

The Morton and Gladys Pickman professional chair in Structural Biology
Department of Structural Biology
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CURRICULUM VITAE

Personal details

Date & Place of Birth	March 22, 1972; Tel-Aviv, Israel
Citizenship	Israeli
Marital Status	Married, three children
Homepage	http://www.weizmann.ac.il/Structural_Biology/Levy/
Languages	Hebrew (mother language), English, Spanish
6/1994 – 6/1997	Military service in the Israel Defense Forces

Education

6/1997 – 6/2002	Tel-Aviv University, Tel-Aviv, Israel. Ph.D., Department of Chemical Physics, School of Chemistry Theoretical and computational biophysics, Thesis title: "Multidimensional Potential Energy Surfaces of Biological Macromolecules". Prof. Joshua Jortner and Dr. Oren Becker.
1991 – '94	Technion- Israel Institute of Technology, Haifa, Israel. B.Sc., in Chemistry (<i>summa cum laude</i>).

Teaching Experience

2008, 2009	Protein Structure Function I, WIS
2007, 2015, 2017	Protein Structure Function II, WIS
2007, 2011, 2013, 2019	Computational Molecular Biophysics, WIS
1998 – '02	Teaching special courses in General Chemistry (The School of Dental Medicine and the Pre-University project, Tel-Aviv University).

- Teaching Assistant in General and Physical Chemistry courses (The School of Medicine, Tel-Aviv University), Laboratory course (General Chemistry), Statistical Thermodynamics and in analytical chemistry courses (The School of Chemistry, Tel-Aviv University).
- 1999 – '01 Member in the center for improving teaching in Tel-Aviv university.
- 1993 – '94 Teaching chemistry (for matriculation), "Shuv" High-School, Haifa.

Honors and Awards

- 1992, 1993, President's award for high academic achievements (Technion, Israel Inst. of Technology).
- 1994 President's award for high academic achievements (Technion, Israel Inst. of Technology).
- 1994 Amos de-Shalit scholarship in Chemistry, Weizmann Institute of Science, Rehovot.
- 1994 Allen de Rothschild first prize for creative work (Technion, Israel Inst. of Technology).
- 1998 Award for excellence in teaching (School of Chemistry, Tel-Aviv university).
- 1998 The Spanish ministry of foreign affairs grant for studying Spanish in Spain.
- 1999 The Wolf foundation grant for Ph.D. students.
- 2000 Travel award from the Protein Society (Philadelphia, USA).
- 2000 – '02 The Charles Clore fellowship for outstanding graduate students in natural sciences.
- 2002 – '03 Fulbright postdoctoral fellowship.
- 2002 – '03 Rothschild postdoctoral fellowship.
- 2003 Travel award from the Protein Society (Boston, USA).
- 2007 – 2010 Horowitz scholarship of "The center for Complexity Science"
- 2010 – Editorial board of the Journal of Biomolecular Structure and Dynamics
- 2011 Scientific council prize for Chemistry, Weizmann Institute of Science
- 2012 – Editorial board of PLoS ONE
- 2012 Excellent young scientist award of the Israel Chemical Society

Research Experience

- 01/2013 Dept. of Structural Biology, Weizmann Institute of Science, Associate professor
- 09/2006 – Dept. of Structural Biology, Weizmann Institute of Science, Senior scientist
Computational and theoretical laboratory that studies the molecular mechanisms of biological self-recognition processes
- 7/2002 – '06 Center for Theoretical Biological Physics, San Diego.
A CTBP fellow, Postdoctoral researcher; Advisors: **Prof. Peter Wolynes** and **José Onuchic**.
- 2001 – '02 Department of Biochemistry, University of Zurich, Switzerland.
Graduate research assistant; Collaborator: **Prof. Amedeo Caflisch**.
- 1997 – '02 Department of Chemical Physics, School of Chemistry, Tel-Aviv University, Israel
Graduate research assistant; Advisors: **Prof. Joshua Jortner** and **Dr. Oren Becker**
- 1993 – '94 Solid-state Institute, Faculty of Chemistry, Technion, Israel.
Undergraduate research assistant; Advisors: **Prof. Arza Ron** and **Elisha Cohen**. Studied the spectroscopic properties of quantum structures of semiconductors by lasers at extremely low temperatures.

Organization activities

- The founder of the Journal Club of the Center of Theoretical Biological Physics at UCSD.
- The coordinator of the weekly joint group meeting of Onuchic and Wolynes research groups.
- The organizer of the weekly departmental seminar of the department of structural biology ('07-'11)
- Organizing summer schools for excellent undergraduate student in Chemistry (Ulpana de Shalit '07, '08, '09)
- Organizing the Departmental retreat of Structural Biology, WIS ('07, '08, '10)
- Organizing the session on Structural Biology in the 74th Israel chemical society meeting (Feb. 2009)
- Co-organizing (with Masha Niv, Daniel Harris, and Dan Major) International workshop on “Biomolecular modeling and simulation”, Safed, IL (Sept. 13-16, 2009) Main sponsor: Safed workshop program & ISF.
- Organizing an international mini-workshop on “Computational Molecular Biophysics”, Weizmann Institute, (Feb. 2010)
- Co-chair, Biophysical Society meeting, subgroup of “Intrinsically Disordered Proteins”, Baltimore, 2011
- Organizing committee of the Albany-2011- The 17th conversation, Albany, USA
- Co-organizing (with Yariv Kafri) International workshop on “DNA Search: from Biophysics to Cell Biology”, Safed, IL (Sept. 11-14, 2011) Main sponsor: Safed workshop program. Other sponsors: Goldschleger Foundation, The Helen and Milton A. Kimmelman Center for Biomolecular Structure & Assembly, and The Clore Center for Biological Physics
- Co-chairing a session platform on IDP in the 56th Annual Biophysical Society meeting, San Diego, 2012
- Co-chairing: Science & Arts: Structure, Form, and Function, Weizmann Inst., 2012 (with Eli Zelzer)
- Co-organizing an international workshop on "Computational Biology: Then and Now", Weizmann Inst. (May, 2013) (with Tamar Schlick) Sponsors: Israel Science Foundation, CSP-Weizmann program, Katzir program, The Helen and Milton A. Kimmelman Center for Biomolecular Structure & Assembly, and The Clore Center for Biological Physics
- Co-chairing a session on Intrinsically Disordered Proteins in the European Biophysics Congress, EBSA2013 (July, 2013), Lisbon, Portugal
- Organizing a symposium commemorating Shneior Lifson's 100th Birthday, Weizmann Inst. (May, 2014)
- Organizing committee of 2020, Rio de Janeiro, Brazil

Other academic activities

- CASP8- Protein structure prediction- Assessor of the template free modeling, 2008
- Acting as an outside expert in the Thesis committee of Fernanda Sirota (Univ. Libre de Bruxelles, Nov. 2008), Nir London (Hebrew Univ.)
- Judge in the IDP poster competition of the Biophysical Society, Feb. 2011
- Discussion leader in "Protein dynamics" session in Biopolymers Gordon Conference, June 2012

- Editing a special volume of the Israel Journal of Chemistry on the 2013 Nobel Prize in Chemistry
- Guest editor of PLoS Computational Biology

Research grants

1. GIF young investigator, (2006): “Biomolecular self-organization in the cell: mechanisms, kinetics, and specificities”
2. Clore Center for Biophysics, (2008): “Chirobiogenesis of Homochiral Peptides in Water: A joint theoretical and experimental study” (with Meir Lahav)
3. ISF, (2009-2011): “Cross-Talks in Folding of Multi-Domain Proteins: Implications for Glycosylation and Ubiquitination”
4. Minerva (2009-2011): “Mechanisms of protein-DNA assembly: Toward deciphering the molecular principles of fast recognition”
5. Mizutani foundation for Glycoscience, (2009): “The effect of glycosylation on the biophysical properties of proteins”
6. TeraGrid allocation time (6M cpu hours) (2010): "Using High Performance Computing to Reveal the Functional" together with P. Whitford and A. Yonath
7. BSF (2011): "Optimizing DNA search efficiency" (2011-2015), Together with Prof. Junji Iwahara, \$200,000
8. German-Israeli Helmholtz Research School in Cancer Biology, joint PhD student (2012), with Prof. Jorg Langowski (German Cancer Research Center (DKFZ) in Heidelberg), in the project "*Exploring the interplay between the linkage of polyubiquitin chains and their structure*"
9. ISF-UGC (2014-2017): “Designing proteins with enhanced stability by modulating the entropy in the folded state”
10. Minerva (2014-2017): “Protein searches for target sites on genomic DNA: Correlating molecular properties, cellular abundance, and function”
11. Weizmann-Texas (2017): “Exploring a novel entropy rheostat regulatory mechanism in DNA binding by Hox proteins”
12. ISF (2017-2019): “Sliding mechanisms in Biomolecules”
13. ISF (2019-2022): “Structures, dynamics, and modifications of phase-separated proteins *in vitro* and in cells”

Invited lectures

- The third international conference on molecular structural biology, “Mapping the energy landscape of the prion protein”. Vienna, Austria, 1999
- The fifth international conference on molecular structural biology, “Binding mechanisms of flexible proteins: traditional scenarios and beyond”. Vienna, Austria, 2003
- Materials Research ITR Computational Workshop, “Minimalist models and connections with large simulations for protein assembly and DNA recognition”. UIUC, IL, USA, 2004
- Chemical biophysics symposium, “Folding for binding or vice versa: New lessons from minimalist models”. Toronto, Canada, 2005
- Gordon conference on Protein Folding, “Folding for binding or vice versa: New lessons from minimalist models”. Ventura, CA, USA, 2006
- National Society of Black and Hispanic Physicists, “Folding for binding or vice”. San Jose, CA, USA, 2006

versa: New lessons from minimalist models”

- Protein Folding and misfolding, CECAM Lyon, France, 2006
- The 72nd meeting of the Israel chemical society Tel Aviv, Israel, 2007
- Biological diffusion and Brownian dynamics brainstorm Heidelberg, Germany, 2007
- Israel Bioinformatics symposium Tel Aviv, 2008
- International workshop on The biophysics of Chromatin Heidelberg, Germany, 2009
- Gordon conference “Biomolecular dynamics and interactions” Galveston, TX, USA, 2010
- Biophysical society (54th annual meeting) San Francisco, CA, 2010
- Solvation and ionic effects in biomolecular recognition: Theory to Experiments Armenia, 2010
- Characterizing Landscapes: From Biomolecules to Cellular Networks Telluride, CO, USA, 2010
- 6th congress of the Federation of the Israel Societies for Exp. Biology Eilat, Israel, 2011
- European Protein Society meeting Stockholm, Sweden, 2011
- Albany 2011- the 17th conversation Albany, USA, 2011
- The 7th International Conference on Biological Physics San Diego, USA, 2011
- Pacific Biocomputing Symposium Hawaii, Big Island, 2012
- Gordon conference on Protein Folding Ventura, USA, 2012
- Protein Degradation Pathways in Health and Diseases (PPDUP) San Diego, USA, 2012
- Protein stabilization, 9th International Conference Lisbon, Portugal, 2012
- Mini-symposium on Computational Biology Lund, Sweden, 2012
- Protein Folding: Moving beyond simple model systems Weizmann Institute, 2012
- International workshop on Nucleosome positioning, chromatin structure and evolution Haifa Univ, 2012
- Gordon conference on Biopolymers Newport, RI, USA, 2012
- Characterizing Landscapes: From Biomolecules to Cellular Networks Telluride, CO, USA, 2012
- Gordon conference on Intrinsically Disordered Proteins Vermont, USA, 2012
- American Chemical Society 244th conference: In "Simulations of Crowding, Confinement, and Cellular Environments" & "Modeling of Biomolecular Systems at Multi-resolution" Philadelphia, USA, 2012
- CECAM Workshop: Exploring Protein Interactions through Theory and Experiments Lausanne, France, 2012
- Israel Chemical Society (in Biophysical Chemistry, and Educational Chemistry) Tel Aviv, Israel, 2013
- WIS/SIB workshop Biel, Switzerland, 2013
- Telluride research conference on macromolecular crowding Telluride, Co, USA, 2013
- EMBO workshop on "Glycoproteins: from structure to disease" Mallorca, Spain, 2013
- Physical Principles and Underlying Mechanisms of Biomolecules and Materials Beijing, China, 2013
- The 2013 Symposium of the Lise Meitner-Minerva Center Weizmann Institute, 2013
- American Chemical Society 244th conference: In " Protein Motion Along Nucleic Acid Polymers" Indianapolis, USA, 2013
- DNA @60 conference Technion, Israel, 2013
- CECAM workshop: Intrinsically Disordered Proteins: Connecting Computation, Zurich, Switzerland, 2013

Physics and Biology

- Workshop on modeling biomolecular systems in cellular environment
Kyoto Univ, Japan, 2013
- On the 2013 Nobel prize in Chemistry
Open University, Israel, 2013
- Annual meeting of the Brazilian Society of Biochemistry
Foz Do Iguacu, Brazil, 2014
- Symposium on current topics in molecular biophysics
Sao Paulo, Brazil, 2014
- The 8th IUPAP international conference on biological physics
Beijing, China, 2014
- CECAM meeting: Modeling cellular life: From single molecules to cellular function
Lausanne, Switzerland, 2014
- Modeling of biomolecular systems interactions, dynamics, and allostery
Istanbul, Turkey, 2014
- Second International Symposium on Protein Folding and Dynamics
Bangalore, India, 2014
- American Chemical Society 249th conference: In "Carbohydrate chemistry"
Denver, USA, 2015
- Golm meeting
Potsdam, Germany, 2015
- York, repeat proteins
York, England, 2015
- Albany 2011- the 19th conversation
New York, USA, 2015
- Biomolecules and Nanostructures
Krakow, Poland, 2015
- Current challenges in chemical dynamics
Neve Ilan, Israel, 2015
- Stochasticity of cells and genes
Tel Aviv, Israel, 2015
- Experimental and Bioinformatic Tools for Protein 3D Structure Determination and Analysis
Varadero, Cuba, 2015
- Michigan-Weizmann-Technion meeting
Ann-Arbor, MI, USA, 2016
- 3DSIG, ISMB conference
Orlando, FL, USA, 2016
- Coarse-grained modeling
Telluride, Co, USA, 2016
- GenoPro 2017, Inveris University
Bareilly, India, 2017
- CECAM meeting: Disordered proteins
Paris, France, 2017
- Brazilian biophysical society (keynote lecture)
Santos, Brazil, 2017
- Protein-DNA Interactions: from Biophysics to Cancer Biology
Houston, USA, 2017
- Mexico BIRS/CMO Meeting
Oaxaca, Mexico, 2018
- TIFR-Weizmann workshop
Mumbai, India, 2019
- Multiscale simulations, JNU
Delhi, India, 2019

Seminars

- The Bioinformatics and genome research open club, Weizmann Institute of science.
Rehovot, Israel, 1998
- The 8th Israeli neuroscience annual meeting, (Neurosci. Lett., S27, Suppl. 54, 1999).
Eilat, Israel, 1999
- The 9th Israeli neuroscience annual meeting.
Eilat, Israel, 2000
- Dept. of medicinal chemistry, School of pharmacy, Hebrew Univ., (Hosted by Prof. Amiram Glodblum).
Jerusalem, Israel, 2000

- Dept. of Chemical Physics, School of Chemistry, Tel-Aviv Univ. Tel-Aviv, Israel, 2001
- Biochemistry Institute, Zurich Univ., (Hosted by Prof. Amedeo Caflisch) Zurich, Switzerland, 2001
- Depts. Of Physics and Chemistry, Univ. of San-Diego, (Hosted by Prof. José Onuchic & Prof. Peter Wolynes). La Jolla, USA, 2001
- Dept. of Chemistry, Ben-Gurion Univ. Beer-Sheva, Israel, 2001
- Faculty of Chemistry, Technion- Israel Inst. of Technology. Haifa, Israel, 2001
- Fritz Haber center, Faculty of Chemistry, The Hebrew Univ. Jerusalem, Israel, 2001.
- Dept. of Chemical Physics, Faculty of Chemistry, Weizmann Institute Rehovot, Israel, 2002.
- National Institute of Cancer, SAIC, (Hosted by Prof. Ruth Nussinov). Frederick, MD, USA, 2003
- Dept. of Chemical Physics, Tel-Aviv Univ. Tel-Aviv, Israel, 2003.
- Dept. of Biochemistry, Tel-Aviv Univ., (Hosted by Dr. Nir Ben-Tal). Tel-Aviv, Israel, 2003
- Biochemistry Institute, Zurich Univ., (Hosted by Prof. Amedeo Caflisch). Zurich, Switzerland, 2003
- Dept. of Molecular Biology, Scripps Institute, (Hosted by Prof. Charles Brooks III). La Jolla, USA, 2003
- Center of Theoretical Biological Physics, UCSD. La Jolla, USA, 2004
- Faculty of Chemistry, Caltech, (Hosted by Prof. Harry Gray). Pasadena, USA, 2004
- Faculty of Chemistry, Bar-Ilan University Israel, 2007
- Faculty of Computer Science, Tel Aviv University Israel, 2007
- Faculty of Biology, Bar Ilan University Israel, 2009
- Dept. of Biochemistry & Mol. Biol., The Univ. of Texas Medical Branch Texas, USA, 2010
- Dept. of Chemistry, Rice Univ. Texas, USA, 2010
- Dept. of Physics, Houston Univ. Texas, USA, 2010
- Dept. of Chemistry, UC Santa Barbara Santa Barbara, USA, 2010
- Dept. of Molecular Biology, Scripps research institute La Jolla, USA, 2010
- Dept. of Pharmacology, UC Davis Davis, USA, 2010
- Dept. of Molecular Biology, Univ. of Oregon Eugene, USA, 2010
- Institute Pasteur Paris, France, 2010
- Univ. Paris 6, Laboratoire de Physique theoreique la matiere condense Paris, France, 2010
- Univ de Lyon, Institut de Biologie et Chimie des Protéine Lyon, France, 2010
- Fritz Haber Institute, Hebrew Univ. Jerusalem, Israel, 2011
- Dept. of Chemistry, Univ. of Pennsylvania Philadelphia, USA, 2011
- Dept. of Chemistry, New York Univ. New York, USA, 2011
- Dept. of Chemistry and Biochemistry, Univ. of Maryland College Park, USA, 2011
- Dept. of Cell Biology, Harvard Medical School Boston, USA, 2011
- Dept. of Chemical Biology, Hebrew Univ. Jerusalem, Israel, 2011
- Dept. of Chemistry, Stony Brook Univ. Stony Brook, USA, 2011
- Dept. of Structural and Chemical Biology, Mount Sinai New York, USA, 2011
- Dept. of Biochemistry, Univ. of Zurich Zurich, Switzerland 2011
- Dept. of Biophysics, EPFL EPFL, Switzerland, 2011
- Dept. of Structural Biology, St. Jude Research Hospital Memphis, TN, USA, 2012

- Dept. of Chemistry and Biochemistry, Harvard Univ. Boston, USA, 2012
- Dept. of Molecular Biology, UCLA Los Angeles, USA, 2012
- Dept. of Biology, Caltech Pasadena, USA, 2012
- Inst. for Research in Biomedicine, Univ. of Barcelona Barcelona, Spain, 2012
- Dept. of Biophysics, Univ. of Copenhagen Copenhagen, Denmark, 2012
- Dept. of Physiology and Biophysics, Cornell Medical School New York, USA, 2012
- Dept. of Biochemistry & Mol. Biol., The Univ. of Texas Medical Branch Galveston, Texas, USA, 2012
- Faculty of Life Sciences, Ben Gurion Univ Beer Sheva, Israel, 2012
- Dept. of Chemical Physics, Tel-Aviv Univ. Tel Aviv, Israel, 2013
- Faculty of Medicine, Ben-Gurion Univ Beer-Sheva, Israel, 2014
- Fritz Haber center, Faculty of Chemistry, Hebrew Univ. Jerusalem, Israel, 2014
- Dept. of Physical Chemistry, Ben-Gurion Univ. Beer Sheva, Israel, 2014
- TIFR Mumbai, India, 2014
- Dept. of Biochemistry, IIT Mumbai Mumbai, 2014
- Hemda Tel-Aviv, Israel, 2015
- Popular lecture “Chemistry today”, Weizmann Inst. Rehovot, Israel, 2015
- Davidson Institute Rehovot, Israel, 2015
- Dept. of Chemistry, Univ of Texas, Austin Texas, USA, 2016
- Dept. of Computer Science, IIT Kharagpur Kharagpur, India, 2016
- Dept. of Bioinformatics, Central University of Himachal Pradesh India, 2016
- Center for Computational Biology, Jawaharlal Nehru University Delhi, India, 2016
- Baylor college Texas, USA, 2016
- Dept. of Chemistry, Georgia State University Atlanta, USA, 2016
- Dept. of Chemistry, Uppsala Univ Uppsala, Sweden, 2017
- National center for biological sciences Bangalore, India, 2017
- Physics colloquium, Sao Paulo University Sao Paulo, Brazil, 2017
- Dept. of Biochemistry, Texas A&M Texas, USA, 2017
- Dept. of Bioscience, Jamia Milia Univ Delhi, India, 2019

Workshops

- Conformational diseases Dead sea, IL, 1998
- Summer school for computational biology Sicily, Italy, 1999
- Protein misfolding and diseases London, England, 2000
- Grand vision of cluster cartography Telluride, CO, USA, 2001
- Frontiers in Bioinformatics Irvine, CA, USA, 2004
- Biophysical society 49th annual meeting Long beach, USA, 2005
- 229th ACS meeting San Diego, USA, 2005
- Multiscale Modeling in Soft Matter and Bio-Physics Los Angeles, USA, 2005
- Physics of Biological Matter Safed, IL, 2007
- CASP8 Madrid, 2008
- Gordon conference on Protein Folding Ventura, CA, 2010

- Gordon conference on Biomolecular Dynamics Galveston, TX, 2010
- Gordon research conference on Biopolymers, Discussion leader Newport, RI, 2012
- Unique properties of Water Weizmann Institute, 2012
- Gordon research conference on Protein Folding Galveston, TX, USA, 2016
- Latin America workshop in Biophysics Sao Paulo, Brazil, 2017