

Research Assistant Positions in Non-Equilibrium Matter at UIUC

(updated: October 17, 2016)

Motivated and ambitious students (both Ph.D. students and undergraduate students who are planning to pursue Ph.D. degrees) are invited to join Prof. Yang Zhang's research group in the area of Non-Equilibrium Matter at University of Illinois at Urbana-Champaign.

Our research focuses on the study of **non-equilibrium matter** using integrated *atomistic theory, modeling, and simulation* and *neutron and synchrotron light experimental probes*. The structure and dynamics of these systems are either inherently complex or driven out of equilibrium by extreme conditions. In particular, we are interested in a range of fundamental and technical problems involving **slow phenomena and rare events**, such as the viscous flow of supercooled liquids, nucleation and crystal growth, the folding of polypeptide chains into structured proteins, the self-assembly of micro-units into functional objects, materials aging and degradation, and some mathematical optimizations.

Immediately, we have Research Assistants (RA) openings to work on the following three projects:

1. *Data-enabled machine learning studies of the extreme phase behavior of liquids and liquid-like matter, unconventional phase transitions and critical phenomena, kinetic theory of liquids.*
2. *Rare-event sampling algorithms applied to understand long timescale phenomena.*
3. *Rigidity control of liquids and granular materials, soft machines and soft robotics.*

The experiments are usually performed at large user facilities at national laboratories in US, Europe, and Asia, such as Oak Ridge National Laboratory, Argonne National Laboratory, Brookhaven National Laboratory, National Institute of Standards and Technology, Institut Laue-Langevin, etc. Solid background in physics, mathematics, and programming are essential. Physics, Chemistry, and EECS majors are preferred, but other majors are also welcome.

For more information, please contact:

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