**Most students choose their intended major or area of study based on a passion or inspiration that’s developed over time – what passion or inspiration led you to choose this area of study? (300 words)**

Heat waves and warmer oceans are telltale signs of global warming. This is one of the reasons for the increasing floods in Indonesia and other tropical countries. High rates of CO2 emissions made me realize the imminent threat of global warming and ignited my yearning to solve global warming using sustainable energy. It would lead to a cleaner future where the condition of the planet changes for the better and resources can still be utilized safely. However, its relative inefficiency at the moment means that there is still work to do to develop more viable alternatives.

I explored improving sustainable energy technologies with the hopes of making its mass adoption a reality. During my research on energy efficiency, I was introduced to thermodynamics' Carnot Cycle and energy storage systems. The possibility of achieving an ideal energy conversion and being able to store it excites me: it means the global usage of sustainable energy is possible.

Whilst looking into new methods of sourcing renewable energy, I discovered tidal turbines. With Indonesia being home to 13,000 islands, there is huge potential to use tidal turbines as an alternative energy source in the remote islands of Indonesia. This would contribute to reducing Indonesia’s pollution level. Although there are some turbines currently functioning, they provide small amounts of energy because their fluid mechanics are still in the early stages. Understanding fluid dynamics could lead to new designs for harnessing more kinetic energy, therefore, generating more electricity. This requires a good understanding of what occurs underwater and designing skills to modify the blueprints. To be able to do this, majoring in Mechanical Engineering is the optimal choice. Pursuing Mechanical Engineering at CMU would enable me to be at the forefront of designing and developing efficient high energy density sustainable energy technologies.