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Tentative topic of the invited talk
Manipulating drops using interfacial phenomena.

Abstract of the invited talk
The dynamics of a fluid drop in another immiscible fluid has been a topic of substantial research interest over many years owing to its wide range of applications such as the preparation and stabilization of colloids and emulsions, enhanced oil recovery, food and cosmetics, as well as more recent and sophisticated applications such as particle and cell encapsulation critical to many biomedical operations. It is well known that the interfacial properties, especially the surface tension of the drop plays an important role in dictating the way it behaves under any given environment. Indeed, great control may be exerted on the motion (i.e., the trajectory) and the morphology of a drop by fine tuning its interfacial properties. In this talk, we shall explore how the interfacial tension of a drop and thereby its kinetics may be manipulated using two distinct pathways: (i) adding surfactants and (ii) imposing temperature gradients. We shall mainly investigate two types of scenarios, namely settling motion and streamwise cum cross-stream migration of drops in confined flows. We shall look into the kinetics of both single and compound drops using mainly semi-analytical tools, while at the culmination, a dash of numerical simulation results associated with multicore compound drops will also be illustrated.