1135-53-1944 **Or Hershkovits*** (orher@stanford.edu), Or Hershkovits, Stanford, CA 94305, and **Brian White**, Stanford, CA 94305. *Uniqueness of mean curvature flow through (some) singularities.*

Given a smooth compact hypersurface in Euclidean space, one can show that there exists a unique smooth evolution starting from it, existing for some maximal time. But what happens after the flow becomes singular? There are several notions through which one can describe weak evolutions past singularities, with various relationship between them. One such notion is that of the level set flow. While the level set flow is unique, it has an undesirable phenomenon called fattening: The “weak evolution” develops an interior in $\mathbb{R}^{n+1}$. This fattening is, in many ways, the right notion of non-uniqueness for weak mean curvature flow.

As was alluded to above, fattening can not occur as long as the flow is smooth. Thus it is reasonable to say that the source of fattening is singularities. Permitting singularities, it is very easy to show that fattening does not occur if the initial hypersurface, and thus all the evolved hypersurface, are mean convex. Thus it's reasonable to conjecture that: ”An evolving surface cannot fatten unless it has a singularity with no spacetime neighborhood in which the surface is mean convex”.

In this talk, we will phrase a concrete formulation of this conjecture, and describe its proof. This is a joint work with Brian White. (Received September 25, 2017)