

POSTER ABSTRACT

**Food Elicited and Nocturnal Increases in Heart Rate:
Entrainment to Light:Dark Cycles and Restricted Feeding
in *Homarus americanus***

A.J. Dill, M.L. Levick, S.J. Skinner, D.T. Walsh, S.H. Betournay, & C.C. Chabot
Department of Biological Sciences, Plymouth State University, Plymouth, NH

Light dark cycles (LD) and restricted food access (RF) in addition has been shown to entrain circadian rhythms in a variety of animals including mammals, birds, honeybees, and crayfish. In the present study we examined the effects of RF and LD on heart rate in American lobsters (*Homarus americanus*). Seven lobsters were housed in individual running wheels under a 14:10 LD photoperiod and wired to heart rate monitors. All but one lobster showed significant increase in nocturnal heart rate, thus demonstrating daily modulation of heart rate. Also, when lobsters were fed daily during light, five out of seven showed an immediate and significant increase in heart rate; this increased heart rate during light persisted more than 10 days after we stopped daily feedings. Our results are the first to suggest the presence of light and food entrainable oscillator(s) modulating heart rate in the American lobster.