2003 IOTA SIGMA PI AGNES FAY MORGAN RESEARCH AWARD

Professor Tamar Schlick, New York University

Professor Tamar Schlick is the **2003 recipient of the Iota Sigma Pi Agnes Fay Morgan Research Award**. This annual award is given for research achievement in chemistry or biochemistry. The nominee must be a woman chemist or biochemist, not over forty years of age at the time of her nomination.

Dr. Schlick's interdisciplinary research involves the development and application of computational techniques to understand the complex three-dimensional structure and function of biological macromolecules. With her solid mathematical science background, she has developed various innovative methods and models for molecular dynamics, multivariate geometry optimization, and large DNA/protein simulations and has, in particular, made significant contributions in the area of DNA structure, from the base pair level to supercoiled DNA systems. These modeling approaches have been used in important applications to large macromolecular complexes, such as involved in transcription regulation, recombination processes in long supercoiled DNA, DNA replication, and DNA repair. Recently, her group has pioneered a new graph-theory

approach to representing RNA molecules and is developing it further in the goal of designing novel RNAs and drug-binding RNAs, and for locating RNA genes in genome databases. All these works blend sophisticated mathematical and computational tools with atomic-level insights into fundamental molecular processes, some of which are studied in collaboration with experimentalists.

Dr. Schlick currently holds appointments in the Departments of Chemistry, Mathematics, and Computer Science at New York University's Faculty of Arts of Science and the Courant Institute of Mathematical Sciences. She also holds appointments in the Biochemistry Department at New York University's School of Medicine and the Howard Hughes Medical Institute.

Dr. Schlick has earned more than 25 awards and honors and has about 100 published papers. She is a member of many editorial boards or advisory committees. Nineteen postdoctoral fellows and 27 research students have worked with Dr. Schlick. Her textbook,*Molecular Modeling: An Interdisciplinary Guide*, was published by Springer-Verlag in 2002. Dr. Schlick has given or participated in 137 invited presentations and colloquia. She has been married to Richard Solway for 18 years.