

1096-76-2176

Nicholas Gewecke* (ngewecke@math.udel.edu), **Rich Braun**, **Chris Breward** and **P. Ewen King-Smith**. *Two Layer Model for Tear Film Dynamics*. Preliminary report.

Many tear film models utilize a single layer, while some recent models include surfactant effects at the liquid-air interface to model the effects of polar lipids. Clinical observations indicate more complicated dynamics of the lipid layer than demonstrated by these previous models, such as the formation of lipid drops, but the dynamics are not well-understood. Our model includes a very thin viscous layer representing the nonpolar lipid layer between the aqueous layer and the air, to capture some of these dynamics and to aid in understanding the mechanisms behind these dynamics. (Received September 17, 2013)