Coral reefs are some of the most diverse and important ecosystems in the ocean, providing habitat for nearly 25 percent of all marine species despite covering only about one percent of the ocean floor. However, rising global temperatures are placing these ecosystems under increasing stress. As ocean temperatures continue to climb, coral bleaching events are becoming more frequent and severe, threatening reef health, marine biodiversity, fisheries, and coastal protection. This study aims to investigate how elevated water temperatures affect reef-building corals by examining changes in photosynthetic activity, visible bleaching, and polyp extension. We hypothesize that corals exposed to temperatures above the control condition of 25°C—specifically 27°C, 29°C, and 31°C—will show reduced photosynthetic activity, increased bleaching, and decreased polyp extension over a two-week period. To test this, we will maintain three coral genera (Zoanthus, Discosoma, and Xenia) in carefully controlled aquarium systems that replicate natural reef conditions, keeping salinity, pH, and lighting constant so temperature is the only variable. We will measure oxygen production to assess photosynthesis, use photographs to quantify bleaching, and evaluate polyp extension using a consistent measurement scale. By simulating warming ocean conditions in a controlled setting- like our fish tanks- this study seeks to better understand how reef-building corals respond to thermal stress and contribute to ongoing efforts to predict and address the impacts of climate change on coral reef ecosystems.