

My name is Kadance McMahon (kadanceivory4@gmail.com) and I go to Great Basin College, my mentor is Dr. Rita Pujari. My project is MARS (Making Astronaut Resources Safe); Oral Health. MARS; Oral Health addresses the vital challenge of maintaining good oral hygiene during long-duration Mars colonization missions, where resources are scarce and sustainability is crucial. The main goal of the project is to develop (research) sustainable dental care practices and materials tailored to the Martian environment, ensuring the well-being and health of astronauts. Differences in barometric pressure, radiation exposure, and microgravity which occur in space can lead to problems of gum disease and tooth decay at a more rapid rate than in Earth conditions. By implementing this research project NASA researchers may be able to find resources that are safe to use in these unique environments. It is important to have good oral health practices and procedures without relying heavily on Earth and its resources. This project could allow for discoveries beyond Mars colonization missions as it aligns with NASA's goal of developing sustainable solutions for space exploration and resource-scarce communities here on Earth. Discovering solutions to oral health in space is a critical step towards a sustainable future for extraterrestrial colonization.