

Name: Alexander Boettinger



About Me: I am from Baltimore, Maryland. I have been interested in nuclear energy since early grade school. Specifically, I am interested in space and military applications of nuclear energy. I currently have a 5-year contract to serve in the Navy on submarines.

Career goals: I want to stay in the Navy for as long as possible. This would hopefully be at least 20 years. During my initial 5-year contract, I will have to master each system on the submarine. At the end of this 5-year period, I plan on going to graduate school to get a master's degree, most likely in some form of engineering. After this, I would continue to rise through the ranks and hopefully get a command position. Once I become the commanding officer of my own submarine, I would like to hold this position for as long as I am able. I am not particularly interested in passing the rank of captain due to the job becoming more focused on administrative tasks. By this point, I will have been in the military for more than 20 years and I will retire.

Interests, Abilities, and Experience: As mentioned before, I am most interested in military applications of nuclear energy but am also interested in applications for space travel. Specifically, I am interested in propulsion, more efficient and smaller reactor designs, and weapon designs. I have coding experience in Fortran, Python, and MATLAB. My technical knowledge and ability to learn new concepts is decent as evidenced by my total GPA of 3.89 and departmental GPA of 3.94. I also have experience in small team leadership from 2 years of Army ROTC.

Projects of Interest: The two projects that I am most interested in are Nuclear Thermal Propulsion Reactor Design and Analysis (NTP) and Simple Flexible Molten Salt Reactor Concept (SF-MSR). I am interested in the NTP project because of its applications in space travel and possible military applications. In space travel, a nuclear rocket could significantly reduce the weight of a craft by eliminating the need for oxidizers. Two strictly military applications that I can envision nuclear propulsion being extremely useful in are ultra long-range missiles and torpedoes. The SF-MSR project interests me because it allows for the possibility of a more efficient and safer reactor due to higher operating temperatures and low pressures. I also like the idea of using used LWR fuel and weapons grade plutonium as fuel. For these projects, I can contribute my coding knowledge, the technical knowledge that I have gained from 3 years of college, and my small team leadership experience.