Biophysics Assignment (Due Monday, Aug. 29)

Assignment will be based on performing literature search on application of MD simulations to a particular biomolecular system and writing a report on the current state of research. You could also choose a particular method used in simulation of biomolecules and write a report on the method. The report should critically examine the work done so far and suggest potential avenues of research that could advance the field.

Some suggested topics
DNA condensation
Helix-coil transition
Single molecule experiments
Protein folding
Protein aggregation
Linear motors (kinesin and myosin)
Rotary motors (F0 motor)
Active transport (e.g. Na-K pump, glutamate transporter, etc.)
Ion channels (e.g. potassium, sodium, calcium, etc.)
Mitochondria as factories
Long QT syndrome (sudden death due to cardiac arrhythmia)
Epilepsy
Cystic fibrosis
Alzheimer's disease
How do toxins and venoms act
Influenza virus
HIV virus
ATP and immune cell death
ABC transporters and multi-drug resistance