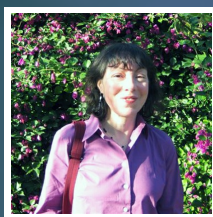


Exploiting Biological Systems: Advancing Medicine and Technology



Tamar Schlick

Professor, Chemistry, Mathematics and Computer Science

CURRENT RESEARCH

Computational and mathematical modeling helps investigate how biological molecules function

Biological molecules, like DNA, RNA, and proteins fold in a choreographed dance to perform their intended functions. Therefore, scientists seek to understand the relationship between molecular structure and function in order to understand how DNA replication and repair, chromosome folding, or epigenetic regulation work, as well as to exploit this information to alter or enhance these processes for medical and technological purposes. Dr. Tamar Schlick, of New York University, uses computational and mathematical tools to investigate how large biological molecules work by simulating their structures and dynamics involved in regulatory cellular processes. Her research may therefore lead to the ability to improve DNA repair or DNA damage associated with human cancers, alter expression of genetic traits, or develop biomolecules like RNA aptamers as sensors for medical imaging or therapeutic targets. In short, by better understanding the dynamics of biomolecular systems, Dr. Schlick may provide the information necessary to design new or modified molecular entities to treat human disease or perform desired functions.

Dr. Schlick's team has multidisciplinary expertise with rigorous mathematical foundations and a strong knowledge of biological and chemical systems. The combination of high-performance and simulation expertise stimulates the development of innovative approaches to problems of intense biological importance from a fresh perspective. Much progress and innovation has already been made within Dr. Schlick's lab and their broad interests and knowledge are leading her and her team towards new, unexpected discoveries of connections and relationships for biological systems. The extent to which Dr. Schlick's...

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AFFILIATION



New York University

EDUCATION

- B.S. in Mathematics, 1982
Wayne State University
- M.S. in Applied Mathematics, 1985 Courant Institute
New York University
- Ph.D. in Applied Mathematics, 1987
Courant Institute, New York University

AWARDS

- Research Fellow, 1993
- Associate Investigator, 1994
- Fellow, 2000
- Fellow of the American Association for the Advancement of Science, Society of Industrial and Applied Mathematics since 2004

RESEARCH AREAS

Life Science, Oncology / Cancer, Oncology / Cancer

FUNDING REQUEST

Your contributions will support Tamar Schlick as she uses computational and mathematical tools to investigate how large biological molecules work. Funding will support the necessary \$1M required primarily for personnel and in addition, computers, supplies, and travel for the group. In choosing to support her research, you will help aid the basic science that may one day lead to a more advanced understanding of biological systems and the developing of new therapeutics and engineering constructs.