



Onuchic Minicourse on Energy Landscapes in Biophysics

March 8, 2015

Instituto de Física Teórica - UNESP, São Paulo, Brasil



Lecturer: Prof. Jose Nelson Onuchic (Rice U.)
Co-director of the Center for Theoretical Biological Physics,
sponsored by the National Science Foundation (NSF)

Program (IFT-UNESP Auditorium):

14:00 Lecture 1: The physics of protein folding: energy landscapes and funnels

16:15 Lecture 2: The energy landscape of bimolecular machines

It is amazing how cells have created a number of molecular machines specialized for undertaking tasks needed to control and maintain cellular functions with exquisite precision. Due to the fact that biomolecules fluctuate via thermal motion and their dynamics is diffusive, biological machines are fundamentally different from those experienced by conventional heat engines or machines in the macroscopic world. One of the key features of biological machines is the conformational changes triggered by the thermal noise under weak environmental perturbation. Therefore we can explain how they behave using ideas borrowed from the energy landscape theory of protein folding and polymer dynamics. This “new view” allows us to envisage the dynamics of molecular motors from the structural perspective and it provides the means to make several quantitative predictions that can be tested by experiments. **This activity will precede the Minischool on Biophysics of Protein Interactions from March 9-13.**



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Registration is not required for this activity.

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<http://www.ictp-saifr.org/onuchic>