

Pattern formation in cellular adhesions and the actin cytoskeleton

In this talk, I will introduce the topic of active self-organization in cells and tissues and will discuss in detail two cases. First, I will discuss how we can use mathematical and computational modeling to understand the formation of dense bundles in the actin cytoskeleton. These structures are very prominent across animal cells and mediate in cell reshaping, wound healing and their ability to exert force. Then, I will discuss the patterning of adhesion fractures and how it relates to mammalian development.