Curriculum Vitae

Nationality	Chinese
Date of birth	21st April 1983
Place of birth	Chengdu, China
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Dr. –Ing. Xin Lai

Education

2008-2012	**Dr.-Ing. in Systems Biology and Bioinformatics** University of Rostock, Germany Dissertation: A systems biology approach to unravel the cellular function of microRNAs (summa cum laude)
2005-2008	**M.Sc. in Computational Engineering** University of Rostock, Germany Thesis: Mathematical modelling and optimization of biochemical systems: a method of analysis in biotechnology and biomedicine (Grade: 1.8)
2001-2005	**B.Sc. in Computer Science** Technology University of Chengdu, China

Honour and Award

2012	**Best Poster Award** Symposium on Remodeling, Repair and Regeneration in Lung Diseases Marburg, Germany
2005	**Excellent Graduate Award** Technology University of Chengdu, China
2002, 2004, 2005	**First Class Scholarship** Technology University of Chengdu, China

Research Project and Position

01/2013-now	**Postdoc Researcher** Department of Systems Biology and Bioinformatics, University of Rostock, Germany
10/2008-12/2012	**Guest Researcher** Systems Biology Platform & Molecular Pulmonology/iLung, German Center for Lung Research, Philipps-University Marburg, Germany
06/2008-09/2012	**Postgraduate Researcher** Investigating the Cancer and Aging Link through Systems Biology Department of Systems Biology and Bioinformatics, University of Rostock, Germany
07-12/2007	**Undergraduate Researcher** Computational Systems Biology of Cell Signalling Department of Systems Biology and Bioinformatics, University of Rostock, Germany

Teaching and Administration Experience

2009-2013	**Hands on Lectures in Systems Biology I and II** miRNA regulation of gene expression: molecular biology and model simulation Mathematical modelling of cell signalling pathways using SBtoolbox2 Mathematical modelling of biochemical networks using SYCAMORE Principles of advanced parameter estimation for biochemical models
2008-2012	**Research Group Seminar Organizer**
2008-2012	**Web Creator and Administrator for BMBF-Funded Research Project CALSYS** www.sbi.uni-rostock.de/calsys
2011	**A Practical Lecture for Collaborators from Medical Department** Mathematical modelling of biochemical networks
2009	**Organization Assistant in Transatlantic Summer School on Cancer Systems Biology, Rostock, Germany**
2008	**Organization Assistant in Systems Biology for Medical Applications Summer School, Tenerife, Spain**

Public Activity

08/2012	**Interview by Anke Wilde**
	http://www.academics.de/wissenschaft/promovieren_im_fach_biotechnologie_53265.html
07/2012	**Poster presentation at Forschungscamp2012, University of Rostock**
12/2011	**Informatik Gongshow, University of Rostock**

Academic Publication and Presentation

Journal publication

- J. Vera, U. Schmitz, **X. Lai**, D. Engelmann, F.M. Khan, O. Wolkenhauer O, B.M. Pützer. Kinetic modeling-based detection of genetic signatures that provide chemoresistance via the E2F1-p73/DNp73-miR-205 network. ***Cancer Research***, in press, 2013.
- A. Sittka, J. Vera, **X. Lai**, B. Schmeck. Systems Biology of asthma. ***Pediatric Research***, in press, 2013.
- **X. Lai**, U. Schmitz, S.K. Gupta, O. Wolkenhauer, J. Vera. Computational analysis of target hub gene repression regulated by multiple and cooperative miRNAs. ***Nucleic Acids Research***, 40, 8818-34, 2012.
- J. Vera, S. Nikolov, **X. Lai**, A. Singh, O. Wolkenhauer. A model-based investigation of the transcriptional activity of p53 and its feedback loop regulation via 14-3-3σ. ***IET Systems Biology***, 5, 293-307, 2011.
- S. K. Gupta, S.K. Gupta, S. Smita, M. Srivastava, **X. Lai**, U. Schmitz, Q. Rahman, O. Wolkenhauer, J. Vera. Computational analysis and modelling the effectiveness of 'Zanamivir' targeting neuraminidase protein in pandemic H1N1 strains. ***Infection, Genetics and Evolution***, 11, 1072-1082, 2011.
- **X. Lai**, S. Nikolov, O. Wolkenhauer, J. Vera. A multi-level model accounting for the effects of JAK2-STAT5 signal modulation in erythropoiesis. ***Computational Biology and Chemistry***, 33, 312-324, 2009.
- S. Nikolov, **X. Lai**, O. Wolkenhauer, J. Vera. Integration of sensitivity and bifurcation analysis to detect critical processes in a model combining signalling and cell population dynamics. ***International Journal of Systems Science***, 41, 81-105, 2009.
- S. Nikolov[*], **X. Lai**[*], O. Wolkenhauer, J. Vera. Time delay and protein modulation analysis in a model of RNA silencing. ***Communications of SIWN***, 6, 111-117, 2009.

Book Chapter

- **X. Lai**, O. Wolkenhauer, J. Vera. Modelling miRNA regulation in cancer signalling systems. miR-34a regulation of the p53/Sirt1 signalling module. ***Computational Modeling of Signaling Networks***. X. Liu, M. D. Betterton (Eds.), Humana press, ISBN 978-1617798320, 2012.

- J. Vera, **X. Lai**, U. Schmitz, O. Wolkenhauer. MicroRNA-regulated networks: the perfect storm for classical molecular biology, the ideal scenario for systems biology. ***miRNA Cancer Regulation: Advanced Concepts, Bioinformatics and Systems Biology Tools***, J. Vera and U. Schmitz (eds.), Springer, ISBN 9789400755895, 2013.

Encyclopaedia Essay

- **X. Lai**, J. Vera. miRNA feed forward loops. ***Encyclopedia of Systems Biology***. W. Dubitzky, O. Wolkenhauer, H. Yokata, K.H. Cho (eds.), Springer, ISBN-13: 9781441998620, 2012.
- **X. Lai**, J. Vera. miRNA clusters. ***Encyclopedia of Systems Biology***. W. Dubitzky, O. Wolkenhauer, H. Yokata, K.H. Cho (eds.), Springer, ISBN-13: 9781441998620, 2012.
- **X. Lai**, J. Vera. miRNA target hub. ***Encyclopedia of Systems Biology***. W. Dubitzky, O. Wolkenhauer, H. Yokata, K.H. Cho (eds.), Springer, ISBN-13: 9781441998620, 2012.

Conference Talk

- **Time delay and protein modulation analysis in a model of RNA silencing.** The Second SIWN Congress (SIWN)-the 2nd International Conference on Bioinformatics and Systems Biology (BSB), Leipzig, Germany, 2009.
- **Integration of sensitivity and bifurcation analysis to detect critical processes in a model combining signalling and cell population dynamics.** Computational Methods in Systems Biology (CMSB), Rostock, Germany, 2008.

Conference Poster

- **A systems biology approach to study the cellular function of microRNAs**. International Workshop on Small RNA in Cancer, Inflammation, and Aging, Copenhagen, Denmark, 2012.
- **The role of microRNA regulation in the early inflammatory response: miR-146a and NFκB signalling in lung inflammation**. Symposium Remodeling, Repair and Regeneration in Lung Diseases, Marburg, Germany, 2012 (**Best poster award**).

- **On the regulation of microRNA target hubs: a Systems Biology perspective.** 12th International Conference on Systems Biology (ICSB), Heidelberg/Mannheim, Germany, 2011.
- **The role of micro RNA regulation in the early inflammatory response: miR-146a and NFκB signalling in lung inflammation.** 12th International Conference on Systems Biology (ICSB), Heidelberg/Mannheim, Germany, 2011.
- **Modelling miRNA regulation in signalling networks: miR-34a regulation of p53/Sirt1 module**. Conference on Systems Biology of Mammalian Cells (SBMC), Freiburg, Germany, 2010.
- **A multi-level model accounting for the effects of JAK2-STAT5 signal modulation in erythropoiesis**. The 2009 International Workshop on 'Computational and Integrative Biology' (CIB), Hangzhou, China, 2009.
- **Mathematical modelling accounting for dynamics of p53/miR-34a pathway**. Cancer Systems Biology (CaSysBio)-Transatlantic Summer School, Rostock, Germany, 2009.
- **Integration of sensitivity and bifurcation analysis to detect critical processes in a model combining signalling and cell population dynamics**. Computational Methods in Systems Biology (CMSB), Rostock, Germany, 2008.
- **Use of sensitivity analysis to detect critical biochemical processes in a mathematical model linking intracellular and cell population dynamics in erythropoiesis**. Systems Biology for Medical Applications-Summer School, Tenerife, Spain, 2008.

Publication in Preparation

- **X. Lai**[*], C. Schulz[*], A. Sittka[*],B. Dolniak, O. Wolkenhauer, J. Vera, B. Schmeck.
  Investigating the role or miR-146a in the regulation of the early inflammatory response to Legionella pneumophila using a systems biology approach.