1135-70-3005 **Kimberly E. Stubbs*** (stubbske@g.cofc.edu), 196 Curtis Creek Rd, Candler, NC 28715, and **Samuel R. Kaplan** (skaplan@unca.edu), 313 Robinson Hall, Asheville, NC 28804. *Dynamics of Co-Orbital Moons Near Collision.* Preliminary report.

This project is about celestial mechanics and dynamical systems. Specifically, the goal is to explore the techniques used in modern celestial mechanics to analyze near-collision dynamics and chaos. The model we're working with is a 3-body co-orbital system. Josep Cors and Glen Hall wrote a paper on 3-body co-orbital systems and determined when the moons will pass each other and/or change orbits. They were only interested in these two occurrences, and so they left out the dynamics of near-collision. We're interested in finding out what happens near collision of the two moons and have done the necessary change of variables to allow analysis of the dynamics and chaos. We'll look into the dynamics and what they mean for the entire system. (Received September 26, 2017)