



### **FROM THE DEPARTMENT CHAIR**

#### **A letter from Karsten Thompson**

Greetings Alumni and Friends,

Nearing the mid-point of spring semester, a lot of exciting things are happening. We received formal approval for a significant curriculum evolution, so faculty are pulling the trigger on plans for new or adapted courses that will add content on unconventional and modern data analysis and will expand content on production and completions. The well facility is back up and running after an extended shut-down for major renovations. Many more improvements are planned, but customers tested in December and the well-control lab course is in session, meaning basic operations are online. I have made (and will continue to make) multiple trips to Houston this semester to meet with companies of all types and sizes to strengthen partnerships with LSU. Thanks to everyone I have visited for such interest and enthusiasm in these discussions. And of course, we have around 150 students itching for May to arrive, when they will join the ranks of Craft & Hawkins Alumni!

As always, we would love to hear from you with news, ideas, or questions!

Until then, enjoy your spring and Geaux Tigers!

Karsten Thompson

# RAO ELECTED SENIOR MEMBER OF NAI



Dr. Dandina Rao is one of three LSU faculty members who have been elected by the National Academy of Inventors, or NAI, as a senior member. Emmett C. Wells Jr. Distinguished Professor Dr. Rao, Department of Mechanical Engineering Professor and DOW

Chemical Endowed Chair in Rotating Machinery Dr. Michael Khonsari, and Pathobiological Sciences Professor Dr. Shafiqul Chowdhury are among the 66 academic inventors to the inaugural class of NAI Senior Members.

Dr. Rao has a record of success in patents, licensing, and commercialization. He has developed the Gas-Assisted Gravity Drainage (GAGD) Process for conventional reservoirs, which rapidly and inexpensively recovers large amounts of oil trapped in reservoirs after primary and secondary waterflood techniques. The NAI Senior Members have produced technologies that have brought, or aspire to bring, real impact on the welfare of society.

“Throughout his career, Dan Rao has developed new technologies for mobilizing oil and helping maximize

recovery,” said Karsten Thompson, chair of the Craft & Hawkins Department of Petroleum Engineering. “Today, his contributions are more important than ever, as we work to maximize production from existing resources before developing new areas. I’m very happy to see Dan recognized with this award.”

Senior members foster a spirit of innovation within their communities by enhancing an inventive atmosphere at their institutions, educating and mentoring the next generation of inventors. This inaugural class of NAI Senior Members represents 37 research universities and government and non-profit research institutes. They are named inventors on more than 1,100 issued U.S. patents. Senior members undergo a two-step selection process, including internal NAI review and consideration by the advisory committee. The committee comprises elected NAI members and other professionals considered pioneers in the respective fields. In addition to the three inaugural senior members, LSU has four faculty who have been elected NAI Fellows—Roger Laine, Mandi Lopez, Isiah Warner, and K.T. Valsaraj, who is also serving on the NAI Board of Directors for 2018-19.

# SOCIETY OF PETROPHYSICISTS AND WELL LOG ANALYSTS (SPWLA)

The LSU Chapter of the Society of Petrophysicists and Well Log Analysts hosted Weatherford for a lunch and learn in October 2018. Robert Ziegler, global manager for MPD, and Neal Richard, MPD manager and university champion for Weatherford at LSU, both represented Weatherford and visited from Houston to give a presentation on managed pressure drilling and new well-logging methods. More than 100 students attended, and while the meeting was supposed to last for two hours, it ended up going for more than four hours. Special thanks to Dr. Ipsita Gupta and Dr. Frederick Thurber for encouraging their classes to attend and learn. We have been invited to attend Weatherford’s technology day in Houston this spring semester.



*SPWLA Meeting*



# SOCIETY OF PETROLEUM ENGINEERS (SPE)

The Society of Petroleum Engineers had an amazing turnout for the Annual Technical Conference & Exhibition in September, with more than 65 students in attendance. Despite a few challenges in the beginning of the trip, it was one of the best ATCE's for LSU students.

## ATCE 2018 ACHIEVEMENTS:

- Outstanding Student Chapter Award
- 2nd Place International PetroBowl Competition
- 2nd Place International Student Paper Contest (Renato Coutinho – PhD)
- 3rd Place International Student Paper Contest (Brennan Flores – Undergraduate)

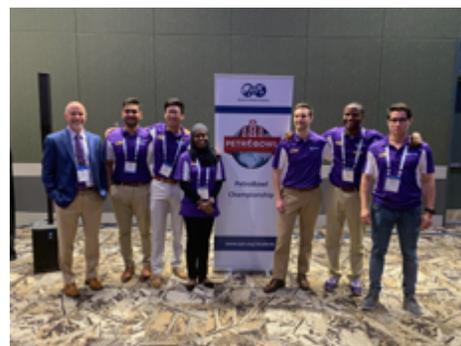
Throughout the fall semester, meetings were sponsored by Chevron, Chesapeake, Newfield, Marathon, Anadarko, Exxon, and Megalex Rods.

In mid-January, we hosted the internal SPE Student Paper Contest for the PhD and master's divisions. The four winners—Andreas Michael, Mojtaba Mosaheb, Francisco Bruno Teles, and Ligia Tornisiello—will advance to compete in the SPE Eastern Regional Paper Contest on March 23 at Penn State University. In early February, 18 students travelled to the University of Houston for the SPE North American Student Symposium and PetroBowl Competition. The students attended field trips, a career fair, and the PetroBowl team placed third overall in the competition, allowing them to advance to the international competition at ATCE in Calgary in late September. If you would like to donate toward this cause, please contact the department.

On Saturday, March 30, SPE will host the SPE Golf Tournament fundraiser. If you are interested in playing or donating, please contact SPE at LSU. Lastly, multiple spring meetings by various companies are scheduled through the semester.



*2019 PetroBowl team*



*2018 PetroBowl team with Dr. Thompson at ATCE*



*2018 ATCE International Student Paper Contest participants Dr. Coutinho and Mr. Flores*

*2018 Outstanding Student Chapter Award at ATCE*

# AMERICAN ASSOCIATION OF DRILLING ENGINEERS (AADE)

The LSU Chapter of the American Association of Drilling Engineers hosted another successful clay shoot in September 2018. Many companies came out to support the organization and have a fun time. Also, Chevron, Wild Well Control, and other companies sponsored meetings, while Workstrings and Halliburton sponsored tailgates for the students during the fall semester. This spring, we look forward to getting a web-based job forum/database off the ground with the help of AADE New Orleans. In early April, 35 students will travel to Denver to attend the AADE National Technical Conference and Exhibition.



*AADE Clay Shoot luncheon*



*AADE Clay Shoot winners*



*The Workstrings team at the AADE Clay Shoot*

# PI EPSILON TAU (PET)

The LSU Chapter of Pi Epsilon Tau, the petroleum engineering honor society, in conjunction with SPE and AADE, is partnering with Total to offer the Total Professor Associates Program to students. This program, wherein industry professionals from Total travel to universities across the world, offers certified courses in petroleum engineering.

In mid-September 2018, a course on the topic of mid-to-deep offshore drilling techniques and operations was taught by former Chief Executive Officer of Qatar Phillipe Guys. After the five-day course, each of the participants received a certificate of completion. In early November 2018, Jean-Louis Idelovici offered a course on oil and gas project management. In late January, Owner and Founder of Unconventionals Oil & Gas Training Aaron Burton visited and taught a two-day course on unconventionals and hydraulic fracturing. Lastly, in mid-February, TPA President Denis Francois taught a five-day course on well logging for oil and gas evaluation. All courses were well attended, and the students left with an enhanced sense of the subject matter.



*From left to right, Neal Kathuria of SPE; Barry Trahan of AADE; Phillipe Guys of Total; and Mitchell Petras of PET*



*September's Total course*



*PET officers with Phillipe Guys of Total (third from right)*



# NEW FACULTY WELCOME



*Dr. Jyotsna Sharma*

The Craft & Hawkins Dept of Petroleum Engineering is pleased to welcome Dr. Jyotsna Sharma, a new assistant professor who joined us this spring semester. Previously, she was with the Chevron Energy Technology Company, where she worked as a research engineer and heavy oil specialist. She completed her PhD at the University of Calgary in December 2011 and joined Chevron in Canada as a reservoir engineer in 2012.

In her first two months at LSU, she has already secured a grant funding entitled, “Digital Scholarship Start-up Grant.” The purpose of the project is to create an online resource for students that provides them access to oil and gas production data for actively producing states around the country. The database is intended to be a quick, accurate, and easy-to-use resource for research and learning purposes. The production and well data for creating this online portal will primarily be sourced from the database maintained by individual state government institutions. Dr. Sharma envisions several uses for this online portal, which is intended for both undergraduate and graduate students, including:

- Understanding domestic oil/gas production trends and optimization opportunities.
- Using data analytics/machine learning tools on the production database to decipher meaningful behaviors and predictions.
- Creating maps and generate statistics and custom visualization tools to aid learning and research.
- Investigating environmental impacts of oil production activities and conduct related research.
- Aiding in understanding geological aspects of oil production.
- Serving as a resource for non-petroleum engineering students to get an overview of the oil industry.