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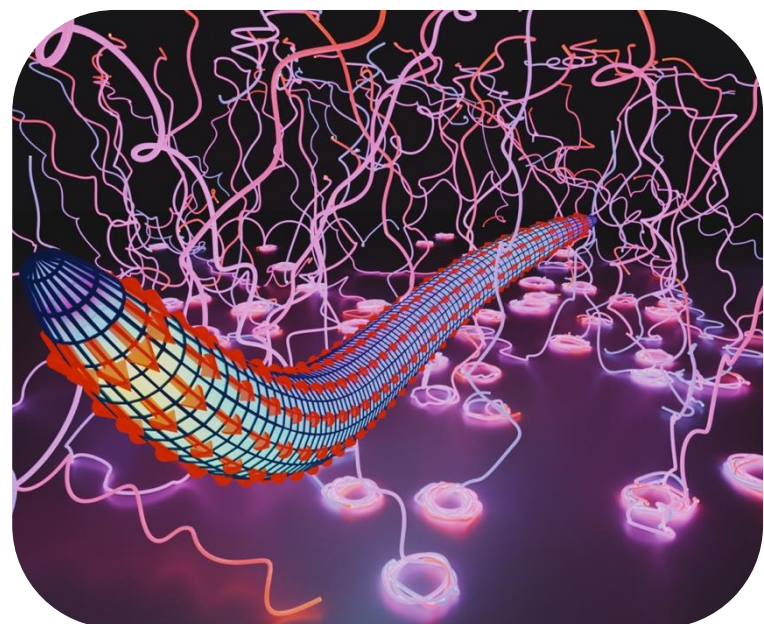
Barcelona, Charles Darwin– PRBB



Biophysics of the malaria parasite

Malaria is still one of the most severe infectious diseases and the underlying mechanisms are far from being understood. The lifecycle of the malaria parasite is complex and strongly shaped by the requirement to frequently switch between different physical environments.

We first discuss the case of sporozoites, which are the slender forms injected by female mosquitoes into the skin of the vertebrate hosts, and show that its motion patterns are strongly determined by right-handed chirality. We then discuss the blood stage, when the malaria parasite induces a system of adhesive knobs on the surface of infected red blood cells, in order to increase residency time in the vasculature and to avoid clearance by the spleen. In both cases, we combine theoretical models and experimental data to uncover the underlying mechanisms.



2026 schedule coming soon!

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