



Life Sciences Seminar

A single-cell perspective on the spatial self-organization of microbial systems

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Many microorganisms live in communities that consist of different genotypes that interact with each other. These interactions can lead to emergent properties at the community level that is, provide the community with functionality that goes beyond what individual members have in isolation. These community-level activities and functions are shaped by metabolic interactions between the organisms that constitute the community. Interactions are expected to mainly occur between microbes that are close to space. As a consequence, the nature and strength of the interactions that will occur will depend on the spatial arrangement of different types of microorganisms. In turn, the spatial arrangement is expected to be shaped by metabolic interactions, which determine regions where a given organism grows well. Our goal here is to better understand this interplay between the spatial arrangement of different types of microbes and the interactions that arise between them. Working with a synthetic consortium of different *E. coli* strains with well-defined metabolic interactions, we can quantify the spatial range over which interactions occur and understand the consequences for the spatial arrangement and growth of the community. We then test these principles in more natural experimental systems. The goal of this work is to contribute to identifying general principles that govern how different types of organisms organize in space, and how this spatial self-organization shapes the activities and functions of the community.

Wednesday, August 29, 2018 03:00pm - 04:30pm

IST Austria Campus Mondi Seminar Room 1, Central Building



This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: <https://ist.ac.at/en/campus/how-to-get-here/> The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.