Martin Loose

Institute for Science and Technology Austria (IST Austria)
Am Campus 1, 3400 Klosterneuburg, Austria
+43 2243 9000 6301
martin.loose@ist.ac.at
http://looselab.ist.ac.at

Nationality: German
Date of birth: 25.11.1980
Married, two children

1. Academic Employment

Since 2015 **IST Austria, Klosterneuburg, Austria**
Assistant Professor

2011 - 2014 **Harvard Medical School, Boston**
Departmental Fellow

2010 - 2011 **Technical University Dresden**
Max Planck Institute of Molecular Cell Biology and Genetics, Dresden
Postdoctoral Researcher

2. Academic Education

2010 **Technical University Dresden**
Faculty for Biology
Doctorate (Dr. rer. nat, Biology, summa cum laude)

2008 **Marine Biological Laboratory, Woods Hole, MA.**
Physiology course

2006-2010 **Technical University Dresden**
Biotechnology Center (Biotec)
Max Planck Institute of Molecular Cell Biology and Genetics, Dresden
Graduate Student (with Prof. Petra Schwille)

2006 **University of Heidelberg**
Faculty for Chemistry
Diploma in Chemistry
(subjects: biochemistry, physical chemistry, organic chemistry, inorganic chemistry; very good)

2005-2006 **European Molecular Biology Laboratory (EMBL) Heidelberg**
Cell Biology and Biophysics Unit
University of Heidelberg
Faculty for Chemistry, Department for Physical Chemistry
Diploma student (with Dr. Francois Nedelec and Prof. Joachim Spatz)

2001-2006 **University of Heidelberg**
Faculty for Chemistry
Undergraduate student

3. Distinctions and Grants

Since 2019 EMBO Young Investigator
Since 2016 HFSP Young Investigator Grant
Since 2015 ERC Starting Grant
2012-2014 HSFP Long-Term Fellowship
2011-2012 EMBO Long-Term Fellowship
2011-2014 Harvard Medical Systems Biology Departmental Fellowship
2010 Dr. Walter Seipp Award for best dissertation at TU Dresden
2001 - 2009 Fellowship of the German National Scholarship Foundation (Studienstiftung)

4. Publications

1. Keisuke Ishihara, Franziska Decker, Paulo Caldas, James Pelletier, Martin Loose, Jan Brugues, Tim Mitchison. **Spatial Variation of Microtubule Depolymerization in Large Asters Suggests Regulation by MAP Depletion** *Under review*, bioRxiv (2020).

2. Víctor M. Hernández-Rocamora, Natalia Baranova, Katharina Peters, Eefjan Breukink, Martin Loose, Waldemar Vollmer. **Real time monitoring of peptidoglycan synthesis by membrane-reconstituted class A penicillin binding proteins.** *Under review*, bioRxiv (2020).

3. Christian Duellberg, Albert Auer, Nicola Canigova, Katrin Loibl, Martin Loose. **In vitro reconstitution reveals phosphoinositides as cargo-release factors and activators of the ARF6 GAP ADAP1.** *In revision* (2020).

4. Paulo Caldas, Philipp Radler, Christoph Sommer and Martin Loose. **Computational analysis of filament polymerization dynamics in cytoskeletal networks.** Methods in Cell Biology (2020), vol. 158:145-161.

5. Urban Bezeljak, Hrushikesh Loya, Beata Kaczmarek, Timothy E. Saunders and Martin Loose. **Stochastic activation and bistability in a Rab GTPase regulatory network.** PNAS (2020), vol. 117(12):6540-6549.

6. Natalia Baranova, Philipp Radler, Victor M. Hernandez-Rocamora, Carlos Alfonso, Mar Lopez-Pelegrin, German Rivas, Waldemar Vollmer, Martin Loose. **Diffusion and capture permits dynamic coupling between treadmilling FtsZ filaments and cell division proteins.** Nature Microbiology (2020), vol. 5(3):407-417.

7. Paulo Caldas, Mar Lopez-Pelegrin, Daniel J.G. Pearce, Nazmi B. Budanur, Jan Brugues, Martin Loose. **Cooperative ordering of treadmilling filaments in cytoskeletal networks of FtsZ and its crosslinker ZapA.** Nature Communications (2019), vol. 10 (1), 5744.

8. Natalia Baranova and Martin Loose. **Single molecule measurements to study polymerization dynamics of FtsZ-FtsA copolymers.** Methods in Cell Biology (2017) vol. 137:355-370.

9. Martin Loose, Katja Zieske and Petra Schwille. **Reconstitution of protein dynamics involved in bacterial cell division.** Springer Subcellular Biochemistry: Prokaryotic Cytoskeleton (2017), vol. 84:419-444.

10. Phuong A. Nguyen, Christine M. Field, Aaron C. Groen, Timothy J. Mitchison, **Martin Loose. Using supported bilayers to study the spatiotemporal organization of membrane-bound proteins.** Methods in Cell Biology (2015) vol. 128:223-41.

11. Phuong A. Nguyen*, Aaron C. Groen*, Martin Loose, Keisuke Ishihara, Martin Wühr, Christine M. Field, Timothy J. Mitchison. **Spatial Organization of Cytokinesis Signaling Reconstituted in a Cell-Free System.** Science (2014) vol. 346, 244-24 *equal contribution.

12. Martin Loose and Timothy J. Mitchison. **The bacterial cell division proteins FtsA and FtsZ self-organize into dynamic cytoskeletal patterns.** Nature Cell Biology (2014) vol. 16, 38–46.

13. Mike Bonny, Elisabeth Fischer-Friedrich, Martin Loose, Petra Schwille, Karsten Kruse. **Membrane Binding of MinE Allows for a Comprehensive Description of Min-Protein Pattern Formation.** PLoS Comput Biol (2013) vol.9(12): e1003347.

14. Jakob Schweizer+, Martin Loose+*, Mike Bonny, Ingolf Mönch, Karsten Kruse and Petra Schwille. **Geometry sensing by self-organized protein patterns.** PNAS (2012) vol. 109(38) pp. 15283-8. *corresponding authors, +equal contribution.

15. Martin Loose, Karsten Kruse and Petra Schwille. **Protein self-organization: Lessons from the Min system.** Annual Reviews for Biophysics (2011) vol. 40 pp. 31536.

16. Martin Loose, Elisabeth Fischer-Friedrich, Christoph Herold, Karsten Kruse and Petra Schwille. **Min protein patterns emerge from rapid rebinding and direct membrane interaction of MinE.** Nature Structural & Molecular Biology (2011) vol. 18(5) pp. 577-83.

17. Ana Dinarina*, Céline Pugieux*, Maria Corral, Martin Loose, Joachim Spatz and François Nédélec. **Chromatin shapes the mitotic spindle.** Cell (2009) vol. 138(3) pp. 502-13.

18. Martin Loose and Petra Schwille. **Biomimetic membrane systems to study cellular organization.** Journal of Structural Biology (2009) vol. 168(1) pp. 143-51. (Review)

19. Martin Loose, Elisabeth Fischer-Friedrich, Jonas Ries, Karsten Kruse and Petra Schwille. **Spatial regulators for bacterial cell division self-organize into surface waves in vitro.** Science (2008) vol. 320 (5877) pp. 789-92