

BIOMEDICAL ENGINEERING

Out of the many types of STEM careers I could've chosen, biomedical engineering sticks out to me most. I've always enjoyed science and working in robotics and knowing that I have the possibility to pursue working in this type of professional field when I'm older is exciting. I find it intriguing and I'm ecstatic to be given the opportunity to be working on this essay to do research



and learn more about biomedical studies and the many talented people working in this work field. Biomedical engineering is a job that requires a lot of experience.

Biomedical engineers must integrate biology and medicine with engineering to solve problems related to living systems. Thus, biomedical engineers must have a solid foundation in a more traditional engineering discipline, such as electrical, mechanical, or chemical engineering,

and increasingly, materials science.¹

Design is crucial to most biomedical and engineering activities. To design, biomedical engineers must have a solid foundation in biology, chemistry, physics, mathematics, and engineering. Although the biomedical engineering curriculum varies from university to university, most programs require courses in biology and physiology, biochemistry, inorganic and organic chemistry, general physics, electronic circuits and instrumentation design, statics and dynamics, signals and systems, biomaterials, thermodynamics and transport phenomenon, and engineering design. Students also take several advanced science and engineering courses related to their specialty in biomedical engineering.²

¹ . (Author: unknown. (2016) Pg.5 How do biomedical engineers differ from other engineers? Retrieved from IEEE Engineering in Medicine and Biology Society website: www.embs.org/about-biomedical-engineering/designing-a-career-in-biomedical-engineering/ (First Picture retrieved from: www.thebestschools.org/rankings/best-online-masters-biomedical-engineering/)

² . (Author: unknown. (2016) Pg.8 What types of university courses will prepare me to become a biomedical engineer? Retrieved from IEEE Engineering in Medicine and Biology Society website: www.embs.org/about-biomedical-engineering/designing-a-career-in-biomedical-engineering/



A famous engineer that had experience in this field of work was Edith Clarke. She was the first woman to be professionally employed as an electrical engineer in the United States, and the first female professor of the electrical engineering in the country. Edith inspires me because she was a pioneer in electrical engineering who used math to improve our understanding of power transmission. She is an example that women shouldn't be looked on as the "lesser" gender and that women can do anything a man can do. "Born in the nineteenth century when women of a certain social class were not expected to work, Edith Clarke broke free of binding stereotypes to join the forefront of the information revolution of the twentieth

century. As an electrical engineer for General Electric (GE), Clarke spent twenty years improving power systems. Then, as a professor at the University of Texas at Austin, Clarke wrote a textbook that became the standard of her field. Her story is an inspiration for women in a field still dominated by men."³

I believe that my involvement in competitive robotics is preparing me for this field because by reading several articles to draft an essay on all the new things that I probably wouldn't have known if I didn't do this research. Challenges like these aren't just a "do-and-dash", you must put in the work and really show that you've learned from these competitions and that if you work hard enough, you'll get the outcome you wish. Considering how biomedical engineers create systems that can aid in health care, like designing replacements for body parts. I believe that a way it can evolve is that there can be a machine that can alter the way you think, kind of like mind control. It could be a tiny chip that gets implanted into you and it alters your movements.

I truly find the biomedical engineer career path to be so intriguing and it really shows that with challenging work, you can carry out a lot. There are people that dedicate their lives to design and build devices to help people with health complications. And it never stops, they're always coming up with innovative ideas and working endlessly and I really admire the things they do for us.

³ (Extended biography written by 2004 summer intern, Amy Hobbs. Retrieved from Archives of Maryland (Biographical Series.)

www.msa.maryland.gov/megafile/msa/speccol/sc3500/sc3520/014000/014065/html/14065bio.html

(Second Picture used of Edith Clarke Picture : www.engineergirl.org/125222/Edith-Clarke)

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