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第 23 回 葉山セミナー / The 23rd Hayama Seminar

2025. June.12 th (Thu) 15:00–17:00

Adaptation at the Invisible Scale

Prof. Dr. Ashleigh S. Griffin

Dept. of Biology, University of Oxford, UK

Abstract:

When Tinbergen pioneered the approach to studying animal behaviour that developed into the modern field of behavioural ecology - the practice of “watching and wondering” as he called it - he emphasised the importance of meticulous observation in nature to understand organisms as a result of adaptation. I study social behaviour and adaptation in bacteria, and individual cells in complex multicellular organisms. The challenge of both these projects comes from the fact that I can't see the things I'm trying to study or experience the environment in which they live. I'd like to take this opportunity to talk about the challenge of being a behavioural ecologist when “watching and wondering” isn't physically possible, and how I've tried to solve some of the problems this raises.

Do bacteria really cooperate?

Prof. Dr. Stuart West

Dept. of Biology, University of Oxford, UK

Abstract:

The growth and success of many bacteria appear to depend upon a stunning array of cooperative behaviors. Cells produce and secrete a range of factors that benefit the local group of cells and so, act as cooperative “public goods.” However, evidence that bacteria cooperate has come predominantly from controlled laboratory experiments. To what extent are test-tube cultures, often utilizing extreme gene knockouts, representative of natural populations? A problem here is that while bacteria and other microorganisms offer many advantages for laboratory experiments, they can be very difficult to study in their natural environment. I will discuss the possibilities that genomics offer to study natural populations, to examine whether bacteria cooperate, why they cooperate, and the broader evolutionary and ecological consequences.

(Host: Assoc. Prof. Ohtsuki)