

My name is Mia Bruce and I am a biological sciences major at the University of Nevada, Las Vegas. Taking courses in microbiology and biochemistry gave me a newfound appreciation for molecular biology. I thought it was fascinating that bacteria have evolved several mechanisms to evade host attacks. I also loved learning about how bacteria function and how they interact with one another. As my passion for microbes grew, I knew that I wanted to learn more. This led me to join the laboratory of Dr. Boo Shan Tseng. In this lab, we investigate various aspects of the bacterial biofilm.

My current project is on determining the effects of fluid shear on *Pseudomonas aeruginosa* biofilm formation grown under different gravity regimes. Biofilms can be extremely problematic in space as they are able to obstruct pipes and pose a health risk to passengers. The knowledge gained from my research can be utilized to develop novel mechanisms to eradicate biofilms in space. To perform my experiments, I will be utilizing a novel flow system developed by the Tseng lab. This novel flow system will be placed on a random position machine and the biofilms will be grown for three consecutive days. The biofilms will be grown combinatorially under two shear stress conditions and three gravity conditions. These biofilms will then be imaged using confocal laser microscopy and will be quantified using Volocity software.