1135-92-2361 **Natalia L Komarova***, Department of Mathematics, University of California Irvine, Irvine, CA 92697. *Fixation of neutral mutants in random environments: minority rules.*

Fixation probability, the probability that the frequency of a particular individual in an initially heterogeneous population will eventually reach unity, is a fundamental quantity in ecology and evolution. Here we study the effect of spatial randomness on the chances of mutant fixation in a population of cells of a constant size. Such problems arise in the models of cancer initiation and progression, bacterial dynamics, and drug resistance. It turns out that spatial heterogeneity redefines the notion of neutrality, allowing, e.g., a minority of cells (whose fitness values are drawn from the same distribution as that of the wild type) to behave as if they had a selective advantage. The effect can be very significant (increasing the probability of mutant invasion by orders of magnitude), it increases with the standard deviation of the underlying probability distribution and decreases with the skewness. It is the largest when the fitness values of the mutants and wild types are anti-correlated. We discuss the results for both a spatial ring geometry of cells (such as that of a colonic crypt) and a mass-action (complete graph) arrangement. (Received September 26, 2017)