, 2011.

DiCarlo considers himself, “very lucky to have the opportunity to equip the next generation of petroleum engineers with the tools necessary to navigate the obstacles of maintaining a stable hydrocarbon supply and, best of all, continuing to challenge young minds.”

The University of Texas at Austin is selected to host the 12th International Conference on Greenhouse Gas Technologies (GHGT-12) in October 2014. Since its inception in 1997, the GHGT series has quickly developed into the leading international conference on greenhouse gas technologies and typically attracts more than 1,200 attendees who come to listen to presentations on a variety of topics, from public perception to wellbore integrity and chemical looping. The conference is held every two years on an informal rotation between major cities in Europe, Asia, and North America. As members of the steering committee, Drs. Steve Bryant and Hilary Olson of UT PGE are excited to bring the GHGT-12 conference to Texas’ capital city.

“The GHGT conference series is the key international venue for research and development on carbon capture and storage, which is a significant technology solution for preventing global warming,” said Bryant. “The selection of Austin to serve as the host city for GHGT-12 in 2014 reflects UT Austin’s worldwide prominence as a thought leader in greenhouse gas technologies.”

UT PGE graduate student Amir Frooqnia took home first place in the poster-presentation competition at the 54th Annual Society of Petrophysicists and Well Log Analysts Symposium in New Orleans in June. The competition hosted around 30 graduate students from universities across the United States, all competing for a $1,000 award.

The students had 10 minutes to present their posters on the subject of formation evaluation, and then judges made their decision based on three criteria: poster presentation, technical excellence and poster quality. Frooqnia’s project, entitled “Estimation of Near-Wellbore Relative Permeability from Simulation and Inversion of Time-Lapse
Mary Wheeler Awarded 2013 John von Neumann Medal for Career of Achievements

Dr. Mary Wheeler, a professor at UT PGE and the Department of Aerospace Engineering and Engineering Mechanics, has published more than 250 research papers, and has made advancements in developing algorithms for modeling subsurface flow in a variety of contexts, from reservoirs of oil and gas beneath the earth’s surface to blood flow beneath the human integument.

Her achievements have been recognized with the John von Neumann Medal, the highest award bestowed by the United States Association for Computational Mechanics. The award honors individuals who have made “outstanding, sustained contributions in the field of computational mechanics generally over periods representing substantial portions of their professional careers.”

John von Neumann, the award’s namesake, was a 20th century scientist and mathematician whose fundamental contributions to computer science, applied mathematics, and physics—as well as his ability to astound his colleagues with his feats of mental math—put him in the pantheon of scientific greats.

“It’s a very prestigious award. And I’d like to say, I’m excited because von Neumann has been one of my heroes in science,” said Wheeler. “He appreciated the importance of these problems.”

Drs. Hilary and Jon Olson Establish a Presidential Endowed Scholarship

Dr. Hilary Clement Olson, Lecturer and Research Associate at UT PGE, and Dr. Jon Olson, Associate Professor, have established the Mark A. Clement Presidential Endowed Scholarship in honor of Hilary’s father. As a geologist, Mark Clement has always loved working with petroleum engineers and has impacted the lives of many in the petroleum industry through his optimism, enthusiasm and passion for the business. Mark says, “I wouldn’t trade the fun of the oil and gas business for anything.”

Mark began his study of geology at The University of Texas at Austin in 1946, but eventually obtained his bachelor’s and master’s degrees from Southern Methodist University. He has been in the oil and gas industry for more than 60 years. He felt that the petroleum engineering courses he took as a young geologist working for Sun Oil Company set the stage for his future successes and interests. His eagerness for learning and his appreciation of education are among many aspects of his character that inspired Hilary and Jon to establish this scholarship in his honor. Hilary and Jon hope the scholarship will lessen students’ financial burdens, allowing them to focus on their studies, which provides a successful student experience.

UT PGE Associate Professor Recognized by the Board of Regents

UT PGE Associate Professor Matt Balhoff received the prestigious Board of Regents’ Outstanding Teaching Award, for his work as an assistant professor. This award is given to tenure-track faculty with high performance in student evaluations, positive peer critiques, innovative courses and extraordinary commitment to teaching and student involvement.

The Regents cited Dr. Balhoff’s one-on-one meetings with students and use of undergraduate teaching assistants in homework support sessions as necessary to promote student engagement in the learning process. His creative use of the “Colley-Matrix” problem, where students use course content to reproduce computer models used to determine a college football champion, is another example of Dr. Balhoff’s innovative teaching techniques to keep students’ interested in engineering through new and exciting avenues.

Dr. Balhoff is also committed to helping his students learn outside of the classroom. He supervised 20 undergraduate researchers, helped launch and develop the Summer Undergraduate Research Internship (SURI) program and is involved with graduate school recruiting and admissions in several organizations. He also served as an advisor for the Society of Petroleum Engineers (SPE) student organization and the Pi Epsilon Tau honor society, took students on a week-long field trip to Robert, La., at Shell’s Jack Hirsch Memorial Drilling and Production Camp and helped students with several SPE competitions.
Two UT PGE Professors Receive Prestigious SPE Awards

Two outstanding UT PGE faculty members are receiving prestigious awards from the Society of Petroleum Engineers (SPE). Department Chair, Dr. Tad Patzek, will receive a Distinguished Membership in SPE and Dr. Kishore Mohanty will accept the Anthony F. Lucas Gold Medal during the SPE Annual Technical Conference and Exhibition (ATCE) in New Orleans this fall.

Dr. Kishore Mohanty

Dr. Mohanty is receiving the Anthony F. Lucas Gold Medal, awarded by SPE in partnership with the American Institute of Mining, Metallurgical and Petroleum Engineers. Established in 1936 by AIME as the first award to recognize contributions in petroleum engineering, this award is given to individuals who identify and develop new technology or concepts that will enhance the process of finding or producing oil.

Mohanty’s contributions to the oil production industry have been numerous. He pioneered wettability alteration as a key mechanism to enhance oil recovery. He has established world-class research programs on chemical enhanced oil recovery, near-miscible gas EOR, fractured reservoir EOR, pore-scale network modeling and gas recovery from hydrate reservoirs at ARCO, UH and The University of Texas at Austin. Dr. Mohanty is a Distinguished Member of SPE. He also received the Peer Apart: Top Technical Reviewers Award from SPE in the same year.

UT PGE Sweeps SPE Gulf Coast Regional Paper Contest

UT PGE proudly hosted the 2013 SPE Gulf Coast Regional Paper Contest on April 5-6, 2013. The contest consisted of 35 undergraduate, masters, and doctorate students from seven universities in the region. Judged by industry professionals, students presented their findings from a research project or internship. The department is thrilled to announce the first place honor in all three categories went to a UT PGE student.

Congratulations to the winners:
Brandon Hilts – BS Category
Shaina Kelly – MS Category
Kan Wu – PhD Category

Hilts, Kelly, and Wu will compete at the international competition at the SPE Annual Technical Conference and Exhibition (ATCE) in New Orleans this fall.

Two New Talented Staff Members Added to Department Roster

During the 2012-2013 school year, UT PGE added two outstanding staff members to the department. Allison Brooks is the new Financial Analyst, handling various departmental accounts and other financial aspects of the department. Originally from Temple, Texas, Allison studied fashion design at Texas Tech University and spent two summers interning in New York City in the fashion industry before deciding to return to school to get her MBA in finance. Allison worked as an administrative associate in the Center for Petroleum and Geosystems Engineering (CPGE) for more than a year before joining UT PGE as an administrative associate in January.

Proud Longhorn Jessica Jimenez is UT PGE’s new Recruitment Support Specialist. She specializes in educating future students about the rewarding opportunities at UT PGE, which enhances the quality of the department’s students. She is a first-generation college student from San Antonio with a passion for supporting all students in their pursuit to earn a degree. Previously, she worked for the Office of Admissions and Equal Opportunity in Engineering Program. She earned her bachelor’s degree in Human Development and Family Sciences and master’s in Higher Education Administration from The University of Texas at Austin.
UT PGE REMEMBERS

WILLIAM BLAIR SCOTT

William Blair Scott (BSPE ’58) passed away on March 16, 2013 in Dallas, Texas. He was born Dec. 23, 1931 in Duncan, Okla. His family moved to Houston where Blair spent his childhood, becoming the state diving champion at Lamar High School. After graduation he served in the U.S. Army before attending and graduating from The University of Texas at Austin. While at UT Austin he was on the diving team and a member of Sigma Alpha Epsilon fraternity. Blair worked in the oil industry his entire career – first with Western Natural Gas and Southland Royalty before starting his own consulting business which took him to Midland, Texas; Dallas, Texas; and Lawton, Okla. He retired to Rockport, Texas in 1994 where he enjoyed his loves of fishing, hunting, golf and cheering on UT Austin sports teams. Blair leaves behind his wife, Pat. Due to his passion for UT PGE, Mr. Scott established a generous scholarship for UT PGE students in 2011. If classmates and friends want to honor his memory they can contribute to the W. Blair Scott Scholarship by contacting Amanda Brown at 512-471-4046 or amanda.brown@austin.utexas.edu.

SAMUEL C. OLIPHANT

Samuel Curtis Oliphant (BSPE ’38, MSPE ’41) passed away on Feb. 6, 2013 at the age of 96. He leaves behind a legacy of professional and personal accomplishments. He was born on Nov. 9, 1916 in Harrisonburg, La., and later moved to Texas where he attended The University of Texas at Austin. He pursued a distinguished career as a petroleum engineer, serving as a senior vice president of Tenneco. After retirement, Sam continued to consult in the industry. He collected and restored antique cars and was active in The Horseless Carriage Club of America for many years. Sam leaves behind his wife of 15 years, Jane, two children, four grandchildren and eight great-grandchildren.

HERBERT POYNER, JR.

Herbert F. Poyner Jr., 87, passed away on July 26, 2013 in Houston, Texas. He was born on Feb. 9, 1926 in Boston, Mass. He was preceded in death by his wife of 58 years, Marjorie Bunge Poyner and survived by his two nieces Patricia Barnett and Elizabeth Malone and caregivers, Mae Jene and Jack Novak. “Herb” wore many hats in his 87 years of life. From geologist to petroleum engineer, to V.P. in the Allide Bank of Texas to Bank of the Southwest for 22 years and then Herb went into private practice in oilfield production. His life touched many people of various endeavors. Dedication was his motto in work as well as in life. He and his wife Marjorie loved to travel, especially to France.

Source: Houston Chronicle

RUSSELL E. FERRELL

Russell E. Ferrell Jr. (BSPE ’48), passed away May 1, 2013. He is survived by his loving wife of 46 years, Millie, two children, two grandchildren and many other family members and friends. Born June 13, 1923, in Goose Creek, Texas, he graduated from Robert E. Lee High School and later from The University of Texas at Austin where he was a letter winner on the varsity track team. He served in the Naval Air Corps as an Instructing Officer. He enjoyed a long career in the oil & gas industry and worked for Colorado Oil & Gas and other oil companies. He was an honorary lifetime member of the Society of Petroleum Engineers. Source: Houston Chronicle
Jennifer Agnew scored a coveted full-time position at ExxonMobil. Starting August 1, she began working on the Equatorial Guinea operations as a reservoir engineer within a Houston-based team comprised of engineers and geoscientists using computer reservoir simulation models to optimize production rates and maximize oil and gas recovery of the reservoirs. As a second generation petroleum engineer, Agnew’s aspirations of working for ExxonMobil took flight at an early age.

“My dad, Mark [Angew] (BSPE ’89) who is also a graduate of the UT PGE
department, works for ExxonMobil and has been with the company since he graduated from the university,” said Agnew. “He highly recommended the company to me based on the strong culture and the opportunity to work on large projects with access to incredible data and technology.”

Agnew landed her first internship at ExxonMobil as a result of the SPE Gulf Coast Section Scholarship, awarded to high school students planning to study science or engineering in college to increase interest in the petroleum industry. After awarding the scholarships, the committee forwarded the recipients’ applications to Houston-area oil and gas companies for potential summer internship opportunities. ExxonMobil reached out to Agnew.

“This was the start of my career in the oil business,” Agnew said. “Getting an internship with the SPE Gulf Coast Scholarship put me in a position to succeed post-graduation.”

Obtaining four internships with the company during her stint at UT PGE - two in reservoir engineering and two in subsurface production – she fell in love with the internship program, saying that one of her favorite aspects of the job is making a positive impact on an integral company project.

Dr. Matt Balhoff, a UT PGE associate professor, knew Agnew’s exceptional work ethic in class and strong internship experiences would lead to a positive future.

“Jennifer is a bright, enthusiastic and hard-working 2013 graduate of our department and I look forward to watching what will certainly be a fruitful career at ExxonMobil,” Balhoff said. “The entire 2013 class was outstanding and I am proud to have been a small part of their career development.”

Agnew is looking forward to taking the lessons she learned at UT PGE with her to the field.

“Working in a diverse group during my senior design project class was one of the most valuable skills I obtained in the department,” said Agnew. “Having the ability to work in a group environment leads to success.”

Austin Basham – BSPE ‘13
Austin Basham is relocating - but not to a traditional oil and gas city like Houston or Denver, and not for a high paying position in the energy industry. Basham is taking his degree across the pond, in hopes that a stint in foggy London will provide a clear path to pursue his passion for music.

While a sophomore at UT PGE, Basham released his debut album, “Little Foxes.” The album, which Basham describes as “modern-day folklore” features nine songs, eight of which he wrote himself. Inspired by folk singer-songwriters such as James Taylor, Nick Drake, Neil Young, Johnny Flynn, and his dad, a singer-songwriter himself, Basham learned to play the guitar and trumpet at an early age and began writing music at 14. Like any true singer-songwriter, Basham writes, composes and plays all of his own music—but he also recorded, mixed and produced everything on his album, including the cover artwork.

Spending four years deriving equations and solving complex mathematical problems has complimented Basham’s development as a musician, instilling in him strong attention to detail and intellectual stamina, which comes in handy during 15-hour recording sessions.

“There is a creative side, but also a whole mathematical side to what I do,” said Basham. “When I’m recording and mixing, I have to be particular about the different levels for each piece of the song, where to incorporate harmony or layer in different instruments.”

The correlation between engineering and music is evident within the UT PGE department, which boasts a handful of accomplished musicians among the faculty, including Professor Larry Lake, who is a talented pianist.

“Both areas have a highly formal method of communication - for the musician it’s the musical score and for the engineer it’s math,” said Lake. Over the course of this next year, Basham hopes to refine his sound and play as many live gigs as possible, as well as follow up “Little Foxes” with another full-length album. Living in the live music capital of the world, Basham has found success locally in Austin, playing gigs around town at well-known haunts such as Spider House, Cactus Café and Hole in the Wall. Through social media, Basham has been able to take his talent on a global scale. He boasts nearly 3,400 followers on Twitter, including some from the United Kingdom.

Though a career in petroleum engineering is still on the table for this Houston native, Basham believes that his passion for music will propel him throughout his career, serving as an outlet for his imagination and broadening his horizons, regardless of his profession.

To check out Basham’s music, follow him on Twitter @austinbasham, or purchase “Little Foxes” on iTunes.
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