



The Nature of Water

MARCH 6TH & 7TH, 2023
MLK JR. BUILDING, WEST PAULEY BALLROOM, 2ND FLOOR
2495 BANCROFT WAY, BERKELEY, CA 94720

PROFESSOR ARIEH WARSHEL

*Nobel laureate, Member, National Academy of Sciences, HonFRSC
Foreign Member, Russian Academy of Sciences, Distinguished Professor - USC
Dana and David Dornsife Chair in Chemistry and Biochemistry
Member, USC Norris Comprehensive Cancer Center*



BIOGRAPHY

In 2013, Arieh Warshel, Distinguished Professor of Chemistry and Biology at the University of Southern California's Dornsife College of Letters, Arts and Sciences, was awarded a Nobel Prize for Chemistry for his groundbreaking research in theoretical chemistry. Dr. Warshel holds the Dana and David Dornsife Chair in Chemistry at USC, where he has served on the faculty since 1976.

A member of the National Academy of Sciences, and a Foreign Member of the Russian Academy of Sciences, Dr. Warshel has pioneered computer simulations of the functions of biological molecules. He has authored over 500 peer-reviewed articles, including the book, *Computer Modeling of Chemical Reactions in Enzymes and Solutions* (Wiley Professional, 1991). He co-developed computer programs for molecular simulations which have been used extensively in different applications including the development of new pharmaceuticals.

He and his colleagues have pioneered key approaches for simulating the functions of biological molecules, including introducing molecular dynamics in biology; developing the quantum-mechanical/molecular-mechanical (QM/MM) approach; introducing simulations of enzymatic reactions; pioneering microscopic simulations of electron transfer and proton transfer in solutions and in proteins; pioneering microscopic modeling of electrostatic effects in macromolecules; and introducing simulations of protein folding. In addition, Dr. Warshel and his collaborators recently elucidated the structure-based origin of the vectorial action of molecular machines. An honorary member of the Royal Society of Chemistry (RSC), Dr. Warshel's numerous awards include the American Chemical Society's Tolman Medal, the RSC's Soft Matter and Biophysical Chemistry Award, and the Biophysical Society's Founders Award.

TALK TITLE

**The role of
water in
biological
systems**

QUOTE

*"The difference between
the "solvation" in protein
and in water is the
key to the action of
many biological
systems"*

Prof. Arieh Warshel

SPECIAL THANKS TO

