



### Engineering Research Excellence

The Department of Chemical Engineering performs world class research in nearly every aspect of the field. Our areas of specialization include: **Electrochemical Energy Conversion and Storage; Experimental and Computational Catalysis; Machine Learning; Energy, Nano-, and Bio-materials; Tissue Engineering and Regenerative Medicine**

### Competitive Stipend & Fellowships

- Ph.D. students receive a **\$30,000** annual stipend plus tuition and insurance
- **SEC Engineering Dean's Graduate Fellow Program:** Awardees receive a \$25,000 annual stipend for five years plus tuition
- **Presidential Fellowship:** Awardees receive a \$40,000 annual stipend for four years plus tuition

### Academic Rankings

The Department of Chemical Engineering at USC is booming! Research funding is at an all-time high, exceeding \$6,000,000 per year and ranking our department in the top 20 nationally. Recent National Research Council (NRC) combined rankings place our graduate program in the top 30, and US News & World Report places us in the top 50.

### Location, Location, Location!!!

In the heart of South Carolina, tradition and tomorrow pair perfectly in Columbia. It's a modern city where stately buildings buzz with new businesses, and centuries-old sites give rise to fresh perspectives. It's a creative hub that's fed by university and capital city communities — all this in the midst of surrounding natural beauty. With dynamite shopping, food, and tons to see and do year round, it's a real southern hot spot that will leave you looking forward to what's next. What's going on in Columbia right now? Search #RealColumbiaSC on your favorite social network.

### Our Faculty

- Melissa Moss, Chair:** Protein Self-Assembly; Alzheimer's Disease Inhibition; Biophysical Techniques
- Edward Gatzke:** Process Control; Estimation and Diagnosis Modeling and Optimization
- Michael Gower:** Cell-Material Interactions; Inflammation; Tissue Engineering; Gene and Drug Delivery
- Andreas Heyden:** Computational Catalysis; Multiscale Modeling; Uncertainty Quantification; Machine Learning
- Esmail Jabbari:** Tissue Engineering; Bioimetic Materials; Bioinspired Nanocomposites; Peptide-Mediated Drug Delivery
- Ehsan Jabbarzadeh:** Cell and Tissue Engineering; Bio-MEMS and Microfluidics; Non-Viral Gene Delivery; Nano-Biotechnology
- Jochen Lauterbach:** Environmental Catalysis; Nanomaterials for Energy Applications; Biofuels Production; CO2 Conversion
- Chang Liu:** Biosensors; Biomarkers; Clinical Diagnostics
- Michael A. Matthews:** Supercritical Fluids; Ionic Liquids; Green Chemical Engineering; Research-Based Learning
- John R. Monnier (NAE):** Heterogenous Catalysis; Bimetallic Catalyst Synthesis; Reaction Kinetics
- William Mustain:** Electrocatalysts; Electrochemical CO2 Utilization; Li Ion Batteries
- Branko N. Popov:** Electrochemical Power Sources; Industrial Metal Finishing; Corrosion
- John R. "JR" Regalbuto:** Catalyst Preparation and Characterization; Absorption Theory; Reaction Kinetics; Computational Chemistry
- James A. Ritter:** Hydrogen Storage Systems; Targeted Drug Delivery; Gas Separation and Purification
- Sanaz (Monirosadat) Sadati:** Soft Matter; Active Materials; Liquid Crystals; 3D Printing; Microfluidics; Rheology
- Nader Taheri-Qazvini:** Biohybrid Materials; Self-assembly; Polymer Physics; Bioprinting; Tissue Engineering
- Mark J. Uline:** Biological Interfaces; Statistical Mechanics and Thermodynamics of Simple and Complex Fluids
- Ralph E. White:** Fuel Cells; Batteries; Electrodeposition; Corrosion; Numerical Methods
- Christopher T. Williams:** Heterogenous Catalysis; Surface Science; Catalyst Design; In-situ Vibrational Spectroscopy

**Questions?** Contact our Graduate Coordinator: Marcia Rowen // rowen@cec.sc.edu // 803-777-1261 // [www.che.sc.edu](http://www.che.sc.edu)