

Biomedical Engineering



Career Pathways

School of Sciences

Overview:

Biomedical Engineers apply a knowledge of engineering, biology, physical principles, and mathematics to the design, development, and evaluation of biological and medical products and systems, such as therapeutic and diagnostic devices, patient monitoring instrumentation, clinical information systems, and health management and care delivery systems. A biomedical engineer uses traditional engineering expertise to analyze and solve problems in biology and medicine, providing an overall enhancement of health care.

Acquired Skills MOST Valued by Employers

- Industry Standards and Regulations
 - Multidisciplinary Expertise
 - Design/Systems Thinking
 - Career & Self Development
 - Communication
 - Project Management/Leadership
 - Professionalism
 - Equity & Inclusion
 - Teamwork
 - Technology
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Common Pathways

- Research and Development
- Clinical Engineering
- Product Design and Development
- Production, Manufacturing, and Support
- Professional (e.g., law, medicine, academia)
- Clinical Trial Design, Monitoring, and Analysis
- Quality Assurance and Management
- Pharmaceutical Design and Production
- Environmental Health and Safety
- Product Management and Marketing
- Technical sales

Please note that some of these pathways require an advanced post bachelor's degree

Common Industries

- Universities/Teaching
 - Medical Devices
 - Diagnostics
 - Pharmaceuticals
 - Healthcare
 - Contract Medical Manufacturing
 - Clinical Research
 - Research Laboratories
 - Law/Intellectual property
 - Consulting
 - Government agencies (e.g., DoD, NASA, FDA, NIH)
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Sample of Employers for Stevenson University Students

- Johnson & Johnson
- GE
- Medtronic
- Gore
- Philips
- Siemens
- Intuitive Surgical
- Second Sight
- Advanced Bionics
- BrainScope
- Ekso Bionics
- Ottobock
- Key Technologies
- Root3Labs
- Sunrise Labs
- IDEO
- Bayer
- Roche
- BD
- Hospitals, university medical centers
- Toyota

An Employer's Perspective:

Based on analysis of current job postings in the State of Maryland and regionally, the majority of employment openings in biomedical or bioengineering are at the bachelor's level, indicating that graduates of this program will be well-positioned for employment. [Hanover Research, *Market Analysis: BS in Biomedical Engineering Prepared for Stevenson University* (July 2018).]

“Employment of biomedical engineers is projected to grow 7 percent from 2016 to 2026, about as fast as the for all occupations. Increasing numbers of technologies and applications to medical equipment and devices, along with the medical needs of a growing aging population, will require the services of biomedical engineers.” [Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Biomedical Engineers, on the Internet at <https://www.bls.gov/ooh/architecture-and-engineering/biomedical-engineers.htm> (visited May 09, 2019).]

Salaries

Salaries are dependent upon the industry, level of position, and geographical region. "The median annual wage for biomedical engineers was \$88,550 in May 2018." [Ibid] A few good resources for researching salaries of specific jobs within various industries are www.salary.com and www.payscale.com. Salary information is also available through the Bureau of Labor Statistics at <http://www.bls.gov/ooh/life-physical-and-social-science/>.

