

EVOLUTIONARY BIOLOGY



SUBDISCIPLINES OF EVOLUTIONARY BIOLOGY

Behavioral Evolution

- Evolution of mating systems, courtship behavior, foraging behavior, predator escape mechanisms, and cooperation.

Evolutionary Developmental Biology (Evo-Devo)

- Evolutionary change in the processes that translate genetic information (genotype) into its behavioral, anatomical, physiological, and biochemical characteristics (phenotype).

Evolutionary Ecology

- How the life histories, diets, and other ecological features of species evolve, and how these processes affect the composition and properties of communities and ecosystems, also, how species evolve in response to one another (e.g. evolution of predator-prey relationships).

Evolutionary Genetics

- The origin of variation; the patterns of variation within populations and species, along with the causes and consequences of these variations.

Paleobiology

- Large-scale evolutionary patterns in the fossil record. Examines origins and fates of lineages, major groups, and anatomical and behavioral novelties, evolutionary trends, and changes throughout geographic areas and geologic time.

Evolutionary Physiology/Morphology

- How physiological, biochemical, and anatomical features of an organism provide adaptation to its environment and lifeways. Also examines the history of these adaptations.

Human Evolution

- Many evolutionary biologists use conceptual issues of the subdisciplines to study a particular group of organisms. Of these groups, one draws special attention—the human lineage.

Molecular Evolution

- Investigates the history and causes of evolutionary changes in nucleotide sequences, the structure and number of genes, their physical arrangement on chromosomes, and other molecular phenomena, including the evolution of genomes.

Systematics

- Distinguishes and names species, infers phylogenetic relationships among species and classifies species based on their evolutionary relationships.