HALEY M. HOLBERT, ZACKARY A. GRAHAM, & ZACHARY J. LOUGHMAN, Department of Biological Sciences, West Liberty University, West Liberty, WV 26074. Utilizing Morphometrics to Determine Burrowing Type in Fossil Crayfish

During the early Mesozoic era approximately 300 MYA, freshwater crayfish diverged from marine lobsters. Roughly 200 MYA, Pangea split into two primary landmasses known as Laurasia in the north, and Gondwana in the southern hemisphere. Crayfish living within these continents, specifically Laurasia, may have migrated across the great landmass before the mid-Jurassic, when Laurasia split into the northern contents we know today. Crayfish who had migrated before the split were likely now separated from their ancestors on the Asian continent and were now in North America. This continental migration may be the cause of similar morphometrics between extant North American species with prehistoric fossil crayfish found in China. In this study we collected morphometrics of 10 extant North American species, covering those that exhibit primary, secondary, and tertiary burrowing behaviors. Twelve different measurements were taken from each specimen with ImageJ. Using a Principal Component Analysis (PCA), the morphometrics from extant species were compared to fossil *Paleocambarus licenti* data collected from China. This data will be used to identify what extant species is most morphologically and behaviorally similar to *P. licenti*.