

Did you acquire basics in biophysics and plan to expand your knowledge now?

What is the **Origin of life**?

Why - and how - do molecular **building blocks** form large, functional structures such as cells? How can these molecular blocks interact to perform actions such as allowing **cancer cells to move** to new locations?

Those questions as well as many more will be answered under biophysical aspects during the **master studies in ‚Biophysik‘**.

You need more infos or help?

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Course info:

- Building on knowledge from Bachelor **Biophysics, Physics, Biology** or equivalent.
- Solving of problems in natural science at the interface of **physics and biology**.
- Classes in biophysics, physics, biology, and other MINT subjects in English on demand.
- Possibility for an **Erasmus-Sokrates** wintersemester at the University Straßburg (France), start in September -> please contact us early (march)!
- Mix of **mandatory classes and options** to choose from.
- **Duration:** 4 semesters (2 years, 120 ETCS points)
Semester 1 + 2: classes
Semester 3 + 4: research
- **Degree:** Master of Science (M.Sc.).
- **Career prospects:** Excellent. The skills developed in this course are highly sought after in a wide range of fields, including medical-, biotechnological -, and pharmaceutical industry as well as fundamental science.

Why Saarbrücken?

- Chances to **actively participate in scientific research** (Internships, student jobs, practica, collaborative research center 1027).
- Students with a large range of **nationalities and backgrounds**.
- **Familiar atmosphere** with excellent and direct contacts between teachers and students.
- **Proximity to scientific institutions**, which are open for scientific projects (e.g. INM, HIPS, IBMT, MPI, KIST, ...).
- Good **infrastructure**.
- Fair trade **canteen**.
- Cool university **sport** options.
- Possibility to learn **new languages** on campus (including German).
- **Affordable living costs**.
- **Nice people**.



UNIVERSITÄT
DES
SAARLANDES

Master

Biophysik (Biological Physics)

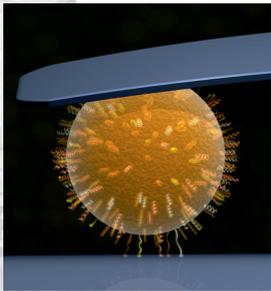
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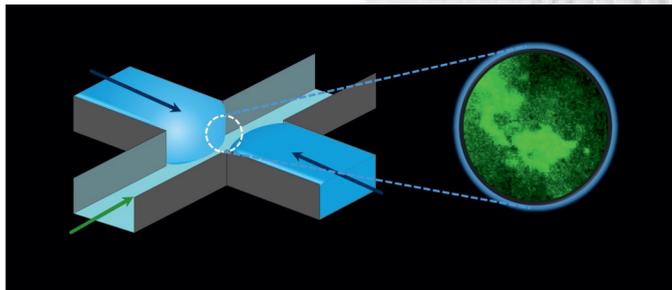
Scientific research at Saarland University

The variety of existing biophysical research groups at the Saarland University and their equipment of experimental and theoretical methods will enable you to get a comprehensive understanding of biophysical processes.

Experimental problems

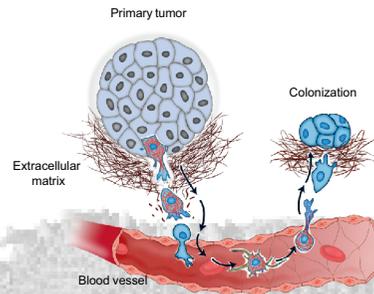


How do bacteria hold on to proteins?
Measurements with an atomic force microscope.

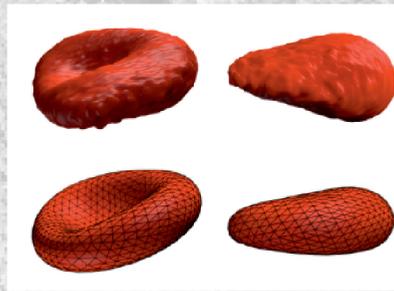


How can transport happen across cell membranes?
We use microfluidic model systems to investigate such processes in lipid bilayers.

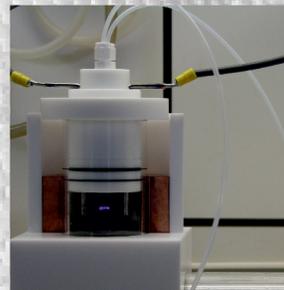
Further experimental problems



How are cellular polymers (called cytoskeleton) involved in the formation of metastasis?
Measurements on high resolution microscopes.



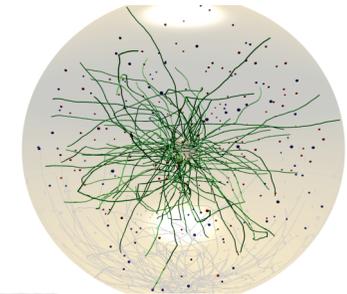
How do red blood cells deform in flow?
Comparison of experimental data (upper row) with simulation (below).



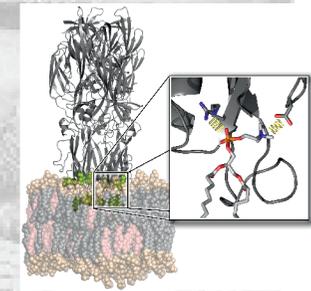
How did first organic molecules emerge during the origin of life? Setup for investigation.

...and many more!

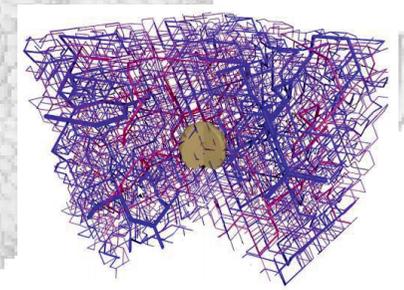
Questions from theoretical problems



How does the cytoskeleton distribute in cells?
Computer-simulations of microtubule dynamics.



How does a virus recognize a host cell?
Computer-simulation of a protein within a virus shell.



How does a growing tumor alter the network of blood vessels?
Computersimulation of the vascularization of tumors.

...and many more!