

RISE Talks Series

Who? Wendy Cornell, Ph.D.

What? Homology Modeling: Building 3D Models of Proteins by Analogy to Experimentally Determined Structures of Related Proteins

When? 12:00-1:00 on Wednesday, April 1

Where? Hall of Sciences, Room 326

A fundamental tenet of biology is that protein structure and function are intimately related. The amino acid chain of a given protein folds into a structure that is both stable and flexible and which positions key residues in space to facilitate binding and catalytic transformation of relevant ligands. The Protein Data Bank (www.rcsb.org) contains over 100,000 experimentally determined 3D structures of proteins, however, many other proteins remain unsolved. In many cases good 3D models can be constructed by analogy to experimentally determined structures of related proteins which have similar (homologous) amino acid sequences. In this talk I will illustrate the technique of protein homology modeling using steroid hormone binding nuclear receptors as examples and describe how the model structures provided insight into function.