



# School of Chemical Engineering

## Chemical / Biomedical / Petroleum

### Message from the Head

It has been my privilege to serve as school head for the past ten months and I would like to thank Dr. Heather Fahlenkamp for her excellent service to the school as interim head, and also for the tireless efforts of our previous head Dr. Rob Whiteley. In total, their efforts have created the foundations for our current successes.

We are pleased to provide a look back at the 2019-2020 school year. The 2020 spring semester has been a singular experience for student and faculty with the COVID-19 virus and requisite teaching and learning adaptations for both faculty and students. The online courses were delivered with very little warning and available planning time, and have been well-executed and well-received by the faculty and students, respectively. In particular, challenging modifications for our laboratory courses were necessary, e.g., in Unit Operations where videos of equipment and data collection were organized by faculty online.

The number of faculty research awards essentially doubled in 2019, increasing to the highest level in the School's history. Looking forward, 2020 may provide even more improvements to our research portfolio, in total providing excellent resources and experiences for our undergraduate and graduate students. We also now have the PhD program in Petroleum Engineering approved in the School. Moving forward we will also have the largest groups of CEAT Scholars in the School of Chemical Engineering in the next years to come due to the increased success of our School and the support of alumni. Momentum toward the "next level" continues and we are well past the halfway mark of our first goal. Please take a few minutes to check out the links that follow.

We graduated the largest class in our history in 2019 with 79 students, and in 2020 we graduated 62 students. The highlights below provide a glimpse into the past year of outstanding accomplishments by our students, staff, faculty, and alumni.

As we continue into the next academic year we will continue to pursue excellence in teaching and scholarship with excitement and orange pride. Our students have and will be given the experience and tools necessary to feed their mind creating a new wave of the brightest and best students on the OSU campus. Our faculty, with exemplary research, new endowments and scholarships, continue to give our students the best possible experience resulting in highly qualified and workforce ready graduates. The future still has some uncertainties but I believe the brightest "Orange" is yet to come. Thank you all for your support!

Geir Hareland, PhD, P.Eng. (OSU, PhD 91)  
Continental Resources Chair, Professor and Head  
School of Chemical Engineering  
geir.hareland@okstate.edu (office) 405.744.9113



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## Angela Peter Represents OSU at Global Grand Challenge Summit

Angela Peter, Chemical Engineering Senior, led an international team in the Global Grand Challenges Summit held in London in September 2019. Her team won the Poster Competition and the award for the Most Innovative Idea out of 50 mixed-country teams. Angela was one of 300 students selected worldwide for this competition. Her team of students from US, UK, and China created a business plan for a United Nations Sustainable Development goal of Good Health and Well Being. [Read more here.](#)



Gentry Meyer



Cara Meyer

## 2019-2020 Seniors of Significance

Gentry Meyer, from Leedy, Oklahoma, and Cara Meyer, from Edmond, Oklahoma were named OSU Alumni Association Seniors of Significance for the 2019-2020 academic year. This Award recognizes students who have excelled in scholarship, leadership, and service to campus and community, and have brought distinction to OSU. The 41 students selected represent the top one percent of the Class of 2020.

Gentry was also named an Outstanding Senior. [Read more here.](#)

## Blake Bartlett Named Goldwater Scholar

Blake Bartlett is a chemical engineering sophomore from Greenwood, Arkansas. He has been both a CEAT Scholar and a Freshman Research Scholar, and he won a Wentz Research Scholarship for his work in OSU's Systems Biomedicine and Pharmaceutics Lab. Bartlett's current research focuses on modeling the mucus that coats the lungs and experimental lung drug delivery. He has presentation experience on the OSU campus and at the national poster competition at the American Institute of Chemical Engineers Annual Student Conference in the fall of 2019. Bartlett is also in the Honors College. He plans to earn a doctorate in chemical engineering and pursue a career in pharmaceutical research and development.



The Goldwater Scholars program is nationwide and highly competitive. [Read more here.](#)



## Chem-e-Car Competition

The Cemyaiya Team, composed of Sam Hatley, Becky Chvatal, Tanner Hagerman, and Ebraheem Faraj (not pictured) won 1st place in the Chem-e-Car Competition. The team is shown here with their car, and with professors Dr. Brad Rowland (far left), and Dr. Sundar Madihally (far right).

The Chem-e-Car Poster Competition was won by the Talladega Knights Team, which consisted of Naser Alfadhli, Conner Allen, and Mohammed Alkandari. Professors Madihally and Rowland are on the right in the picture.



## Sushobhan Pradhan Receives Outstanding GTA Award

Sushobhan Pradhan has received the Outstanding GTA award from the Graduate and Professional Student Government Association (GPSGA). The GPSGA recognizes only one Outstanding GTA across campus each year with a cash prize and a certificate to be presented during the Graduate Student Appreciation Week. In the past, Sushobhan has been a GTA for some of the Petroleum courses and more recently was a GTA for CHE 2033 Introduction to Chemical Engineering. Just another example of the outstanding performance our graduate students provide in support of our undergraduate program. [Read more here.](#)



## OSU Petroleum Researchers Team with Continental Resources on \$19.9M Grant



A group led by Oklahoma State University researchers and consisting of academic and industry partners have received a \$19.9 million grant, to conduct research on the Caney Shale, a potential petroleum resource in south western Oklahoma. The award includes money from the U.S. Department of Energy (DOE) and cost share from Continental Resources, the principal industry partner in the study.

The four-year study will involve multiple faculty, students and national lab personnel and will be tasked with investigating and understanding the ductile type shale rock found in the Caney Shale resource. [Read more here.](#)

## Dr. Jindal Shah Awarded NSF Grant

Dr. Jindal Shah's project titled "RII Track IV: Deciphering the Role of Polarization on Ionic Transport in Ionic Liquid Batteries" was funded by the National Science Foundation.

The project will focus on understanding the effect of polarization on Li-ion transport from ab initio molecular dynamics simulations performed on binary ionic liquid systems. The research will be conducted in collaboration with researchers at the Pacific Northwest National Lab.



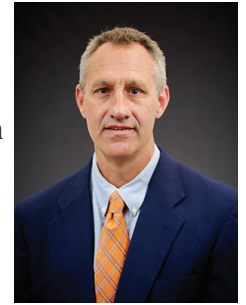
## Dr. Shohreh Hemmati and Dr. James Smay Awarded NSF Grant

The National Science Foundation has funded the collaborative work of PI Dr. Shohreh Hemmati and co-PI Dr. James Smay for the three year project titled "Continuous, Large-scale Manufacturing of Functionalized Silver Nanowire Transparent Conducting Films."

The project will focus on reaction conditions and mechanisms in a continuous reactor to produce silver nanowire-based conductive inks that can be continuously printed onto flexible substrates to create transparent conducting films for the Internet of Nano Things (IoNT).

## Dr. Jeff White Awarded Research Grant from Phillips 66

Dr. White's project titled "Advanced Magnetic Resonance Investigations of Heterogeneous Catalysts" has been awarded a four-year research grant from Phillips 66. Dr. White's research group focuses on the physical chemistry of heterogeneous materials. Nuclear magnetic resonance (NMR) spectroscopy is the key tool that is utilized to study different systems. Both solid-state NMR and diffusion NMR are used to interrogate the physical chemistry of systems, in particular, heterogeneous copolymers and gradient copolymers, heterogeneous catalysis in solid acids, oil shale, geological rock, etc.



## Dr. Heather Fahlenkamp and Dr. Josh Ramsey Help with Fight against COVID-19

OSU's veterinary lab has been vital in Oklahoma's approach to COVID-19 testing. The lab — which typically tests for diseases in animals — has run more COVID-19 tests than any other in the state, with a staff of volunteers and lab personnel making it happen. Lab personnel speak of their new task as a public service mission.

[Read more from The Washington Post](#)

## Dr. Yu Feng's Lab Examines Social Distancing Models

Dr. Yu Feng is an assistant professor in chemical engineering who specializes in computational lung aerosol dynamics. He and his lab colleagues — Jianan Zhao, Hamideh Yayati, Hang Yi and Ted Sperry — are collaborating with Global Healthcare Industry Director Dr. Thierry Marchal and Vishal Ganore, an academic strategic partnership manager with engineering simulation and 3D design software company Ansys.



Feng and his lab members have simulated different environmental conditions, such as calm air, light air and a light breeze blowing along different directions, to see if six feet of distance is sufficient. They are also simulating how individuals cough and how cough droplets can affect another person, whether they are running or talking to someone who is potentially infected. [Read more here.](#)

## ChE Industrial Advisory Committee Met November 11, 2019



Front Row, L-R: Ashleigh Ross, Kelsey Deupner, Renee Hale, Kyle Sharon, Jennifer Jones, David Wiist, Lindel Larrison  
Back Row, L-R: Dereck Sumner, Terry Stewart, Carl Robertson, Chad Bergman, Scott Lewis, Keith Montgomery, Gary Miller