1077-76-1394 **Bree Cummins*** (bcummins@tulane.edu). *A regularization technique for oscillating slender bodies in low Reynolds number flow.*

I present a regularization technique for the oscillatory Stokes equations in three dimensions in which the regularization parameter is related to the width of a slender body. The solution to the regularized equations represents the oscillations of a slender body in vanishing Reynolds number flow, or the motion of a slender body through porous media. I discuss the application of this method to a sensory system in crickets and to the feeding appendages of copepods. (Received September 19, 2011)