

Curriculum Vitae of Samuela Pasquali

Personal data

Date of birth: October 7th,1975
Place of birth: Milano, Italy
Citizenship: Italian
Gender: Female
Marital Status: Married, one child

Contact

Laboratoire de physico-chimie théorique (PCT)
École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI)
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Education

- **Graduate studies**

1999 - May 2005: Physics department New York University, New York, NY
USA

May 2001: Master of Science

May 2005: Ph.D.

Research fields: RNA folding, models for confined polymers

Thesis title :”Studies in confined biopolymers”

Advisor: J.K. Percus

GPA: 3.8 (over 4)

- **Undergraduate studies**

September 1993 - October 1998: Physics Department, Università Statale di
Milano, Milano, Italy

Degree: Laurea in Fisica. Graduation grade: 110/110 cum laude

Research thesis field: protein folding models

Thesis title: “Studies on models of folding and aggregation of proteins”

Advisor: Professor Ricardo Broglia

Teaching Experience

- 2000-2005 Teaching assistant for the following courses at NYU: Courses taught (several more than once): General Physics I, General Physics II, 20th Century Concepts of Space, Time, and Matter, Explorations of Light and Colors, The Universe: Its Nature and History, Sound and Music, Modern Physics, Einstein's Universe.

Typical work load for one course: 10 hours per week (teaching and grading) for 14 weeks per semester. Average annual course load around 300 hours.

- January 2007: Qualification for "Maitre de Conference" teaching position in France, sections 28 (dense media and materials), 29 (theoretical physics), and 31 (theoretical and physical chemistry)

Numerical Expertees

Linux Environment

C and C++ programming language

Matlab and Octave

Mathematica

Languages

Bilingual Italian and English

Good spoken French

Fellowships and awards

- 1993-1997: Scholarship from Universita' Statale di Milano, based on grade point average
- 1999: Meyer Fellowship from NYU Department of Physics.
- 2003, 2004: GSAS Travel Grant.
- 2003: nominated by the NYU Physics Department for the GSAS Dean Dissertation Fellowship.
- 2005: Post-doctoral fellow from PCT, ESPCI.

School and conferences

- *Third International Workshop on Methods from Macromolecular Modeling (M^3)*, Courant Institute of Mathematical Sciences and Department of Chemistry, New York City, USA, October 2000.
- *International Workshop on Proteomics: Protein Structure, Function and Interactions*, The Abdus Salam international centre for theoretical physics, Trieste, Italy, May 2003.
- *Structural Approaches to Sequence Evolution: Molecules, Networks, and Populations*, Max Planck Institute for Physics of Complex Systems, Dresden, Germany, July 2004.
- *Workshop: From Colloids to Polymers*, CECAM, Lyon, France, November 2005.
- *Workshop on Driven States in Soft and Biological Matter*, The Abdus Salam international centre for theoretical physics, Trieste, Italy, April 2006.
- *Dispersion Forces and Nano-Electro-Mechanical Systems*, Lorentz Center, Leiden, Holland, December 2006.
- *Workshop on computer simulations of soft matter and biosystems*, Heidelberg, Germany, March 2007.
- *Spring College on Water in Physics, Chemistry and Biology*, The Abdus Salam international centre for theoretical physics, Trieste, Italy, April 2007.
- *Congrès Général de la Société Française de Physique*, Grenoble, France, July 2007.

Presentations

- Seminar: “*Exploring RNA secondary repertoire through graphs*”, AMOLF (January 2005), University of Koln (January 2005), Munich Technical University (January 2005), ESPCI (October 2005), Max Planck Institute Dresden (January 2006)
- Seminar: “*On-lattice Thermal Casimir: numerical methods and theory*”, ESPCI (October 2006), Courant Institute at NYU (October 2006)
- Poster: “*Exploring RNA secondary repertoires through graphs*”, at: Structural Approaches to Sequence Evolution: Molecules, Networks, and Populations, Max Planck Institute for Physics of Complex Systems, Dresden (July 2004)
- Poster: “*Mapping a homopolymer onto a model fluid*”, at: Workshop on Driven States in Soft and Biological Matter, ICTP, Trieste (April 2006)
- Poster: “*Fluctuation-induced interactions between dielectrics*”, at: Congrès Général de la Société Française de Physique, Grenoble (July 2007)

Publications

- R.A. Broglia, G. Tiana, S. Pasquali, H. E. Roman, E. Vigezzi, “*Folding and Aggregation of Designed Protein Chains*”, Proc. Natl. Acad. Sci. USA, 95:12930-1293 (1998)
- H. H. Gan, R. A. Perow, S. Roy, J. Ko, M. Wu, J. Huang, S. Yan, A. Nicoletta, J. Vafai, D. Sun, L. Wang, J. E. Noah, S. Pasquali, and T. Schlick, “*Analysis of Protein Sequence/Structure Similarity Relationships*”, Biophys. J., 83:2781-2791 (2002)
- H. H. Gan, S. Pasquali, and T. Schlick, “*Exploring The Repertoire of RNA Secondary Motifs Using Graph Theory with Implications for RNA Design*”, Nuc. Acids Res., 31:2926-2943 (2003)
- S. Pasquali, H.H. Gan, T. Schlick, “*Modular RNA architecture revealed by computational analysis of existing pseudoknots and ribosomal RNAs*”, Nuc. Acids Res., 33:1384-1398 (2005)
- S. Pasquali, J.K. Percus, “*Mapping a homopolymer onto a Model Fluid*”, J. Chem. Phys. 125:064906 (2006)
- S. Pasquali, F. Nitti, A.C. Maggs, “*Numerical methods for fluctuation driven interactions between dielectrics*”, submitted to PRE (2007), arXiv:cond-mat/0703229
- S. Pasquali, A.C. Maggs, “*Fluctuation-induced interactions between dielectrics in general geometries*”, submitted to PRE (2007), arXiv:0704.2171
- S. Pasquali, J.K. Percus, “*Mean field and the single homopolymer*”, in preparation