

ISFG Pre-congress workshop

Workshop Ancestry/Appearance & Phenotyping

Tuesday, 10th September

Whenever traditional molecular DNA methods fail to produce an identification or establish a kinship, alternative DNA methods are sought to contribute (when possible) with investigative leads. During the last decade, several DNA markers (e.g. mtDNA, Y-CHR) and different approaches (e.g. DNA Phenotyping, strategies for low copy DNA) were procured to answer different needs. In recent years, the forensic community has paid increasing attention to DNA phenotyping, which comprises the characterization of appearance traits, biogeographical ancestry and age from a DNA sample, (sometimes referred to as DNA phenotyping), both in terms of legislation and applications. Knowing these externally visible characteristics (EVCs) of an individual based on its DNA, when no other clue is given can be invaluable as it narrows down the pool of individuals our sample can originate from. Furthermore, it can also corroborate or oppose testimony declarations.

In this workshop, we present the genetic and epigenetic bases of the analysis of appearance traits, biogeographic ancestry and age. For this we use the state-of-the-art VISAGE tools. We will start by curating the genetic data (please bring your computers with IGV installed <https://igv.org/doc/desktop/#DownloadPage/>) and learn how this will affect later predictions. Hands-on exercises on appearance traits, biogeographical ancestry and age prediction will be executed using different software (all web based) in easy and more complex samples. Lastly, reporting of the results will be open for discussion and a few tips will be shared among the group.

Table 1 Preliminary agenda of the workshop.

Time	Description
9:00 - 10:00	Intro
	Sample curation
	IGV analysis
10:00 - 10:15	Break
10:15 - 11:00	Phenotyping easy and complex exercises
11:00 - 11:45	Biogeographical ancestry easy and complex exercises
11:45 - 12:00	Break
12:00 - 12:45	Age exercises
12:45 - 13:00	Reporting results