

## **From Bacteria to People: Modeling Group Dynamics in Phototaxis**

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Microbes live in environments that are often limiting for growth. They have evolved sophisticated mechanisms to sense changes in environmental parameters such as light and nutrients, after which they swim or crawl into optimal conditions. This phenomenon is known as "chemotaxis" or "phototaxis." Using time-lapse video microscopy we have monitored the movement of phototactic bacteria, i.e., bacteria that move towards light. In this talk we will survey our recent results on mathematical models for phototaxis, focusing on modeling selective local interactions with memory. We will comment on possible connections to the motion of high-level organisms (people).