Population structure

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1 What is a population?

A gorup of closely related organisms capable of mating with each other. Populations evolve. Population genetics concerned with allele frequencies in populations.
Interested in

- mutations
- SNP - single nucleotide polymorphism
- Recombination

Hardy Weinburg equilibrium (usually null hypothesis for population genetics) assumes: Population infinitely large, no mutations, no gene flow, no selection, random mating

Panmixia - Random mating (all individuals have an equal chance of mating with each potential mate), outbred (expected heterozygosity), expected relatedness between any two individuals equal to the population average, genetic

What happens when species are not panmictic?
Demes (more likely to mate with someone from your deme than from some other deme), more likely to share a most recent common ancestor with some than others. You have genetic ... structure

Causes of genetic structure: non rndom mating, geographic features, distance, mate choice

2 Why do we care about this?

- population history
- variation and geography
- migration
- connectivity
- genotype/ penotype relationships
- first step of speciation
- conservation

3 How does structure develope?

- Allele frequency differences
- evolution
- genetic drift
- natural selection
- mutations
- phenotypes

Most comes from genetic drift.