

Department of Bioengineering  
Rebecca Richards-Kortum, Chair

190 undergraduate students  
105 graduate students  
17 tenured and tenure-track faculty

The Department of Bioengineering is consistently ranked among the top 10 bioengineering/biomedical engineering graduate programs. As a member of the Texas Medical Center, the largest medical center in the world, we have built numerous interdisciplinary partnerships in education, research, and outreach. Collaborating with scientists and clinicians, our faculty are advancing research in biotechnology and biomedical engineering, bringing innovative diagnostic tools and therapeutic agents to patients; 12 FDA-approved products are already impacting global health.

#### RESEARCH AREAS AND THEIR IMPACT

**Biomedical imaging and diagnostics:** Applying nano-/micro technology to develop instruments for real-time imaging, monitoring, and treatment of cancers

**Biomaterials and drug delivery:** Developing biomaterials for imaging contrast agents, tissue engineering scaffolds, and drug delivery vehicles

**Cellular and biomolecular engineering:** Manipulating cells to improve their ability to produce therapeutics and other useful products

**Tissue engineering and biomechanics:** Optimizing engineered constructs for treatment of cardiovascular disease, osteoporosis, and trauma injuries

**Computational and theoretical bioengineering:** Developing and applying models of medically-related biological systems

**Supramolecular biophysics and bioengineering:** Developing models of macromolecular complexes and protein networks

#### EDUCATIONAL ACTIVITIES AND THEIR IMPACT

The Department of Bioengineering has three interdisciplinary training programs funded by the Howard Hughes Medical Institute (HHMI):

**Beyond Traditional Borders** – An undergraduate global health program with a multi-disciplinary concentration in global health technologies, research/design opportunities, mentored teaching for graduate students and postdocs, and outreach to middle and high schools

**BioE Med Into Grad** – A clinical program that trains graduate students in translational research in cancer diagnostics and therapeutics. The program features clinical rotations and PhD thesis projects jointly mentored with University of Texas M.D. Anderson Cancer Center faculty

**Clinical Internship** – An undergraduate summer internship that provides experience in clinical medicine and interdisciplinary research

The faculty in the Department of Bioengineering include: a member of the National Academy of Engineering, eight Fellows of the American Institute of Biomedical and Biological Engineering, three recognized by MIT Technology Review as among the “World’s Top Young Innovators,” two HHMI Professors, and six National Science Foundation CAREER awardees.

For more information see: <http://www.bioe.rice.edu>

DEGREES OFFERED: BS, MBE, MBE/MBA, MS, PhD, MD/PhD

