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Jan Rychtar* (rychtar@uncg.edu), Department of Mathematics and Statistics, University of North Carolina at Greensboro, Greensboro, NC 27410. *Evolutionary dynamics on undirected graphs - the effect of graph structure and initial placement on mutant spread.*

We study how the fixation probability of a mutant in a finite population in stochastic birth-death dynamics depends on the initial placement of a mutant. In particular, we study how the outcome depends on the degree of the vertex where the mutant is introduced. We give explicit formulae for fixation probabilities in the case of random drift (with mutants identical to the resident population) and also give approximations of relative fixation probabilities for general case. Further, we explore which types of graphs are conducive to mutant fixation and which are not. (Received September 21, 2009)