

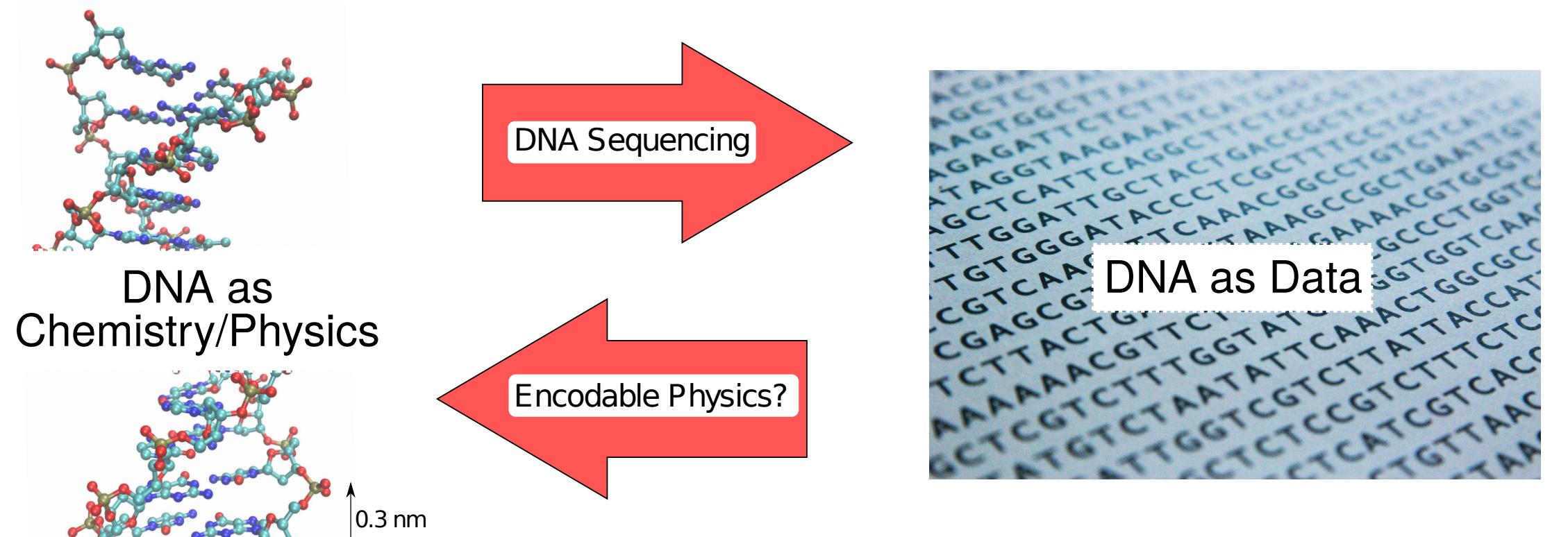


# Encodable Physics: Engineering Molecular Interactions using DNA

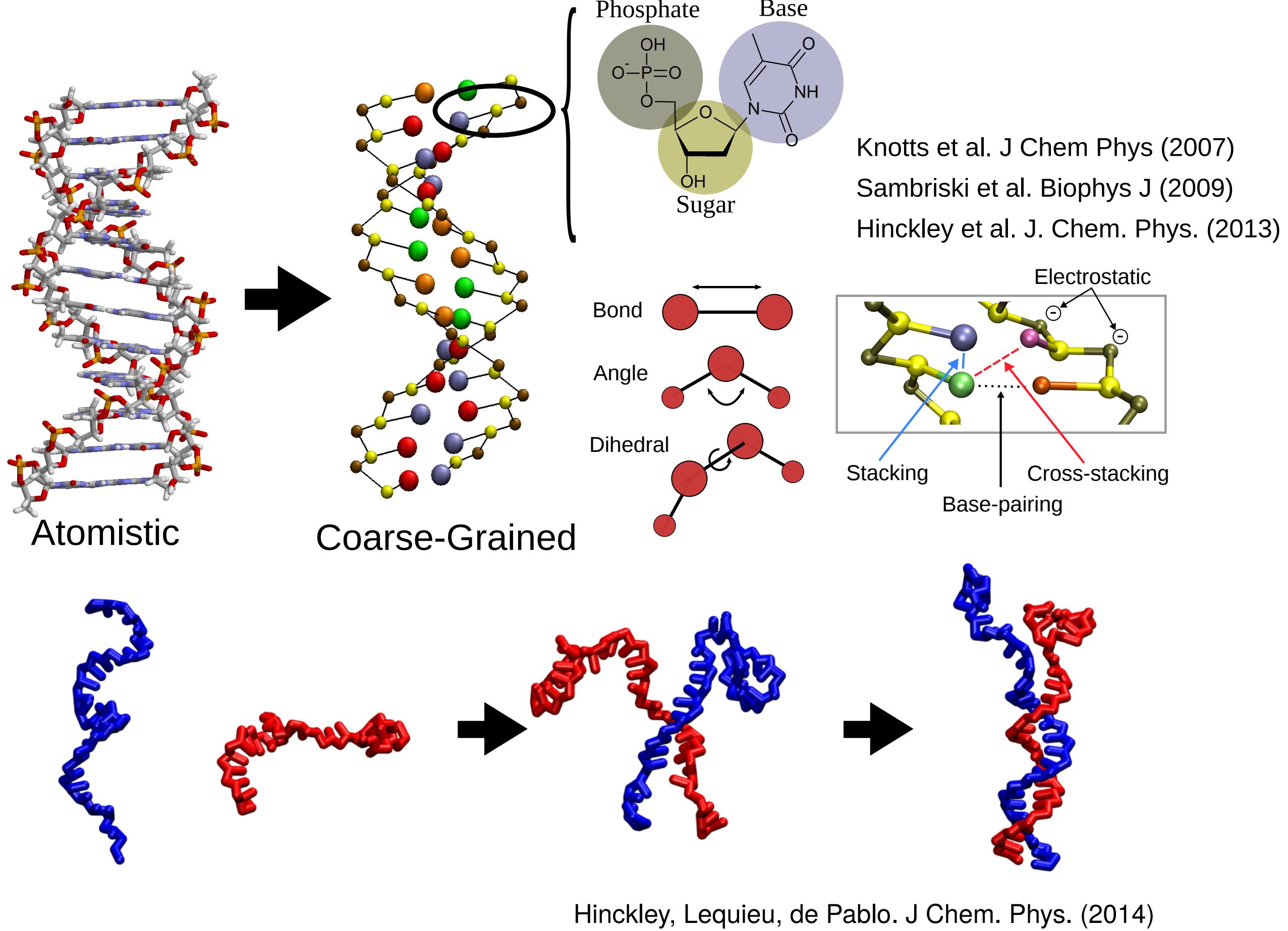
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Institute for Molecular Engineering, University of Chicago



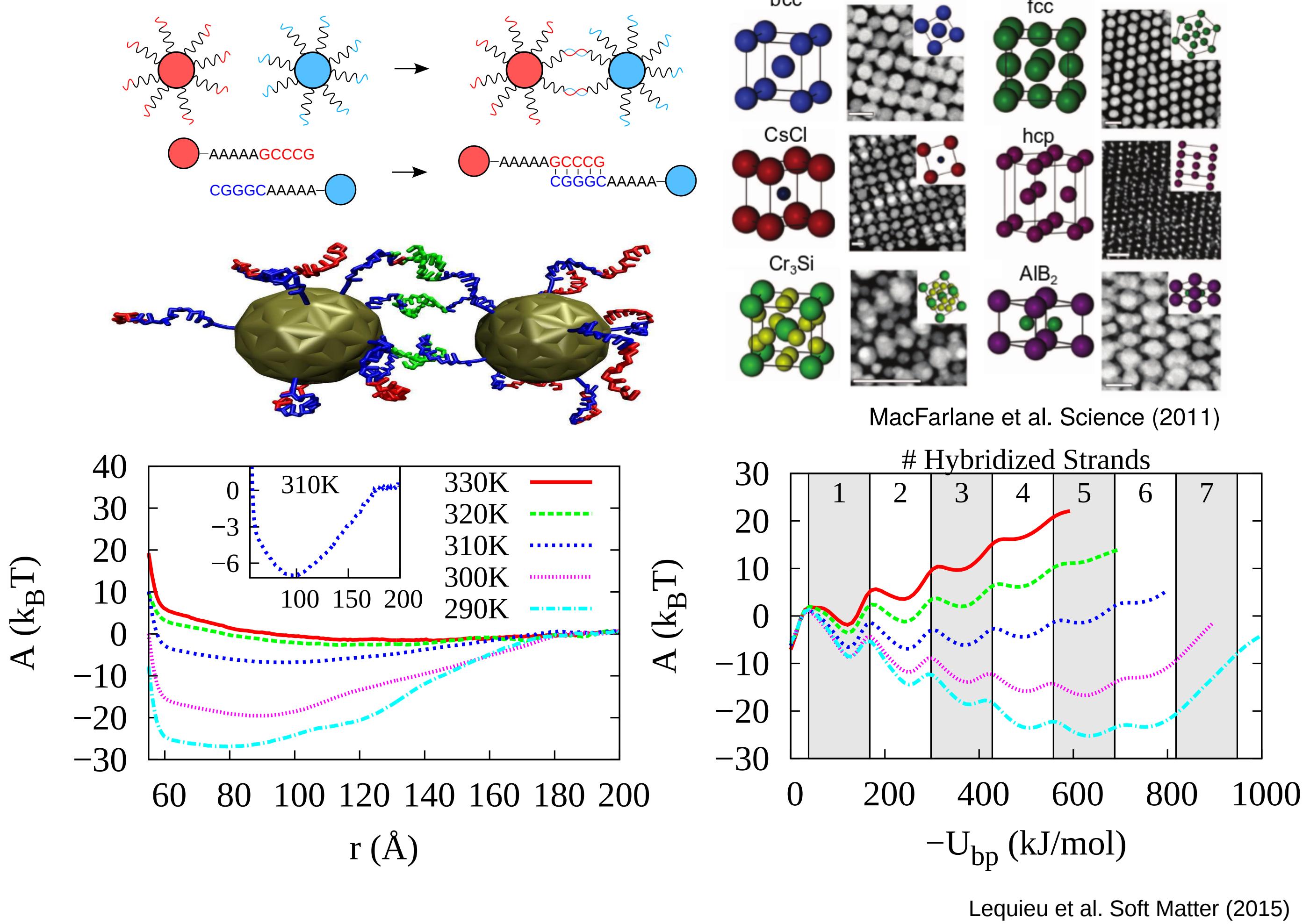
## Introduction



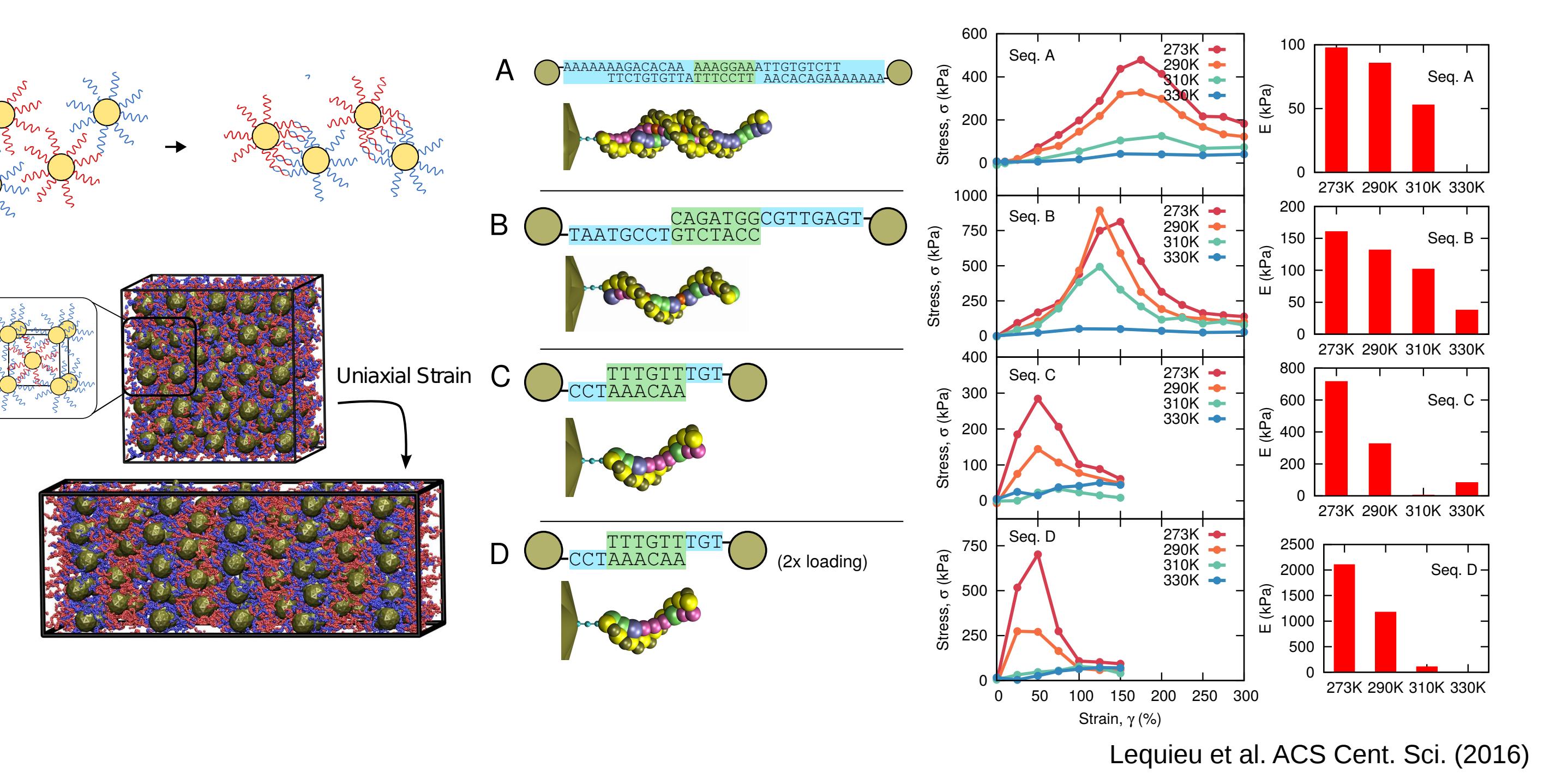
## Coarse-Grained DNA Model



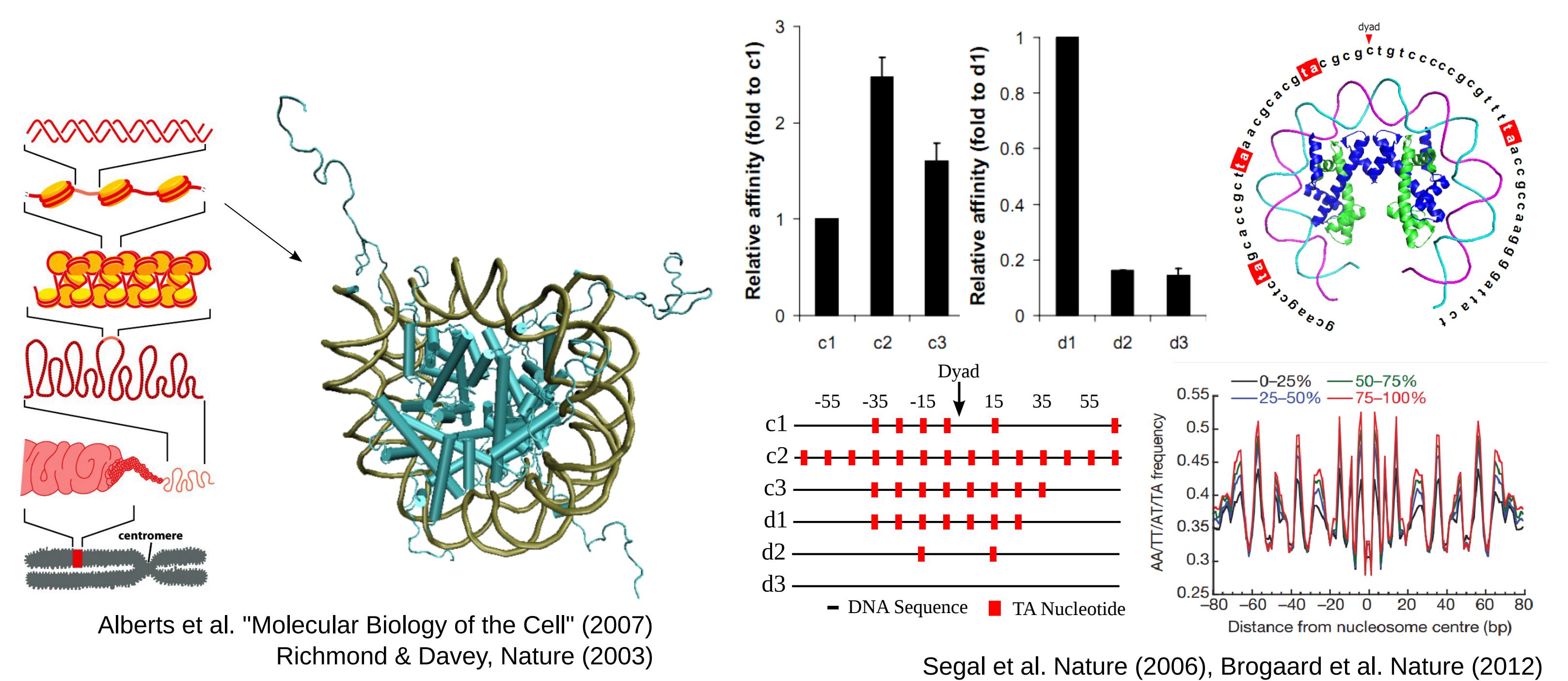
## DNA-Conjugated Nanoparticles



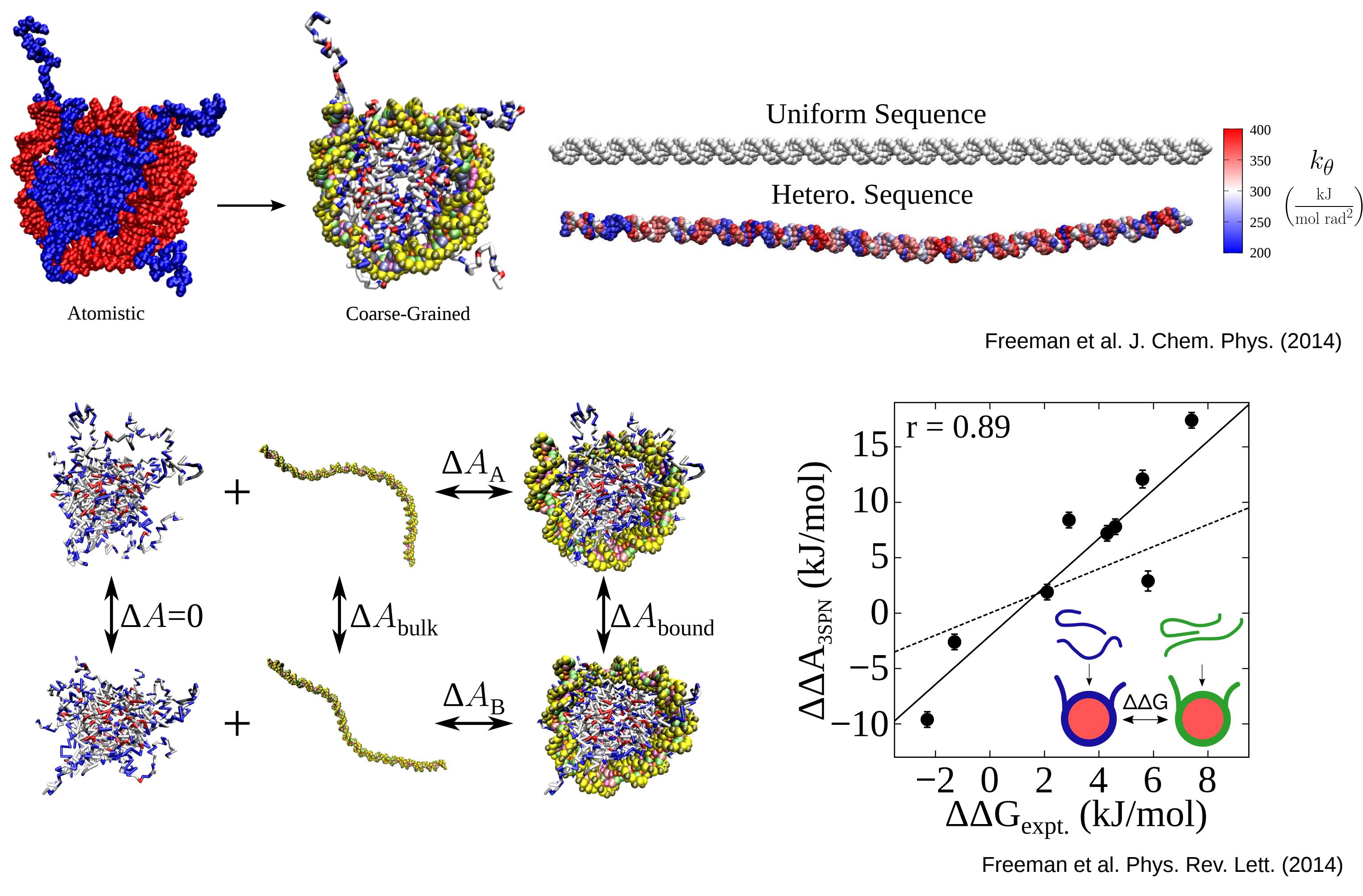
## Engineering Mechanical Properties with DNA



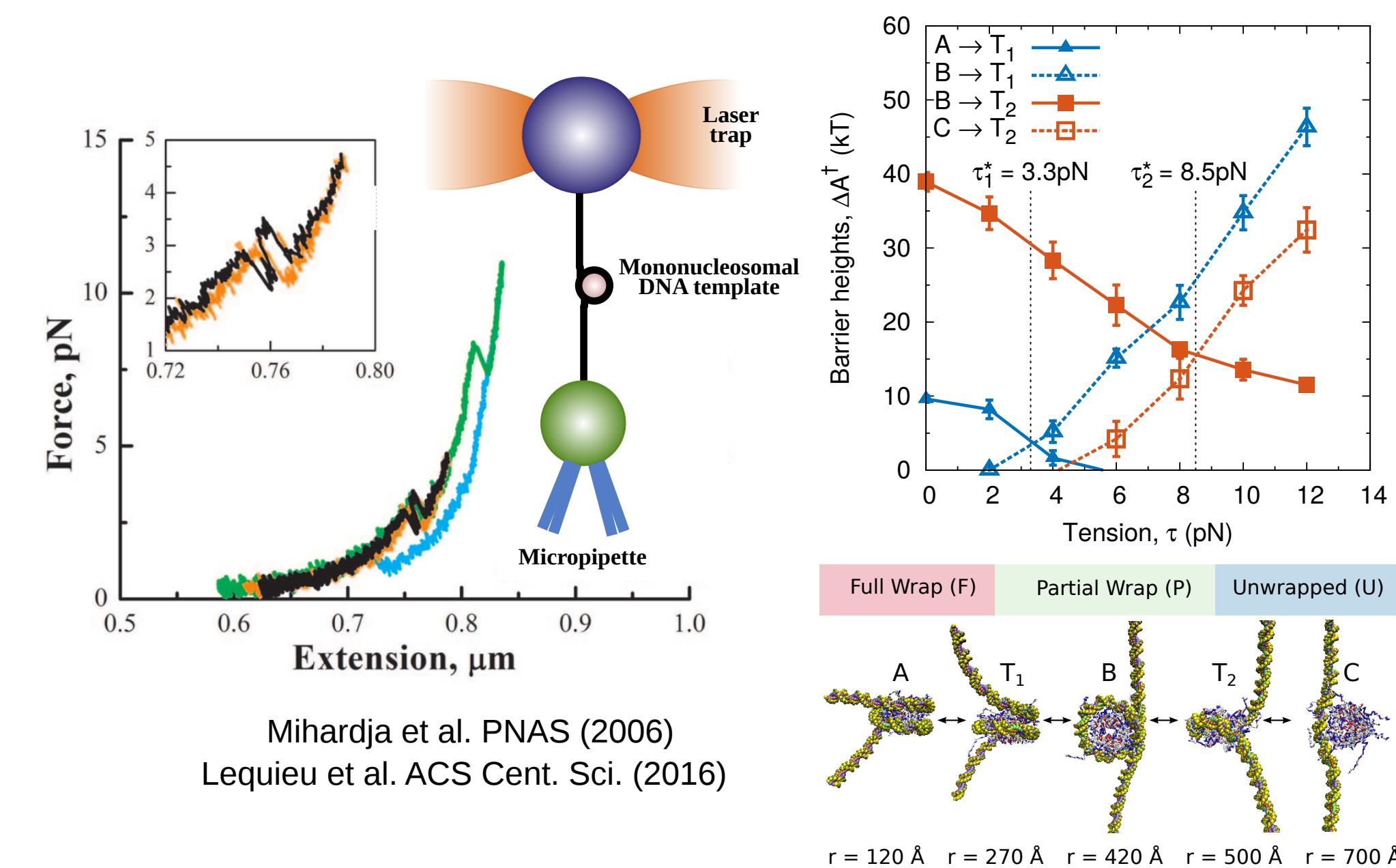
## Chromatin Compaction: taking inspiration from biology



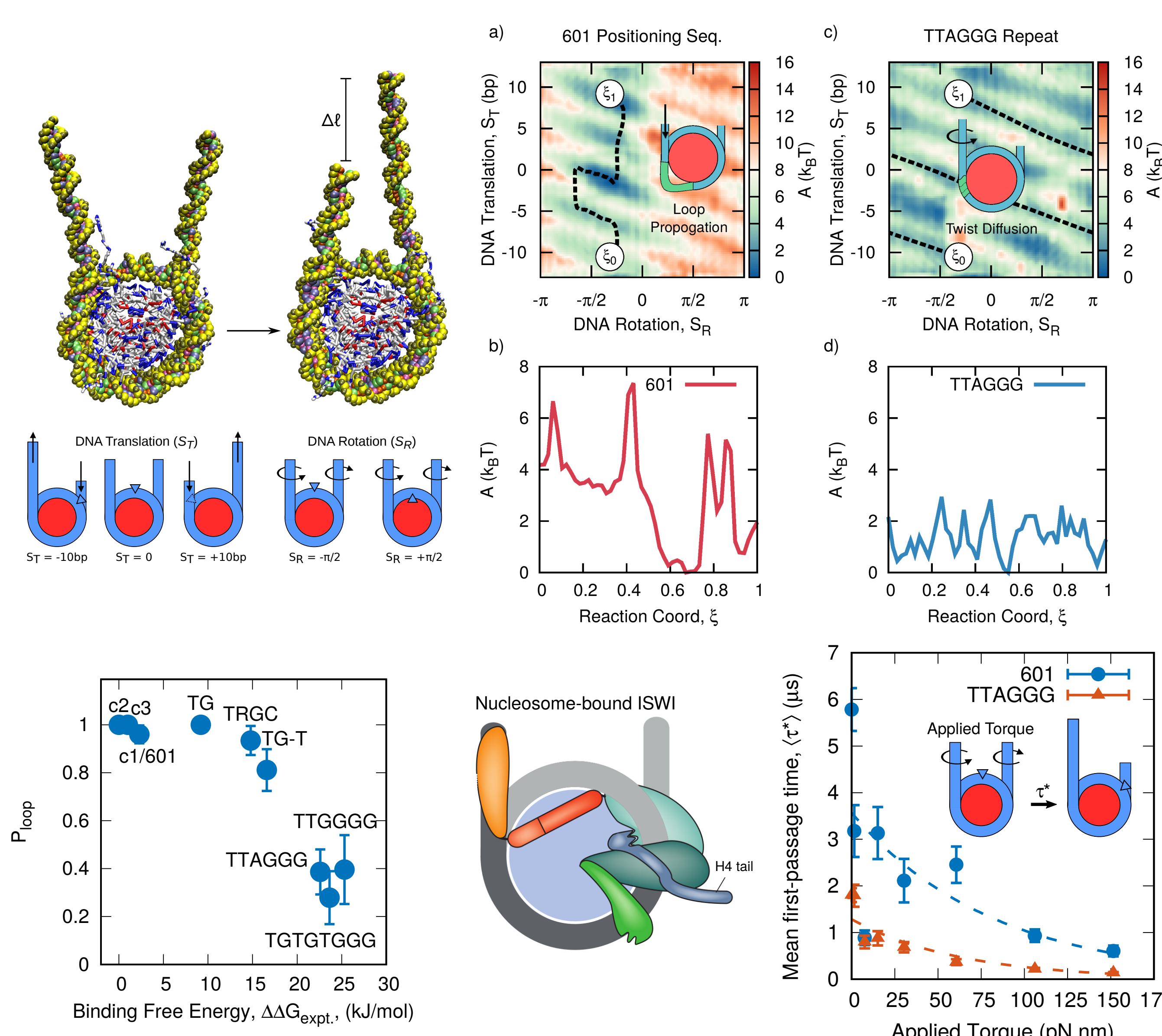
## Coarse-grained Model of the Nucleosome



## Free Energies of Nucleosome Unwrapping



## Sequence-dependent Mechanism of Nucleosome Sliding



## Meso-scale Chromatin Structure and Dynamics

