This intercollege program provides graduate-level training in engineering and the life sciences, and their integration. Students graduating from this program will have acquired expertise in the application of engineering principles to fundamental problems in biology, clinical problems in medicine, or in the development of new biomedical instrumentation. They are also expected to produce scholarly work to be published in peer-reviewed journals and presented at national conferences. Graduate curricula and student assessment in bioengineering is under the direction of the program chair and a graduate curriculum committee that is composed of Graduate Faculty representing several departments in the Colleges of Engineering, Health and Human Development, Science, and Medicine.

Opportunities for specialized research are offered by Graduate Faculty working on electrical, mechanical, and biophysical properties of biological materials and the application of this knowledge to understanding molecular, cellular, tissue, and organ level processes involved in health and disease. Specific applications include:

- artificial organs
- biomaterials
- bioMEMs
- nanotechnology
- biophotonics
- cellular and medical imaging
- cardiovascular engineering
- cell signaling and protein dynamics
- mechanobiology
- neural interfaces
- tissue engineering
- regenerative medicine

Extensive computer facilities and specialized equipment are available to support a combination of studies that employ experimental observations and their analysis through mathematical modeling and computer simulations.