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## **Mechanics during *Pseudomonas aeruginosa* airway infection**

*Pseudomonas aeruginosa*, a pathogen highly recalcitrant to antibiotic treatment, commonly causes devastating pneumonia in individuals with impaired mucosal defenses. In many patients, aggressive antibiotic therapy often leads to long-lasting persistent chronic infections. However, little is known about how pathogenic strains evolve and establish themselves at the mucosal surface. Using experiments from human lung organoids that replicate the physiology of the airway mucosal surface, I will show that biofilm formation is a critical phenotype in host colonization. *P. aeruginosa* pays a fitness penalty for forming biofilms at the mucosal surface, but this strategy pays off under the selective pressures of antibiotic treatment. Our approach combining in vitro tissue with functional genomics thus allowed us to understand pathogen evolution at high resolution, and is widely applicable to many other infections.

Wednesday, 30 April 2025, 17:00

Institute for Biological Physics, Zülpicher Str. 77a

**Seminar Room S0.02**

Hosted by Berenike Maier