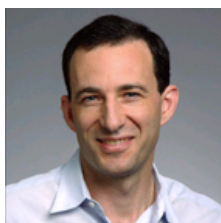


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## BRUCE TIDOR



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## BIOGRAPHY

Our research is focused on the analysis of complex biological systems at both the molecular level and the systems level. Our molecular work concentrates on the structure and properties of proteins, nucleic acids, and their complexes. Investigations probe the sources of stability and specificity that drive folding and binding events of macromolecules. Studies are aimed at dissecting the interactions responsible for the specific structure of folded proteins and the binding geometry of molecular complexes. The roles played by salt bridges, hydrogen bonds, side-chain packing, rotameric states, solvation, and the hydrophobic effect in native biomolecules are being explored, and strategies for re-casting these roles through structure-based molecular design are being developed. Our work at the systems level involves the construction and analysis of correlated patterns of gene expression and their relation to biochemical regulatory networks and signal transduction pathways in cells. Much of this work is motivated by the enormous advances in genome science and in the availability of parallel arrays of gene expression data. The methods of theoretical and computational biophysics and approaches from artificial intelligence, applied mathematics, and chemical engineering play key roles in our work.

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#### AWARDS

American Association for the Advancement of Science: Fellow (2009)

Sloan Foundation: Research Fellowship (1999)

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