Adenylate Kinase (1985-96). Several major controversies in the structure-function relationship of adenylate kinase, including a major disagreement in the substrate binding sites deduced from X-ray and NMR studies, have been resolved by the interplay of site-directed mutagenesis, structural analysis, and conventional biochemical and chemical experiments. His insistence of analyzing every mutant protein by NMR has also set a good standard in the field. The quantitative structure-function analysis has also led to the demonstration of complete reversal (by R44M mutation) and enhancement (by R97M mutation) of phosphorus stereoselectivity by single mutations, which has never been achieved for any enzyme before. A critical review published as “Perspectives in Biochemistry”, entitled “Site-Directed Mutagenesis Versus X-ray and NMR”, (publication #72) has been cited 87 times. Publications: #37, 47, 48, 52, 57, 60, 64, 67, 70, 71, 72, 74, 78, 84, 85, 87, 88, 95, 96, 102, 104, 118, 136.


