Jonathan C. Horton* (jhorton3@masonlive.gmu.edu), George Mason University, 4450 Rivanna River Way, Fairfax, VA 22030. Effects of a Contact Lens and the Blinking Cycle on Tear Film Deposition and Drainage.

This study analyzes the dynamics of the eye’s pre-lens tear film when a contact lens is in place. The blinking cycle replenishes the tear film and causes motion of the contact lens. With assumptions based on lubrication theory, equations governing the fluid dynamics of the tear film are simplified to provide an evolution PDE describing the rate of change in the tear film’s thickness. Further research will explore numerical solutions, which may provide necessary insight for treating dry eye in contact lens wearers. (Received January 28, 2014)