Abstract:

Oxygen makes up approximately 21 percent of our atmosphere, crucial for life, and must be at a proper threshold. Too low could cause an inadequate supply of oxygen to tissues and plant life and most, if not, everything that thrives and properly operates. With NASA's ever-growing interest in interstellar exploration, the vacuum of space and specifically the lack of oxygen that is less than 1 percent on Mars is not the suitable biome that would welcome human exploration and colonization. However, there can be proper measurements for avoiding hypoxia and any other homeostasis disruptions, and research has led to specifically: *Drosophila melanogaster* (fruit flies). Proper experimental conditions on the common fruit fly, can help determine the possibility of insect life thriving on Mars and can lead to colonization on Mars with an example of *Apis mellifera*, the Western honey bee, to help with pollination of plants. In this experiment, the common fruit fly will be used to properly explore and better grasp how levels of oxygen can ultimately affect them and how these symptoms can correlate to bees and provide a solution for plant life and colonizing on Mars.