

Biophysics

PHYC 480.001

Fall 2010

Instructor: Dr. K. Lidke

M W 17:30-18:45

P&A room 5

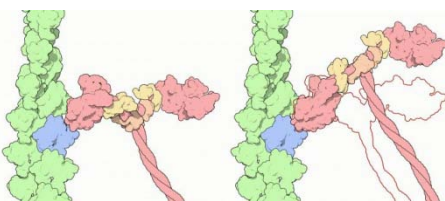
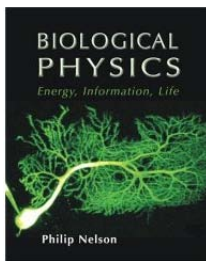
This course is targeted to physics undergraduate and graduate students who want to learn more about biophysics, although any interested student who is comfortable with calculus is invited to attend. The course will give an introduction to the structure and function of biological cells and cover basic biophysical concepts such as diffusion in cells, viscosity, entropic and chemical forces, membranes and motor proteins. In addition, a range of topics will be covered that are related to theoretical and experimental biophysics research being done in the UNM physics department including: measuring diffusion of cell components using single particle tracking (SPT) and fluorescence correlation spectroscopy (FCS); fluorescence super-resolution imaging; and DNA stretching and unzipping using optical tweezers.

A small laboratory component will introduce students to SPT, FCS, DNA tethering and basic wet bench techniques.

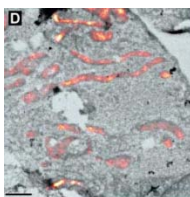
No background in biology is assumed.

Text: Biological Physics by Philip Nelson

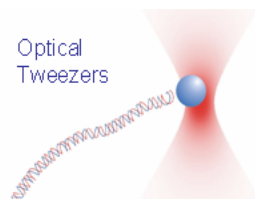
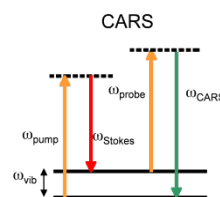
For further information, contact Dr. Lidke: klidke@unm.edu



Myosin Power stroke



EM- PALM



Optical Tweezers

