Evidence of Evolution

- **Fossil Record – Paleontology**
  Fossil record provides consistent evidence of systematic change through time—of descent with modification. It can be predicted that no reversals will be found in future paleontological studies.

- **Common Structures – Comparative Anatomy**
  Scientists call strikingly similar structures in varied species homologies and have concluded that they are best explained by common descent.

- **Distribution of Species – Biogeography**
  Simultaneous wide diversity and specialization. Geographical isolation (Hawaii, Australia, Galapagos)

- **Similarities During Development – Embryology**
  Ontogeny recapitulates Phylogeny. A wide variety of organisms from fruit flies to worms to mice to humans have very similar sequences of genes that are active early in development.
Molecular Evidence – Unity of Life

The code used to translate nucleotide sequences into amino acid sequences is essentially the same in all organisms. Hemoglobin and myoglobin, among others, sequencing shows family trees identical to those derived from paleontology and anatomy. Genetic sequencing and molecular clocks reinforce this. Also pseudogenes, which are remnants of genes that no longer function but continue to be carried along in DNA as excess baggage (junk DNA). Pseudogenes change through time, as they are passed on from ancestors to descendants, re-confirmin other observations.