



Department of Biomathematics Seminar Series:
Frontiers in Systems and Integrative Biology

The Ecology and Evolution of Social Aggregations: Case Study *Dictyostelium Discoideum*



Corina E. Tarnita, Ph.D.

Assistant Professor

Department of Ecology & Evolutionary Biology

Princeton University

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13-105 Center for the Health Sciences (CHS)

ABSTRACT:

Cooperation, in which individuals provide benefits to others at a cost to themselves, has been studied extensively, and mechanisms have been proposed for its persistence in the face of free-riders. Often however, especially in microbes, these studies focus on one fitness component, with little information about or attention to the ecological context, which can lead to paradoxical findings. I will discuss such an example in the slime mold *Dictyostelium discoideum* whose life cycle includes both a single cellular and a multicellular stage, and I will propose a broader ecological framework in which multiple life history tradeoffs arise collectively in response to characteristics of the environment. I will argue that this multidimensionality can resolve existing inconsistencies regarding the social behavior and I will conclude that the complexities of social behavior in general and multicellularity in particular can only be understood in the appropriate ecological and life history context

Host: Van Savage

To receive e-mail seminar notices, contact David Tomita (dtomita@biomath.ucla.edu)

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