

# Natural Selection

- Mutation, recombination and other processes introduce variation into genomes of organisms
- The fitness of an organism describes how well it can survive/grow/function/replicate in a given environment, or how well it can pass on its genetic material to future generations
- The same mutation can have different fitness costs in different environments (fitness landscape), and different genetic backgrounds (epistasis)
- Any particular mutation can be:
  - **Neutral:** no or little change in fitness (the majority of genetic variation falls into this class according to the neutral theory)
  - **Deleterious:** reduced fitness
  - **Adaptive:** increased fitness

