I am interested in participating in the URAP program this summer for many reasons. First off, I am deeply interested in the STEM field and I particularly like utilizing mathematics and engineering concepts to solve real-life problems. Being that I am a Biomedical Engineering and Applied Mathematics double major, I have taken numerous courses in my college career thus far that explore many areas of mathematics, computer science and various engineering disciplines. More specifically, I believe that I am well qualified to take part in this program because not only have I completed a wide variety of mathematical and engineering coursework in my academic career, but I also have experience in the programming languages C++ and python in addition to experience with MATLAB and the creation of graphical user interfaces (GUIs). My first choice for program location is Stony Brook University where the research being conducted involves modeling and simulation of a parachute assembly acting as the air deceleration system. This research appeals to me because not only is this a fascinating research topic, but it is applicable to a variety of real-world situations. This is because parachutes are designed very carefully to reduce the speed of a load falling from the sky in order to guarantee a safe landing without harming the load itself. In my opinion, participating in the URAP program would be a fantastic experience because I would have a chance to solve the problems evident in the parachute simulation that are very closely related to contemporary problems faced by biomedical engineers. One of the most prominent problems that ties the two STEM areas together is incorporating accurate folding algorithms into the research projects being studied (ex: Parachute canopy folding, creation of artery stents, etc.) in order to produce a favorable design. This origami/folding problem is something that I believe I would encounter while participating in the URAP program and would be very interested in analyzing. I also believe that this experience would be beneficial for me and the research team I would work with because I can use my current knowledge from past and current coursework regarding deformable bodies and fluid dynamics to contribute to the research being conducted while also continuing to build on my knowledge in these areas. The newly acquired knowledge that I gain from participating in this program, such as studying fluid-structure interaction and various types of fluid interfaces, will also help me progress in my academic career and any future mathematics or engineering courses I take. Not only will URAP expose me to unique areas of analysis and computing, but I believe this program is a perfect opportunity for professional development by allowing me to improve my teamwork and communication skills in order to be a more effective researcher. This program will help me achieve this by allowing me to work with other researchers while utilizing various computer programs and other measurement tools to reach the common goals set within our area of research. Furthermore, this URAP program opportunity will help prepare me for independent research in the future by enabling me to think, learn, and develop solutions just as a professional researcher would. I sincerely believe that this experience will be extremely advantageous in my development as a college student into a future researcher in the STEM field.