

Mardi 13 juin 2023 à 10h30
Amphithéâtre Henri Benoît

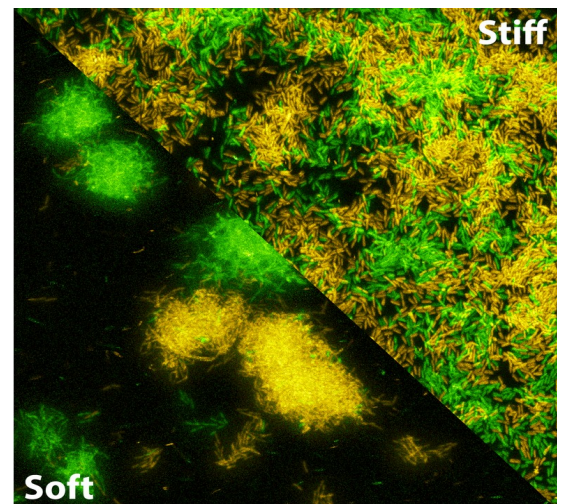
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Bacteria meet surfaces: early biofilm formation from a physics perspective

Surface-associated lifestyles dominate in the bacterial world. Large multicellular bacterial assemblies, called biofilms, are essential to the survival of bacteria in harsh environments, and are closely linked to antibiotic resistance in pathogenic strains. Biofilms stem from the colonization of substrates by bacteria: this process takes place on a wide range of surfaces, from living tissues to inert materials, under varying flow conditions.

In this talk, I will present our efforts to decipher the physical processes that regulate the assembly of individual bacteria into colonies. In the lab, we develop experimental tools that allow for the precise control of the mechanical cues experienced by bacteria, and image their behavior *in situ* for several hours, as they transition from individuals to microcolonies. I will in particular present recent results highlighting the key role of substrate rigidity in the behavior of the widespread pathogen *Pseudomonas aeruginosa* [1].



[1] Sofia Gomez, Lionel Bureau, Karin John, Elise-Noëlle Chêne, Delphine Débarre, Sigolene Lecuyer (2023) *Substrate stiffness impacts early biofilm formation by modulating Pseudomonas aeruginosa twitching motility* eLife 12:e81112