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# Special Biological Physics Seminar

## Anomalous Bulk and Boundary Behavior in Simple Models of Dense Biological Tissue

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Location: SE1 270K

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ABSTRACT

Dense biological tissues and cellular aggregates display a rich variety of complex, non-equilibrium phenomena. For example, recent experiments have suggested that confluent cellular monolayers may lie close to a collective rigidity transition controlled not by density but by the shapes of the cells. Motivated by such results, I will explore the theoretical predictions that a broad class of shape-based models for dense tissue make for the behavior of cells in the bulk and at tissue boundaries. These predictions – such as anomalous tissue surface tension at the boundary between different cell types – often differ by orders of magnitude from naïve expectations, and may be understood via a combination of geometrical and topological considerations. I will discuss the relevance of the predicted surface phenomenon for processes such as cell sorting and compartmentalization, and compare with experimental results.