Comparing nervous system the following question: Does an increased modulatory

capacity correlate with increased behavioral flexibility? Neuromodulation is the process in which

the output of a neuron, or neural circuits, is changed by modulators such as hormones,

neurotransmitters, and peptides. Nў뽑漐Ř嘗ᥧ隇倔╸ቝthe

Kelp crab, an herbivore, and the Spider crab, an omnivore, have highly conserved nervous

systems yet respond to different numbers of endogenous modulators. Our hypothesis to explain

this is that a more flexible nervous system would need more modulators, as responding to more

modulators means a direct increase in behavioral responses. Given the two Crabs’ differences in

diets, this means different digestion patterns. These two crabs also have conserved cardiac

nervous systems, so if the hypothesis is supported, we would expect

system

to have no significant differences. Preliminary data analysis of past lab work suggests

that there is a correlation between increased modulatory capacity and increased behavioral

flexibility as the Spider Crab STNS responded to more modulators than the Kelp Crab’s,