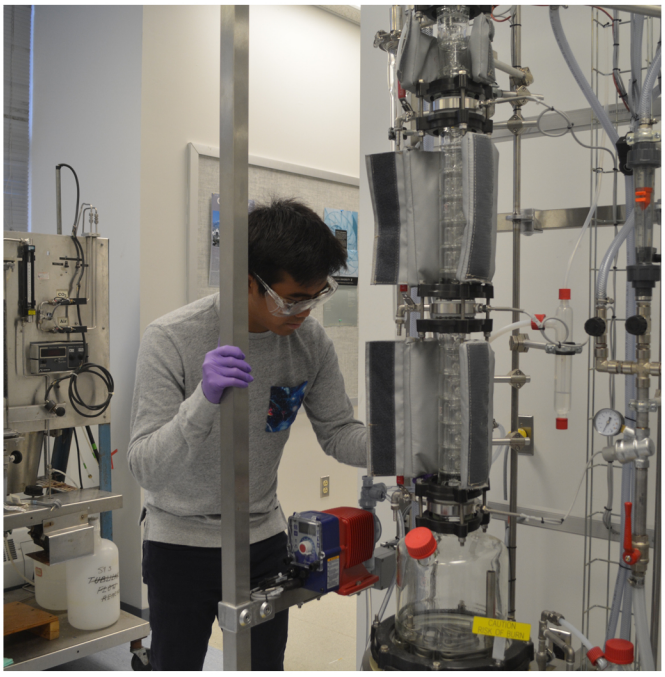
Department of Chemical and Biological Engineering

Drexel University

Undergraduate Research

Undergraduate students in the Department of Chemical and Biological Engineering have the opportunity to participate in a variety of research programs led by our dynamic faculty in modern facilities. Students gain hands-on experience in research outside of the classroom environment. Students with laboratory experience are better prepared for graduate studies and better equipped to decide what they want to do after graduation. Our students go on to begin graduate study in chemical engineering, medicine, or work in industries from pharmaceuticals to energy.



Learn More

To learn more about our programs, contact Professor Cameron Abrams, Department Head, at cfa22@drexel.edu or Katie Brumbelow, Director of Undergraduate Affairs, at kms88@drexel.edu.

Professor Abrams
Department Head

Katie Brumbelow
Director of Undergraduate Affairs

Drexel UNIVERSITY

Apply online

www.drexel.edu/em/apply

Some of the current research projects are in areas such as:

- Drug Delivery
- Solar Cells
- Polymer and Composites
- Renewable Energy
- Nanotechnology
- Fuel Cells
- Biosensors
- Molecular Simulations
- Biological Colloids

Visit us online at: www.drexel.edu/cbe/

Department of Chemical and Biological Engineering

Drexel University

Undergraduate Research

Here's what two of our students had to say about their experiences conducting research as an undergraduate in our department...

Anthony Abel

BS/MS

Nanomaterials for Energy Applications and Technology (NEAT) Laboratory

"During my first summer at Drexel, I participated in the STAR program, which allowed me to begin studying iron oxide for solar water splitting in Dr. Jason Baxter's group. This research has since grown into a published project, and led directly to two research co-ops in industry. Further, I have developed professional relationships with the graduate students in my lab and my professors, which has helped me succeed in classes and given me the opportunity to travel to academic conferences. These experiences have shown me all the different types of research available to chemical engineers, and driven me to pursue a Ph.D. after graduating from Drexel."

Anjli Patel

BS

Nanomaterials for Energy Applications and Technology (NEAT) Laboratory

"Undergraduate research has been an extremely beneficial experience that has enriched my education and also helped inspire my career plans. I began studying copper oxide solar cells in Prof. Baxter's group as a freshman, and I've continued with photoelectrochemical (PEC) water splitting research ever since. My experience in this research has allowed me to build important technical skills and learn to effectively communicate scientific findings. Through my involvement in research, I've also developed a keen interest in solar energy research that I plan to pursue by attending graduate school for a Ph.D. after graduating from Drexel."

Faculty

Cameron F. Abrams
PhD, University of California - Berkeley
Molecular Simulations in Biophysics and Materials; HIV-1 Envelope Structure and Function; Protein-Ligand Binding Thermodynamics and Kinetics

Nicolas J. Alvarez
PhD, Carnegie Mellon University
Photonic Crystal Defect Chromatography; Extensional rheology of polymer/polymer composites; Surfactant/polymer transport to fluid and solid interfaces; Aqueous lubrication; Interfacial Instabilities

Jason B. Baxter
PhD, University of California - Santa Barbara
Solar cells; Semiconductor nanomaterials; Ultrafast spectroscopy

Richard A. Cairncross
PhD, University of Minnesota
Biodiesel Production; Sustainability; Waste to Energy Systems; Biodegradable Polymers and Composites

Nily R. Dan
PhD, University of Minnesota
Self assembly in amphiphilic and polymeric systems; Controlled drug release from polymer-based carriers

Aaron T. Fafarman
PhD, Stanford University
Photovoltaic energy conversion; Solution-based synthesis of semiconductor thin films; Colloidal nanocrystals; Electromodulation and photomodulation spectroscopy

Vibha Kalra
PhD, Cornell University
Electrodes for Energy Storage and Conversion; Supercapacitors, Li-S Batteries, Fuel Cells, Flow Batteries; Electrospinning of Nanofibers; Molecular Dynamics Simulations

Kenneth K.S. Lau
PhD, Massachusetts Institute of Technology
Polymer thin films and devices; Energy capture (solar cells); Energy storage (supercapacitors, batteries); Surface engineering (superhydrophobicity, superhydrophilicity)

Raj Mutharasan
PhD, Drexel University
Cantilever sensors for biological detection; Modeling of resonance; Dynamics of fluid-solid interactions; Mechanics and related phenomena in biological binding and interaction

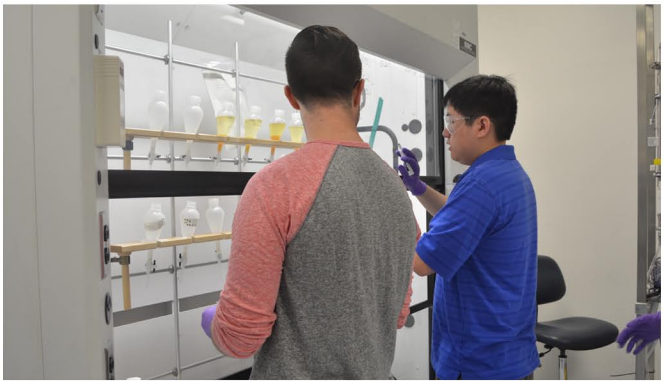
Giuseppe R. Palmese, Department Head
PhD, University of Delaware
Thermosetting polymers and biomaterials; Composites and interfaces; Processing-Structure-Property relationships

Joshua D. Snyder
PhD, Johns Hopkins University
Electrocatalysis (Energy Conversion/Storage); Heterogeneous Catalysis; Corrosion (Dealloying, Nanoporous Metals); Interfacial Electrochemical Phenomena in Nanostructured Materials Colloidal Synthesis

Masoud Soroush
PhD, University of Michigan
Modeling, control and optimization of solar cell, fuel cell and power storage systems; Probabilistic risk assessment and mitigation ; Polymerization reaction engineering; Process systems engineering; Polymer membranes; Multiscale mathematical modeling

Maureen H. Tang
PhD, University of California - Berkeley
Electrochemistry (batteries, fuel cells, electrolyzers); Catalysis and surface science

Steven P. Wrenn
PhD, University of Delaware
Ultrasound-triggered drug delivery; Biological Colloids and Membranes; Atherosclerosis and gallstone pathogenesis



Drexel UNIVERSITY

Apply online
www.drexel.edu/admissions/apply/

Visit us online at: www.drexel.edu/cbe/