# **Genetic Genealogy Glossary**

#### ancestors

The relatives you descend from directly, including parents, grandparents, great-grandparents and so on. Your number of ancestors doubles each generation you move backward; for example, you have four grandparents, eight great-grandparents and 16 great-grandparents.

### autosomal DNA

All your DNA except what's on the X and Y chromosomes. Genetic material inherited equally from mother and father. It's less useful genealogically than Y-DNA and mtDNA because it mutates more often. Genetic tests to determine ethnic origins—African, Native American, Viking—typically analyze autosomal DNA.

### chromosome

a threadlike strand of DNA that carries genes and transmits hereditary information with various geographic origins.

#### DNA

the molecule that contains each cell's genetic code, organized into 23 pairs of chromosomes. Genetic genealogy tests analyze your Y-DNA, mtDNA or autosomal DNA.

### ethnic DNA test

A Y-DNA or mtDNA test in which results are compared to databases containing DNA profiles of populations around the world for matches from particular ethnic backgrounds.

### gene

a hereditary unit consisting of a sequence of DNA that occupies a specific location on a chromosome, and determines a particular characteristic in an organism.

## genetic marker

represents a specific location on a chromosome where the basic genetic units exist in a variable number of repeated copies

# genotype/signature

the compilation of multiple genetic markers; serves as the unique genetic identifier for any given individual.

# haplogroup

an identification of the genetic group your ancient ancestors (10,000 to 60,000 years ago) belonged to; sometimes referred to as your branch of the world's family tree

# HVR, or hypervariable region

Sections of mtDNA (such as HV1 and HV2) that geneticists use to determine your haplogroup.

## mitochondrial DNA (mtDNA)

genetic material both males and females inherit from their mothers. Because it's passed down mostly unchanged from mothers to daughters, mtDNA can tell you about your maternal line—but the results reveal only "deep ancestry," not definitive links to recent generations.

### **MRCA**

Most recent common ancestor. The most recent ancestor (such as grandparent, great-grandparent, etc.) two individuals both descend from.

### mutation

Any change in a person's DNA. Geneticists can use mutations in two people with closely matching DNA marker values to estimate how long ago an MRCA lived.

### **SNP**

Single nucleotide polymorphism. Harmless mutations in autosomal DNA that can indicate your biogeographic ancestry, or where in the world your ancient ancestors came from. Also called admixture markers.

## **STR**

Short tandem repeat. A type of DNA marker scientists can use to determine relationships between individuals.

### Y chromosome

genetic material passed down from father to son. Because surnames also pass from father to son, Y-DNA tests can confirm (or disprove) genealogical links through a paternal line. Y-DNA surname studies are the most popular application of genetic genealogy.