

From: Jacobus Verbaarschot <Jacobus.Verbaarschot@stonybrook.edu>
Subject:
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On Nov 29, 2009, at 5:55 PM, jnawang2@notes.cc.sunysb.edu wrote:

Dear Jacobus,

I got another grant. As two of my graduate students are finishing their Ph.D. this December (David Lepzelter from Physics just passed his defense and will go to Boston University to start his post doctoral research), I am now looking for new graduate students as well as a new post doctor to join my research group (one of my current post doctors who got his Ph.D. with Prof. Warren Siegel from Yang Institute, Dr. Haidong Feng has been doing very well here).

My group is focused on biological physics at the molecular and cellular level. We previously have been focused on theoretical investigations, we are now also trying to develop an experimental component of the exploration. We are looking for both graduate students and post doctoral researchers to join us. My webpage is <http://www.chem.stonybrook.edu/Jin-Wang.html>

One focus of my research is on the study of the fundamental mechanism of biomolecular folding and recognition, especially protein folding and protein-protein/protein-DNA interactions. Using modern statistical mechanics, molecular simulations and empirical information from protein database, energy landscapes of protein folding and recognition can be mapped. By further studying the detailed structure correlations of the landscape, the fundamental questions such as nucleations and nature of transition state ensemble can be probed for different proteins and biomolecular recognition complexes. The results of the study can be compared with the experiments. We are developing energy landscape description of protein folding and recognition which will provide insight of new algorithms of structure prediction and drug design.

Another focus of the group is on the study of the underlying principles of the cellular networks. In particular, we are interested in the nature of the robustness of the cellular networks in the noisy fluctuating environments. We aim to understand and quantify the dynamics and pathways of the cellular networks. These studies should lead to optimal design and evolution of the networks.

We are also interested in the study of single molecule reaction dynamics. The single molecule detection provides us detailed picture of molecular reactions without ensemble average. It is also a sensitive probe to the local environments. It can help us to pin down the reaction pathways. Since the single molecule has only one sample, the statistical fluctuations normally ignored under the situation of large samples may not be neglected. Quantitative study of the statistics of single molecule reaction dynamics is very necessary and underway in order to understand the whole picture.

Could you help to advertise in physics?

Thank You Very Much!

Jin

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