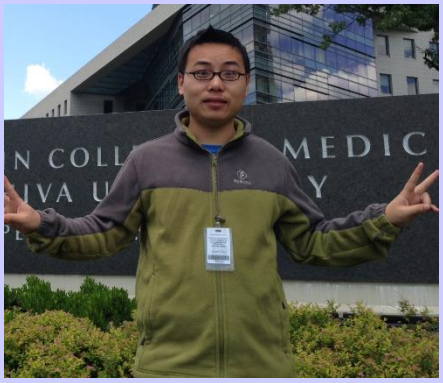
学术报告

Understand the influence of E-cadherin clustering on its biological function using multi-scale model



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Albert Einstein College of Medicine

2017年07月12日(周三)

下午03:00-04:30

新波谱楼十楼会议室

About the speaker: Jiawen Chen, Research Fellow at Department of system and Computational Biology, Albert Einstein College od Medicine. His research focus on connecting the structure feature of bio-molecules (in micro scale) and cellular function (in macro scale). He developed multi-scale tools to study 1) the binding kinetics between proteins; 2) the multi-body effects and kinetic mechanism of bio-molecules; 3) the influence of bio-molecules structure on its cellular function. Dr. Chen has published more than 10 papers in journals like *Journal of Chemical Physics* , *Biophysical Journal* , *Journal of Molecular Biology, PLOS One*

Abstract: E-cadherins are trans-membrane proteins that can mediate calcium dependent cell adhesion in extracellular region and participate in wnt signaling pathway inside cells. Experimental studies indicated that E-cadherin can form two-dimensional (2D) array of double-layered molecular architecture on cell membrane which dramatically changes the kinetics and strength of E-cadherin mediated cell adhesion. Understanding how and why E-cadherin clustering changes its biological function is crucial for further research and disease treatment. A multi-scale scheme has been developed to understand the mechanism of E-cadherin clustering and to explain the experimental phenomenon. Besides that a mathematical model has also been developed to study the possible impacts of E-cadherin clustering on wnt signaling pathway. I will talk about the details of these two projects and our current understanding about this issue.

主办单位:武汉物数所理论与交叉研究部