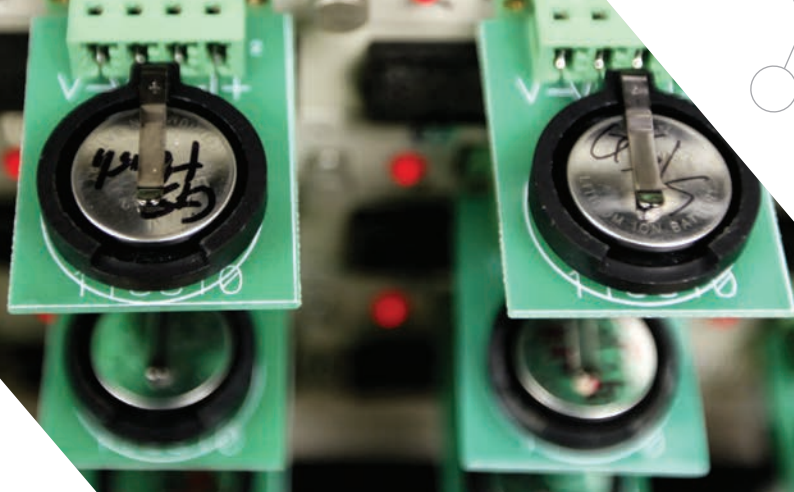
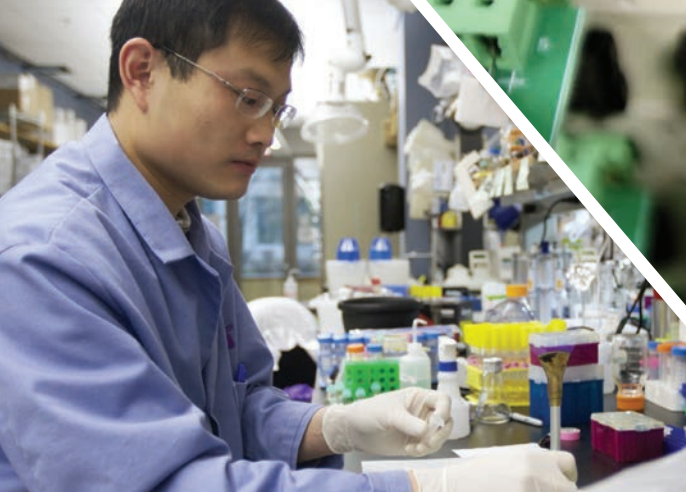


# CHEMICAL ENGINEERING





# CHEMICAL ENGINEERING

Nationally recognized for its leadership in research and education, the **DEPARTMENT OF CHEMICAL AND BIOLOGICAL ENGINEERING** shapes the field by tackling compelling, complex problems in **energy, materials, sustainability, complex systems, global health, synthetic biology, and biotechnology**. By integrating fundamental science with technology development, the department conceives ideas without boundaries, fosters entrepreneurship, and prepares the next generation of chemical engineers.

## UNDERGRADUATE STUDY

### PROGRAMS OF STUDY

- \ **Bachelor of science in chemical engineering** \ Within the program, science and engineering technical electives may be chosen to define an area of specialization. Current options include:
  - \ **Chemical process engineering**
  - \ **Bioengineering**
  - \ **Environmental engineering and sustainability**
  - \ **Polymer science and engineering**
  - \ **Design**
  - \ **Nanotechnology and molecular engineering**
- \ **Minors** \ Students with interests in the emerging areas of pharmaceuticals, biotechnology, and bioprocessing may also pursue the minor in biotechnology and biochemical engineering

### EXAMPLE COURSES

- CHEM\_ENG 211 *Thermodynamics*
- CHEM\_ENG 307 *Kinetics and Reactor Engineering*
- CHEM\_ENG 352 *Chemical Engineering Design Projects*
- CHEM\_ENG 355 *Chemical Product Design*
- CHEM\_ENG 365 *Sustainability, Technology and Society*

### OUTSIDE THE CLASSROOM

- \ **INTERNSHIPS** \ Approximately 30 percent of upper-class chemical engineering majors participate in co-op internships, a combination of classroom learning and professional experience.
- \ **RESEARCH** \ In addition to offering independent study credit, some research laboratories engage students for work-study or paid laboratory aide positions.
- \ **AMERICAN INSTITUTE OF CHEMICAL ENGINEERS** \ This student-led group offers a great way to meet classmates and learn about career and graduate school opportunities in chemical engineering.

## GRADUATE STUDY

### PROGRAMS OF STUDY

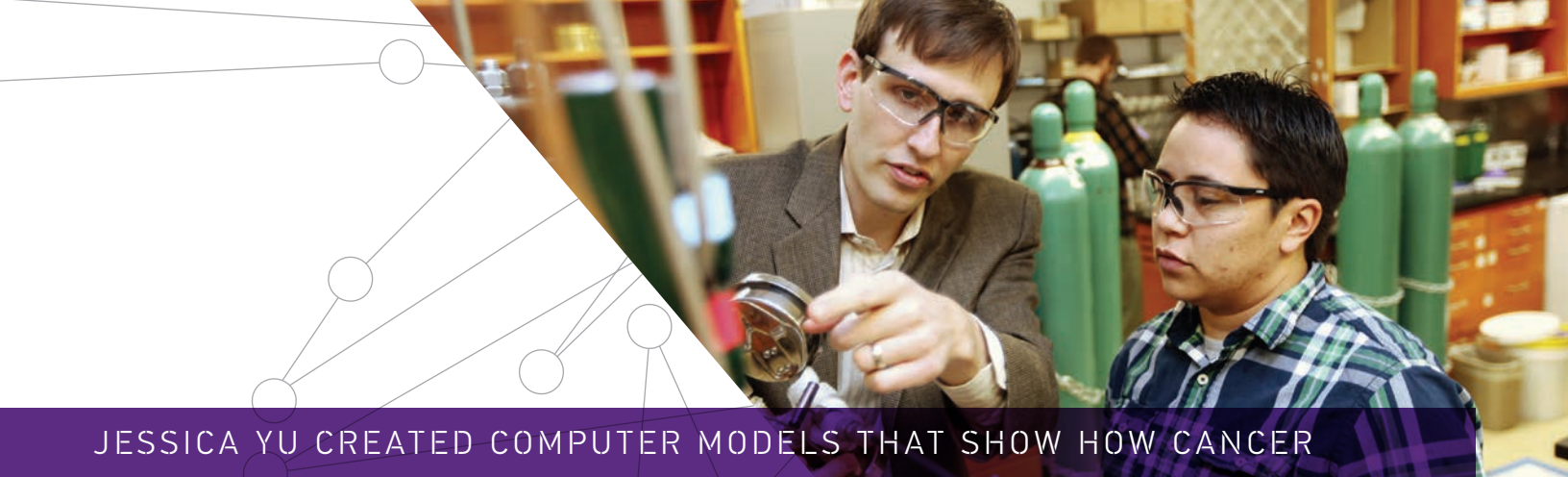
- \ **Master of science in chemical engineering**
- \ **Master of science in biotechnology**
- \ **PhD in chemical engineering**

### RESEARCH AREAS

More than half of chemical engineering students engage in undergraduate research, working directly with faculty to define new frontiers of technology in areas such as:

- \ **Catalysis and reaction engineering** \ Biochemical and biomedical engineering \ Polymer science \ Fluid mechanics and transport \ Process systems research





JESSICA YU CREATED COMPUTER MODELS THAT SHOW HOW CANCER CELLS INTERACT WITH OTHER CELLS, BLOOD VESSELS, AND OTHER PARTS OF THEIR ENVIRONMENT. "I LIKE THE WAY PROGRAMMERS THINK," SHE SAYS. "I LIKE SOLVING THOSE PROBLEMS."

JESSICA YU \ CHEMICAL ENGINEERING

## CAREERS IN CHEMICAL ENGINEERING

### WHAT'S NEXT?

Our chemical engineering graduates are equipped to pursue careers in diverse industries, including:

Pharmaceutical \ Food \ Chemical \ Petroleum \ Information technology \ Consulting \ Materials

### ADVANCED STUDY

Recent Northwestern graduates have also gone on to advanced study in other prestigious programs:

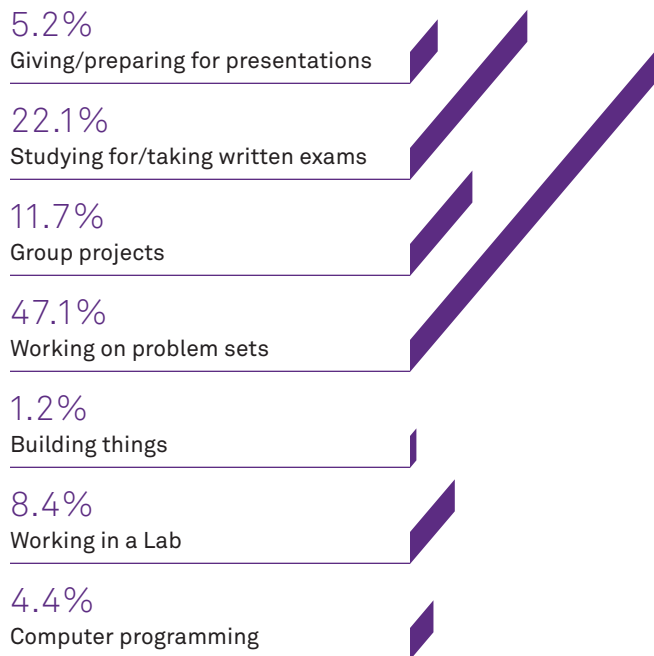
- \ **Graduate study** \ Caltech, UC Davis, UC Irvine, UC San Diego, UC Santa Barbara, Cornell, Illinois, Northwestern, Lehigh, Yale, MIT
- \ **Law school** \ George Washington University, Loyola University, Northwestern
- \ **Medical school** \ Baylor, Case Western Reserve, Illinois, Minnesota, Northwestern, Southwestern, Wisconsin

### RECENT GRADUATE PLACEMENTS

Chemical engineer at **NASA Glenn Research Center** \  
 Chemical engineer at **Argonne National Laboratory** \  
 Production engineer at **Keurig Green Mountain** \  
 System integration analyst at **Accenture** \ Technical account manager at **Microsoft** \ Process automation engineer at **Dow Chemical Company** \ Associate scientist at **AbbVie** \  
 Chemical engineer at **Goodyear** \ Procurement associate at **ExxonMobil** \ Leader of analytics at **Tally Solutions**

## HOW YOU SPEND YOUR TIME IN THIS PROGRAM

BASED ON A SURVEY OF CURRENT STUDENTS.



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## ENVISION WHAT'S POSSIBLE

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NORTHWESTERN ENGINEERING STUDENTS  
CONSTANTLY EXPLORE NEW PATHWAYS  
IN CHEMICAL ENGINEERING. IMAGINE YOURSELF:

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- \ Collaborating directly with faculty in research to define new frontiers of synthetic biology, biotechnology, bioprocessing, and energy
  - \ Applying your training to advance professionally as an entrepreneur or in medicine, law, government, or academia
  - \ Thinking critically and creatively to address local and global problems through technology
  - \ Becoming a versatile, productive player in any industry you choose

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## FIND YOUR DIRECTION HERE

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Northwestern | McCORMICK SCHOOL OF  
ENGINEERING

[www.chbe.northwestern.edu](http://www.chbe.northwestern.edu)