Faculty Name:

Nandan Nerurkar

Faculty Email:

nln2113@columbia.edu

Lab:

Morphogenesis and Developmental Biomechanics Lab

Project Title:

Molecular control of forces driving buckling morphogenesis of the small intestine

Description:

The trainee will assist in research aimed at understanding how molecular cues control cell behaviors that drive the physical process of bending the small intestine into a series of loops during embryonic development. In particular, the trainee will investigate the signaling pathways responsible for acto-mysoin activity in the dorsal mesentery, a tissue that provides a stiff mechanical constraint to the elongating gut tube, and in doing so drives its buckling into stereotyped loops necessary for packaging the intestine within the viscera. This will be done via drug treatments in explant culture as well as gene misexpression in vivo, and output measures will include measurement of tissue mechanics, morphometry, and fluorescence microscopy.

Location of Research:

On-Site

# of hrs/week:

40

Department/Program:

Biomedical Engineering

Eligibility:

Basic lab safety procedures, physics, cell biology; BS, Second Year, BS, Third Year, BS, Fourth Year

To apply, please contact:

nln2113@columbia.edu