Glossary

Alleles – Different forms of a gene that arise by mutation and are found at the same place on a chromosome.

Bayesian Coalescent Analysis – A statistical method used to infer population genetics and evolutionary history by analyzing genetic sequences using Bayesian inference.

Circadian Rhythms – Biological processes that follow a roughly 24-hour cycle, responding primarily to light and darkness in an organism's environment.

Coronary Atherosclerosis – A condition in which plaque builds up inside the coronary arteries, leading to reduced blood flow to the heart muscle.

Eastern Beringia – A region that once connected Asia and North America during the last Ice Age, playing a crucial role in human migration.

Gene Cluster – A group of adjacent genes that are similar in sequence and function, often arising through duplication events.

Genetic Drift – A mechanism of evolution that refers to random changes in allele frequencies within a population due to chance events.

Gene-Environment Interactions – The dynamic interplay between genetic predispositions and environmental factors that influence traits and disease risk.

Gene-Gene Interactions – The way in which different genes influence each other's expression and contribute to phenotypic traits or disease susceptibility.

Immune Response – The body's defense mechanism against pathogens, involving the activation of immune cells and production of antibodies.

Mitochondrial DNA (mtDNA) – Genetic material found in mitochondria, inherited exclusively from the mother, and used for tracing maternal lineage.

Maternal DNA – DNA inherited from the mother, typically referring to mitochondrial DNA, which provides insights into maternal ancestry.

Myelin Sheath – A protective covering around nerve fibers that increases the speed of nerve impulse transmission.

Pathogen Resistance – The ability of an organism to defend against harmful microorganisms, often influenced by genetic and immune system factors.

Phenome-Wide Association Study (PheWAS) – A research approach that examines associations between genetic variants and a wide range of phenotypic traits.

Phenotypic – Referring to observable traits or characteristics of an organism, which result from genetic and environmental influences.

Population Replacement – The process by which one population is displaced or replaced by another, often due to migration, selection, or genetic drift.

Single Nucleotide Polymorphism (SNP) – A variation at a single nucleotide position in the genome that occurs among individuals in a population and may influence traits or disease risk.