

## Schneider Fellowship

Name: José Mariano Guardado Estrada.

Institute: National School of Forensic Science/Autonomous National University of Mexico

Host: Prof. Walther Parson

Institute: Institute of Legal Medicine of Innsbruck, Austria.

### Report of the stay:

During this stay, I re-analyzed 82 mitochondrial genomes sequenced from Mexican Mestizo population through massive parallel sequencing using Illumina technology. I learned and applied the steps required after obtaining FASTQ files from mtDNA genome sequencing to identify differences from the rCRS using various bioinformatics tools specific for mtDNA. I identified all changes relative to the rCRS of these mitogenomes with the IGV software, including point mutations, insertion-deletion changes, and true heteroplasmies. The haplotypes were identified according to the ISFG recommendations for mtDNA analysis, allowing us to classify the haplogroups more cost-effectively in Haplogrep. We also performed a phylogenetic alignment of the mtDNA genome sequences using the SAM tool, which helped identify polymorphisms and verify any discrepancies from the IGV analysis. By the end of the stay, we are in the final stages of quality control for these haplotypes, preparing them for upload to the Haplogrep database. This stay set an important precedent for future collaboration between both institutions.

José Mariano Guardado Estrada  
Universidad Nacional Autónoma de México

