Interview Assessment #1

Professional Name: Mr. Amrut Patil

Profession/Title: Product Development Engineer

Date of Interview: October 30th, 2024

Introduction:

I scored my very first interview with Mr. Amrut Patil, prior to the interview I was becoming anxious since no professional had shown any interest in having a brief conversation with me mostly through sending back no response. Getting a response back and scheduling the interview gave me the confidence I needed to conduct further into the field of biomedical engineering. I found Mr. Patil while looking through employees under various biomedical engineering firms. Mr. Patil's profile popped under Viant Medical. I found additional contact information and decided to give him a call requesting an interview.

Mechanical Engineering as a Foundation:

Through the interview I found out that Mr.Patil began his career as a mechanical engineer but later decided to pivot into biomedical engineering because he believed that he could create an impact on human life through providing his service into this profession. He expanded on that by explaining that even though he didn't do biomedical engineering as a major he has a good understanding of materials and their design because of his mechanical background. He even explained that mechanical and biomedical engineering degrees have many similarities since both are teaching engineering principles, the only major difference is that biomedical also teaches about the human anatomy while mechanical only focuses on engineering. He explained that despite that difference both majors allow you to pursue biomedical engineering as a career.

Advice on choosing Engineering Major:

One of Mr. Patil's crucial piece of advice is to choose a route of engineering that you are specifically interested in learning. He explained that different engineering majors such as electrical, mechanical, or even biomedical, can lead to careers in biomedical engineering. The field has an interdisciplinary nature meaning that different kinds of engineering are still relevant within biomedical. For instance, in a device like neuromodulators electric engineering is relevant due to the role electrical signals play in the device which help alleviate pain and prevent seizures through nerve stimulation.

Differences between OEM and Contract Manufacturers:

Mr. Patil introduced me to two important concepts within the biomedical industry: Original Equipment Manufacturer (OEM) companies and Contract Manufacturers (CM). OEMs focus on building and manufacturing their own products while contract manufacturers will execute product development for other companies that lack resources. Mr. Patil gave an example for CM: if a start-up that lacks a lab or budget to create equipment has a device plan and wants to execute it they can do so through contacting a CM and getting their product made there. He explained that the company he works for is also a contract manufacturer. Understanding these roles provided insight into how products are developed and brought to market within the biomedical industry.

R&D Tools and Process:

Mr. Patil recommended me to look into Solidworks for 3D Modeling in order to create prototypes. He also told me that once that idea is thought out on the computer it can be brought to life through 3D printing, also making it a useful tool. To add on, he told me about the functionality of neuromodulators and the purpose they serve which I had come across before in a research assessment.Neuromodulators are devices that send electrical signals to nerves, potentially relieving pain or managing neurological conditions, and Mr. Patil suggested looking further into companies like Neuralink, which develops brain-implanted devices to address various medical issues.

Work Environment & Product Development:

Mr. Patil shared that his work consists of both being in a lab and office setting which he enjoys thoroughly. His role as a product development engineer includes the need to use both the lab and the office giving him hands-on experience. He also mentioned the complexities of bringing a product out to the market. The process is to begin with building your product then getting it approved by the FDA before you can finally put it out into the market. All this he said can take up to 10 years making it hard to launch products. He explained that if you need to make any updates on the equipment you would need to build the update, get it FDA approved, and then it would finally make it out into the market. He expressed the importance of this process by talking about how a minor error in equipment could cause a human life, it is not an aspect to take lightly. When working with anything that will potentially affect a person's body you need to ensure that everything is functioning properly so you can avoid hurting the person.

Reflection:

Interviewing Mr.Patil provided me with valuable insights onto the field of biomedical engineering and encouraged me to work and network with professionals in the field.His journey highlighted the importance of foundational skills in engineering, the interdisciplinary nature of biomedical work, and the potential for innovation within this field. His advice has given me a clearer understanding of the steps I can take toward a career in biomedical engineering, regardless of my specific major. I express a great deal of gratitude for Mr. Patil for talking and advising me.