

*Extended form
August 25th, 2003*

Curriculum vitae

Last Name: MOVILEANU

First Name: LIVIU

Date and place of birth: August 11th, 1965; Babadag, Tulcea County, Romania.

Marital status: Married with Iulia Movileanu since 1990. I have a daughter, Andrada-Lucia Movileanu, born on July 28th, 1993

Present home address: 4302 College Main #107
Bryan, Texas 77801
USA
Phone: +979-260-1192

Present office address: Dr. Liviu Movileanu,
Department of Medical Biochemistry & Genetics
The Texas A&M University System Health Science Center
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College Station, Texas 77843-1114
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Education:

1994-1997	Ph.D. in Biophysics University of Bucharest, Bucharest, Romania.
1989-1990	M.S.in Polymer Physics University of Bucharest, Bucharest, Romania.
1985-1989	B.S in Physics University of Bucharest, Bucharest, Romania.

High school: 1980-1984 High school of mathematics and physics
"Spiru C. Haret" Tulcea, Romania

Languages: English, Romanian. Some knowledge of French.

Academic Positions:

1. September 1990 - January 1991, Junior Researcher, Institute of Physics and Nuclear Engineering, Institute of Atomic Physics, Bucharest-Magurele, Romania.
2. February 1991 - September 1993 and August 1994 - September 1997, Assistant Professor, University of Bucharest, Faculty of Biology, Biophysical Laboratory, Bucharest, Romania.
3. September 1993 - July 1994, Graduate Research Fellow, Institute for Neurobiology, University of Amsterdam, Faculty of Biology, Department of Experimental Zoology, Amsterdam, The Netherlands.
4. October 1997 - October 1998, Postdoctoral Visiting Research Associate, University of Missouri-Kansas City, Division of Cell Biology and Biophysics, School of Biological Sciences, Kansas City, USA.
5. January 1998 - December 2003, Associate Member of the Abdus Salam International Centre for Theoretical Physics, Trieste, strada Costiera 11, I-34014, Italy.
6. November 1998 – present, Research Associate, Texas A&M University, College of Medicine, Health Science Center, Department of Medical Biochemistry and Genetics, College Station, Texas 77843-1114, USA.

Affiliations: Member of:

Federation of European Biochemical Societies (FEBS)
American Biophysical Society (ABS)
Federation of American Societies for Experimental Biology (FASEB)
The Scientific Research Society Sigma Xi (USA)

Scientific awards: Nomination of the American Biographical Institute for scientific accomplishments (1995, 1996); “Research Fellow Recognition” of the American Biographical Institute, Raleigh, NC in 1997.

Teaching experience:

1. General Biophysics and Biophysical Chemistry for undergraduate and graduate students in: Biological Sciences, Biochemistry and Ecology
2. Physics for undergraduate students in Biological Sciences, Biochemistry and Ecology
3. Practical sessions of Biophysics and Biophysical Chemistry
4. Practical sessions of Electrophysiology
5. Theoretical Physics (Molecular Physics, Quantum Chemical Physics) at undergraduate level.
6. Experimental Physics (Polymer Physics, Medical Physics and Biophysics) at graduate level.

Fields of interest (Key words: *Membrane biophysics; Electrophysiology; Biophysical chemistry; Single-molecule biophysics; Biosensors; Nanobiotechnology*):

A. Previous research topics:

1. Electrophysiology of ionic transport through epithelial cell membranes (Ionic channels and other translocation mechanisms for the ionic regulation of the cell)
2. Laser Raman spectroscopy of Nucleic Acids (Raman difference spectroscopy). Raman melting profiles (melting and premelting transitions) of nucleic acids and their complexes
3. Biophysical Chemistry of Nucleic Acids (Thermostability of DNA)

B. Current research interests:

1. Membrane Biophysics
2. Reconstitution and characterization of ionic channels, pores and porins into artificial bilayer lipid membranes (α -Hemolysin and bi-component Leukocidin pore-forming toxins of *Staphylococcus Aureus*)
3. Ion channels (bacterial toxins) chemically modified by different tethered blockers and sulfhydryl-directed reagents (MTS reagents, polymers and biopolymers) via cysteine scanning mutagenesis.
4. Single molecule biophysics. Polymer biophysics (DNA and proteins)
5. Dynamics, partitioning and translocation of polymers within protein nanopores
6. Dynamics of stochastic pores in planar lipid bilayers

Expertise

A. Theoretical

(Molecular Dynamics Simulations, Stochastic Models of Biomembranes, Epithelial Ionic Transport Models, Non-linear Dynamics in Biochemical Systems)

A1. Software package CHARMM for molecular dynamics simulations;

A2. Graphic packages for biomolecular structures

A2.1. Graphic interface QUANTA for molecular dynamics simulations

A2.2. Software package RASMOL, INSIGHT II for graphic analysis of molecular dynamics simulations

A2.3. Graphic package SPOCK for visualization and “illustration design” of biomolecular structures

A3. Stochastic models for phospholipid - phospholipid interactions from bilayer lipid membranes

A4. Computer models for the analysis of the ionic and water transport through epithelial membranes

A5. Computer models for the analysis of non-linear dynamic processes and chaotic behavior in multiply regulated biochemical systems

A6. Programming in BASIC, MAPLE V, TURBO PASCAL etc.

A7. Models of single-channel kinetics and correction schemes for rate constants due to missed events.

B. Experimental

B1. Electrophysiology and Membrane & Single Molecule Biophysics

of the epithelial ionic transport (B1); Protein expression and purification and DNA manipulation (B2); Laser Raman spectroscopy of DNA (B3);

B1.1. Electrophysiology of ionic and water transport across epithelial cell membranes

B1.1.1. Classical Ussing chambers for the ionic transport through epithelial membranes. Voltage-clamp method. Ionic fluxes measured by macroscopic electrodes

B1.1.2. Conventional microelectrode technique (CMT) for ionic transport through epithelial cell membranes - Application to human colon carcinoma cell line

B1.2. Reconstitution of ion channels and pore-forming bacterial toxins within planar bilayer lipid membranes (Single-channel recording and macroscopic current measurements)

B1.2.1. Method of folded bilayers (Montal-Müller). Single-channel recording.

B1.2.1.1. Designing the temperature-control set-up for the BLM technique of “folded bilayers”.

B1.2.1.2. Designing the perfusion system for the BLM technique of “folded bilayers”.

B1.2.2. Method of painted bilayers. Capacitance/Conductance measurements on BLMs

B1.3. Electrophysiological software packages (pCLAMP from Axon Instruments and QUB for single-channel recording analysis)

B1.4. Noise analysis technique on single-channel recording (Butterworth filter, sampling rules, Fast Fourier transform etc.)

B2. Biophysical Chemistry techniques

B2.1. Circular dichroism of polypeptides (CD thermal unfolding curves)

B2.2. Laser Raman spectroscopy of DNA

B2.2.1. High Resolution Raman Difference (HRRD) Spectroscopy of Nucleic acids

B2.2.2. Raman melting profiles for nucleic acids and their assemblies

B2.2.3. Software packages for Raman spectroscopy: SpectraCalc (Galactic Industries), SpectraMax, Software for data acquisition ISA/Jobin-Yvon (IBM compatible computer)

B2.3. Differential scanning calorimetry of DNA

B2.4. UV-VIS absorption spectroscopy of proteins and nucleic acids

B3. Protein Chemistry techniques – Protein overexpression and purification

B3.1. SDS-PAGE gel electrophoresis of very short peptides (Tris-Tricine Gels) and proteins (transcriptional factors and membrane proteins)

B3.2. High performance liquid chromatography (HPLC) of proteins

B3.3. *In vitro* translation and transcription of the pore forming bacterial toxin α -hemolysin of *Staphylococcus Aureus* on rat red blood cell membranes (IVTT)

B3.4. Oligomerization of membrane protein pores on rabbit red blood cell membranes

B3.4.1. Preparation of rat red blood cell membranes

B3.5. Protein over-expression in *Escherichia coli* cells (transcriptional factors and membrane proteins)

B3.6. Site-directed mutagenesis and multi-site mutagenesis (e.g. cysteine scanning mutagenesis etc.)

B4. DNA cloning and manipulation of nucleic acids (purification, estimations and assays)

B4.0. Bacteria. Cell cultures and competent cells

B4.1. Denaturing and non-denaturing DNA gels

B4.2. High performance liquid chromatography (HPLC) of nucleic acids (reversed-phase DNA chromatography, hydroxylapatite chromatography for DNA etc.)

B4.3. Oligonucleotide/primer design

B4.4. Agarose-gel purification of DNA plasmids and oligonucleotides

B4.5. Site-specific DNA plasmid digestion reactions via restriction enzymes

B4.6. Phosphorylation and DNA ligation product reactions in oligonucleotides/plasmids

B4.7. Cassette single-site and multi-site mutagenesis

B4.8. PCR protocols

B4.9. Mini-, Midi- and Maxi-Preps's for DNA Plasmids

Publications: 29 articles in international scientific journals
 20 articles in Romanian scientific journals
 2 textbooks for students' use
 16 published abstracts to international conferences, congresses etc.

Articles indexed in:

(i) BIOSIS (27)

(ii) SCIENCE CITATION INDEX (29)

(iii) PUBLIC MEDLINE (16)

(iv) CURRENT CONTENTS (22)

Articles cited in: *Analytical Chemistry, Angewandte Chemie-International Edition, Aquaculture, Archives of Biochemistry and Biophysics, Biochemical Pharmacology, Biochemistry, Bioelectrochemistry, Biochimica et Biophysica Acta - Biomembranes, Biochimica et Biophysica Acta – Gene Structure and Expression, BioMedCentral Cell Biology, Bioorganic and Medicinal Chemistry, Biophysical Chemistry, Biophysical Journal, Biopolymers, Cellular and Molecular Life Sciences, Chemical Physics Letters, Chemistry & Biochemistry, Chemistry and Biology, Comparative Hepatology, Current Medicinal Chemistry, Current Opinion in Colloid & Interface Science, Disease Markers, Electrophoresis, E-Polymers, European Journal of Pharmaceutical Sciences, European Journal of Pharmacology, Industrial and Engineering Chemistry Research, Journal of Agricultural and Food Chemistry, Journal of the American Chemical Society, Journal of Bacteriology, Journal of Bioenergetics and Biomembranes, Journal of Biological Chemistry, Journal of Chemical Physics, Journal of General Physiology, Journal of Membrane Biology, Journal of Molecular Biology, Journal of Molecular Structure (THEOCHEM), Journal of Neuroscience, Journal of Physics: Condensed Matter, Journal of Pineal Research, Microbiology and Immunology, Nature, Nature Biotechnology,*

Nucleic Acids Research, Proceedings of the National Academy of Sciences USA, Protein Science, Science, Talanta, Trends in Biotechnology etc.

Comments of other scientists about my work in international scientific journals:

(1) Science 287 (5460), (2000) pp.1887-1889, Editor's choice: "Highlights of recent literature. Chemistry: Polymer dynamics in a pore". By Dr. Phil D. Surami – Field Editor – Science.

The comments refer to the paper *J. Am. Chem. Soc.* **122(11)** (2000) 2411-2416.

(2) Nature Biotechnology **18 (10)**, (2000) pp. 1026, "Protein identification at nanomolar concentration". By Dr. Judy Jamison (Field Editor – Nature Biotechnol.)

The comments refer to the paper *Nature Biotechnol.* **18 (10)** (2000) pp. 1091-1095.

(3) Nature Biotechnology **18 (10)**, (2000) pp. 1037, "Sensing proteins outside of the box". By Professors F. Gisou van der Goot and Stefan Matile (University of Geneva)

The comments refer to the paper *Nature Biotechnol.* **18 (10)** (2000) pp. 1091-1095.

(4) Doubletwist – Web publication (www.doubletwist.com), November 6, 2000
"Protein Detection. Who's that yanking my chain?" By Dr. Jim Kling (Editor)

The comments refer to the paper *Nature Biotechnol.* **18 (10)** (2000) pp. 1091-1095.

(5) Journal of General Physiology **117(3)**, (2001) pp. 235-237.

Commentary – SCAM Feels the Pinch. By Professor Arthur Karlin (Columbia University at New York).

The comments refer to the paper *J. Gen. Physiol.* **117(3)** (2001) pp. 239-251.

(6) Journal of General Physiology **117(3)**, (2001) pp. 195-202.

The 54th Annual Meeting and Symposium of the Society of General Physiologists – Structures and Mechanisms of Channels and Transport Proteins by Professors O. S. Andersen (Cornell University at New York) and R. W. Aldrich (U. Pennsylvania).

The comments refer to the paper *J. Gen. Physiol.* **117(3)** (2001) pp. 239-251.

Cover Pictures for Scientific Journals:

Nature Biotechnology vol. 18 (October) (10) (2000).

GRANTS AND SOURCES OF PAST FUNDING:

1. Associate Member of the International Center of Theoretical Physics Abdus Salam (1998-2003)
2. NIH Postdoctoral Fellowship: University of Missouri at Kansas City, USA. October 1997 - October 1998. Project: Thermostability of DNA by laser Raman spectroscopy.
3. International award - The Wellcome Trust Grant awarded 054406/Z/98 for 1998-2000 at the University of Newcastle upon Tyne, Department of Physiological Sciences,

Newcastle upon Tyne, UK. Amount: £115,360 \cong \$ 186,850 (Co-PI Prof. Dr. Barry E. Argent)

Title: "Inhibitory mechanisms in the pancreatic ductal epithelium"

4. FOM Projectruimte "Threading a single protein through a nanopore"

Amount 300.000 \$ (The Netherlands)

PATENTS AND INVENTIONS:

United States of America Patent Application filed with US Patent and Trademark Office, Serial No. 09/781,697 (PCT Patent Application US Serial No. PCT/US01/04482)

Title: BIOSENSOR COMPOSITIONS AND METHODS OF USE

Authors: Hagan Bayley, Stefan Howorka and Liviu Movileanu (The Texas A&M University System Health Science Center, College Station, Texas).

Scientific referee for the following journals:

1. *Biophysical Journal*
2. *Biopolymers*
3. *Molecular Microbiology*
4. *Biochimica et Biophysica Acta*
5. *Biochemistry*
6. *European Journal of Clinical Nutrition*
7. *BioMedCentral Pharmacology*

International Symposiums, Conferences, Schools or Associate Research Fellow in other laboratories

(i) Participations (without Communications) (A)

A9. Grant Writing Workshop "Write Winning Grants", organized by the Texas A&M Research Foundation (presented by Prof. Steve Russell, University of California at San Diego), the College Station Conference Center, November 10-11, 2000, College Station, Texas, USA.

A8. The MURI Meeting (Multiple University Research Initiative of Air Force Office of Scientific Research (AFOSR)) jointly organized by the Office of Naval Research USA and the University of Texas at Austin, 7th-8th June, 1999, Austin, Texas, USA.

A7. The 42nd Annual Meeting of the Biophysical Society, organized by the American Biophysical Society, 22nd-26th February, 1998, Kansas City, Missouri, USA.

A6. Workshop "College on Introductory Computational Physics", organized by the International Centre for Theoretical Physics, 19th May - 13th June, 1997, Trieste, Italy.

A5. Workshop "Proteines, Membranes and Their Interactions", organized by the International Centre for Theoretical Physics, 22nd July-2nd August, 1996, Trieste, Italy.

A4. Fellowship for attending the 16th International Congress of Biochemistry and Molecular Biology, 19-22 September, 1994, New Delhi, India.

A3. International Conference “Whole heart modelling” sponsored by Priority Programm “Nonlinear Dynamics” of the Netherlands Organization for Advanced Research, 11-13 February, 1994, Utrecht, The Netherlands.

A2. International Symposium “Biophysics of Membrane Transport”, International Symposium in the Memory of Late Peter Lauger, 19-23 July, 1993, Konstanz, Germany.

A1. French-Romanian Summer School of Biophysics, 23-29 September, 1991, Bucharest, Romania. Theme: “Structure, Dynamics and Function of Proteins”.

(ii) Talks (T)

T19. The Bi-Annually Meeting of the Molecular Biophysics Group of the Dutch Biophysical Society, 7th-8th October, 2002, Lunteren, The Netherlands.
Title: Single polymer dynamics in a large protein channel

T18. 46th Annual Meeting of The Biophysical Society, 23-27 February, 2002, Moscone Convention Center, San Francisco, California, USA.
Title: DNA duplex formation of individual DNA strands within a single protein pore

T17. 46th Annual Meeting of The Biophysical Society, 23-27 February, 2002, Moscone Convention Center, San Francisco, California, USA.
Title: Interrogating large ion channels with tethered flexible polymers. A new strategy for basic science and nanobiotech.

T16. Division of Pharmaceutics, The University of Iowa, College of Pharmacy, February 14th, 2002, Iowa City, Iowa, USA.
Title: Interrogating transmembrane protein pores with flexible polymers

T15. Department of Physics and Astronomy, The Arizona State University at Tempe, February 11th, 2002, Tempe, Phoenix, Arizona, USA.
Title: Interrogating a nanopore with a single flexible polymer

T14. Center for Biomolecular Science & Engineering, The University of California at Santa Cruz, February 1st, 2002, Santa Cruz, California, USA.
Title: Interrogating large ionic channels with tethered flexible polymers

T13. Department of Animal Physiology and Biophysics, University of Bucharest, Faculty of Biology, November 30th, 2001, Bucharest, Romania.
Title: Leukocidins form large bicomponent octameric channels in lipid bilayers

T12. Department of Electricity and Biophysics, University of Bucharest, Faculty of Physics, November 27th, 2001, Bucharest-Magurele, Romania.

Title: Single-molecule biophysics with a single flexible polymer anchored within a transmembrane protein pore

T11. Molecular Biophysics Group, The Delft University of Technology, Faculty of Applied Sciences, Department of Applied Physics, November 19th, 2001, Delft, The Netherlands.

Title: Single molecule biophysics with flexible polymers tethered within a nanopore

T10. Symposium of the Center for Advanced Biomolecular Research (CABR) of The Texas A&M University System, 3-4 November, 2001, Camp Allen, Navasota, Texas, USA.

Title: Staphylococcal Leukocidin: composition and properties of a bicomponent toxin pore.

T9. The Workshop on “Polymers in Nanoscopic Pores: Applications to Single Molecule Analysis and Metabolite Transport”, 16th-18th April, 2001, US National Institutes of Health, Bethesda, Maryland, USA. This was co-sponsored by the US National Institutes of Health and University of California.

Title: Dynamics of a neutral flexible polymer in the lumen of a transmembrane pore: application to single molecule detection of proteins

T8. Symposium of the Center for Advanced Biomolecular Research (CABR) of The Texas A&M University System, 18th November, 2000, Hilton Conference Center, College Station, Texas, USA.

Title: Single molecule sensing of protein analytes.

T7. The 16th Annual Lost Pines Molecular Biology Conference, 13-15 October, 2000, University of Texas M.D. Anderson Cancer Center, Science Park-Research Division, Smithville, Texas, USA.

Title: Single molecule detection of proteins

T6. 44th Annual Meeting of The Biophysical Society, 12-16 February, 2000, New Orleans, Louisiana, USA.

Title: Local and nonlocal structural changes associated with premelting and melting transitions of double-stranded *B* DNA: new insights from Raman spectroscopy.

T5. 11th Conversation in the Discipline Biomolecular Stereodynamics, June 15-19, 1999, University of Albany, SUNY, Albany, New York, USA.

Title: Structure and thermostability of DNA containing A·T pairs in alternating and non-alternating sequences: investigation of premelting, melting and postmelting phenomena by Raman spectroscopy.

T4. International Meeting “European Intestinal Transport Group ‘95”, 21-25 May, 1995, Lecce, Italy.

Title: A rapid method for computer modelling of ion transport through intestinal cells

T3. The International FEBS Special Meeting “Biological Membranes”, organized by Federation of European Biochemical Societies, 26th June-1st July, 1994, Helsinki, Finland.

Title: Specific interactions and association phenomena into single chain binary mixtures.

T2. Joint Meeting of the Dutch Physiological Society and The British Physiological Society, 10-11 June, 1994, Nijmegen, The Netherlands.

Title: Cellular and transepithelial responses of the HT-29 cl.19A human colonocytes to K-substitutions. Electromotive forces of the cellular pathway.

T1. 9th Balkan Biochemical and Biophysical Days, 21-23 May, 1992, Thessaloniki, Greece.

Title: Oscillations in a multiply regulated enzyme-substrate system and experimental model of membrane.

(iii) Posters (P)

P20. 47th Annual Meeting of The American Biophysical Society, March 1 – 5, 2003, San Antonio Convention Center, San Antonio, Texas, USA.

Title: Raman Spectroscopy Resolves Base and Backbone Contributions to the Thermodynamics of DNA Melting and Premelting: Application to A·T Sequence Isomers.

P19. 47th Annual Meeting of The American Biophysical Society, March 1 – 5, 2003, San Antonio Convention Center, San Antonio, Texas, USA.

Title: Partitioning of flexible polymers into a transmembrane protein pore.

P18. 47th Annual Meeting of The American Biophysical Society, March 1 – 5, 2003, San Antonio Convention Center, San Antonio, Texas, USA.

Title: Subunit composition of a bicomponent toxin: staphylococcal leukocidin forms an octameric transmembrane pore.

P17. 2002 FASEB Summer Research Conferences “Molecular Biophysics of Cellular Membranes”, 13-18 July, 2002, Vermont Academy, Saxtons River, Vermont, USA

Title: Subunit composition of a bicomponent toxin: staphylococcal leukocidin forms an octameric transmembrane pore

P16. Symposium of the Center for Advanced Biomolecular Research (CABR) of The Texas A&M University System, 3-4 November, 2001, Camp Allen, Navasota, Texas, USA.

Title: Location of a constriction in a large β -barrel protein channel: targeted tethered polymers and cysteine scanning mutagenesis.

P15. The 12th Biochemical and Biophysical Balkan Days, 10-13 May, 2001, Bucharest, Romania.

Title: The elastic waves induce the appearance of pores in a lipid bilayer membrane.

P14. 45th Annual Meeting of The Biophysical Society, 17 - 21 February, 2001, Hynes Convention Center, Boston, Massachusetts, USA.

Title: Dynamics of a neutral flexible polymer in the lumen of a transmembrane protein pore.

P13. 45th Annual Meeting of The Biophysical Society, 17 - 21 February, 2001, Hynes Convention Center, Boston, Massachusetts, USA.

Title: Probing the location of a constriction in a protein pore by targeted covalent attachment of polymers.

P12. 8th International Meeting on Chemical Sensors, 2-5 July, 2000, Basel, Switzerland.

Title: A polymer tethered within the lumen of a transmembrane pore. A new sensing principle

P11. 44th Annual Meeting of The Biophysical Society, 12-16 February, 2000, New Orleans, Louisiana, USA.

Title: Probing conformational fluctuations of a single polymer chain in the lumen of a transmembrane pore.

P10. 43rd Annual Meeting of The Biophysical Society, 13-17 February, 1999, Baltimore Convention Center, Baltimore, Maryland, USA.

Title: Structure and thermostability of DNA containing A·T pairs in alternating and non-alternating sequences: investigation by Raman difference spectroscopy.

P9. The FEBS Advanced Course “Membrane Transport Processes and Signal Transduction” organized by the Federation of European Biochemical Societies, 24-31 August, 1997, Bucharest, Romania.

Title: Statistical mechanics approaches of bilayer lipid membranes.

P8. 11th Balkan Biochemical and Biophysical Days, 15-17 May, 1997, Thessaloniki, Greece.

Title: Explanation of the flip-flop diffusion by the selective association of phospholipids into bilayer lipid membranes.

P7. 11th Balkan Biochemical and Biophysical Days, 15-17 May, 1997, Thessaloniki, Greece.

Title: Mecanisms of ionic transport processes through fish intestinal epithelial cells.

P6. 13th School on Biophysics of Membrane Transport, 11-18 May, 1997, Ladek Zdroj, Wroclav, Poland.

Title: Classical thermodynamics and statistical mechanics can solve some questions regarding the bilayer lipid membranes.

P5. The NATO Workshop “Molecular Mechanisms of Signalling and Targeting” co-sponsored by FEBS, 18-30 August, 1996, Island of Spetsai, Greece.

Title: Biochemical changes induced by UVA irradiation in cellular homogenates and the interference of antioxidants.

P4. The NATO Workshop “Molecular Dynamics of Biomembranes” co-sponsored by FEBS, 19th June-1st July, 1995, Cargèse, Corsica, France.

Title: Sensitivity of hydrophobic effects to the changes in external aqueous medium for a single-chain binary mixture.

P3. Fellowship for attending The Young Scientists Programme 17th-18th September, 1994, New Delhi, India.

Title: Electrostatic forces and lipid-lipid interactions in biological membranes.

P2. International Symposium “Dynamics and Function of Biomolecules”, 30th July-2nd August, 1993, Szeged, Hungary.

Title: An investigation on the binary mixture of single-chain amphiphiles into planar monolayers. A three-dimensional approach.

P1. International Summer School “Biophysics of Proton and Ion Transport”, 3-6 August, 1993, Brasov, Romania.

Title: Procaine effects on the passive transport of the frog skin epithelium.

(iii) Associate Research Fellow or Visiting Fellow in laboratories (C)

C6. November 1998 - Present

Postdoctoral Research Associate: Texas A&M University, College of Medicine, Health Science Center, Department of Medical Biochemistry and Genetics, 440 Reynolds Medical Building, College Station, Texas 77843-1114, USA.

Project: “Reconstitution and characterization of genetically engineered passive pores in the bilayer lipid membranes”

C5. October 2002 – December 2002

Visiting Assistant Professor, the Delft University of Technology, Department of NanoScience, Lorentzweg 1, 2628 CJ Delft, The Netherlands.

Project: Biopolymer translocation across membrane nanopores.

C4. October 1997 - October 1998

NIH Postdoctoral Fellow: University of Missouri-Kansas City, Division of Cell Biology and Biophysics, School of Biological Sciences, 405 Biological Sciences Building, 5100 Rockhill Road, Kansas City, Missouri 64110-2499, USA.

Project: “Melting and premelting of DNA studied by Laser Raman spectroscopy”.

C3. June- July 1997

Research Mobility Bursary of Tempus Programm S-JEP 09373/95: Centre d’Etudes Nucléaires de Saclay, Section de Biophysique des Protéines et des Membranes, Laboratoire de Simulation Moleculaire, 91191 Gif-sur-Yvette, Paris, France.

Project: “Molecular dynamics simulations of pure hydrated lipid bilayers with anisotropic constant pressure boundary conditions (II).”

C2. January- February 1997

Research Mobility Bursary of Tempus Programm S-JEP 09373/95: Centre d’Etudes Nucléaires de Saclay, Section de Biophysique des Protéines et des Membranes, Laboratoire de Simulation Moleculaire, 91191 Gif-sur-Yvette, Paris, France.

Project: “Molecular dynamics simulations of pure hydrated lipid bilayers with anisotropic constant pressure boundary conditions (I).”

C1. September 1993 - July 1994

Graduate Research Fellow: Institute for Neurobiology, University of Amsterdam, Faculty of Biology, Department of Experimental Zoology, Kruislaan 320, 1098 SM Amsterdam, The Netherlands.

Project: “Electrophysiology on the HT29 cl.19A human colon carcinoma cell line. A microelectrode study.”

REFERENCES:

1. Professor Hagan P. Bayley,

Temporary address and contact from August 26th until October 15th

Hagan Bayley, Professor, Department of Chemistry, Dyson Perrins Laboratory, South Parks Road, Oxford, OX1 3QY, England, UK. E-mail: bayley@tamu.edu

tel: +44-1865-275948; fax: +44-1865-275905

bletchley.tamu.edu/homepage

Permanent address after new lab opening on October 15th

Hagan Bayley, Professor, Department of Chemistry, University of Oxford, Chemistry Research Laboratory, Mansfield Road, Oxford, OX1 3TA, England, UK

tel: +44-1865 285100 (Hagan Bayley); fax: +44-1865 285102

2. Professor C. Nick Pace, the Department of Medical Biochemistry & Genetics, The Texas A&M University System Health Science Center, 440 Reynolds Medical Building, College Station, Texas 77843-1114, USA. Phone (979) 845-1788; Fax (979) 847-9481; E-mail: nickpace@tamu.edu

3. Dr. Sergey M. Bezrukov, Head of the Laboratory of Physical and Structural Biology, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, Maryland 20892-0924, USA. Phone: 301-402-4701; Fax: 301-402-9462; E-mail: bezrukov@helix.nih.gov

4. Professor James M. Benevides, University of Missouri at Kansas City, School of Biological Sciences, Division of Cell Biology and Biophysics, Kansas City, Missouri 64110-2499, USA. Phone: +816-235-2499; Fax: +816-235-1503; E-mail: BenevidesJ@umkc.edu

5. Professor Stephen B. Cheley, The Texas A & M University System Health Science Center, Department of Medical Biochemistry & Genetics, 440 Reynolds Medical Building, College Station, Texas 77843-1114, USA. Phone: +979-862-2693; Fax: (979) 847-9481; E-mail: scheley@medicine.tamu.edu

LIST OF PUBLICATIONS

Articles in international scientific journals (D)

D29. **L. Movileanu** and H. Bayley, 2003, Looking at nanopores with tethered polymeric arms. *Invited review in preparation*

D28. D. Popescu, S. Ion, A.I. Popescu and **L. Movileanu**, 2003, Appearance of Three-state Pores within Bilayer Lipid Membranes, *Biophys. J.*, *Near to be submitted*.

D27. **L. Movileanu** and H. Bayley, 2003, Passive entry of a folded peptide in a nanopore. *In preparation*.

D26. **L. Movileanu**, S. Cheley and H. Bayley, 2003, Partitioning of individual flexible polymers into a nanoscopic protein pore, *Biophys. J.* **85(2)**, 897-910.

D25. D. Popescu, S. Ion, A. I. Popescu and **L. Movileanu**, 2003, Elastic properties of bilayer lipid membranes and pore formation. *In: Membrane Science and Technology Series (vol. 7), Planar Lipid Bilayers (BLMs) and Their Applications*, H. Ti Tien and A. Ottova (Eds.), Elsevier Science Publishers, Amsterdam, pp. 173-204.

D24. S. Avram, **L. Movileanu**, D. Mihailescu, M.-L. Flonta, 2002, Comparative study of some energetic and steric parameters of the wild type and mutants HIV-1 protease: a way to explain the viral resistance, *J. Cell Mol. Med.* **6(2)**, 251-260.

D23. **L. Movileanu**, J.M. Benevides and G.J. Thomas, Jr., 2002, Temperature dependence of the Raman spectrum of DNA. II. Raman signatures of premelting and melting transitions of poly(dA)•poly(dT) and comparison with poly(dA-dT)•poly(dA-dT), *Biopolymers* **63(3)**, 181-194.

D22. **L. Movileanu**, J.M. Benevides and G.J. Thomas, Jr., 2002, Determination of Base and Backbone Contributions to the Thermodynamics of Premelting and Melting Transitions in B DNA, *Nucleic Acids Res.* **30(17)**, 3767-3777.

- D21. G. Miles, Jr., **L. Movileanu** and H. Bayley, 2002, Subunit composition of a bicomponent toxin: staphylococcal leukocidin forms an octameric transmembrane pore, *Protein Sci.* **11(4)**, 894-902.
- D20. **L. Movileanu**, and H. Bayley, 2001, Partitioning of a polymer into a nanoscopic protein pore obeys a simple scaling law. *Proc. Natl. Acad. Sci. USA* **98(18)**, 10137-10141.
- D19. S. Howorka, **L. Movileanu**, O. Braha and H. Bayley, 2001, Kinetics of duplex formation for individual DNA strands within a single protein nanopore. *Proc. Natl. Acad. Sci. USA* **98(23)**, 12996 - 13001.
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