CURRICULUM VITAE January 2013

Edward N. Trifonov

Born March 31, 1937 (Leningrad, USSR).

Education:

1961	M.Sc. Moscow Physico-Technical Institute. Biophysics.
1970	Ph.D. Moscow Physico-Technical Institute. Molecular Biophysics.

Working experience:

1961-1964	Research, Moscow Physico-Technical Institute.
1965-1975	Research, Biological Department, I. Kurchatov Institute of Atomic Energy, Moscow.
1976-1991	Associate Professor, Dept. of Polymer Research, and
1992-2002	Professor, Department of Structural Biology, The Weizmann Institute of Science, Rehovot, Israel.
since 2003	Professor Emeritus, The Weizmann Institute of Science.
1992-1995	Head, Center for Genome Structure and Evolution, Institute of Molecular Medical Sciences, Palo Alto, USA (visiting position).
since 2002	Head, Genome Diversity Center, Institute of Evolution, University of Haifa, Haifa, Israel
2007-2012	Professor, Masaryk University, Brno, Czech Republic

Teaching and invited series of lectures:

1970-1975	Moscow Physico-Technical Institute.
1981-2000	The Feinberg Graduate School (The Weizmann Institute of Science).
1987	University of North Carolina, Chapel Hill, USA
1988	University of Wuerzburg, FRG
1988-1992	International Summer School for talented high school students (Long Island, USA).
1989	Research Computer Center of Academy, Pushchino, USSR
1990	Yale University, New Haven, USA
1990	L. Pauling Institute of Science and Medicine, Palo Alto, USA
1992, 95, 97	Bar-Ilan University (Tel-Aviv, Israel).
1993, 95	The Fromm Institute of Lifelong Learning, University of San Francisco (San Francisco, USA).
1999, 2007	Masaryk University and Inst. of Biophysics (Brno, Czech Republic).
1999	Lomonosov Moscow State University.
2000	University Paris Sud, Orsay
2000	Murdoch University, Australia
since 2002	University of Haifa
2005, 2009	University of Rome "Sapienza"
since 2007	Masaryk University, Brno, Czech Republic

Courses:

1970-1975	Physical chemistry of proteins and nucleic acids, for undergraduate students.
1974	Grammar of genetic language, for undergraduate and graduate students.
1981	Physical chemistry and molecular biology of nucleic acids, for graduate students.

1984	New chapters in nucleic acids research, for graduate students.
1988-1992	Molecular biology of the gene, for talented high school students.
1990	Molecular and sequence structure of nucleic acids, for graduate students.
1992, 96, 97	Molecular and sequence structure of genomes, for graduate students.
1993, 95	Talking to DNA, for retirees.
1995	Molecular evolution, for graduate students.
since 1998	Genetic codes, for graduate students.
since 2002	Early molecular evolution, for graduate students

Instruction:

since 1965	Supervisor of 19 master, 25 doctoral theses and 7 postdoctoral fellows in Molecular Biophysics and Bioinformatics

Invited lectures at scientific meetings : over 150

Editorial and advisory boards:

1970-1975	Editor, Microbiology and Biochemistry Sections of Russian "Biological Abstracts".
1988-1995	Editor, Journal of Biomolecular Structure and Dynamics.
1993-2004	Editorial board and Associate Editor, Journal of Molecular Evolution.
1994-1999	Academic Council of the College of Judea and Samaria (Kedumim-Ariel, Israel).
since 1997	Editorial Board of "Gene Therapy and Molec. Biology".
since 2006	Editorial Board of OMICS, J. of Integrative Biology
2010	Editorial Advisory Board, J. Biomol. Str. and Dynamics
2011	Editorial Board of Genomics,Proteomics and Bioinformatics

Membership in learned societies:

1970	USSR Biochemical Society
1987	The Israel National Committee for CODATA
1993	International Society of Molecular Evolution
1997	International Society of Gene Therapy and Molecular Biology.

Honors:

1969	I. Kurchatov Prize for Young Scientists
1971	I. Kurchatov Prize for Basic Research
1982-2002	J. Kleeman Professor of Molecular Biophysics
1999	Adjunct Professor of Lomonosov Moscow State University
2003	The Stanislaw Ulam Memorial Lecture at the 2003 RECOMB meeting, Berlin
2004	Mendel Lecture, Brno, Abbey of St. Thomas, October 7
2007	INNOLEC Lectureship Award, Masaryk University, Brno
2008	Distinguished Membership Award of Israeli Society for Bioinformatics and Computational Biology (ISBCB)
2009	Distinguished Citizen Fellow, University of Indiana, South Bend, IN

Funding:

1965-1975 – Governmental support (USSR)

2002-2005 - ISF (Israel Science Foundation) grant 710/02-19.0 to E. N. Trifonov and V. M. Kirzhner, Sept. 2002 - Sept. 2005. Proteomic Code - a Basis for Struct. and Funct. Classification of Proteins

2002-2006 - EU (European Union) grant QLG2-CT-2002-01298 to six European laboratories and Genome Diversity Center (E. N. Trifonov), 2002-2006. Protein Folding Fragments
2004-2008 - BSF (US-Israel Binational Science Foundation) grant No. 2003291 to D. Barash, A. Bolshoy and E. N. Trifonov, Sept. 2004 - Oct. 2008. Comput. and Experim. Studies of Riboswitch Domains
2006-2009 - CCS (Center of Complexity Science) GR2006-018 Jan. 1 06 – Aug. 8 09. Application of the percolation theory for analysis of protein sequence module space and 3D structure predictions
2009-2012 - ISF (Israel Science Foundation) grant 222/09, Oct. 2009 – Nov. 2012. Derivation of sequence-directed nucleosome positioning patterns.
2010-2013 - SoMoPro (South Moravian Program) grant (with J. Fajkus, Masaryk University), Apr. 2010 – Apr. 2013. Plant chromatin. Structure and function at single-base resolution.

Publications: over 200 titles.

Rate (by decades):
1972-1981 20 papers; 1982-1991 42 papers; 1992-2001 63 papers; 2002-2011 82 papers

Representative sample: (yearly citations 6 to 17)

Trifonov, E. N., Sussman, J. L., The pitch of chromatin DNA is reflected in its nucleotide sequence. Proc. Natl. Acad. Sci. USA 77, 3816-3820 (1980)
Brendel, V., Trifonov, E. N., A computer algorithm for testing potential prokaryotic terminators. Nucl. Acids Res. 12, 4411-4427 (1984)
Trifonov, E. N., Curved DNA. CRC Crit. Rev. Biochemistry 19, 89-106 (1985)
Bucher, P., Trifonov, E. N., Compilation and analysis of eukaryotic Pol II promoter sequences. Nucl. Acids Res. 14, 10009-10026 (1986)
Ulanovsky, L., Bodner, M., Trifonov, E. N., Choder, M., Curved DNA: design, synthesis and circularization. Proc. Natl. Acad. Sci. USA 83, 862-866 (1986)
Ulanovsky, L. E., Trifonov, E. N., Estimation of wedge components in curved DNA. Nature 326, 720-722 (1987)
Trifonov, E. N., Translation framing code and frame-monitoring mechanism as suggested by the analysis of mRNA and 16S rRNA nucleotide sequences. J. Molec. Biol. 194, 643-652 (1987)
Bolshoy, A., McNamara, P., Harrington, R. E., Trifonov, E. N., Curved DNA without AA: experimental estimation of all 16 wedge angles. Proc. Natl. Acad. Sci. USA 88, 2312-2316 (1991)
Shpigelman, E. S., Trifonov, E. N., Bolshoy, A., CURVATURE: software for the analysis of curved DNA. CABIOS 9, 435-440 (1993)
Ioshikhes, I., Bolshoy, A., Derenshteyn, K., Borodovsky, M., Trifonov, E. N., Nucleosome DNA sequence pattern revealed by multiple alignment of experimentally mapped sequences. J. Molec. Biol. 262, 129-139 (1996)
Herzel, H., Weiss, O., Trifonov, E. N., 10-11 bp periodicities in complete genomes reflect protein structure and DNA folding. Bioinformatics 15, 187-193 (1999)
Berezovsky, I. N., Grosberg, A. Y., Trifonov, E. N., Closed loops of nearly standard size: common basic element of protein structure. FEBS Letters 466, 283-286 (2000)
Trifonov, E. N., Consensus temporal order of amino acids and evolution of the triplet code. Gene 261, 139-151 (2000)
Trifonov, E. N. The triplet code from first principles. J Biomolec Str Dyn 22, 1-11 (2004)
Gabdank, I., Barash, D., Trifonov, E. N., Nucleosome DNA bendability matrix (C. elegans). J. Biomol. Str. Dyn. 26, 403-412 (2009)
Trifonov, E. N. Cracking the chromatin code: precise rule of nucleosome positioning. Physics of Life Reviews 8, 39-50 (2011)

Trifonov, E. N. Vocabulary of definitions of life suggests a definition, J Biomolec Str Dyn 29, 259-266 (2011)
Rapoport , A. E., Frenkel, Z. M., Trifonov, E. N. Nucleosome positioning pattern derived from oligonucleotide compositions of genomic sequences. J Biomol Struct Dyn 28, 567-574 (2011)