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I did not imagine working as a grad student in the ChBE Department meant being a part of a family, but it's felt amongst the admin, faculty, students and even the cafe staff! Integrity and quality work are enforced as much as enjoying a healthy work-life balance. The department also works with you to make sure you're getting what you need every step of the way in order to not only graduate but also be prepared for what comes after. They invest in you and your success.

-Amanda Garley, Kaar Lab
The department has many working partnerships with private, academic and government entities, which I felt would enrich my graduate research experience. Their facilities are well-equipped to perform cutting-edge research in a broad array of fields. Located at the foot of the Rockies, Boulder also allows me to pursue all of my passions in the outdoors so that I can work hard and play often in the same place.

- Megan English, Weimer Lab

“CU Boulder is the closest to a dream school I could think of. I love to be immersed in an academic environment where people can have a perfect leisure-to-work balance and enjoy the outdoors without sacrificing the quality of the cutting-edge research that is carried out here. It is motivating to belong to the ChBE family, and inspiring to be surrounded by successful and smart people all year long.”

- Hector Sanchez-Moran, Kaar & Schwartz Labs

16th
OVERALL RANKED CHEMICAL ENGINEERING GRADUATE PROGRAM (U.S. News & World Report)

$15,122,128
Average research grant total in last four years

#1 Recognized Faculty (Shanghai Ranking)
3 National Academy Members
4 MRS Outstanding Young Investigators
10 NSF CAREER Awards
2 AIChE Colburn Awards
1 AIChE Lifetime Achievement Award
50%+ Received Teaching Awards
AWARD-WINNING FACULTY

**Kristi Anseth**  
Biomaterials, stem cells, regenerative medicine, drug delivery  
Elected into the National Academy of Engineering, Science and Medicine

**Chris Bowman**  
Biomaterials, photopolymerization, reaction kinetics, polymer chemistry  
Founding director of CU’s Materials Science and Engineering Program  
Polymers licensed to 3M for FitTek™ Bulk Fill Posterior Restorative

**Stephanie Bryant**  
Functional tissue engineering, photopolymerization, biomaterials  
Inducted into the American Institute for Medical and Biological Engineering

**Jennifer Cha**  
Nanoeengineering, biomaterials, surface science, colloids, self-assembly  
Research featured on front cover of Advanced Materials

**Anushree Chatterjee**  
Gene mutations, resistance-free antibiotics, metabolic engineering, biofuels  
ACS Infectious Diseases Young Investigator Award

**Robert Davis**  
Fluid mechanics, separation processes  
Dean Emeritus of the College of Engineering and Applied Science  
Hugh Hampton Young Chair

**Jerome Fox**  
Biocatalysis, synthetic biology, protein engineering, biofuels, molecular recognition, biological complexity  
NSF CAREER Award, ARO Young Investigator, Army-ECASE Award

**Andrew Goodwin**  
Colloid and interface science, polymer engineering, drug delivery, cancer research  
Recipient of $2M NIH New Innovator Award to detect disease

**Ankur Gupta**  
Transport phenomena, electrokinetics, energy storage, complex fluids, soft matter  
Hugh Hampton Young Fellow

**Ryan Hayward**  
Assembly of polymer and particle-based nanostructures, mechanics and instabilities of soft active materials, active polymer materials and interfaces, self-assembly of polymers and particles  
Fellow of the American Physical Society

**Hendrik Heinz**  
Simulation of biological and nanostructured materials, force field development  
NSF CAREER Award and Max Hey Medal recipient

**Laurel Hind**  
Innate immunity, microfluidic models  
Interaction With an Endothelial Lumen Increases Neutrophil Lifetime and Motility in Response to *P. aeruginosa*, Blood, 2018

**Adam Holewinski**  
Heterogeneous catalysis and electrochemistry for sustainability  
Catalysis work published in Nature Chemistry

**Christine Hrenya**  
Complex fluids: gas-particle fluidization and heat transfer, flow instabilities, particle cohesion, aerosol dynamics, granular matter  
Associate Editor of AIChE Journal (2015 – present), Chair of the 2016 AIChE Annual Meeting, 2014 AIChE PTF Lectureship Award in Fluidization

**Joel Kaar**  
Biocatalysts, enzyme stabilization, protein-polymer materials, protein-surface interactions  
NSF CAREER Award recipient, ARO Young Investigator

**Michael McGehee**  
Perovskite solar cells and dynamic windows with adjustable tinting  
Materials Research Society Outstanding Young Investigator

**Will Medlin**  
Surface chemistry, heterogeneous catalysis, renewable energy  
2015 AIChE Himmelblau Award recipient

**Charles Musgrave**  
Catalysis, electrocatalysis, photocatalysis, photovoltaics, H2O splitting and CO2 reduction, machine-learning, quantum simulations  
Water-splitting and organic photocatalysis both highlighted in Science

**Ted Randolph**  
Thermodynamics of protein solutions, lyophilization, reactions  
Awarded $4.4M by NIH to study aggregation of therapeutic proteins

**Dan Schwartz**  
Biointerfaces, separations for energy and pharma, surface modification, catalysis/biocatalysis, single-molecule/nanoparticle studies of transport at surfaces and in porous environments  
Elected Fellow of the ACS and APS

**C. Wyatt Shields IV**  
Soft Materials, active particles, microfluidics, self-assembly, in vitro diagnostics, colloid and interface science, biosensors, drug delivery  
Dean’s Award for Excellence in Mentoring from Duke University

**Wilson Smith**  
Electrochemical engineering, materials science, operando spectroscopy and microscopy  
RASEI Fellow, Senior Scientist at NREL

**Kayla Sprenger**  
Immune-based therapies for neurological and infectious diseases  
Optimizing Immunization Protocols to Elicit Broadly Neutralizing Antibodies, PNAS

**Jeff Stansbury**  
Dental and biomedical polymeric materials, photopolymerization processes  
Awarded NIH grants to develop high performance materials for 3D printing

**Michael Toney**  
Electrochemical energy storage, foundational and applied materials science of hybrid metal halide perovskite semiconductors, organic photovoltaics, clean water technologies, hydrogen storage materials  
American Physical Society Fellow

**Al Weimer**  
Particle ALD, reaction engineering, solar-thermal processing, additive manufacturing  
2018 National Academy of Inventors

**Timothy White**  
Soft matter, responsive materials, functionality in robotics, optics and biology  
Outstanding Young Investigator – Materials Research Society, SPIE, Air Force

**Timothy Whitehead**  
Designing biological macromolecules for new and enhanced functions  
2017 PEGS Young Investigator Award
DEPARTMENT FACTS

» Two PhD programs:
  » Chemical Engineering
  » Biological Engineering

» 30 tenured or tenure-track faculty

» 167 graduate students
  » 36% female students
  » 22% international students
  » 6% Black, Latina/o/x and Indigenous domestic students
  » All students fully supported via research funding

» 43 postdoctoral fellows

» 739 undergraduates

DEPT-INSPIRED START-UPS

ALD Nanosolutions | Nanocoatings | Weimer
BaroFold | Therapeutic protein folding | Randolph
CPS | Colorado Photopolymer Solutions | Bowman
Dynamic Matter | Bowman
Inscripta | Digital genome engineering
Mosaic Biosciences | Materials for tissue regeneration | Bowman, Anseth
Nanoly Bioscience | Vaccine stabilization | Anseth
PRAAN Biosciences | Quantum Molecular Sequencing | Chatterjee, Nagpal
RxKinetix | Drug delivery | Randolph
Sundrop Fuels | Solar gasification | Weimer
VitriVax | Vaccine stabilization | Randolph
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RESEARCH PARTNERS

BioFrontiers Institute
Center for Membrane Applied Science and Technology (MAST)
Center for Pharmaceutical Biotechnology
National Institute of Standards and Technology (NIST)
National Renewable Energy Lab (NREL)
Photopolymerizations Center
Renewable & Sustainable Energy Institute (RASEI)
Soft Materials Research Center (SMRC)
CAREER PREPARATION

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-Amanda Garley, Heinz Lab