THE UNIVERSITY OF TOKYO

OIST 10th

SUSTAINABLE DEVELOPMENT GOALS
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OIST and The University of Tokyo Joint talk series for future science Season 6

The struggle for coexistence:

empirical approaches to understand mechanisms of persistence under competition

$$r_i \approx r_i^* + \Delta E + \Delta N + \Delta I$$

When populations compete for a shared essential resource, the outcome is often competitive exclusion. Occasionally, however, stable coexistence is possible if certain conditions are satisfied. But how do we know these conditions, and perhaps more importantly, how do we measure them? In this talk, I will briefly review “modern” coexistence theory and then discuss an empirical application with the goal of understanding how trait differences and environmental variation can determine species coexistence. Using floating aquatic plants as an example, I will then demonstrate how coexistence theory can be used to understand how species’ geographic ranges can be jointly shaped by environmental variation and competition within and among species. As the coexistence mechanisms I will discuss are extremely general phenomena that apply to most competitive systems, it is my hope that this talk encourages researchers in medical, social, and biological fields to take a fresh perspective on the subject of invasion, competition, and coexistence.

2022 Wed. May 18th

17:30-18:30 Zoom

Zoom Link
Meeting ID: 876 4179 2600
Passcode: 841235

Chair
Associate Professor
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Dr. Yasuo Ihara

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Dr. David Armitage

Dave Armitage is an ecologist working at the intersection of communities and ecosystems. In his current role as an assistant professor at OIST, he leads the Integrative Community Ecology Unit — a group of ~10 researchers working on the population biology of plants, animals, microbes, and theory. Dave’s own research centers on questions surrounding species coexistence in variable environments, the evolution of plant-microbe interactions, and the natural history of carnivorous plants. He is also beginning to study the spatial ecology of plant secondary metabolites. In his educational role, Dave has taught university courses in ecology, plant systematics, and statistics.

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