

# Physics Colloquium

**Professor Margaret Gardel**

(University of Chicago)

**“Design Principles of Morphogenetic Matter”**

**Friday, April 9, 2021**

**1:00pm—2:00pm**

**Zoom link: <https://virginiatech.zoom.us/j/96084996911>**

My lab studies how the movement and shape of living cells is controlled by living materials constructed by protein assemblies within the cell interior. In this talk, I will describe my lab’s recent efforts to understand the design principles of the active, soft materials that drive morphogenesis of epithelial tissue. In particular, we are interested in the design principles by which protein-based materials generate, relax, sense and adapt to mechanical force. Here I will describe our current experimental efforts using optogenetic approaches to study a morphogenetic ratchet controlling epithelial cell shape.