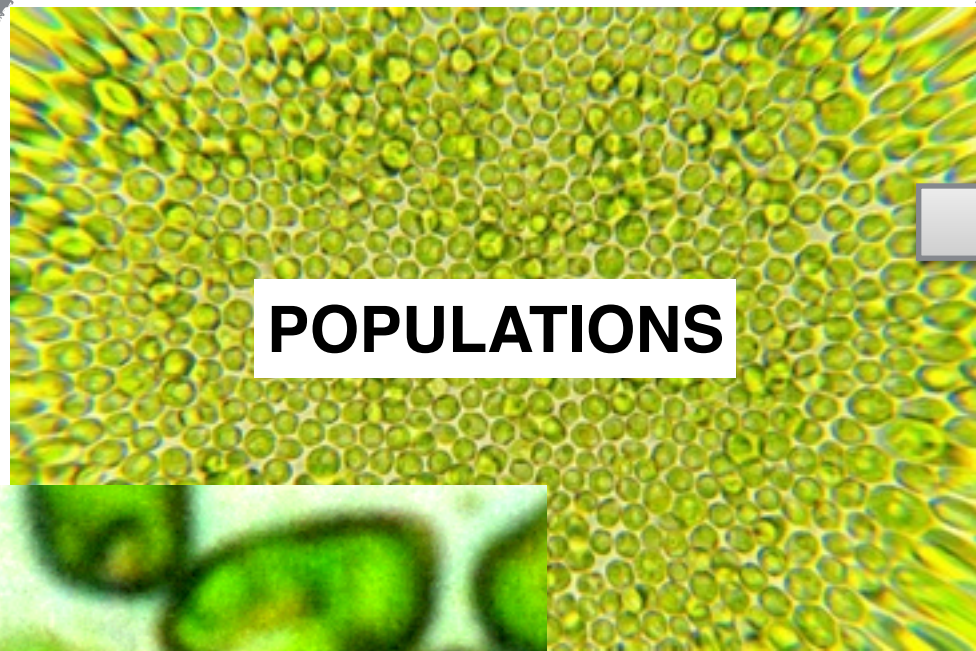


Single-cell motility profiling of pond- and ocean- dwelling microorganisms

POPULATIONS

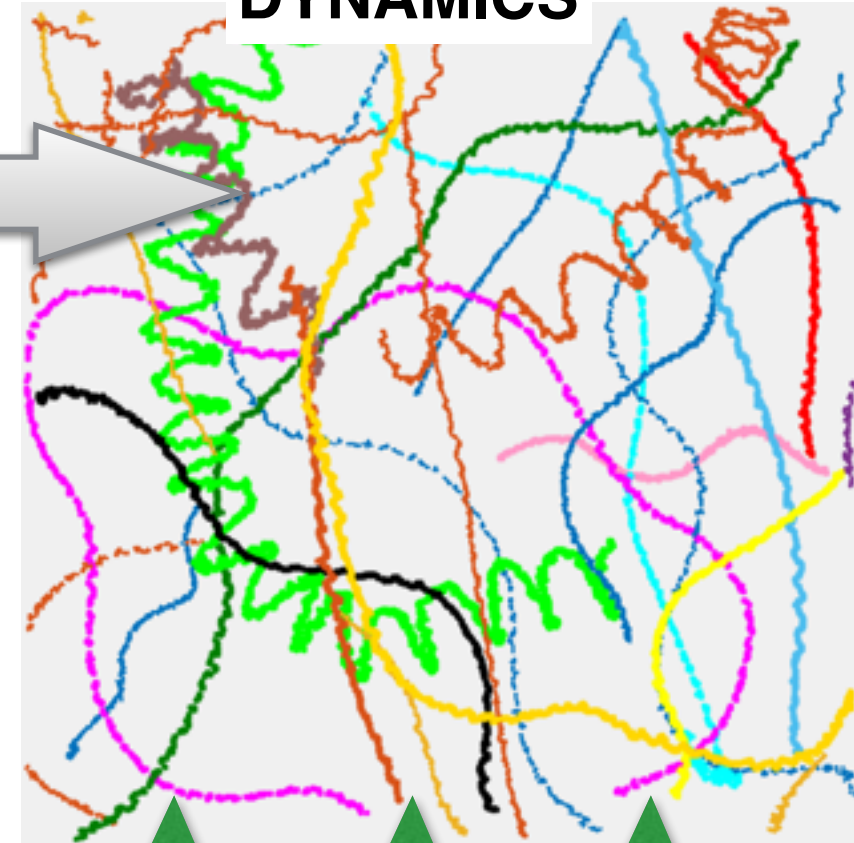


INDIVIDUALS



swimming by flagella

DYNAMICS



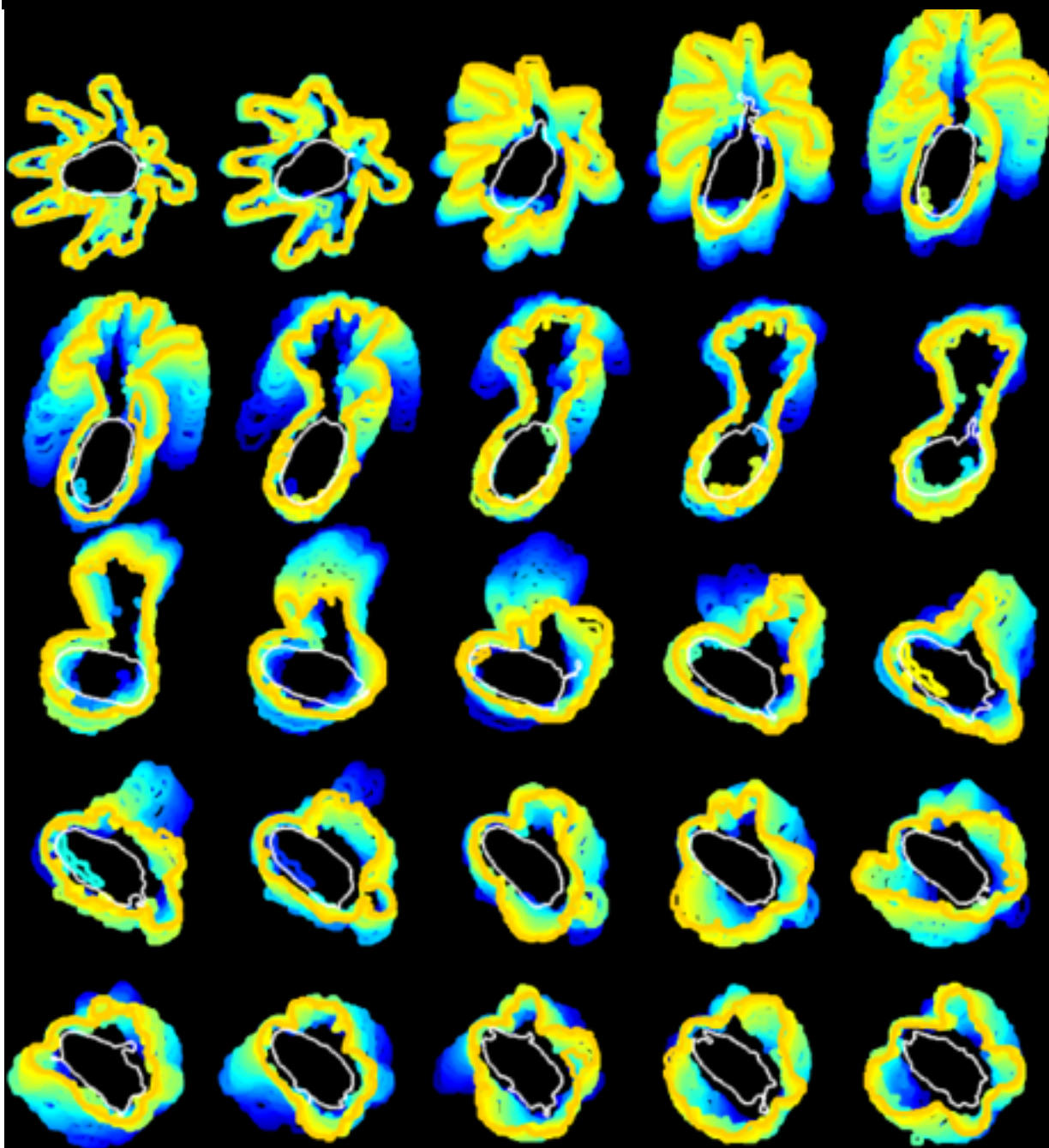
Importance of
mathematical
modelling
and
analysis!

EXTERNAL STIMULI

- light
- flows, currents
- temperature, pH
- availability of food
- predation

Precision tracking of single-cells

- detect subtle changes in gait
- unbiased population statistics
- cell-cell variability
- map behavioural space: “fingerprinting”



Stable observation platform

Analyse dynamics at high spatiotemporal resolution.

Compute principal modes and key observables.

Connect molecular biology with physics of behaviour.

