BCH622 -- Individual Projects

For the second half of the semester, each class member (or, optionally, two working together) will research and present an individual project of their choice. Topics must relate to some aspect of protein and/or nucleic acid 3D structure and to the course content, but there is a very broad range of suitable questions such as catalysis, conformational changes, evolutionary or functional comparisons, binding specificities of small or large molecules, structural motifs, protein design, folding, methods issues, control or signaling, molecular machines, ... The topic should either relate to your current or expected research, or else just be a question that especially interests you.

Half the class will give progress reports on alternating weeks, using interactive graphics (probably either KiNG or PyMol) as the major tool (a few slides for background are good, but are not the main point), preparing for a more formal presentation at the end.

For the class just after spring break, you need to identify at least one, usually more, relevant PDB structures, one or more literature references, and the most nearly relevant Wikipedia article, and be ready to give us a brief show of your project idea. You can use your own laptop, or can email us material and use our computer to show it.

For the homework exercise on making kinemages, the final section will be to make a first simple kinemage of a molecule likely to be used in your project.

• Identify the PDB code, resolution (or method, if other), and molecule name in the filename and/or the kinemage text.
• Make at least two views: an overview more informative than the default, and a closeup of some relevant aspect.
• Use at least two different types of representation and coloring: ribbon, full sticks, Calphas plus some detail, an animated change, ...

Email it to us, as part of the assignment. It will probably serve as the starting-point for what you show in class after spring break.