

Invitation to the Seminar series in Evolutionary Biology

Tuesday, 11.06.2024

Prof. Dr. Ines Mandić Mulec

(Department of Microbiology, Biotechnical Faculty, University of Ljubljana, Slovenia)

Title: Mechanisms and consequences of kin discrimination by *Bacillus subtilis*

Abstract:

Bacteria live in diverse communities in which they participate in social dialogues and cooperative and antagonistic cell-cell interactions that influence their composition and function. However, a comprehensive understanding of how genetic relatedness influences bacterial interactions is lacking. We use a collection of soil isolates of *Bacillus subtilis*, Gram positive beneficial bacteria, as the model system to study kinship-dependent sociality during cooperative group behaviours such as swarming, or biofilm formation. We find that phylogenetically closely related (kin) swarms merge and phylogenetically less related (distant kin) swarms form boundaries when they encounter each other. This differential behaviour comprising incompatibility between distant kin but cooperation between close kin is reminiscent of kin discrimination, a mechanism thought to stabilise cooperative behaviour of humans, animals and plants. I will present results on bacterial mechanisms contributing to intraspecies swarm incompatibility, results on the role of kin discrimination in horizontal gene transfer between *B. subtilis* isolates and results on the influence of kin discrimination on the spread of public goods exploiters during experimental evolution.

Host: Prof. Hanna Kokko

The colloquium takes place on Tuesdays at 12:15 pm until approx. 1:15 pm in the BZ 1 lecture hall (HS 00.187). Talks are given in English. Everyone interested is welcome!