1171-35-172 Li Wang<sup>\*</sup>, 206 Church St. SE, Minneapolis, MN 55455. *Dynamics in particle suspension flow.* In this talk, I will consider two set up of particle suspension flow. One is a gravity driven flow down an incline, and the other is a pressure driven flow in a Hele-Shaw cell. In the former case, the interesting phenomena is the formation of singular shock that appears in the high particle concentration case that relates to the particle-rich ridge observed in the experiments. We analyze the formation of the singular shock as well as its local structure. In the latter case, we rationalize a self-similar accumulation of particles at the interface between suspension and air. Our results demonstrate that the combination of the shear- induced migration, the advancing fluid-fluid interface, and Taylor dispersion yield the self-similar and gradual accumulation of particles. (Received August 10, 2021)