ALLISON M. LOTT, SIERRA BADLEY and RUTH A. CONLEY, Biology Department, Shepherd University, Shepherdstown, WV 25443. Blood Octopamine levels affiliated with righting and exploration behaviors in *Gromphadorhina portentosa*, a Madagascar hissing cockroach.

Many animals exhibit behavioral syndromes, a collection of correlated behaviors across various contexts. Risk acceptance (aka Shy-Bold syndrome) is affiliated with aggressiveness and has been shown to be present among male Madagascar Hissing cockroaches*, Gromphadorhina portentosa* (Mishra 2011, Logue et al 2009, 2011). We used behavioral assays developed for *G. portentosa* to observe behavioral syndromes in both male and female *G. portentosa* as well as to explore the possible role of octopamine, a neuromodulator, in risk acceptance. Octopamine (OA) is a neurohormone involved in modulating many behaviors including feeding & aggression in insects and crustaceans. High levels of OA are affiliated with aggression (crickets, Stevenson 2005) as well as submissiveness (lobster, Livingston 1980). OA injections into *G. portentosa* cause a submissive-like stance, decreased activity, and increased hissing (Conley & Baird 2011).We used HPLC to measure blood OA levels of animals tested for behavioral syndromes (ie. shyness vs boldness) using the time to right themselves after a flip onto their back and the area covered while exploring a novel environment. Animals with lowest OA levels were fastest to right themselves; however not all animals with low OA levels were fast at righting. At present, we see no relationship between exploration and OA level with our current behavioral assay and OA detection methods. These experiments provide evidence that female *G. portentosa* also possess behavioral syndromes for these behaviors. These results are useful in designing further behavioral assays concerning octopamine's behavioral effects; further refinement of HPLC detection methods will also be useful. *This work was funded in part by the Research Challenge Fund through a Summer Undergraduate Research Experience Grant from the West Virginia Higher Education Policy Commission Division of Science and Research*