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Science, technology, engineering, and mathematics, also known as STEM, offers a plethora of career fields with a steep growing job outlook. It seems everyone is in desperate need of scientists and engineers, and the STEM field looks pretty promising right now. The Navy and Marine Corps evidently understand the value of the STEM field and the crucial place it holds in our future. From mechanical engineering to autonomy of unmanned systems, it seems STEM is paving the way for the future, with the Navy and Marine Corps leading the way.

Mechanical engineering is a broad field of engineering that develops mechanical systems with the use of mathematics, physics, and engineering concepts. There are various subfields of mechanical engineering including automotive, aerospace, robotics, nanotechnology, etc. Mechanical engineering interests me so much just because there are all these different paths to explore and it is just such a broad field.

Aerospace and building rockets are incredibly different from nanotechnology, yet both fall under the realm of mechanical engineering. Another thing that inspires me is the simple fact that it gives me the power to make these machines. I can identify something that needs to be improved in life and design a machine to fix this problem. Then I can make constant iterations and improvements to my machine, making it the best functionality possible. Really, I love the fact that mechanical engineering empowers me to better the world around me. I do not want to be powerless to watch as problems exist around me, but rather design a machine that can solve those problems. The Navy and Marine Corps clearly take a similar perspective, as they also utilize mechanical engineering in all that they do for the betterment of the country. With mechanical engineering, the Navy can build ships to defend our country. They can build robots to save someone from drowning, probes to explore the ocean floor, or new radar to detect imminent threats. Mechanical engineering is a crucial field to the Navy as it covers so many facets. Because the Navy is a branch of the military, especially since it operates primarily in the water, advanced machines developed by mechanical engineers are crucial. Mechanical engineering is special because it offers both breadth and depth and impacts the lives of every American.

Now for me, I was incredibly fascinated by Lily Steward, a mechanical engineer. She received an internship at a shipyard as a mechanical engineer through the Science, Mathematics, and Research for Transformation program, also known as the SMART program. In addition to this internship, she received scholarship money to pay for her tuition and is now working there full time. Her story is something that I think is really inspiring because she addressed all of my fears about going to college for STEM. First, I am concerned that I won't be able to pay for my college, but she was able to do this with the scholarship money she was awarded through the SMART program. Secondly, I am concerned I am not fit to be an engineer, but she discussed in length how you might not be born an engineer, but as long as you have a passion for STEM and have a desire to learn, you will excel. Lastly, I am anxious that I will graduate college with no practical experience in my field, but Lily showed me this does not have to be the case. Not only did she receive an internship, but that led the way to her current job at the shipyard. Lily opened my eyes and showed me that while all these concerns might be valid, ultimately they can be overcome, just as she was able to do. I am now far more confident and eager to pursue my STEM career, despite the challenges I will face. I aspire to major in mechanical engineering with a focus in aerospace engineering, so while Lily is in the shipyard, I will be in the aircraft carrier. Up until today, I severely doubted I would actually be able to work with aircraft directly, but after hearing Lily's story, I realized

just how wrong I was. She was able to work right on the shipyard as an undergraduate, so that really inspired me and made me understand that it is possible to work directly with aircraft. If nothing else, Lily made me believe in myself and understand that in life, we might not always start knowing exactly what we want. Sometimes we just need to go out on a whim, like she did by applying to the SMART program, and it might just work out.

Aamir Qaiyumi's presentation of autonomy for unmanned systems was a field that had enormous amounts of potential going forward. Firstly, he really made me reconsider my career goals, as I have always been focused on aerospace engineering and building aircraft and spacecraft to explore space. However, he made a startling comparison of space to the underwater environment, something I had never really considered before. Now, I am a lot more open to various STEM fields because I see how many of them are more related than they seem at first glance. I think it is this hidden connection that will lead to such dramatic changes in the future. Autonomy for unmanned systems is a very broad concept, and Qaiyumi applied it to underwater exploration. However, autonomy for unmanned systems has a range of applications, from space/underseas exploration to our everyday lives. Autonomy of machines and robots will change every aspect of our lives, as now humans will be aided by an unmanned system. The science fiction of "the Jetsons" could become reality with the advancement of autonomy. This is a truly exciting and thrilling development, and I think by the year 2040, our lives will be incredibly different. Over that short period of 20 or so years, we will learn to use autonomous systems more and more and begin to understand just how much they can help us. From menial tasks to personal assistants and elderly care, the possibilities of autonomy of unmanned systems is endless. While we might not be lounging around all day with our robot butler serving us, it will allow us to unlock new discoveries and advancements that humans could never do on their own. The Navy and Marine Corps focus on serving and protecting the country, and the development of autonomous unmanned systems are quintessential to this goal. As the autonomous system advances further, it can do more on its own. This means more detailed maps of the ocean floor, more lives saved, and better protection of our country, while we can focus on constantly improving these systems at the same time. There are certain things humans just cannot do on their own, but an unmanned system can do with ease. Making it autonomous, and improving that autonomy to where it is able to function at near perfection, will save countless lives and discover secrets we didn't even know existed.

I have always been interested in STEM, specifically in space. Exploring these careers and fields that are offered through the Navy and Marine Corp have completely altered my perspective. Pioneers in their respective fields, like Lily Steward and Aamir Qaiyumi, inspire me to be open to these ever changing fields and pursue the opportunities that are waiting for me. I cannot wait to join the STEM field and engineer the future of our world.