Recent progress on Modeling the Human Tear Film[1] RICHARD
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IIT Madras, TOBIN DRISCOLL, U of Delaware, EWEN KING-SMITH, The Ohio
State University — We report on recent results in from our modeling efforts to
better understand the dynamics of the human tear film. Lubrication theory is used
to reduce the problem to a nonlinear one-dimensional partial differential equations
governing the tear film thickness. The curvature variation of the (ellipsoidal) cornea
is studied in a model problem that illustrates the influence of this aspect of the eye.
Other progress will be discussed as available, including a shear thinning fluid to
model tears.

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