



Biology Seminar

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Behavioral Ecophysics

Monday Sept 30, 2024 | 12:00PM PDT | HCK 132



Our Behavioral Ecophysics lab focuses on the study of organismal mechanisms (e.g., physiology, biomechanics) in light of biotic and abiotic interactions, with the goal of establishing explicit links between physical laws and rules of life, from individual to ecological scales. A central challenge of biological studies is to describe functional links between underlying architecture (e.g., genotype,

phenotype) and emergent phenomena (e.g., performance, ecological patterns). To meet this challenge, it is necessary to identify and quantify causal relationships between variation in traits, such as wing and bill shape, and corresponding capabilities, such as cost of flight and feeding, of their possessors. Having this information allows us to unveil the connections between these capabilities and realized patterns (e.g., resource use, competition strategies), and thus their ecological and evolutionary implications.

We focus on nectar-feeding animals to establish links between morphology, performance, and ecological patterns, as understanding the way in which they find, access, and intake nectar (their efficiency, preferences, and limits) will determine their peaks and ranges of maximal performance on several environmental axes. Increasing our knowledge of aspects such as nectarivore physiological requirements, nectar-feeding mechanics, and energetics of floral visitation, will have profound implications for understanding and predicting foraging behaviors and ecophysical responses, as testable biological rules.

