

CURRICULUM VITAE

(July 2018)

PERSONAL DATA:

Last Names: PANTANO GUTIERREZ
Sex: Male
Date of Birth: July 9th 1972
Marital Status: married, one son
Languages: Spanish (native), Italian (written, spoken), English (written, spoken).
Work address: Calle Matajojo 2020, CP 11400, Montevideo, Uruguay
Phone: +598-2-5220910 Int. 156, Fax: +598-2-5220910
e-mail: spantano@pasteur.edu.uy

First names: Sergio Fabián
Citizenship: Argentinean – Italian
Argentinean Passport: 22714906
Italian Passport: YB0681512

EDUCATION DEGREES:

- Degree in Physics (Licenciado en Física). Faculty of Phys., Math. and Nat. Sciences. National University of San Luis (NUSL), 1996. San Luis, Argentina.
- Magister Philosophiae. International School for Advanced Studies (SISSA), Italy, 1999.
- Doctor Philosophiae. SISSA, 2001.

FORMER POSITIONS:

- Researcher (Assegnista di Ricerca) at the Sector of Statistical and Biological Physics. SISSA, Trieste, Italy. 2002-2004
- Independent researcher at the Venetian Institute for Molecular Medicine (VIMM), Padua, Italy, from 2004 to 2007.

PRESENT POSITION:

Head of Biomolecular Simulations at the Institut Pasteur de Montevideo, Uruguay, since 2007 (permanent position).

PUBLICATIONS:

1. Tosar JP, Gambaro F, Darré L, Westhof E, Cayota A, Dimerization confers increased stability to nucleases in extracellular 5' halves from glycine and glutamic acid tRNAs. NAR, 2018 In press.
2. Zonta F, Buratto D, Crispino G, Carrer A, Bruno F, Yang G, Mammano F and Pantano S. Cues to opening mechanisms from in silico electric field excitation of Cx26 hemichannel and in vitro mutagenesis studies in HeLa transfectants. Frontiers in Molecular Neuroscience. 2018, vol 11, art 170.
3. Esteban C, Donati I, Pantano S, Villegas M, Benegas J, Paoletti S, Dissecting the conformational determinants of Chitosan and Chitlac oligomers. Biopolymers, 2018, e23221.
4. Viso JF, Belelli P, Machado M, González H, Pantano S, Amundarain MJ, et al. (2018) Multiscale modelization in a small virus: Mechanism of proton channeling and its role in triggering capsid disassembly. PLoS Comput Biol 2018, 14(4): e1006082.
5. Sulpizi M, Faller R, Pantano S. Multiscale modeling on biological systems. BBRC. 2018, 498:263.
6. Brandner AF, Schueller A, Melo F, Pantano S. Exploring DNA dynamics within oligonucleosomes with coarse-grained simulations: SIRAH force field extension for protein-DNA complexes. BBRC, 2018, 498:319

7. Machado M, Gonzalez HC, Pantano S. MD Simulations of Virus-Like Particles with Supra CG solvation affordable to desktop computers. *JCTC*. 2017, 13: 5106.
8. Marcello A, Pantano S. Interdisciplinary approaches to the study of flavivirus. *BBRC*, 2017, 492:531.
9. Barrera E, Frigini EN, Porasso RD, Pantano S. Modeling DMPC lipid membranes with SIRAH force-field. *Journal of Molecular Modelling*. 2017, 23: 259
10. Surdo N, Berrera M, Koschinski A, Brescia M, Machado M, Carr C, Morotti S, Grandi E, Wright P, Bers D, Gorelik J, Pantano S, Zacco M. FRET biosensor uncovers cAMP nano-domains at β -adrenergic targets that dictate precise tuning of cardiac contractility. *Nature Comm*, 2017, 8: 15031.
11. MF Festari, F Trajtenberg, N Berois, S Pantano, L Revoredo, Y Kong, et al. Revisiting the human polypeptide GalNAc-T1 and T13 paralogs. *Glycobiology*. 2017, 27:140.
12. Astrada S, Gomez Y, Obal G, Pritsch O, Vallespí MG, Bollati-Fogolín M. Comparative analysis reveals amino acids critical for anticancer activity of peptide CIGB-552. *J. Pep. Sci.* 2016, 22:711.
13. Cali T, Frizzarin M, Luoni L, Zonta F, Pantano S, Cruz C, Bonza MC, Bertipaglia I, Ruzzene, De Michelis MI, Damiano N, Marina O, Zanni G, Zanotti G, Brini M, Lopreiato R, Carafoli E. The ataxia related G1107D mutation of the plasma membrane Ca²⁺ + ATPase isoform 3 affects its interplay with calmodulin and the autoinhibition process. *BBA - Mol. Basis Dis.* 2016, 1863:165.
14. Machado MR and Pantano S. SIRAH Tools: mapping, backmapping and visualization of coarse-grained models. *Bioinformatics*, 2016, 32:1568.
15. Machado MR and Pantano S. Exploring LacI–DNA Dynamics by Multiscale Simulations Using the SIRAH force field. *JCTC*, 2015, 11:5012.
16. Jäger AV, De Gaudenzi JG, Mild JG, Cormack BM, Pantano S, Altschuler DL, Edreira MM. Identification of novel cyclic nucleotide binding proteins in *Trypanosoma cruzi*. *Mol Biochem Parasitol.* 2015, 198:104.
17. Darré L, Machado MR, Brandner AF, Ferreira S, Gonzalez HC, Pantano S. SIRAH: a structurally unbiased coarse-grained force field for proteins with aqueous solvation and long-range electrostatics. *JCTC*, 2015, 11:723.
18. Morande PE, Borge M, Abreu C, Galletti J, Zanetti SR, Nannini P, Bezares RF, Pantano S, Dighiero G, Oppezzo P, Gamberale R, Giordano M. Surface localization of high-mobility group nucleosome-binding protein 2 (HMGN2) on leukemic B cells from chronic lymphocytic leukemia patients is related to secondary autoimmune hemolytic anemia. *Leuk Lymphoma*. 2015. Jan 21:1-8.
19. Sanguinetti M, Amillis S, Pantano S, Scazzocchio C and Ramón A. Modeling and mutational analysis of *Aspergillus nidulans* UreA, a member of the subfamily of urea/H⁺ transporters in fungi and plants. *Open Biology*, 2014, 4:140070
20. Zecchin A, Pattarini L, Gutierrez MI, Mano M, Mai A, Valente S, Myers MP, Pantano S, and Giacca M. Reversible acetylation regulates vascular endothelial growth factor receptor-2 activity. *Journal of Molecular Cell Biology*, 2014, 6:116.
21. Gonzalez HC, Darré, L. Pantano, S. Transferable Mixing of Atomistic and Coarse-Grain Water Models. *J. Phys. Chem. B*, 2013, 117 :14438.
22. Pantano S, Montecucco C. The Blockade of the Neurotransmitter Release Apparatus by Botulinum Neurotoxins. *Cell. Mol. Life Sci.* 2013, DOI:10.1007/s00018-013-1380-7.
23. Megighian A, Zordan M, Pantano S, Scorzeto M, Rigoni M, Zanini D, Rossetto O, Montecucco C. Evidence for a radial SNARE super-complex mediating neurotransmitter release at the *Drosophila* neuromuscular junction. *J. Cell. Sci.*, 2013, 136: 3134.
24. Almeida RS, Loss O, Colabardini AC, Brown NA, Bignell E, Savoldi M, Pantano S, Goldman MH, Arst HN Jr, Goldman GH. Genetic Bypass of *Aspergillus nidulans* crzA Function in Calcium Homeostasis. *G3 (Bethesda)*, 2013, 3:1129.
25. Vo Cam Q, Pantano S, Rossetti G and Carloni P. HIV-1 Tat binding to PCAF: Structural determinants from computational methods. *Biology*, 2012, 1:277

26. Darré L, Tek A, Baaden M and Pantano S. Mixing atomistic and coarse grain solvation models for MD simulations: let WT4 handle the bulk. *JCTC*, 2012, 8:3880.
27. Giorgetti A, Ruggerone P, Pantano S, Carloni P. Advanced Computational Methods in Molecular Medicine. *J Biomed Biotechnol.* 2012, 709085.
28. Zeida A, Dans P and Pantano S. Breathing, bubbling and bending: DNA flexibility from multi microseconds simulations. 2012, *Phys. Rev. Letters E.* 2012, 86: 021903
29. Richero M, Oestreicher N, Muro-Pastor MI, Pantano S, Scazzocchio C, Cecchetto G. Mutations in the basic loop of the Zn binuclear cluster of the UaY transcriptional activator suppress mutations in the dimerisation domain. *Fungal Genetics and Biology.* 2012, 49:731.
30. Darré L, Machado MR, Pantano S. Coarse Grained Models of Water. *WIREs Comput. Mol. Sci.* 2012, 2: 921.
31. Herrera F, Bouchet A, Lairion F, Disalvo A and Pantano S, Molecular dynamics study of the Interaction of Arginine with POPC and POPE bilayers. *J. Phys. Chem. B.* 2012, 116:4476.
32. Herrera FE and Pantano S. Structure and dynamics of nano-sized raft-like domains on the plasma membrane. *J. Chem. Phys.* 2012, 136: 015103. Also selected for the *Vir. J. Bio. Phys. Res. / Vol. 23 / Iss. 2 / MEMBRANE BIOPHYSICS*
33. Machado MR, Dans, PD and Pantano S. A hybrid all-atom/coarse grain model for multiscale simulations of DNA. *Phys Chem Chem Phys.* 2011, 13:18134.
34. Darré L, Machado MR, Dans PD, Herrera FE, Pantano S. Another Coarse Grain Model for Aqueous Solvation: WAT Four? *JCTC.* 2010, 6:3793.
35. Megighian A, Scorzeto M, Zanini D, Pantano S, Rigoni M, Benna C, Rossetto O, Montecucco C, Zordan M. Arg206 of SNAP-25 is essential for neuroexocytosis at the *Drosophila melanogaster* neuromuscular junction. *J Cell Sci.* 2010, 123:3276.
36. Garcia Silva MR, Tosar JP, Frugier M, Pantano S, Bonilla B, Esteban L, Serra E, Rovira C, Robello C, Cayota A. Cloning, characterization and subcellular localization of a *Trypanosoma cruzi* argonaute protein defining a new subfamily distinctive of trypanosomatids. *Gene.* 2010, 466:26.
37. Dans PD, Zeida A, Machado MR, Pantano S. A Coarse Grained Model for Atomic-Detailed DNA Simulations with Explicit Electrostatics. *JCTC*, 2010, 6:1711.
38. Machado MR, Dans PD, Pantano S. Isoform Specific Determinants in the Binding of HP1 to Histone 3: Insights from Molecular Simulations, *Amino Acids*, 2010, 38:1571.
39. De Marco, Dans PD, Knezevich A, Maiuri P, Pantano S, Marcello A. Subcellular localization of the interaction between the human immunodeficiency virus transactivator Tat and the nucleosome assembly protein *Amino Acids*, 2010, 38:1583.
40. Gauna CF, Villegas M, Guidugli S, Esteban C, Paoletti S, Pantano S, Benegas J. Study of molecular dynamics in a tridimensional structure of kappa-carragenan in different solvents. *Revista Mexicana De Fisica*, 2010, 56:61.
41. Herrera FE, Pantano S. Salt induced asymmetry in membrane simulations by partial restriction of ionic motion. *J. Chem. Phys.* 2009, 130, Art. Num. 195105
42. Carnevale V, Raugei S, Neri M, Pantano S, Micheletti C, Carloni P. Investigating aspects of HIV-1 drug resistance via molecular simulation: Multi-scale modeling of the HIV-1 protease and Tat protein targets, *Journal of Molecular Structure*, 2009, 898:97.
43. Pantano S. In silico description of fluorescent probes in vivo. *J Mol Graph Model*, 2008, 27: 563.
44. Pantano S, Zonta F; Mammano F. A fully atomistic model of the Cx32 connexon. *PLoS ONE.* 2008, 3(7):e2614.
45. Hernandez VH, Bortolozzi M, Pertegato V, Beltramello M, Giarin M, Zacco M, Pantano S, Mammano F. Unitary permeability of gap junction channels to second messengers measured by FRET microscopy and dual whole-cell current recordings. *Nature Methods.* 2007, 4: 353.
46. Berrera M, Pantano S, Carloni P. Catabolite Activator Protein in Aqueous Solution: A Molecular Simulation Study. *J. Chem. Phys. B.* 2007, 111:1496.

47. Pantano S, Carafoli E. The role of phosphorylation on the structure and dynamics of phospholamban: A model from molecular simulations. *Proteins*, 2007. 66:930.
48. Bicego M, Beltramello M, Melchionda S, Carella M, Piazza V, Zelante L, Bukauskas FF, Arslan E, Cama E, Pantano S, Bruzzone R, D'Andrea P, Mammano F. Pathogenetic role of the deafness-related M34T mutation of Cx26. *Hum Mol Genet*. 2006, 15:2569.
49. Berrera M, Pantano S, Carloni P. CAMP Modulation of the Cytoplasmic Domain in the HCN2 Channel Investigated by Molecular Simulation. *Biophys. J*. 2006, 90:3428.
50. Pantano S, Marcello A, Ferrari A, Gaudiosi D, Sabo A, Pellegrini V, Beltram F, Giacca M, Carloni P. Insights on HIV-1 Tat:P/CAF Bromodomain Molecular Recognition From in Vivo Experiments and Molecular Dynamics Simulations. *Proteins*, 2006, 62:1062.
51. Pasquato N, Bern R, Folloni S, Cianci M, Pantano S, Helliwell J, Zanotti G. Crystal Structure of Peach Pru p 3, the Prototypic Member of the Family of Plant Non-Specific Lipid Transfer Protein Pan-Allergens. *J Mol. Biol*. 2006, 356:684.
52. Pantano S, Marcello A, Sabo A, Ferrari A, Pellegrini V, Beltram F, Giacca M, Carloni P. A Model of N-Terminal Cyclin T1 Based on FRET Experiments. *J. Theor. Med*. 2005, 6:73.
53. Pantano S, Carloni P. Comparative Analysis of HIV-1 Tat Variants. *Proteins* 2005, 58: 638.
54. Pantano S, Zaccolo M, Carloni P. Molecular Basis of the Allosteric Mechanism of CAMP in the Regulatory PKA Subunit. *FEBS Lett*. 2005, 579:2679.
55. Pantano S, Montecucco C. A Molecular Model of the Vibrio Cholerae Cytolysin Transmembrane Pore. *Toxicon*. 2005, 47:35.
56. Montecucco C, Schiavo G, Pantano S. SNARE Complexes and Neuroexocytosis: How Many, How Close? *Trends Biochem. Sci*. 2005, 30:367.
57. Lissandron V, Terrin A, Collini M, D'alfonso L, Chirico G, Pantano S, Zaccolo M. Improvement of a FRET-Based Indicator for CAMP by Linker Design and Stabilization of Donor-Acceptor Interaction. *J Mol. Biol*. 2005, 354:546.
58. Ayala YM, Pantano S, D'Ambrogio A, Buratti E, Brindisi A, Marchetti C, Romano M, Baralle FE, Human, Drosophila, and C.Elegans TDP43: Nucleic Acid Binding Properties and Splicing Regulatory Function. *J Mol. Biol*. 2005, 348: 575.
59. Pantano S, Tyagi M, Giacca M, Carloni P. Molecular Dynamics Simulations on HIV-1 Tat. *Eur. Biophys. J* 2004, 33:344.
60. Pantano S, Tyagi M, Giacca M, Carloni P. Amino Acid Modification in the HIV-1 Tat Basic Domain: Insights From Molecular Dynamics and in Vivo Functional Studies. *J Mol. Biol*. 2002, 318:1331.
61. Pantano S, Alber F, Lamba D, Carloni P. NADH Interactions With WT- and S94A-Acyl Carrier Protein Reductase From Mycobacterium Tuberculosis: an Ab Initio Study. *Proteins* 2002, 47:62.
62. Pantano S, Alber F, Carloni P. Proton dynamics in an enzyme model substrate: an ab initio molecular dynamics study. *J. Mol. St.-THEOCHEM*, 2000, 530:177.
63. Paoletti S, Benegas JC, Pantano S, Vetere A. Thermodynamics of the conformational transition of biopolyelectrolytes: The case of specific affinity of counterions. *BIOPOLYMERS*. 1999, 50:705.
64. Benegas JC, Pantano S, Vetere A, Paoletti S. Polyelectrolytic aspects of the thermodynamics of conformational transition: kappa-Carrageenan in formamide. *BIOPOLYMERS*. 1999, 50:127.

Chapters in Books/Proceedings:

1. Pantano S, Berrera M, Anselmi C, Carloni P. Voltage-gated Ion Channels Investigated by Molecular Dynamics and Bioinformatics. *Proceedings of the International School of Physics "Enrico Fermi", Course CLXV. "Protein Folding and Drug Design"*. Edited by R.A. Broglia, L. Serrano and G. Tiana. Varenna, Italy. 2007, pp. 332.
2. Machado M, Pantano S. Structural Characterization of a New Target Against HIV-1 Using Theoretical Methods Book of selected invited experts ICS-UNIDO. *Drug Design and Discovery for Developing*

Countries International Conference. Edited by E. Megnassan, L. Owono Owono and S. Miertus Trieste, Italy. 2008, pp. 84.

3. Dans PD.; Darré L.; Machado MR.; Zeida A.; Brandner A. F.; Pantano S. Assessing The Accuracy Of The Sirah Force Field To Model Dna At Coarse Grain Level. In *Advances In Bioinformatics And Computational Biology*, Setubal, J. C., Almeida, N. F., Eds.; Springer International Publishing: 2013; pp 71-81.
4. Machado MR and Pantano, S. In silico approaches for the development of novel cAMP FRET reporters. In *cAMP signalling, Methods in Molecular Biology*, Zaccolo, M et al. Eds. Springer International Publishing, 2015; pp 41-58.

MEMBERSHIPS, FELLOWSHIPS, ETC:

- Researcher 4th degree (5 maximum) in the Biology and Chemistry Areas of “PEDECIBA” (Program for Development of Basic Sciences in Uruguay).
- Researcher Level II (III maximum) of the National Agency for Innovation and Investigation, Uruguay.
- Senior associate of the International Centre for Theoretical Physics (ICTP) 2019-2025.
- International Consultant at the ICS-UNIDO, Trieste, Italy 2008, 2009.
- Junior associate of the International Centre for Theoretical Physics (ICTP) 2002-2004.
- Doctoral Fellow, SISSA, Trieste, Italy. 1998-2001
- Doctoral Fellow, CONICET, Argentina. 1996-1998.

INVITED SEMINARS:

Delivered invited seminars (not listed for shortness) in: Argentina, Brazil, Cameroon, Chile, China, Finland, Germany, Italy, Malaysia, Thailand, Scotland, Spain, Sweden, Switzerland, UK and Uruguay.

ORGANIZATION OF SCIENTIFIC EVENTS:

- OpenLab “Performing Molecular Simulations with the Sirah force field”, IP Montevideo, Dec. 2017.
- Co-chair of the 42nd edition of Quitel 2016, Nov. 2016, Montevideo, Uruguay
- VIII PostLATAM course Membrane Lipids, Transporters, Channels...and all that crosstalk, Salto, Uruguay. Nov. 2015.
- Co-Organizer of the joint meeting SAB/SBFUy “Latin American Crosstalk in Biophysics and Physiology”, Salto, Uruguay. Nov. 2015.
- OpenLab “Performing Molecular Simulations with the Sirah force field”, IP Montevideo, May 2015.
- Course “Introduction to Structural Biology and Bioinformatics”, IP Montevideo, Nov. 2013.
- Course and workshop “Ion Channels: From Molecules to Pathology”, Universidad de la República - IP Montevideo, April 2012.
- “NFS Workshop on Multiscale Modeling and Simulation”, IP Montevideo, Sept. 2012.
- “Hands-on Course: Coarse Grain Methods for Biomolecular Simulations”, IP Montevideo, Sept. 2011.
- “Course and Workshop: Computational Modelling and Simulation of Biological Systems”, IP Montevideo, February 2010.
- “Conference on Molecular Aspects of Cell Biology: A Perspective from Computational Physics”, International Centre for Theoretical Physics, Italy, October 2010.

FORMATION OF HUMAN RESOURCES:

Concluded: 3 PhDs (1 as co-director), 2 Posdocs, 1 MSc and 4 Degree theses (2 as co-supervisor).

Ongoing: 4 PhDs (2 as co-supervisor), and 2 MSc (1 as co-supervisor). 2 Posdocs.

OTHER:

- Executive Editor of the journal BBRC, Elsevier.
- Editor-In-Chief of the journal MethodsX, Elsevier.
- External examiner of PhD theses in Argentina, Brazil, Italy and Uruguay.
- Software's authorship (copyright). "The SIRAH force field 2014"
- Visiting Professor at the Physics Department, NUSL, San Luis, Argentina, 2017.

TEACHING:

At the Department of Physics of the NUSL, San Luis, Argentina:

- Teacher assistant from 1993 to 1994. • Instructor 1994 to 1998.

At the Physics department of the Università degli Studi di Padova, Padua, Italy:

- Director of the PhD Course "Structure and dynamics of proteins and nucleic acids", 2005 and 2006.

At the ORT University, Montevideo, Uruguay

- Professor of Bioinformatics, 2012-2013.