



Sami Rissanen

Curriculum Vitae

Personal Information

Born in **5.12.1988**

Current Position **PhD Student (Fall 2013–)**, Biological Physics and Soft Matter Group, Center of Excellence in Biomembrane Research (chosen by the Academy of Finland for 2014–2019), Tampere University of Technology, Finland.

Interests Movies, computer games, and various kinds of sports including running, cycling, gym, floorball, football, badminton, and tennis.

Computer skills

Operating Systems	Very Good in Windows, Good in OSX and Unix	Programming Languages	Good in C and C++
Scientific Applications	Excellent in MATLAB, Good in GROMACS and VMD	Application Programs	Excellent in L ^A T _E X and Microsoft Office

Positions of Trust

2010–2013 **Sports Manager**, *The Board of Teekkareiden Urheilu- ja Voimailukerho ry.*
TURVoKe ry organises the sport services at TUT facilities

2009 **Sports Manager**, Student Guild of Science and Engineering.

Education

2012–2013 **Master of Science (Technology)**, *Science and Engineering*, Tampere University of Technology, Finland, Major in Advanced Engineering Physics, orientation in Biological Physics. Minor in Signal Processing and Multimedia, GPA – 4.56/5.

2008–2012 **Bachelor of Science (Technology)**, *Science and Engineering*, Tampere University of Technology, Finland, Major in Advanced Engineering Physics, Minor in Biomedical Engineering, GPA – 4.34/5.

2007 **The Finnish Matriculation Examination**, *Kallaveden lukio* (high school), Kuopio, GPA – 9.1/10.

Employment Objectives

Short-term Complete Doctoral studies. While working as a PhD student, continue learning various methodologies in scientific computing, and network with people in the academic and private sectors, as well as expand knowledge in biological and life sciences.

Long-term A specialist and later a leadership position in the private sector in the field of computational biology and nanosciences and related industry.

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Work Experience

- 2013–Present **Researcher, Ph.D. Student**, *Department of Physics*, Tampere University of Technology, Computational Physics, Biological Physics and Soft Matter Group.
Research Objectives: The research focused on specifically chosen atomic level cell signalling events. The first project deals with the regulation of integrin activation/inactivation.
Other Responsibilities Involved in Postgraduate Studies:
- Supervision of younger students.
 - Management of the group's storage system for big data.
 - Organizing a conference in Levi in 2013 (chair of the organizing committee).
 - Member of the Centre of Excellence (CoE) student council.
- 2013 **Teaching Assistant**, *Department of Physics*, Tampere University of Technology.
Teaching assistant in analytical mechanics course.
- 2010–2013 **Research Assistant**, *Department of Physics*, Tampere University of Technology, Computational Physics, Biological Physics and Soft Matter Group.
Research Objectives: The aim of the computational work was to study interactions between a few different drug molecules, lipid bilayers, and a polymer called polyethylene glycol used in drug delivery. The results were published in [1 – 3], and one manuscript is being prepared based on this work.
Master's Thesis project focused on the binding of cholera toxin to various kinds of lipid bilayers. Two posters of this project have been presented and two manuscripts are being prepared based on this work.

Theses

- 2013 **Master's Thesis**, *Binding of Cholera Toxin to Lipid Bilayers of Various Compositions*, Supervised by Ph.D. Tomasz Róg and Prof. Ilpo Vattulainen. *Grade 5/5*.
The effect of the composition of lipid bilayers on the binding of cholera toxin was studied through computational methods. Two manuscripts are being prepared based on this work.
- 2011 **Bachelor's Thesis**, *Polyetyleeniglykoli Lääkeaineiden Kuljettajana*, Supervised by Prof. Ilpo Vattulainen. *Grade 5/5*.
The interactions between three relevant drug molecules and a polymer used in drug delivery, were examined. Three publications are related to this work [1 – 3].

Output and Experience with Respect to Age

After my M.Sc. studies, me and my supervisor decided that I should first focus on the numerous ongoing projects that had been started during my B.Sc. and M.Sc. studies, the objective being to complete them. As a result I now have 3 published peer-reviewed articles and 7 manuscripts are under review/final preparation. Now, as to my Ph.D. research work which was started in the Fall 2014, the aim is to focus on high risk/high gain projects. Given my quite profound experience and know-how, especially with regard to my age and position as a Ph.D. student, this strategy is feasible and provides an excellent basis for a high-impact Ph.D. Thesis.

Peer-Reviewed Journal Articles

- [1] M. Stępniewski, M. Kepczynski, D. Jamróz, M. Nowakowska, S. Rissanen, I. Vattulainen, and T. Róg. Interaction of Hematoporphyrin with Lipid Membranes. *The Journal of Physical Chemistry B*, 116(16):4889–4897, 2012.
- [2] Y. Li, S. Rissanen, M. Stępniewski, O. Cramariuc, T. Róg, S. Mirza, H. Xhaard, M. Wyrwal, M. Kepczynski, and A. Bunker. Study of Interaction Between PEG Carrier and Three Relevant Drug Molecules: Piroxicam, Paclitaxel, and Hematoporphyrin. *The Journal of Physical Chemistry B*, 116(24):7334–7341, 2012.
- [3] S. Rissanen, M. Kumorek, H. Martinez-Seara, Y. Li, D. Jamróz, A. Bunker, M. Nowakowska, I. Vattulainen, M. Kepczynski, and T. Róg. Effect of PEGylation on drug entry into lipid bilayer. *The Journal of Physical Chemistry B*, 118(1):144–151, 2014.

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