

Consequences of “Life at Low Reynolds Number” for the
Biophysical Investigation of
Polymer Dynamics & Tissue Patterning in Developmental Biology

Glenn Edwards
Physics Department
Duke University

We have been investigating polymer dynamics and tissue-patterning processes during the very early stages of *Drosophila* morphogenesis. Physical forces, generated by molecular processes, drive cell shape changes that exert forces on neighboring cells. Cell shape changes collectively drive tissue movements and pattern formation. The viscosities that characterize the aqueous environments of the molecules, cells, and tissues satisfy the condition of low-Reynolds number, i.e., all of these dynamics are overdamped. This talk will review the consequences of low-Reynolds number for the biomechanics of tissue-patterning processes.