

# ARIEH WARSHEL

Nobel Laureate Chemistry 2013  
Member of the National Academy of Sciences  
Fellow of the Royal Society of Chemistry  
Distinguished Professor of Chemistry and Biochemistry  
Full member of the USC Norris Cancer Center

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## Profile

A pioneer for the development of key methods and concepts to study functional properties of biological macromolecules through microscopic computer simulation techniques. Nobel laureate for the "development of multiscale simulation methodology".

## Education

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| <b>BSc. in Chemistry;</b> graduated " <i>Summa Cum Laude</i> "<br><i>The Technion (Israel Institute of Technology)</i> , Haifa, Israel | 1962-1966 |
| <b>MSc. in Chemical Physics</b><br><i>The Weizmann Institute of Science</i> , Rehovot, Israel  | 1966-1967 |
| <b>PhD. in Chemical Physics;</b> (Advisor: <i>S. Lifson</i> )<br><i>The Weizmann Institute of Science</i> , Rehovot, Israel            | 1967-1969 |

## Professional Positions

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| <b>Research Fellow,</b><br><i>Department of Chemistry, Harvard University</i><br>Cambridge, MA, USA          | 1970-1972 |
| <b>Research Associate,</b><br><i>Weizmann Institute of Science,</i><br>Rehovot, Israel                       | 1972-1973 |
| <b>Senior Scientist,</b><br><i>Weizmann Institute of Science</i><br>Rehovot, Israel                          | 1973-1977 |
| <b>EMBO Visiting Scientist,</b><br><i>MRC Laboratory of Molecular Biology</i><br>Cambridge, UK               | 1974-1976 |
| <b>Assistant Professor</b> of Chemistry,<br><i>University of Southern California</i><br>Los Angeles, CA, USA | 1976-1978 |
| <b>Associate Professor,</b>  |           |

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|---|-------------|
| <i>Weizmann Institute of Science</i><br>Rehovot, Israel   | 1977-1978   |
| <b>Associate Professor</b> of Chemistry,<br><i>University of Southern California</i><br>Los Angeles, CA, USA                      | 1979-1984   |
| <b>Professor</b> of Chemistry,<br><i>University of Southern California</i><br>Los Angeles, CA, USA                                | 1984        |
| <b>Professor</b> of Chemistry and Biochemistry,<br><i>University of Southern California</i><br>Los Angeles, CA, USA               | 1991        |
| <b>Full Member at the USC Norris Cancer Center,</b><br><i>University of Southern California</i><br>Los Angeles, CA, USA           | 2004        |
| <b>Visiting Professor,</b><br><i>Royal Institute of Technology</i><br>Stockholm, Sweden   | Spring 2006 |
| <b>Distinguished Professor</b> of Chemistry and Biochemistry,<br><i>University of Southern California</i><br>Los Angeles, CA, USA | 2011-       |
| <b>Dana and David Dornsife</b> Chair in Chemistry,<br><i>University of Southern California</i><br>Los Angeles, CA, USA            | 2014-       |

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*Honors,  
Awards  
and  
Fellowships*

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| <b>Technion Award</b> for " <i>best 3rd year student in Chemistry</i> "              | 1965      |
| <b>BSc.</b> with <i>Summa Cum Laude</i>  | 1966      |
| <b>Mifal-Hapays Prize</b>  | 1969      |
| <b>EMBO Fellowship</b> to <i>MRC Laboratory of Molecular Biology</i>                 | 1975-1976 |
| <b>Alfred P. Sloan Fellowship</b>  | 1978-1980 |
| <b>USC Associates Award for Creativity in Research</b>                               | 1981      |
| <b>EMBO Senior Fellowship</b> to <i>the Weizmann Institute of Science</i>            | 1981-1982 |
| <b>USC Faculty Recognition Award</b>   | 1992      |
| <b>Annual Award of the International Society of Quantum Biology and Pharmacology</b> | 1993      |
| <b>Elected Fellow of the Biophysical Society</b>                                     | 2000      |
| <b>Tolman Medal</b>  | 2003      |
| <b>President's Award for Computational Biology from the ISQBP</b>                    | 2006      |

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| <b>Elected fellow of the Royal Society of Chemistry (FRSC)</b>   | 2008     |
| <b>Molecular Frontiers Symposium, Royal Academy of Science, Stockholm</b>                                  | 2008     |
| <b>Elected Member of the National Academy of Sciences of the USA</b>                                       | 2009     |
| <b>Distinguished Professor of Chemistry and Biochemistry,<br/><i>University of Southern California</i></b> | 2011     |
| <b>RSC Soft Matter and Biophysical Chemistry Award</b>   | 2012     |
| <b>Elected Fellow of the AAAS</b>  | 2012     |
| <b>The Nobel Prize in Chemistry</b>  | 2013     |
| <b>The Founders Award of the Biophysical Society</b>   | 2014     |
| <b>Elected Honorary Fellow of the Royal Society of Chemistry (HonFRSC)</b>                                 | 2014     |
| <b>The 2013 Israel Chemical Society Gold Medal</b>   | 2014     |
| <b>Doctor of Philosophy, <i>Honoris Causa</i>,<br/><i>Bar Ilan University</i></b>                          | May 2014 |
| <b>Honorary Doctor of Al-Farabi Kazakh National University</b>   | 2014     |
| <b>Honorable Professor of the Kazakh National Agrarian University</b>                                      | 2014     |
| <b>The Jubilee Medal “80 years of Al-Farabi Kazakh University”<br/><i>Almaty</i></b>                       | 2014     |

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*Keynote  
lectures*

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| <b>The Inaugural Becton Dickinson Memorial Lecture</b><br>,<br>Duke University<br><i>"How do enzymes really work"</i>   | 1991 |
| <b>The Brown and Williamson Scholar Lectures,i</b><br>University of Louisville<br><i>"How do enzymes really work"</i> and<br><i>"Computer simulations of the dynamics of biological processes"</i>    | 2002 |
| <b>The Habermann Lecture,</b><br>Marquette University<br><i>"Computer simulations of biological processes: Towards quantitative structure-function<br/>correlation in biology"</i>                    | 2003 |
| <b>3rd Chinese Theoretical and Computational Chemistry Conference,</b><br><i>Keynote speaker</i><br><i>"Computer simulation of the function of biological molecules"</i>                              | 2005 |
| <b>The 2006 Presidents Award Lecture: ISQBP President's meeting</b><br><i>"Computer simulations of the function of biological molecules: What has been<br/>accomplished and where are we going ?"</i> | 2006 |
| <b>Molecular Frontiers Symposium</b><br>Royal Swedish Academy of Science, Stockholm   | 2008 |

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| <b>The CUSO Lecture Series</b> , Switzerland<br><i>"Frontiers in Biophysical Simulations"</i>  | 2009 |
| <b>The Lifson Memorial Lecture</b><br>Weizmann Institute of Science<br><i>"Computer simulations of the functions of biological systems: What has been accomplished and where are we going ?"</i> | 2010 |
| <b>The Chevy Goldstein Distinguished Lecture in Chemistry</b><br>Cal Poly Pomona<br><i>"Electrostatic basis of biological functions"</i>   | 2010 |
| <b>Distinguished Lecture in Computational Biology</b><br>UC Irvine<br><i>"Advances in modeling of biological functions"</i>  | 2012 |
| <b>RSC Award in Soft Matter and Biophysical Chemistry Lecture Tour</b><br>Newcastle, Sheffield, Bath<br><i>"Advances in modeling of biological functions"</i>                                    | 2012 |
| <b>Opening Lecture in Modeling Interaction in Biomolecules VI</b><br>Mariánské Lázně, Czech Republic<br><i>"Multiscale Modeling of the Function of Biological Systems"</i>                       | 2013 |
| <b>Nobel Lecture</b><br>Stockholm, Sweden<br><i>"Computer Simulations of Biological Functions; From Enzymes to Molecular Machines"</i>   | 2013 |
| <b>Opening Lecture, Federation of Israeli Experimental Biology (ILANIT)</b><br>Eilat, Israel<br><i>"Multiscale Modeling of Complex Biological Systems and Processes"</i>                         | 2014 |

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| <b>Review<br/>Committees<br/>(2001 -<br/>current)</b> | <i>Special review of theoretical chemists from Sweden for a senior position</i> | 2001      |
|   | <i>Study section of theoretical chemistry in Sweden</i>                         | 2002      |
|   | <i>Search for a chair in Computational Biophysics in Denmark</i>                | 2003      |
|   | <i>NIH Special emphasis panel for a program on ikb/NF kB recognition</i>        | 2004      |
|   | <i>NIH study section for National Centers for Biocomputing</i>                  | 2004      |
|   | <i>NIH study section for National Centers for Biocomputing</i>                  | 2005      |
|   | <i>NIH study section ZRG1 BCMB-Q (90)</i>                                       | 2006      |
|   | <i>European Review Panel</i>  | 2008-2013 |
|   | <i>NAS Review committee of molecular dynamics proposals</i>                     | 2010-2012 |

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| <b>Publication<br/>Summary</b> | <i>Total number of publications: 504 ( as of 01-24-2014)</i>      |
|                                | <i>Citations without self-citations: 29985 (as of 01-24-2014)</i> |

*Arieh Warshel's Hirsch Index: 100 (as of 01-24-2014)*

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