



PhD Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

Open PhD position at FUB for CSC scholarship candidates 2016

Please note: the PhD position is only offered to Chinese PhD candidates for application in the framework of the FUB-CSC PhD Program.

<u>Department/Institute:</u>	Mathematics, Computer Science, Chemistry, Physics
<u>Subject area:</u>	Computational Biophysics, Scientific Computing
<u>Name of Supervisor:</u>	Prof. Dr. Frank NOÉ (Mr.)
<u>Number of open PhD positions:</u>	2
<u>Type of the PhD Study:</u>	Full-time
<u>Project title:</u>	Computational Biophysics and Scientific Computing

PhD Project description:

Our group does cutting-edge computational methods development in biophysics. Our two main project areas are:

1. Particle-based reaction diffusion simulations of signal transduction in cells. We develop software and simulation methods, and study processes such as phototransduction in the human eye, neurotransmission, and the motion and crowding of proteins in cells. Our next aims are to simulate an entire procariotic cell, resolving all proteins, and to develop a generic, efficient, and user-friendly HPC software for this kind of simulation.

2. High-throughput molecular dynamics simulations.

We develop software and simulation methods to study conformational transitions and binding proteins of proteins, which are the nanomachines that drive almost every biochemical process in live. We overcome the sampling problem by running simulations highly distributed and using Markov state models to reconcile them. Current challenges are to completely characterize protein-protein association in atomistic detail and to develop new adaptive sampling and modeling methods and software.

We are competing with the best groups internationally. Keeping up in that challenge requires students that are highly talented, have outstanding ambition and work ethics. It is required that students are strong in at least one technical discipline, such as statistical physics, numerics and/or development and design of complex codes.

Language requirements:

English. Excellent command of English in writing, comprehension and speaking is required.

Academic requirements:

Excellent candidates may qualify with a BSc for one of our fast-track PhD programs. In the more common case, an MSc degree is needed to be admitted to our PhD program. Suitable prior degrees are in Physics, Physical Chemistry, Computer Science, Mathematics (with strong computational or engineering aspects), Bioinformatics.

Information of the professor or research group leader:

Group website: research.franknoe.de

Our reaction-diffusion project: readdy-project.org

Our molecular dynamics / Markov modeling project: markovmodel.org

Please note:

In a first step the complete application should submit to the Beijing Office for evaluation by January 4th, 2016. Please don't contact the professor before. He/She will get in contact with you after having received the complete application in January.