The Department of Biomedical Engineering administers the undergraduate major and minor in biomedical engineering. The department’s graduate program is a part of the University-wide Intercollege Graduate Degree Program, offering both M.S. and Ph.D. degrees in bioengineering. Our research and education missions focus on applications of engineering principles and technologies to medical and life sciences for the betterment of human health and society.

Minors and Degrees Offered

Bachelor of Science (B.S.)
- Biomedical Engineering with 4 specialized degree options (biochemical, biomaterials, medical imaging and devices, and biomechanics)

Master of Science (M.S.)
- Biomedical Engineering: one-year, non-thesis resident path
- Bioengineering

Doctor of Philosophy (Ph.D.)
- Bioengineering

Doctor of Philosophy (Ph.D.)/Doctor of Medicine (M.D.)
- Dual Degree Bioengineering and Medicine

Degrees Awarded (2015-16)

- 95 Total Degrees in BME
- 78 Undergraduate
- 11 Master’s
- 6 Ph.D.

Faculty (2015-16)

- 6 Professors
- 4 Associate Professors
- 2 Assistant Professors

NEW HIRES
2016 – 2018: +8

2015-16 Research Expenditures: $7.2 million

Research expenditures include subcontracts and internally funded projects.

Our Students are Engaged:

APPROXIMATELY 75% of Penn State BME students who participate in experiential learning: Co-ops, internships, undergraduate research opportunities, study abroad opportunities, and global capstone projects.
Research Labs and Facilities:

- Active Biomaterials Lab
- Biophotonics and Ultrasonics Imaging Lab
- Cellular Biomechanics Lab
- Human Stem Cell Engineering Lab
- Mechanobiology Lab
- Minibio Micro and Nano Integrated Biosystem Lab
- Molecular Biomechanics Lab
- Multimodal and Computational Neuroimaging Lab
- Musculoskeletal Regenerative Engineering Lab
- Nanotherapeutics and Regenerative Biomaterials Lab
- Pluripotent Stem Cell Engineering Lab
- Precision Therapeutics and Bioresponsive Materials Lab
- Systematic Bioengineering Lab
- Transformative Biomaterials and Biotechnology Lab
- Translational Neuroimaging and Systems Neuroscience Lab

University-wide Research Centers and Institutes:

- The Penn State Hershey Medical Center
- The Huck Institutes of the Life Sciences
- The Materials Research Institute
- The Social, Life, and Engineering Sciences Imaging Center (SLEIC)

Research Areas:

- Artificial Organs
- Biological Liquid Crystals
- Biomaterials
- Cardiovascular Engineering
- Cell and Molecular Bioengineering
- Cell Signaling and Cancer
- Diagnostic Tools
- Mechanobiology
- Multimodal and Computational Neuroimaging
- Nanomedicine and Drug Delivery
- Neuroimaging
- Novel Optical, Ultrasound, and Photoacoustic Imaging/Sensing Technologies
- Novel Stimuli-Responsive Biomaterials for Precision Medicine
- Targeted Immunotherapy and Microbiome Engineering
- Tissue Engineering and Regenerative Medicine
- Cardiac Regenerative Medicine
- Genome Editing
- Human Pluripotent Stem Cells Transformation
- Mathematical Modeling of Cell Motility