1135-35-755 **Peter Constantin**, **Tarek Elgindi** and **Huy Nguyen***, Fine Hall, Washington Road, Princeton University, Princeton, NJ 08544, and **Vlad Vicol**. *On singularity formation in a Hele-Shaw model.*

We will discuss a lubrication approximation model of the interface between two immiscible fluids in a Hele-Shaw cell, derived in [Constantin et al, Physical Review E, 1993] and widely studied since. The model consists of a single one dimensional fourth-order nonlinear degenerate parabolic equation for the thickness of a thin neck of fluid, and two boundary conditions fixing the neck height and pressure jump. We prove that starting from a smooth interface with positive neck height, no singularity can arise as long as the neck height remains positive. As a consequence, we show that if the pressure of the less viscous fluid is larger than some explicit number then pinching happens in either finite or infinite time. This is joint work with P. Constantin, T. Elgindi and V. Vicol. (Received September 14, 2017)