1125-76-2889 **Amy Buchmann***, abuchman@tulane.ed, and **Ricardo Cortez** and **Lisa Fauci**. *A Computational Model of Ciliary Beating.* Preliminary report.

Cilia, flexible hairlike appendages located on the surface of a cell, play an important role in many biological processes including the transport of mucus in the lungs and the locomotion of ciliated microswimmers. Cilia self-organize forming a metachronal wave that propels the surrounding fluid. To study this coordinated movement and motivated by the oscillator model in, we model each cilium as an elastic, actuated body whose beat pattern is driven by a geometric switch where the beat angle switches between two 'traps', driving the motion of the power and recovery strokes. The cilia are coupled to a viscous fluid using a numerical method based upon a centerline distribution of regularized Stokeslets. We first characterize the beat cycle and flow produced by a single cilium and then investigate the synchronization states between two cilia. (Received September 20, 2016)