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Monday, April 16, 2018
Time: 4:00 p.m.
Location: Weber 223

Title: Mathematical Models for Cell Shape: From One Cell to Many

Abstract: The size and shape of a mammalian cell is regulated by a network of proteins. Among these are central regulators (GTPases) that control the polarity, the contraction or the spreading of a cell. In my talk, I will describe efforts at understanding the emergent behaviour using mathematical modeling at the level of a cell and of a tissue made up of many cells. The models lead to interesting mathematics, as well as insights into behaviour observed in experimental cell biology. I will review both partial and ordinary differential equation versions of our models, and illustrate some new methods devised to analyse these. I will conclude with recent work on waves of contraction observed in a tissue composed of many "model cells".

Host: Yongcheng Zhou