The cellular cortex is a thin layer of actomyosin connected to the cell membrane. The actin network is dynamically polymerized and depolymerized, and myosins molecular motors use the energy of ATP hydrolysis to exert stresses within the network, giving rise to a cortical surface tension. The cortex plays an essential role in setting cell shape and generating forces in many examples of biological processes. In this talk, I will focus on how the physical properties of the cortical cytoskeleton play a role in the stability of cell division, in the process of cell migration in a channel and during zebrafish epiboly, a developmental process where a contractile actomyosin ring drives deformation of an entire epithelium.