

Self-Organisation of Migrating Multicellular Communities

Giulia Celora

Abstract: Collective cell migration underlies many biological processes, including morphogenesis and cancer metastasis, yet the mechanisms governing emergent collective motion remain poorly understood. In this talk, I will present our recent advances in modelling the spatiotemporal dynamics of migrating cell collectives. In particular, I will discuss how mathematical theory and analysis, combined with experimental data, has helped us uncover key mechanisms of migration in two distinct systems: mixed dilute populations of immune cells and dense homogeneous groups of amoeba cells. Overall, our work offers a new perspective on collective migration by highlighting the fundamental role of physical interactions in shaping the emergent dynamics of cell groups.