Biomedical Engineering Department
Facts 2012

Developing clinically translatable solutions for human health by training the next generation of biomedical engineers, cultivating leaders, and nurturing the integration of engineering and medicine in a discovery-centered environment.

Similar to a civil engineer’s focus to improve urban infrastructure or a petroleum engineer’s goal to find new methods of efficient energy use, biomedical engineers respond to societal needs to provide solutions that improve patients’ quality of life. Biomedical engineers design diagnostic devices and equipment to detect diseases. They use their mathematical and computational skills to analyze actions in the body, such as blood flow, in order to create ventricular assist devices, stents, or artificial organs. Biomedical engineers use advanced computer modeling to develop new drugs used to treat diseases like cancer, cardiovascular disease, diabetes, osteoporosis, and many others.

Degrees Awarded 2011–2012
Bachelor’s degrees: 83
Master’s degrees: 3
Doctoral degrees: 16

Enrollment 2012–2013
Undergrad Total: 435
Undergrad Men: 58%
Undergrad Women: 42%
Undergrad Minorities: 13%
Valedictorians & Salutatorians: 31%
Average SAT score: 1436

Graduate Total: 85
Graduate Men: 57%
Graduate Women: 43%
Graduate Minorities: 21%
Graduate International: 21%
Fellowships: NSF, 7; NIH TR32, 4; others, 14

The Biomedical Engineering Department offers the most competitive engineering program at The University of Texas at Austin. Students who are admitted to our undergraduate program consistently graduate at the tops of their high school classes, with an average class rank of 6%.

Upon Graduation...
According to CNN Money.com, biomedical engineering is one of today’s fastest growing fields. Many students who graduate with a bachelor’s degree from The University of Texas at Austin find jobs working for medical device and pharmaceutical companies, while others pursue further coursework. Roughly one-third of our graduates find work in the biomedical/biotechnology industry, one-third attend medical school, and one-third pursue graduate school.

Research Developments
Faculty and students conduct research that transforms the way we diagnose, treat, and cure disease. Recent advancements include:

- Dr. Aaron Baker’s research in developing innovative ways to regrow small blood vessels of the heart to benefit those who suffer from cardiovascular disease.
- Dr. Stanislav Emelianov’s development of contrast agents that enhance the capabilities of photoacoustic and ultrasound imaging to detect, characterize, and treat cancer and other diseases.
- Dr. George Georgiou’s work toward development of new drugs to treat cancer and pediatric tumors.
- Dr. Laura Suggs’ developments in wound healing materials for use by soldiers on the battlefield.
- Dr. John Zhang’s research to improve early cancer detection by testing blood with disposable microchips.
RECENT HIGHLIGHTS
In 2011, the Biomedical Engineering Department at The University of Texas at Austin:

- Increased national visibility for outstanding teaching and research leadership.
- Added distinguished faculty members, including Dr. Ning Jenny Jiang, a recognized cancer researcher, Dr. Michael Sacks, an international authority on cardiovascular biomechanics, and Dr. Jeanne Stachowiak, a leading scientist in biomaterials.
- Hosted Donald D. Harrington Fellow, Dr. Ali Khademhosseini, a renowned researcher and associate professor of medicine at Harvard Medical School. He interacted with faculty and students and started a number of new projects.
- Hosted the National Academy of Engineering (NAE) Regional Meeting, “Engineering the Future of Health Care,” bringing in renowned experts from across the country to discuss the latest advances in biomedical engineering as they relate to health care.

FACULTY RECOGNITION
BME faculty members received a number of prestigious awards, including:

- The election Dr. George Georgiou to the Institute of Medicine of the National Academies.
- The election as Fellows of Dr. Thomas Milner to the American Institute for Medical and Biological Engineering (AIMBE), Dr. Nicholas A. Peppas to the American Chemical Society (ACS), and Dr. Krishnendu Roy to the Biomedical Engineering Society (BMES).
- Appointments to numerous editorial boards of leading publications in the field, such as the Journal of Microelectromechanical Systems, Annual Review of Biomedical Engineering, Cardiovascular Pathology, and Drug Discovery & Development, among others.
- The promotion of five faculty members to associate professors.

RESEARCH AREAS
From cancer detection and treatment to cardiovascular research and enhancements in drug delivery, our faculty and students are committed to transforming the ways we diagnose, treat, and cure disease. Areas of research include:

- Biomechanics—applying engineering principles to understand how living systems function at all scales of organization and translating this to the design of devices and procedures to improve methods in health care.
- Biomedical Imaging and Instrumentation—using optical technologies to solve biological and medical questions.
- Cellular and Biomolecular Engineering—tissue engineering, biomaterial synthesis, gene therapy, smart drug delivery devices, and more.
- Computational Biomedical Engineering and Bioinformatics—using advances in molecular biology and technology to revolutionize healthcare practice by combining clinical data with patient-specific genotyping and molecular profiling.