1125-76-1503 **Rachael Thormann***, School of Mathematical Sciences, Rochester Institute of Technnology, Rochester, NY 14623. *Mathematical Model of the Motion of a Contact Lens.*

We are developing a model of the motion of a contact lens under the influence of the shear stress produced by a pressure gradient in the tearfilm. After a soft contact lens is placed on the eye, blinking deforms the lens causing it to take the shape of the eye and shift off the center of the eye. Our model will capture the mechanism of re-centering the contact lens on the eye. This is the next step towards a full model of the solid and fluid mechanics of a contact lens in the tear film. To do so, we describe the solid mechanics of the contact lens building off the suction pressure work of Maki, Ross, and Holz (Existence Theory for the Radially-Symmetric Contact Lens Equation, D. S. Ross, K. L. Maki, E. Holz, SIAM J. Appl. Math, 76(3), 827-844, (2016)). (Received September 17, 2016)