

RICHARD SLOAN, and SARA SAWYER, Department of Science and Mathematics, Glenville State College, Glenville, WV, 26351. **The role of cellular signaling during bleaching in the sea anemone, *Aiptasia pallida*.**

Corals are symbiotic with dinoflagellate algae. This symbiosis allows corals to thrive in the nutrient poor waters of the tropics. Coral bleaching is the loss of the endosymbiont due to environmental stressors such as oxygen loss, bacterial infections, and changes in salinity and temperature. The mechanisms underlying temperature-induced coral bleaching are not well understood; however, it is known the process of apoptosis (programmed cell death) is involved. We are investigating the signaling pathways that are involved in temperature-induced bleaching in sea anemone, *Aiptasia pallida*. We are focusing on two pathways, MAP Kinase (ERK) and PI3Kinase (AKT), known to be activated by various environmental stresses and also play a role in apoptosis. The pathways are activated when the proteins involved are phosphorylated. To investigate whether temperature-induced bleaching activates these pathways, the tropical sea anemone, *Aiptasia pallida* is heat shocked from 25° C to 30° C. After the stress, proteins are isolated from the anemones, separated by protein electrophoresis and the phosphorylation levels of ERK and AKT are determined by Western blotting. Results from these studies will enable us to determine the extent that the MAP Kinase (ERK) and PI3Kinase (AKT) pathways are involved in bleaching and begin to determine how these pathways are involved in the apoptosis that results from bleaching.