

## WOLFRAM MOEBIUS

### Front dynamics and evolution associated with spatial spread

The spatial spread of a population is a transient process that is characterized by an advancing population front and leaves its footprints in the population's genetic structure. We here study the effects of finite-sized heterogeneities on the population front's dynamics and on the genetic diversity at the front as well as in the established population. We address this problem using a bottom-up approach, focusing on the shape of the population front in simplified geometries. A combination of experiments with bacteriophage, theory, and simulation allows us to gain insight into the front dynamics and evolutionary dynamics. In particular, we describe an effect of 'geometry-enhanced genetic drift', complementary to founder effects occurring in the presence of 'spatial bottlenecks' and shaping the diversity of the population. I believe that these findings are relevant for a range of spreading processes and I am looking forward to exploring potential applications over the course of the workshop.