



BiophysTO Lunchtime Seminar Series

Date

Thursday, April 5, 2018
Noon

Location

MP606
St. George Campus

Streaming

Seminar livestreamed to
DV3129 @ UTM

**Pizza & refreshments
provided**

Dr. Lisa Manning

Department of Physics, Syracuse University

How do mechanical forces sculpt tissues?

How do individual cells generate large-scale patterns on the scale of organs and tissues, and how does this process break down in disease? While patterning of biochemical signaling molecules play an important role, physical forces can also help to execute and control the pattern proscribed by genetics. In multicellular tissues, local physical forces can generate surprising and robust behaviors that span many cell diameters. I will discuss our recent work using mathematical models to predict how cells migrate and change shape in response to physical forces in in vitro systems, including cultured human bronchial cells and breast cancer cell lines, as well as in vivo systems, such as the zebrafish left-right organizer and cancer tumors from human patients. Understanding these emergent behaviors helps us to generate unexpected new hypotheses about the molecular mechanisms that drive pattern formation in these systems.

Host: Dr. Rodrigo Fernandez-Gonzalez



**Seminar
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