OVERVIEW AND RESEARCH

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, doubling student populations and becoming a research-intensive department. Momentum continues to grow as we attract the very best students and faculty.

The graduate programs in chemical engineering are dynamic and internationally visible. Our laboratory facilities support innovative experimental programs, and our computational resources are exploited for state-of-the-art modeling and simulation activities. The master's and Ph.D. programs enable students to be involved in award-winning research in the following areas:

- Bioengineering
- Energy and Sustainability
- Polymers and Materials
- Simulation and Modeling in Chemical Engineering

Undergraduates are also encouraged to conduct research for credit or compensation.

FROM HERE, IT’S POSSIBLE

Yunzhe Ma received the 2014 Texas Tech Outstanding Dissertation Award. Ma's research was supervised by Dr. Gill. He is currently working at Intel in Hillsboro, Oregon.

Haoyu Zhao won first place in the 2014 Student Poster Competition at the North American Thermal Analysis Society (NATAS) and was the 2013 Perkin Elmer NATAS Student Award winner. Haoyu is supervised by Dr. Simon.

Naureen Suteria won first place in the AIChE Regional Student Paper Competition as an undergraduate researcher supervised by Dr. Vanapalli in 2013. She is now working in the same laboratory as a Ph.D. student.

Michael Wurmstein won first place at the Undergraduate Research Poster Competition at the 2014 AIChE meeting in the Computing and Process Control Division. He will graduate in May 2016.

Rodney Preistley graduated with a BSChE in 2003, performing undergraduate research with Dr. McKenna. He received his Ph.D. from Northwestern and now is a tenured faculty member at Princeton University.

ABOUT THE DEPARTMENT

Enrollments (Fall 2014):

- Estimated Qualifying Foundational Students: 129
- ChE Undergraduate: 211
- Master's: 10
- Doctoral: 65

Tenure and Tenure-Track Faculty: 16

Endowed Chairs and Professors: 3

Research Expenditures (FY 2014): $4.9M

DEGREES

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

150–Hour Combined B.S./M.S.

CONTACTS

Dr. Sindee Simon
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Dr. Siva Vanapalli
Graduate Advisor
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Dr. Mark Vaughn
Undergraduate Advisor
mark.vaughn@ttu.edu

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."
Chemical Engineering Research
Faculty Research Specializations

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

Dr. Harvinder Singh Gill
Assistant Professor
Drug and vaccine delivery, bionanomaterials, immunomodulation

Dr. Ronald C. Hedden
Associate Professor
Networks, gels, and elastomers, biofuels, polymer processing

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
Associate Professor
Molecular dynamics and simulations of polymer and soft matter

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

Dr. Wei Li
Assistant Professor
Cell/polymer interactions, cell microenvironments, biomedical devices

Dr. Jeremy Marston
Assistant Professor
Fluid and granular flows, cavitation, 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
Associate Professor and Graduate Advisor
Microfluidics, mechanics of cells and biopolymers, colloidal assembly

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

Dr. Brandon Weeks
Professor and Associate Department Chair
High explosives, nanolithography, microcantilever, crystal growth

Dr. Theodore F. Wiesner
Associate Professor
Solar energy, hydrogen production, CO\textsubscript{2} mitigation

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