

$$S' \longrightarrow \Delta G' \longrightarrow f(\Delta G')$$

Selection coefficient of the mutant:

$$s = \frac{f(\Delta G') - f(\Delta G)}{f(\Delta G)}$$

Probability of fixation of the mutant:

$$p_{\text{fixation}} = \frac{1 - e^{-2s}}{1 - e^{-4N_e s}}$$

Compute the  $p_{\text{fixation}}$  for  
each possible mutant

Draw random numbers to  
choose the next substitution.  
Update the DNA sequence.