iTHEMS Colloquium

Smart heuristics of a single-celled organism

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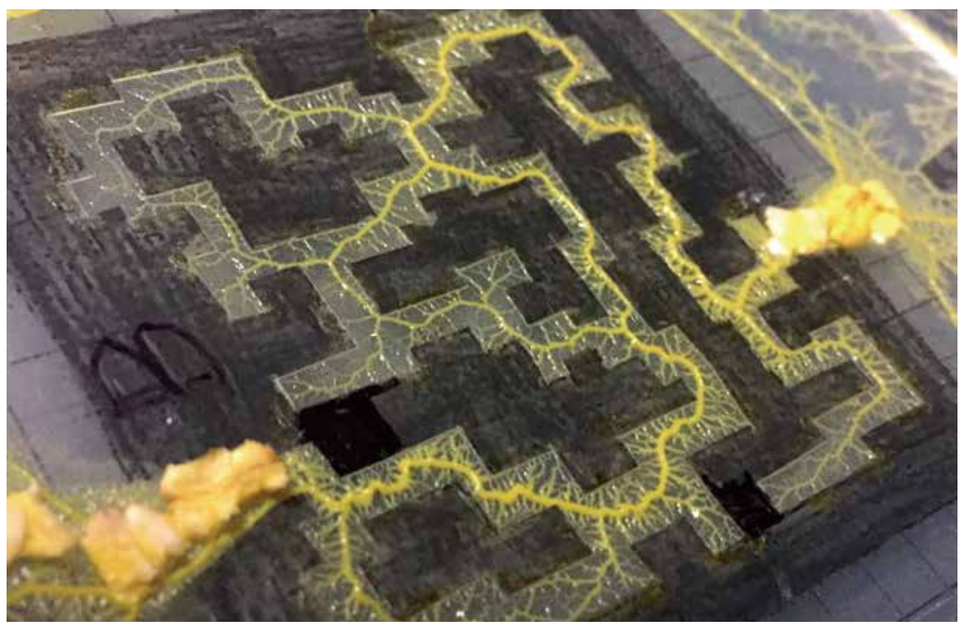
Okochi Hall (Bldg. C32) & via Zoom
at RIKEN Wako Campus

Zoom Registration

Although we rarely question how smart unicellular organisms are, it has become clear that unicellular organisms are smarter than we expected. In fact, various protozoa (unicellular eukaryotes) can take actions that are advantageous for their survival even in complex environments in the wild environments. In this talk, I will introduce some typical examples of smart behaviors in a protozoan amoeba (the plasmodium of *Physarum polycephalum*): (1) maze-solving, (2) formation of multi-functional transport network that mimics public transportation network among cities in Tokyo region, and so on. We will propose a mathematical model of these behaviors and extract the heuristics (simple rules of behavior) that give rise to their smartness. In general, we will discuss the future potential of research into the behavioral intelligence of protozoa.



Reference: Research Project “Ethological Dynamics in Diorama Environments” https://diorama-ethology.jp/eng/