

## **Effect of acute salinity stress on the metabolic rate of *Strongylocentrotus droebachiensis***

Climate change poses serious threats to the ocean and marine organisms. As climate change continues to worsen, it is predicted that there will be an increase in precipitation, heat waves, evaporation, and rising temperatures in seawater which can make salinity fluctuate to either fresher or saltier seawater. Although all marine organisms face repercussions due to climate change, an economically and ecologically important species is the green sea urchin, *Strongylocentrotus droebachiensis*. In this experimental study, standard metabolic rate (SMR) of sea urchins were measured and urchins were then exposed to ambient, hypo- and hypersaline treatments for a duration of two weeks. Metabolic rates were then collected 24 hrs after exposure and 336 hrs after exposure. The results revealed no significant differences (NSD) in SMR among the sea urchins before exposure to the salinity treatments. After the exposure period was completed, the results showed NSD in MR among the treatments over the duration of the study. The findings of this study support that sea urchins are able to withstand changes in salinity that may occur from future climate change predictions.

Advisor: Jessica Muhlin