1106-E1-305 **Michael Dorff*** (mdorff@math.byu.edu), 310 TMCB, Department of Mathematics, Brigham Young University, Provo, UT 84602. *Shortest paths, soap films, and mathematics.*

In high school geometry we learn that the shortest path between two points is a line. In this talk we explore this idea in several different settings. First, we apply this idea to finding the shortest path connecting four points. Then we move this idea up a dimension and look at a few equivalent ideas in terms of surfaces in 3-dimensional space. Surprisingly, these first two settings are connected through soap films that result when a wire frame is dipped into soap solution. We use a hands-on approach to look at the geometry of some specific soap films and "minimal surfaces". (Received August 20, 2014)