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The STEM topic that I have selected is mechanical engineering since it will be the major that I will be studying when I enroll into my university. I am interested in mechanical engineering because of the ambition and unlimited creation associated with it. This includes the many possible processes utilized to create objects such as welding, drilling, mixing, etc. Plus, mechanical engineering has a connection with all of the other engineering branches so studying it allows me to learn even more new things which I believe is where the subject is most valuable to the Navy and Marine Corps. The Navy department must rely on the diverse skill set from mechanical engineering to help it develop, improve, and evolve its inventions, vehicles, and equipment. This way, the Navy can lead the U.S to victory in terms of improving the nation's infrastructure. Because of the Navy's current innovations and designs for future inventions, I have been inspired to draw my own devices from my imagination. In fact, for undergraduate research, I am planning to build a device I call the solar collector that can be sent to space to vacuum particles from the Sun to achieve nuclear fusion as a clean, unlimited energy source. I have even designed the actual device. Now that being said, I really don't have much experience in engineering, thus I decided to look at the videos on the Naval Horizon website, which is how I found Annie Dunigan's video about Bernoulli's Principle, Mitch Jorgensen's video about parachute designs, and Jennifer Wolk's video about materials science.

First and foremost, one of the three videos that interested me the most was Annie Dunigan's demonstration and explanation of Bernoulli's Principle. She is into aerospace engineering which is what I will be minoring in. In fact, I have idealized that my first invention will be launched into space so her video was fairly useful. Even though the term itself sounded familiar, I never got a full grasp of Bernoulli's Principle. Thankfully, because of Dunigan's method of explaining it, I now understand that Bernoulli's Principle states that velocity dominating air pressure causes the airlifting of aeronautical objects. Getting into the video, I watched how Dunigan blew the paper and later the ball by increasing the air's velocity surrounding the objects with separate methods. This has helped me fully comprehend Bernoulli's Principle. Her video has influenced me to always remember how to launch something into space and how to make sure it stays airborne properly as well as how to land it safely. Now, not only am I further interested in developing aerospace-related projects, but I also know how to make those projects work according to Bernoulli's Principle.

Additionally, Jennifer Wolk's materials science video was very relatable to the point where it deserved to be mentioned in this essay. To me the most interesting videos are the ones that display visible examples for better comprehension of the subject and Wolk's video is no exception. The video introduced me to the concept of additive materials, which are components added into an object already built out of other components. My favorite part of the video was when Wolk demonstrated the twisted metal piece from what I think appears to be a propeller (judging by the twisted shape) and the layers of metal that she mentioned were clearly visible to me. From what I can tell, the propeller component was formed through a process called welding, which is very common in projects involving mechanical engineering. While I'm not majoring in materials engineering, it is still helpful to my mechanical engineering major that I am familiar with how materials can be merged together. Therefore, I plan to apply this concept to whatever I build in college, including the solar collector.

Furthermore, Mitch Jorgensen's parachute video was the most interesting to me. When I was young, I had always been interested in parachuting, so Jorgenson's video quickly got my attention along with the fact that he majored in mechanical engineering himself. Perhaps the most gained aspect from Jorgensen's video was the featuring of several mathematical formulas for parachutes of different shapes. The significance of these formulas is that they show the vast differences between the outcomes of parachutes with different shapes. Another thing that Jorgensen's video taught me was that terminal velocity is the maximum velocity that equals gravity which informed me how acceleration can equal zero. But most of all, I really liked how he visually presented actual parachutes and applied them to miniature makeshift parachutes made out of paper, yarn, and clips. Jorgensen's video applies to my favorite aspect of mechanical engineering which is how inventions can come in various designs, allowing for various possible results. Ultimately, this vast level of variety is what gives mechanical engineering the level of creative experimentation that inspires me into the major.

Over the next 15 to 20 years, I see the world becoming more dependent on mechanical engineering and other STEM programs, with more research centers being built for new inventions to be developed. Since the Navy is the most STEM-focused out of all the military departments, it is bound to eventually become the dominant branch in the military, exceeding the size of the army because of the world's growing reliance on STEM majors. By 2040, the Navy's constant use of nuclear reactors to power its mechanisms would convince the public to abandon fossil fuels in favor of nuclear energy once and for all. This will allow our nation to evolve with a truly environmentally friendly infrastructure with future inventions playing a role in its development such as my proposed solar collector. Our daily lives by then would be controlled by nuclear energy as a power source and in the end, the Navy's STEM program would become the most dominant workforce in America and eventually the entire world.