ABOUT THE DEPARTMENT

Enrollments (Fall 2018):
- Foundational Freshmen: 235
- CHE Undergraduate: 242
- Master’s: 11
- Doctoral: 76

Tenure and Tenure-Track Faculty: 19

Endowed Chairs and Professors: 5

National Academy Members: 1

Research Expenditures (FY 17): $6.6M

DEGREES

- Doctor of Philosophy in Chemical Engineering
- Master of Science in Chemical Engineering
- Bachelor of Science in Chemical Engineering

CONTACTS

Dr. Sindee Simon | Whitacre Department Chair
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Dr. Rajesh Khare | Graduate Advisor
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Dr. Mark Vaughn | Undergraduate Advisor
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STUDENT TESTIMONIALS

- “I found the courses to be really effective and useful.”
- “Excellent working environment for research.”
- “Seminars were thought-provoking and scientifically stimulating.”
- “My advisor was a good mentor and leader. He motivated students to develop independent research skills.”
- “I have always felt that everyone was here to help me succeed.”
- “All the people in the department are very helpful and made my stay here wonderful.”

OVERVIEW: RESEARCH AND TEACHING

The Department of Chemical Engineering at Texas Tech University offers nationally ranked programs resulting in B.S., M.S. and Ph.D. degrees. The department has seen tremendous growth over the past ten years.

Overall faculty scholarship ranks 48th nationally according to Academic Analytics. Momentum continues to grow as we attract the very best students and faculty.

Research in the department covers a broad range of innovative experimental programs and state-of-the-art modeling and simulation activities. Ph.D. and M.S. students, as well as undergraduate researchers, are involved in cutting-edge research in the following areas:

- Bioengineering and Biomedicine
- Energy and Sustainability
- Soft Matter and Nanotechnology
- Computational Modeling and Data Science

The department also highly values excellence in teaching. Students at all levels receive significant hands-on experiences with a new $1 M teaching laboratory from Valero and a new $1.2 M Morrow Energy pilot plant.

FROM HERE, IT’S POSSIBLE

Jennifer Hewitt received the Fulbright Scholar Award for a nine-month’s study at the Max Planck Institute for Biology of Aging. Her studies involve using worms as a model system to determine the effects of exercise and nutrition on muscle mass and aging.

Nazam Sakib received the NATAS Perkin Elmer Student Award and gave a special oral presentation at the 2018 annual meeting of NATAS on the thermal and rheological characterization of polymer-grafted nanocomposites.

Mizanur Rahman won the Innovation Award at the 2018 Tech Connect Conference in Anaheim, CA, for microfluidics technology developed with Dr. Vanapalli to study aging in nematodes.

Ziye Dong won the Best Graduate Student Presentation in Biomaterials at the 2018 AIChE National Meeting for his work capturing cancer cells from blood samples.
Chemical Engineering Research
Faculty Specializations

Dr. Ya-Wen (Winnie) Chang
Assistant Professor
Soft and living matter, cell organization and behavior, microfluidics and 3D printing

Dr. Chau-Chyun Chen
Professor and Jack Maddox Distinguished Engineering Chair in Sustainable Energy
Molecular thermodynamics, phase equilibria, process modeling

Dr. Gregory Fernandes
Research Assistant Professor
Solution and adsorbed polymer behavior, structure and dynamics of colloidal systems

Dr. Harvinder Singh Gill
Associate Professor and Whitacre Endowed Chair of Science and Engineering
Drug and vaccine delivery, bionanomaterials, immunomodulation

Dr. Josh Howe
Assistant Professor
Electronic structure and classical atomistic material simulations, adsorption and separations, nanoporous materials

Prof. Chijuan Hu
Assistant Professor of Practice
Undergraduate teaching laboratories and biochemical engineering

Dr. Sheima Jatib-Khatib
Assistant Professor
Heterogeneous catalysis, membrane reactors

Dr. Rajesh Khare
Professor, Associate Department Chair, and Director of Graduate Studies
Molecular simulations, rheology of complex fluids, polymer nanocomposites, separations

Dr. Carla Lacerda
Assistant Professor
Heart valve degeneration: models, mechanisms and prevention

Dr. Wei Li
Assistant Professor
Cell/polymer interaction, cell microenvironment, biomedical devices

Dr. Mahdi Malmali
Assistant Professor
Reaction and separation processes, water recycle and reuse, process intensification

Dr. Jeremy Marston
Assistant Professor
Fluid and granular flows, high speed imaging

Dr. Gregory B. McKenna
Horn Professor and John R. Bradford Chair in Engineering
Polymer and soft matter physics, rheology, nanorheology, nanomechanics

Dr. Nurxat Nuraje
Assistant Professor
Enhanced oil recovery, photocatalysis, renewable energy

Dr. Al Sacco Jr.
Dean of the Whitacre College of Engineering
Transition metal and acid catalysts, zeolite synthesis

Dr. Sindee L. Simon
Whitacre Department Chair and Horn Professor
Physics of glasses, nanconfined reactions, calorimetry, dilatometry

Dr. Siva A. Vanapalli
Professor and Bill Sanderson Faculty Fellow
Microfluidics, mechanics of cells and biopolymers, colloidal assembly

Dr. Mark W. Vaughn
Associate Professor and Director of Undergraduate Studies
Nitric oxide in microcirculation, membrane transport

Dr. Brandon L. Weeks
Professor and Associate Dean for Research and Graduate Programs
High explosives, nanolithography, microcantilever, crystal growth

Dr. Theodore F. Wiesner
Associate Professor
Solar energy, hydrogen production, \( \text{CO}_2 \) mitigation