

1 Executive Summary – APS1018 Team 3

During the summer term of 2018, our team collaborated with Professor Stephen Armstrong through an online medium to analyze and develop recommendations for potential strategies on how humanity can live longer by preventing extinction of the human race using concepts of transhumanism. Due to the open-ended nature of the project, and a restricted time frame of four months, the team narrowed down the objective of providing recommendations on how environmentally friendly technology, innovation and inventions can be used for space expansion. Moreover, the objective of the project was to make sure that ethical justifications for space exploration, colonization and enhancement of the human body are provided.

Through discussions with the project team, as well as collective team research, a problem statement was established. The core of the problem was extinction and natural forces continuing to wipe out humanity. Based on this problem statement, the team brainstormed the many options humanity has for survival. The research was then narrowed down to concepts of space exploration and expansion as it's been a booming field of study and a far-fetched challenging long-term solution that is available to us. The approach that was taken was to understand how humanity has been affected by events in the past. By conducting research on historical events and concepts of transhumanism, several findings regarding the history of transhumanism, theories and views of experts on transhumanism, availability of the next generation technology and the ethics and risks that may be encountered were noted down.

From research and past historical events, it was clear that many things could qualify as reasons for extinction events. Some of these include climate change, plague, meteorite impacts, gamma ray burst, global warfare, advanced artificial intelligence, finite resources etc. This led the team to conclude that space exploration and expansion was the way forward. This is because of our technological capabilities combined with our natural characteristics of being a dynamic and adaptive species. On the contrary, the report also highlights our incapacibilities as human beings to mitigate the risks of extinction on our planet that has a population of 7 billion people. Moreover, the actions that are needed for a successful mission of sending intelligent humans to colonize other planets are discussed. Much of the technology has to do with our advancements in building giant spacecrafts with advanced propulsion systems, radiation shielding, innovation in biomedical technology etc. The final point the report touches on is the important concept of ethics. The question of funds being spent on the future of humanity vs. funds being spent to mitigate issues in the present may arise. However, this is explained by highlighting the importance of spreading the human race across the universe versus having one species in danger with their fate tied to a single world.