CURRICULUM VITAE

PERSONAL INFORMATION

Name, Family Name	**Nunu Metreveli**
Contact Information	nunu_metreveli@iliauni.edu.ge

EDUCATION & PROFESSIONAL TRAINING

• Dates (from – to)	1997
• Name and type of organization	Iv.Javakhishvili Tbilisi State university
• Faculty/Training/Course	Faculty of Physics
• Type of qualification awarded	PhD in Biophysics

• Dates (from – to)	1981-1986
• Name and type of organization	Iv.Javakhishvili Tbilisi State university
• Faculty/Training/Course	Faculty of Physics
• Type of qualification awarded	MSc in Physics

EMPLOYMENT

• Dates (from – to)	From 2006 to present
• Employer	Ilia State University
• Rank/Position held	Professor

• Dates (from – to)	1998-2006
• Employer	Iv.Javakhishvili Tbilisi State University
• Rank/Position held	Associate Professor

• Dates (from – to)	1992-1998
• Employer	Iv.Javakhishvili Tbilisi State University
• Rank/Position held	Research Scientist

SYMPOSIAS AND SEMINARS

- „Influence of porphyrin on the stability of DNA quadruplexes“, 35th Annual Gibbs Conference on Biothermodynamics September 25-28, 2021.
- „Structure of tetrahelical Monomolecular DNA (tmDNA) Probed by NMR“; 35th Annual Gibbs Conference on Biothermodynamics September 25-28, 2021.
- "DNA quadruplexes for non-enzymatic nucleic acid amplification", 2nd Conference on Biomotors, Virus Assembly, and Nanotechnology Applications", Columbus, USA, 2019.
- "Quadruplex priming amplification at range of normal human body temperature". TIDES Europe: Oligonucleotide & Peptide Therapeutics 2019, 12-15 November, Amsterdam, Nitherlands.
- "Uptake of K, Cs and Rb and their Influence on Accumulation and Reduction Capacity of Cr(VI) by Highly Resistant Arthrobacter Species"; Goldschmidt 2019: annual international conference on the geochemistry and related subjects; Barcelona, Spain, 2019, 18-23 August.
- "Effect of chromate(VI), magnesium and calcium on the proteome of Arthrobacter globiformis 151B ''; The 43rd FEBS congress, Prague 7-12 July 2018;
- "Domain Assembly and Hysteresis of a Monomolecular DNA Quadruplex"; 60th Annual Meeting Biophysical Society, Los Angeles, California, February 27 – March 2, 2016.
- "Nucleic acid Quadruplexes in Biotechnological applications"; 17th Annual Rustbelt RNA Meeting; Sawmill Creek Resort, Huron, OH; October 23-24, 2015.
- "Thermodynamic and Optical properties of Quadruplex Primers for isothermal DNA Amplification"; 5th International Meeting on Quadruplex Nucleic Acids; Talence, Bordeaux, France; May 26-28, 2015.
- „Studying the accumulation and distribution the toxic and potentially radioactive elements by wheat and barley"; . 8th International Symposium on Ecosystem Behavior (Biogeomon 2014)" 13-17 July, 2014; Bayreuth, Germany.
- "Studying the accumulation and distribution of Mn, Cu, Cd and Zn by some Georgian feed plants"; 6th International Symposium on Recent Advances in Food Analysis (RAFA 2013), 5-8 November, Prague, Czech Republic.
- "Investigation of the assimilation of Cd by edible plant Saffron"; 12th International Conference on the Biogeochemistry of Trace Elements, Athens, Ga, (USA). 16-20 June 2013.
- „UV Radiation damages of collagen"; 1st International Conference Nano – IBCT 2011, Radiation damage of biomolecular systems: Nano-scale insights into Ion Beam Cancer Therapy, 2nd-6th October 2011, Caen, France.
- "Radiation Damage in Collagen Molecules"; VII International Conference on Radiation Damage in Biomolecular Systems, Madrid, Spain, 30 June-4Jule, 2010.
- "Identification of free radicals induced by UV irradiation in collagen water solutions"; XIII th European Conference on the Speqtroskopy of Biological Molecules (ECSBM), Palermo, Italy, 28 August -2 September, 2009.

- "UV-Vis and FT-IR spectra of ultraviolet irradiated collagen in the presence of antioxidant ascorbic acid"; XIII th European Conference on the Spectroscopy of Biological Molecules (ECSBM), Palermo, Italy, August 28 – September 2, 2009.
- « Photochemical Damages in Collagen under UV Irradiation » ; Central European Conference on Photochemistry (CECP), Austria, February 10 to 14, 2008.
- "Mechanisms of the Influence of UV Irradiation on Collagen and Collagen-Ascorbic Acid"; The 9th International Conference on Solar Energy and Applied Photochemistry, SOLAR 06, Cairo, Egypt, 23-27 January 2006.
- "The Influence of UV Irradiation on Collagen"; IV-th World Congress of the International Academy of Cosmetics Dermatology, Paris, France, 2-5 July, 2005.
- "Microcalorimetric and ESR Study of the UV irradiation on collagen"; Summer School in Protein Aggregation – Les Houches, France, 2-7 April, 2002.
- "Liposome-DNA Interaction. Microcalorimetric Study"; 15th International Conference on Chemical Thermodynamics. Porto – Portugal, 1998.
- "Partial Spesific Heat Capacity Change-Fundamental Characteristic of the Procese of Thermal Denaturation of Biological Macromolecules (Proteins and Nucleic Acids)"; Keihanna International Conference on Molecular Biophysics. Kyoto, Japan, 1996.
- "About the Physical Nature of Phase Transition in the Aqueous Solution of "Molten Globule"; 14th IUPAC Conference on Chemical Thermodynamics, 1996.
- "Microcalorimetric Study of Helix-Coil Transition of DNA in Ordinary and Heavy Water Solutions"; 6th Europian Symposium on Thermal Analisis and calorimetry. Italy, 1994.
- "Thermal Denaturation of DNA is Accompanied by the heat Capacity"; 11th IUPAC Conference on Chemical Thermodynamics, Como, Italy, 1990.

OTHER ACTIVITIES AND MEMBERSHIP

From 2011 to present
Ilia State University
Director of the Institute of Biophysics

From 2019 to present
Ilia State University
Member of the Academic Council

2010-2011
Ilia State University
Member of the Representatve Council

2006-2009
Ilia State University, Faculty of Physics and Mathematics
The Head of the Faculty Assurance Service

DIPLOMAS, AWARDS

2011
N.Copernicus University Diploma of Scientific Achievents

RESEARCH

Biophysics of Photobiological Processes
Molecular Biophysics
Biotechnology

LIST OF PUBLICATIONS

- "The Effect of Si-ions on the Uptake Process of Zinc and Chromium by Arthrobacter Globiformis 151B"; A.Rcheulishvili, L.Tugushi, E.Ginturi, O.Rcheulishvili, N. Metreveli, M. Gurielidze, H-Y. Holman; Eur. Chem.Bull. 12(Special Issue 13), 1209-1214; 2023.
- "Structure of tetrahelical DNA homopolymers support quadruplex world hypothesis"; L. Lomidze, M. Yang, D. Khutsishvili, N. Metreveli, K. Musier-Forsyth, B. Kankia; *ACS Chemistry* 7, 4311-4316; 2022.
- "Bioremediation potential of hexavalent chromium- resistant Arthrobacter globiformis 151B Study of the uptake of Cesium and other alkali ions"; Rcheulishvili Olia, Solomonia Revaz, Tsverava Lia, Metreveli Nunu, Hoi-Ying Holman; International Microbiology, 25(4), pp.745-758, 2022.
- „Quadruplex Priming Amplification at a Range of Human Body Temperature"; David Gvarjaladze, Tamari Gulua, Shota Gogichaishvili, Jozef Hritz, Nunu Metreveli; Biointerface Research In Applied Chemistry, V.11, Issue 1, 7932- 7942, 2021.
- „Heavy metals specific proteomic responses of a highly resistant Arthrobacter globiformis 151B"; O. cheulishvili, L. Tsverava, A. Rcheulishvili, M. Gurielidze, R.

Solomonia, N. Metreveli, N. Jojua, H-Y Holman; Annals of agrarian Sciences; Vol.17, No 2, p.218-229, 2019.

- „Sr^{2+} Induces unusually stable d(GGGTGGGTGGGTGGG) quadruplex dimers"; Levan Lomidze, Sean Kelley, Shota Gogichaishvili, Nunu Metreveli, Karin Musier-Forsyth and Besik Kankia; Biopolymers, Volume 105, Issue11, p811-818, (2016).

- „Stable Domain Assembly of a Monomolecular DNA Quadruplex : Implications for DNA-Based Nanoswitches" ; Besik Kankia, David gvarjaladze, Adam Rabe, Levan Lomidze, Nunu Metreveli, and Karin Musier-Forsyth; Biophysical Journal, Vol.110, Issue 19, p2169-2175, (2016).

- „The Uptake and detoxification of Chromium by bacteria of Arthrobacter species and the influence and of different metal ions on these processes"; O.Rcheulishvili, T. Kalabegishvili, Hoi-ving Holman, N. Rcheulishvili, D.Papukashvili, N. Metreveli, A.Rcheulishvili; Conference Paper. Conference: The 8th international Workshop on Contaminant Biovailability in the Terrestrial Environment., At Nanjing, China, · October 2015.

- „Study of cadmium distribution and accumulation in saffron" ; Rcheulishvili O, Rcheulishvili A, Osefashvili M, Papukashvili D, Tugushi L, Metreveli N; Proceedings Of the Georgian Academy of Sciences, v.39, N3-4, (2014).

- „Effect of Chromate on DNA of Arthrobacter globiformis"; O. Rcheulishvili, N. Datukishvil, I. Gabriadze, T. Kutateladze, D. Pataraya, M. Gurielidze, N. Metreveli; Nano Studies, 7, pages 193-2007, (2013).

- „UV damage of collagen: Insights from model collagen peptides"; K. Jariashvili, B. Madhan, B. Brodsky, A. Kuchava, L. Namicheishvili, N. Metreveli, Biopolymers, Volume 97, Issue 3, pages 189-198, (2012).

- „UV-Vis and FT-IR Spectra of Ultraviolet Irradiated Collagen in the Presence of Antioxidant Ascorbic Acid"; Nunu Metreveli, Ketevan Jariashvili, Louisa Namicheishvili, George Mrevlishvili, David Svintradze, Marine Dgebuadze, Alina Sionkowska, Joanna Skopinska. Ecotoxicology and Environmental Safety, 73, 448-455, (2010).

- „Identification of Free Radicals Induced by UV Irradiation in Collagen Water Solutions"; Nunu Metreveli, Louisa Namicheishvili, Ketevan Jariashvili, Eduard Chikvaidze, Marine Dgebuadze, Alina Sionkowska; Journal of Photochemistry and Photobiology, 93(2),61-5, (2008).

- „Collagen-DNA Complex"; David Svintradze, George Mrevlishvili, Nunu Metreveli, Ketevan Jariashvili, Luisa Namicheishvili, Joana Skopinska, Alina Sionkowska; *Biomacromolecules,* Vol. 9, No. 1, p. 21-28, (2008).

- „Investigation of Collagen-DNA Films"; David Svintradze, George Mrevlishvili, Nunu Metreveli, Ketevan Jariashvili, Luisa Namicheishvili, Joana Skopinska, Alina Sionkowska; Journal of biological Physics and Chemistry, Vol. 7, No. 3, p. 107-116, (2007).

- „Mechanisms of the Influence of UV Irradiation on Collagen and Collagen-Ascorbic Acid Solutions"; . N.Metreveli, L.Namicheishvili, K.Jariashvili, G.Mrevlishvili, A.Sionkowska; International Journal of Photoenergy, Article ID 76830, p.1-4, (2006).

- „A Microcalorimetric and Electron Spin Rezonance Study of the Influence of UV Radiation on Collagen“; N.O.Metreveli, L.O. Namicheishvili, K.K.Jariashvili, E.N.Chikvaidze and G.M.Mrevlishvili; Biophysics, Vol.51, No.1, pp.29-32, (2006).

- „Ultraviolet (UV) Irradiation on Collagen: Mechanisms of the Influence“; N. Metreveli, L. Namicheishvili, K. Jariashvili, E. Chikvaidze, G. Mrevlishvili; Journal of biological Physics and Chemistry, 5, p. 133, (2005).

- „Subdenaturational Heat-Absorption in Water Solutions of Collagen under Various Factors“; Metreveli N., Jariashvili K., Namicheishvili L., Mrevlishvili G.; Bulletin of the Georgian Academy of Science*s,* 2004. V.170. N3. p.584-586, (2004).

- „The Action of Ascorbic Acid on Collagen as a Protective System Against UV Irradiation“; Metreveli N., Jariashvili K., Namicheishvili L., Mrevlishvili G.; Bulletin of the Georgian Academy of Sciences*,* V.169. N2. p.357-359, (2004).

- „The Influence of UV Irradiation on Collagen in the Presence of Vitamin C“; Metreveli N., Jariashvili K., Namicheishvili L., Mrevlishvili G.; Bull. of the Georgean Acad. of Sci., 2003.-V.168.-N3.-p.546-548, (2003).

- „Microcalorimetric and Electron Spin Resonance Study of the Ultra-Violet Irradiation on Collagen“; N. Metreveli, L. Namicheishvili, K. Jariashvili, E. Chikvaidze, G. Mrevlishvili; Bulletin of the Georgian Academy of Sciences, V.165. N3. p.552-555, (2002).

- „The Influence of Ultra-violet Irradiation on Collagen“; N. Metreveli, L. Namicheishvili, K. Jariashvili, I. Jorjishvili, G. Mrevlishvili; Bulletin of the Georgian Academy of Sciences, V.164. N3. p.538-540, (2001).

- „Denaturation Increment of Heat Capacity in Diluted Aqueous Solutions of Collagen in the Presence of Neutral Salts“; N. Metreveli, L. Namicheishvili, K. Jariashvili, G. Mrevlishvili; Bulletin of the Georgian Academy of Sciences, V.160. N3. p.553-555, (1999).

- „Partial Heat Capasity - Fundamental Characteristic of the Prosses of Thermal Denaturation of Biological Macromolecules (Proteins and Nucleic Acids)“; G. Mrevlishvili, N. Metreveli, G. Razmadze, T. Mdzinarashvili, G. Kakabadze, M. Khvedelidze; Thermochemica Acta, 308, p.41-48, (1998).

- „Liposome-DNA Interaction: Microcalorimetric Study“; G. Mrevlishvili, B. Kankia, T. Mdzinarashvili, N. Metreveli; Chemistry and Physics of Lipids, 94, p.139-143, (1998).

- „The Denaturing Increment of the Heat Capacity in Dilute Aqueous Collagen Solutions“; G.M.Mrevlishvili, N.O. Metreveli and T.Dzh.Mdzinarashvili; Biophysics, 1997, Vol.42, No.1, pp.81-85, (1997).

- „Calorimetric Investigation of the Thermodynamic Parameters of Denaturing of Collagen in Dilute Solutions at Different Scanning Rates“; T.V.Burdzhanadze, N.O. Metreveli, T. Dzh. Mdzinarashvili and G.M. Mrevlishvili; Biophysics, Vol.42, No.1, pp.77-79, (1997).

- „Calorimetric Investigation of DNA in the Native and Denatured State“; G. M. Mrevlishvili, G.Z. Razmadze, N.O. Metreveli; Thermochimica Acta, 274, p.37-43, (1996).

- „Physics of the Interaction of DNA and Water With Reference to Two Types of Hydrogen Bonds in Water“; G.M.Mrevlishvili, G.Z.Razmadze, N.O.Metreveli and G.R.Kakabadze; Biophysics, Vol.40, No.2, pp.263-265, (1995).

- „Physics of water-dna interaction with reference to the two kinds hydrogen bonds in water“; . G. M. Mrevlishvili, G.Z. Razmadze, N.O. Metreveli; Proceedings Of the Georgian Academy of Sciences, v.20 N1-6, (1994).
- „Microcalorimetric Study of the Bacteriophage DDVI“ ; G.M.Mrevlishvili, T.D.Mdzinarashvili, N.O.Metreveli, L.G.Kalandarishvili ; Biofizika, Vol.37, No.1, pp.48-52, (1992).
- „Thermal capacity of DNA in the native and denatured states“ ; G.M. Mrevlishvili, T.D. Mdzinarashvili, N.O. Metreveli and G.R.Kakabadze ; Biophysics, Vol.37, No.5, pp.755-756, (1992).

GRANTS RECEIVED

- Shota Rustaveli National Science Foundation – Project FR-23-14629, (2023- 2026), "Nucleic acids quadruplexes for static and dynamic nanotechnologies".

- Shota Rustaveli National Science Foundation – Project N FR17-140, (2017- 2021), "Quadruplex priming amplification for molecular diagnostics and DNA sequencing".

- Shota Rustaveli National Science Foundation – Project N D-13/12 , (2017- 2019), "Quadruplex Priming Amplification at Range of Normal Human Body Temperature".

- Shota Rustaveli National Science Foundation – Project (FR / 218 018 /16) (2016-2019), "The influence of different metal ions on the Cr(VI) reduction process ongoing in bacteria such as Arthrobacter species".

- Shota Rustaveli National Science Foundation – Project N^0 D-13/12 (2012 2015), "Thermodynamics of DNA Quadruplexes".

- STCU –Project # 4744 (2010-2013), "Development of Methods of Nanoparticle Production Using Extremofiles".

- NATO-PDD(CP) - (CBP.EAP.CLG 982215) (2006-2008), "Mechanisms of th Influence of UV Irradiation on Collagen and Collagen-DNA Functiona Complex".

- INTAS 99 1390, (2004-2005), „The Biological Dispersion Phenomenon and the Energetics of Microplankton: A Search for the Ecological Regularities and the Relationship to Environmental Fluctuations".

- Ministry of Science and Education of Georgia, N76, (2005-2006) "Thermodynamic, Hydrodynamic and Specrtoscopic Investigation of Proteins, Nucleic Acids and Their Complexes (Viruses and Phages)".

- ISF – Soros Internatiol Grant (1995-1998) , "Thermodynamic Investigation of Proteins, Nucleic Acids and Their Complexes ".