

NEWSLETTER



MESSAGE FROM THE CHAIR



I hope everyone had a great Christmas holiday and a great start of the new year. Things have been very busy and exciting around the department. I couldn't be prouder of my faculty's effort in advancing research and working to increase the number and quality of our undergraduate population. Drs. Emadi, Yuan, and Leggett along with myself have submitted numerous proposals for federal grants over the last several months. We have indications that several will be successful, and we'll be able to update you in the fall newsletter. Dr. Yuan continues a very successful research

program in hydrogen while Dr. Leggett is working on both geothermal and artificial lift. In February of this year, a pulling unit arrived at OTC to run casing in one of our test wells for Dr. Leggett's gas lift consortium. Dr. Emadi and I continue to develop a wellbore integrity lab which supported multiple proposals in the area of carbon capture storage. We have filed multiple patents for CCUS. In the area of undergraduate recruiting, Dr. Gamadi has worked tirelessly to add inhouse coursework to our program, such as thermodynamics and fluid dynamics. He will be offering these courses online for the benefit of transferring junior college students so that they can have the opportunity to graduate in two years after coming to Texas Tech.

I just got back from NAPE and was really stunned and encouraged by the amount of carbon capture storage projects on display. This certainly supports our research efforts and our new CCUS certificate program we started last year. I was able to take three students this year and had an informal get together with alumni at The Four Seasons in downtown Houston. Hopefully next year we can plan on something a little bit larger, and I am open to suggestions and help from alumni to make that happen.

Sincerely,

Dr. Marshall Watson

Department Chair

Petroleum Engineering

CONTENTS

WHAT'S INSIDE!

Check out all the exciting things happening at the Bob L. Herd Department of Petroleum Engineering at Texas Tech!



02 **IMPACT THE WORLD** Grants & Reserach



06 **FEATURE** Alumni Spotlight



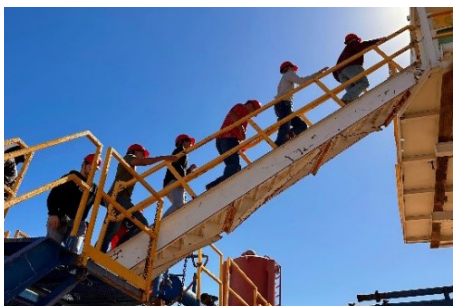
07 **ACHIEVEMENTS** Faculty Achievements



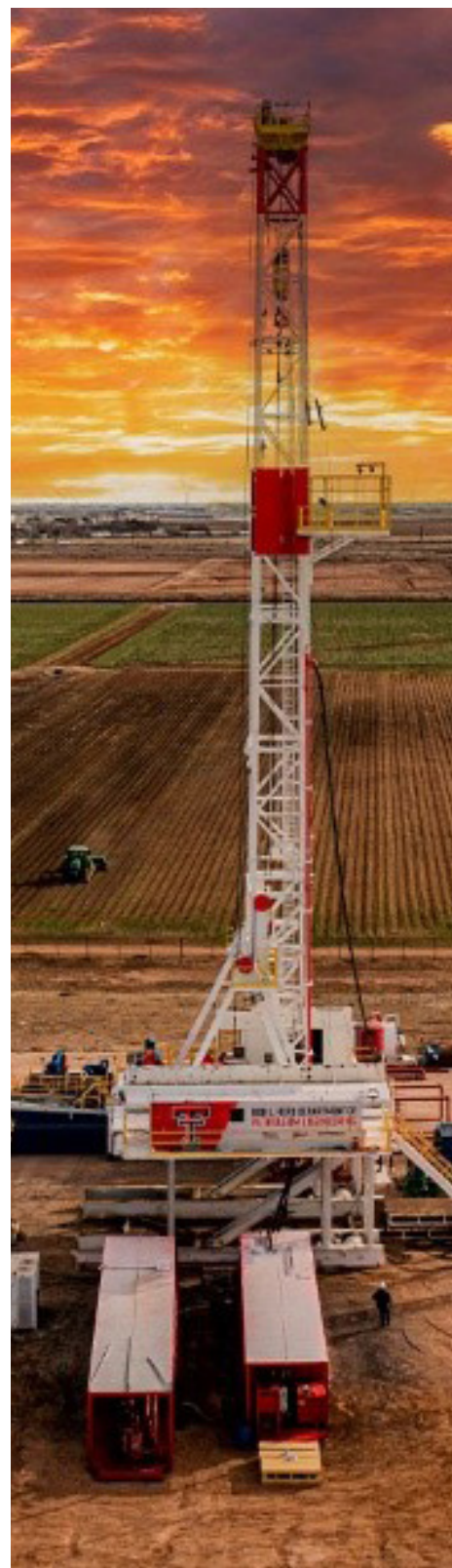
08 **INDUCTED** Academy of Petroleum Engineers Inductees



09 **WHAT'S HAPPENING** Events



10 **DAY IN THE LIFE** Around Petroleum



Our faculty are doing research that impacts everyone across the globe!



Dr. Leggett Receives Early Career Fellowship

Dr. Smith Leggett was awarded a \$75,000 Early Career Research Fellowship through the Gulf Research Program's Offshore Energy Safety Track. In his proposal, Dr. Leggett discussed the potential to revolutionize offshore energy safety through the development of advanced distributed fiber optic sensing (DFOS) technology. His work focuses on early detection of subsea hazards such as gas kicks, underground

blowouts, and liquid slug production, which is crucial for preventing offshore incidents. This innovative research is significant as it enhances the safety of offshore operations, mitigates environmental risks, and represents a leap forward in subsurface monitoring technology. It offers a proactive approach to hazard management, setting a new standard for operational safety in the energy sector.

Our faculty are doing research that impacts everyone across the globe!



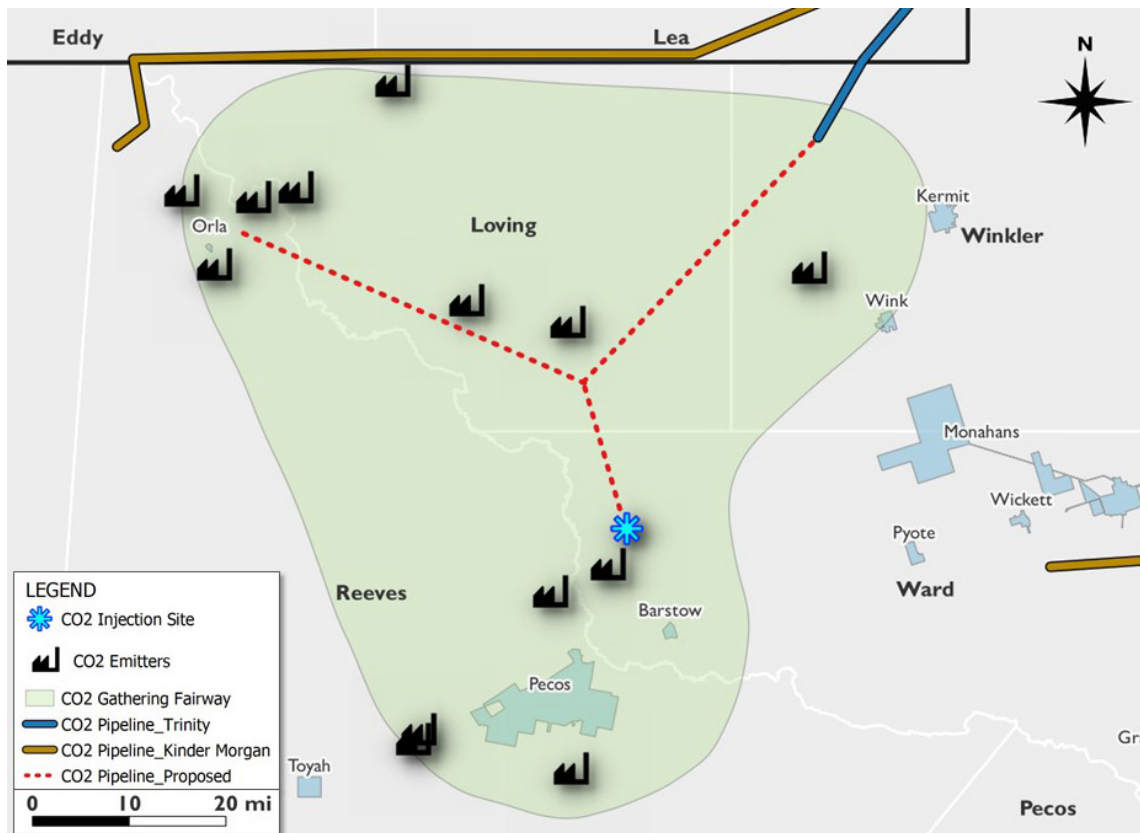
Dr. Watson and Team Receive Grant to Empower Offshore Worker Safety

Dr. Marshall Watson, along with Dr. Changwon Son from ISME, were recently awarded an \$855,750 research grant from the NASEM Gulf Research Project. Texas Tech is one of only five schools to be awarded for their projects. This project is focused on enhancing offshore safety through SURE programs: Stop-work authority, Ultimate work authority, Reporting unsafe conditions, and Employee participation. These programs were added to the Bureau of Safety and Environmental Enforcement's Safety

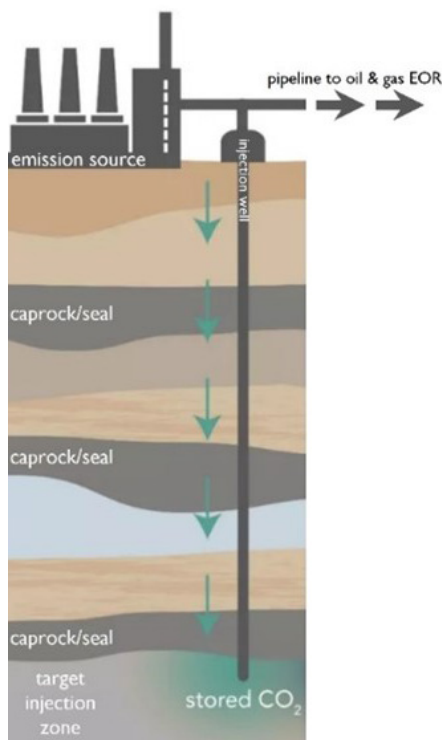
and Environmental Management System in 2013; however, there are still many problems. With the funding, the team will be working to combat poor safety culture and lack of hazard awareness by implementing a "SURE Toolbox" program, which includes education and training materials, operating procedures, observation and reporting cards, end-user manuals, team safety meeting guidelines, and data analytics.

IMPACT THE WORLD

Our faculty are doing research that impacts everyone across the globe!



Carbonsafe Phase II Project Funded



We are delighted to announce a significant milestone for the Department of Petroleum Engineering – the attainment of a \$600,000 grant from the Department of Energy for the Carbonsafe Phase II project, entitled the “Permian Regional Carbon Sequestration Hub (PRCS Hub)”. Spearheaded by Principal Investigator (PI) Dr. Qingwang Yuan, alongside Co-PIs Dr. Hossein Emadi and Dr. Marshall Watson, our accomplished faculty is partnering with Omnia Midstream Company, the lead institution, in pioneering research on carbon storage

within the Delaware Basin. This collaborative venture extends to include New Mexico Tech and other esteemed research institutions and stakeholders. Focused on the PRCS Hub, our collective efforts aim to propel advancements in carbon storage technologies, offering substantial contributions to sustainable energy solutions. This achievement solidifies Texas Tech University’s leadership role in addressing critical challenges in petroleum engineering through cutting-edge research and impactful collaboration.

Sajjad Esmaeilpour

Sajjad Esmaeilpour graduated with a PhD from the Bob L. Herd Department of Petroleum Engineering in Spring 2022. Since graduating he accepted a job as an instructor at New Mexico Tech University in the Petroleum and Natural Gas Engineering Department. When asked how his time as a petroleum student at TTU helped set him up for this success, Sajaad said it provided him with a strong foundation in the fundamental principles of petroleum engineering. Because of the rigorous coursework and research opportunities, he developed critical thinking and problem-solving skills. Additionally, he said his advisor, Dr. Ispas, played a significant role in building his self-confidence by allowing him to teach senior and graduate students as a TA, and involving him in all aspects of the class. This greatly helped him prepare for a career in academia.

As a faculty member now, his primary focus is on research and teaching. He plans to continue his research in developing more efficient and sustainable methods for extracting and utilizing fossil fuels. He is also interested in exploring new technologies for renewable energy and alternative fuels. When asked what his favorite part of being a petroleum engineer is, he said he really enjoys the chance to tackle real-world issues that have significant effects on society and the environment. With the increasing emphasis on sustainability in the energy sector, it's critical for Petroleum Engineers to develop innovative and efficient technologies and processes. Whether it's devising more effective extraction techniques or researching alternative energy sources, he says he is passionate about being part of an industry that's dedicated to advancing a greener future. And of course, the financial rewards of the job are also a plus.

Sajjad also hopes to continue mentoring and supporting the next generation of petroleum engineers through teaching and other professional development opportunities. He has a lot of



advice for current and future students in our program. Sajjad recommends taking full advantage of the opportunities available at Texas Tech. This includes not only coursework and research, but also participating in student clubs (SPE, ARMA, SPWLA, AADE, etc.), attending conferences, field trips, technical courses, and other events to expand their knowledge and experiences, and stay up to date with the latest industry trends and technologies. He also suggests building a strong network with faculty members and other students. This can be an invaluable resource for finding job opportunities and gaining insights into the industry. Additionally, he would encourage students to be proactive in seeking out innovation and new approaches to their research and work. By combining a strong academic foundation with practical skills and real-world experience, students can prepare themselves for success in their future careers.

When reflecting on his time at Texas Tech, Sajjad said "My wife and I are both proud to be graduates of this great university, and we have countless cherished memories from our time there. Texas Tech is a special place that holds a significant place in our hearts, and we both feel that we left a part of our soul there. Thank you again for the opportunity to reflect on my experiences and share my story."

Bob L. Herd Department of Petroleum Engineering Enters Into A Joint Partnership

Dr. Qingwang (Kevin) Yuan recently announced a joint partnership with the Hope Group as Texas Tech University and TerraVent. TerraVent and Hope Group technologies have enabled affordable Hydrogen energy solutions for low-cost, carbon-zero, carbon-free, and carbon-negative Hydrogen production. Argonne National Laboratory's Final Report concluded that the TerraVent and Texas Tech Hydrogen Production method can potentially enable Hydrogen Production for as low as \$0.86 per kilogram. Funded by the U.S. Department of Energy (DOE) under the Hydrogen Shot Incubator Prize Program,



along with experimental results funded by The CH Foundation, the analyses are a promising step in meeting the DOE's stated goal of producing one kilogram of Hydrogen for \$1 by 2031.



Dr. Watson Inducted Into Hall Of Fame

Dr. Marshall Watson was inducted into the Kilgore College Athletic Hall of Fame on Oct. 21st. The annual Hall of Fame weekend honors former standout athletes, coaches, and contributors. Dr. Watson received the Spirit of Excellence award that weekend. The Spirit of Excellence Award is for former KC athletes or coaches who have carried on the Ranger tradition of excellence to achieve an impressive level of distinction in their fields. Marshall played football for the Kilgore College 1977 conference champions and also in 1978 when the Rangers won the National Championship.

Academy of Petroleum Engineers Inductees



Pictured - Juan Navarez (Left), Rodney Cox (Middle), and daughter Carly (Right)



Pictured - Juan Navarez (Left), Terry Fuller (Middle), and Linda Fuller (Right)

This past fall our department had the distinct honor to host our annual Academy Dinner where Rodney E. Cox was inducted into the Academy of Petroleum Engineers and Terry Fuller was awarded the Herald W. Winkler Distinguished Lifetime Achievement Award. Terry was more than deserving of the Winkler award as he devotes countless hours to supporting our activities from his “bus office” out back!

SPE ATCE Conference

Many of our wonderful faculty and students attended this year's SPE ATCE Conference in San Antonio, Texas. ATCE, or the Annual Technical Conference and Exposition, is a yearly event bringing students, faculty, industry professionals, and companies together in one place. Each year, thousands of delegates from around the world meet here to exchange knowledge, innovate, and advance their technical and professional skills in the world of oil and gas and related energy resources. Our faculty and students set up a booth for our department, attended presentations, and one student, Keju Yan, presented at the conference. Following ATCE, our department hosted an alumni dinner honoring our wonderful alumni, and giving current students the opportunity to network with successful industry professionals from our department.



Petroleum Students Attend Permian Basin BBQ Cook Off

In September, ten of our PE students, along with five Energy Commerce students attended the 2023 Permian Basin BBQ Cookoff hosted by Daniel Energy Partners (DEP). The event hosted 5 different schools, including TTU sponsored by DEP, PROpetro, and alumni Terry Fuller.

Although our students did not place in the contest, they had an engaging and memorable experience sitting in on the Fireside Chats with executives from different companies during both days, networking with professionals, and attending the Catie Offerman and Josh Abbott concerts in the



evenings! After the event, ProPetro and DEP also put together a Rig Tour and Frac Tour for the students of the 5 different universities present. We are excited for this now annual event to become a TTU PE tradition!



Alex Epstein Visits Campus

The Bob. L Herd Department of Petroleum Engineering in partnership with the Free Market Institute and the School of Law were proud to bring author and advocator Alex Epstein to Campus this past September. Mr. Epstein spoke about the future of fossil fuels. His talk, titled "Why Global Human Flourishing Requires More Oil, Coal, and Natural Gas – Not Less" was attended by students across campus. Students were also given access to Mr. Epstein's book courtesy of a generous donation from Rockliff Energy.

DAY IN THE LIFE



Petroleum Engineering Junior Class visits Norton Energy Drilling Site



AADE Annual Golf Tournament



Baker Hughes SPE Tailgate



**NAPE 2024 – note the prospect to right
“500 BOPD at 700 FT!”**

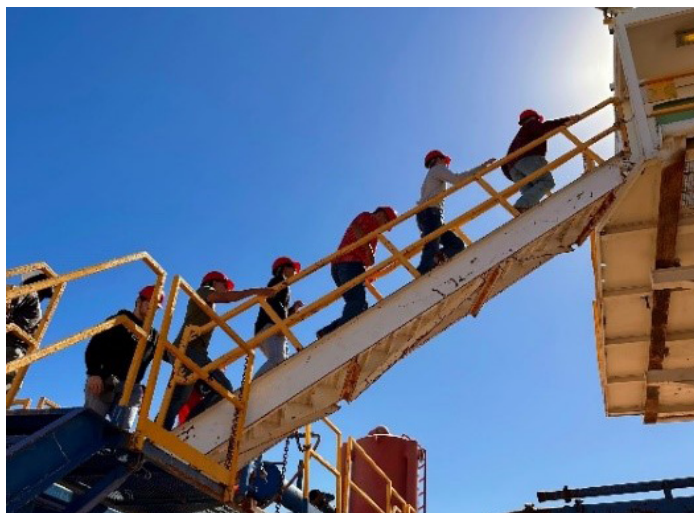


“Of course, Terry was a great supporter of our huge football tailgates again this past fall. I didn’t do so well on my conference championship projection, but we did end the season strong with another great bowl win. I hope to see many of you at the tailgates this coming fall.”

-Dr. Marshall Watson



Wyatt Edwards
"Prospecting" at NAPE



Toben Scott demonstrates the importance of safety at the OTC



Terry Fuller shows students how the pumpjack operates at the OTC

FROM HERE, IT'S POSSIBLE.™

Bob L. Herd Department of
Petroleum Engineering
Box 43111
Lubbock, TX 79409-3111
Phone: 806.742.3573



SUPPORT OUR MISSION

Discover how your contribution can change the lives of students who are engineering a global future! Visit our website below to find out how you can make a difference in the lives of future engineers.

**Visit Our
Website!**



www.depts.ttu.edu/pe/

**Follow Our
Socials!**

