

2016 I N F O R M A T I O N

CHEMICAL AND BIOLOGICAL ENGINEERING

WELCOME TO CHEMICAL AND BIOLOGICAL ENGINEERING!

Our goal is to prepare students to use their knowledge and skills to contribute to society and their profession. We offer undergraduate degrees in both chemical engineering and biological engineering.

The basis of both chemical and biological engineering is the useful transformation of matter from one form to another. That transformation can be brought about by direct chemical reactions, or chemical reactions mediated by living organisms.

Right now, chemical and biological engineers can work in many of the same areas. That may change as biological develops as a profession, but biological engineers are likely to work closely with chemical engineers for the foreseeable future.

CHEMICAL ENGINEERING

chemical manufacturing, petroleum refining, biomedicine, pharmaceuticals, nanotechnology, materials science, environmental engineering

BIOLOGICAL ENGINEERING

biomedicine, pharmaceuticals, nanotechnology, materials science, environmental engineering

The list is expanding all the time—tomorrow's graduates may find careers in fields that do not even exist today as chemical and biological engineering research continually expands the opportunities.

If your student hasn't decided whether he or she wants a career in chemical or biological engineering, take heart—the curricula for chemical engineering and biological are identical for the first three semesters.

In the first three semesters the focus is on basic math and science courses, and both biological engineers and chemical engineers need chemistry, calculus, and physics. The curricula start diverging in the junior year when biological engineering majors take more bio-based science courses while chemical engineering majors take more engineering courses.

ACADEMIC ADVISING

The academic advisor and departmental certifying officer is Shelley Thomas. For most academic advice she will be your student's first contact. She is available to assist students with registration questions and processes. Shelley's office is located in 327 Cobleigh Hall. For additional information regarding career focus advice, each CHBE student is assigned two academic advisors, according to the first letter of his or her last name:

A-D Ryan Anderson, Jennifer Brown
E-J Ross Carlson, Paul Gannon
K-N Jeff Heys, Brent Peyton
O-S Abbie Richards, Joe Seymour
T-Z Stephanie Wettstein, Jim Wilking
Additionally, Dr. Jeffrey Heys serves as back-up advisor

ENTERING FRESHMEN

Your advising contact is Shelley Thomas. The department head is also available to advise new students. After admission, students are encouraged to become acquainted with their career advisors, following designations above.

TRANSFER STUDENTS

1. The university evaluates transfer courses for equivalencies.
2. The department evaluates your transfer credits for allowable substitutions.

Questions? Visit our main office:

306 Cobleigh Hall
chbe@montana.edu
406-994-2221

USEFUL WEBSITES

MSU Catalog: www.montana.edu/wwwcat
CHBE Homepage: www.chbe.montana.edu
CHBE Academic Information (electives, prerequisite flow sheets, and co-op schedules):
<http://www.chbe.montana.edu/Students/AcademicInformationUndergraduate.htm>

FACULTY

2016



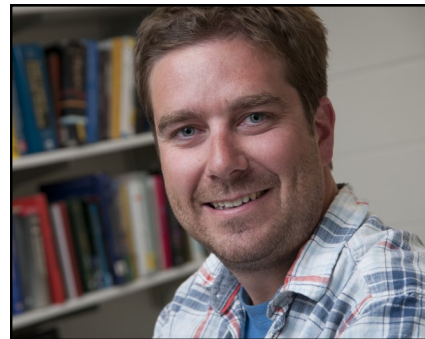
Dr. Richards' research is focused on the study of microbial life in extreme environments, in particular those of high pH, high salinity, or dissolved solids.



Dr. Gerlach investigates the transport, growth, and reaction of microbes and solutes in biofilms and porous media.



Dr. Seymour's studies further application of MRM methods in the study of transport phenomena and material characterization.



Dr. Gannon studies mechanistic understanding of materials used in extreme environments relevant to energy conversion systems.



Dr. Anderson's research focuses on heat transfer and fluid flow in sustainable energy systems.



Dr. Chang researches drop-based microfluidics—the creation and manipulation of tiny drops of fluid.



Dr. Heys applies fundamental conservation laws to understand transport in biological systems.



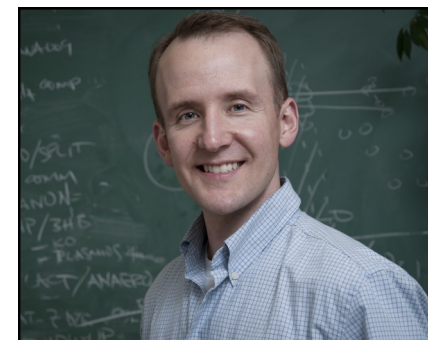
Dr. McCalla studies purification of biomolecules, and transport analysis in microfluidic reactors



Dr. Wilking researches soft materials, microbial biofilms and colloidal and nanomaterials synthesis.



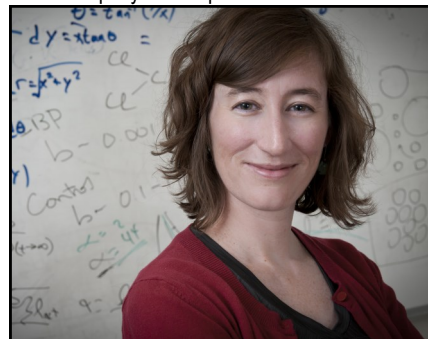
Dr. Foreman researches microbial communities in relation to their environment and the processing of nutrients.



Dr. Carlson studies biological systems to optimize biofuels production, control medical infections, or understand ecological energy cycles.



Dr. Peyton's algal research screens novel strains of algae from unique environments to optimize lipid yields to produce biodiesel.



Dr. Brown researches transport dynamics in soft matter systems using Magnetic Resonance (MR) techniques and rheological characterization.



Dr. Wettstein researches the synthesis of platform chemicals, specialty chemicals, and biofuels from lignocellulosic biomass using catalytic and separation processes.

CHBE