

As countries strive for innovation in a rapidly changing world to gain advantage in the maritime realm, the US has remained firmly at the top of naval dominance in the modern era. However, simply being at the top should not yield complacency; other actors such as Russia and China have spent years pursuing naval programs in an effort to both modernize and advance their own naval capabilities. Russia and China modernize their fleets by upgrading older ships, rapidly developing and building new ones, and Russia is even designing autonomous nuclear submarines.

The age of maritime navigation and discovery has been sidelined, and all three major power actors are looking towards expansion towards the final frontier of space. In 2008, the US tested its ship-based RIM-161 Standard Missile 3 and successfully destroyed a satellite: no other nation has successfully done the same. Since then, Russia and China have developed their own land-based anti-satellite weapons, sparking the race to develop the most advanced and innovative space weapons. Currently, naval power is used as a projection of sovereignty- as seen with the US deployment of its fleet conducting Freedom of Navigation Operations in the South China Sea and its missile tests.

Although all servicemen and women truly are inspirational to the younger generations and deserve the proper respect for making sacrifices to serve our country, Rear Admiral Lorin Selby embodies the essential tenets of progressing a nation through naval innovations. Admiral Selby served multiple tours aboard nuclear powered attack submarines, and later served as an instructor at the US Naval Academy. He then rose through the ranks from serving as the deputy director of the Navy's liaison office to the House of Representatives and eventually assumed command of the Office of Naval Research in May of 2020. Admiral Selby's work inspires me because his office plans and encourages scientific research in an effort to reimagine naval power. He creates synergy among his team to research across a vast field -- ranging from biological monitoring of sailors to electronic warfare-- for the betterment of the Navy and Marine Corps service members and protection of the national security of the US and its allies. His work inspires me because the research done is crucial for the advancement of sciences and technologies and takes us into the next generation of improvements in life.

Just like how Admiral Selby's work helps make sailors and Marines more capable, as a doctor I wish to be able to improve the quality of life for my patients. I would like to utilize the research conducted by scientists across the world to be able to give the most accurate diagnosis and treatment plan to patients. Just like how naval innovations can spring up rapidly, medicine evolves rapidly and constantly progresses. Thus, following Admiral Selby's example, as a doctor I will never get complacent, as complacency hinders growth, which can lead to decreased quality of care. Not only is Admiral Selby and his colleagues' work inspiring, but Admiral Selby himself inspires me to pursue challenges with an open mind. From his video on reimagining naval power, Admiral Selby heavily emphasized on the importance of diversity in race, ethnicity, sexual orientation, and having an open mind when tackling challenges. Having diversity in the workplace allows everyone to be more open-minded and receptive to different ideas, creating a network of tenacious minds sharing the same goal. Diversity brings in new ideas, more creativity, and allows for open dialogue. Diversity can be applied everywhere, as diversity in the Navy and medicine allows for the surfacing of ingenuity to tackle any and all types of challenges.

Even currently, space exploration is an area where many countries are investing billions upon billions of dollars to develop cutting edge technology. By 2040, based on current trends, hundreds of additional satellites will be placed into space for a variety of purposes: civilian use such as using GPS or accessing the internet, aerospace agency use to observe the stars, and military use for precisely locating targets

and functioning as a growing early-warning system. As we become more and more dependent on space, a stronger deterrent and defense of the satellites becomes imperative. Currently, anti-satellite weaponry (ASATs) has a few limitations. Tracking capabilities on missiles can be interfered with by changing inclinations of the satellite positioning, and current missiles can only reach low orbit and cannot target GPS/communication satellites. Despite these limitations, in the next 20 years, with constant investment into research and development of new technology and design changes, such as the integration of existing liquid-fueled space launch vehicles, laser guidance for targeting, and artificial intelligence to constantly calculate changing trajectories, as well as changing launch method (such as via aircraft, submarine, or land), it is my belief that the space frontier can foster peace and multilateralism, since no side would risk firing upon and damaging any other country's satellites due to the grave understanding of the imminent reciprocation of equal or greater strength that would follow. By incorporating multiple disciplinary fields in aeronautics, physics, aerospace engineering, and others - by pulling together a diverse group of people and setting them to one common task - naval power can be reimagined away from a projection of power but rather a guarantor of peace.