

Short Term Fellowship of the International Society for Forensic Genetics (ISFG) awarded to Rui Pereira, PhD (IPATIMUP, Portugal)

(Host institution: Rio de Janeiro State University (UERJ); Travel dates: October 28th - November 11th 2017)

Short report about the purpose and main outcome of the exchange visit:

The Institute of Molecular Pathology and Immunology of the University of Porto (IPATIMUP) and the Rio de Janeiro State University (UERJ) have a long-lasting collaboration on the study of the genetic variation of indel polymorphisms of forensic interest in Brazilian populations (1-3). Currently ongoing projects involve the characterization of the Colombian population with a set of 38 neutral indels specially optimized for forensic human identification, and a comprehensive study of Panama with indel ancestry informative markers (AIMs). Both indel assays have been developed at IPATIMUP/USC and have been successfully employed at the UERJ LDD lab.

The ISFG short term fellowship granted me the opportunity to travel to the UERJ to explore and analyse the generated data together with this research group. Data treatment involved the assessment of standard diversity parameters, Hardy-Weinberg and Linkage disequilibrium tests, population comparisons (Fst genetic distances, Multidimensional Scaling and Principal Component Analysis), as well as statistical parameters of forensic efficiency. For the Panamanian population the apportionment of genetic ancestry components was also estimated through Structure and Admixture software. During this period, it was also possible to analyse data on AIM indels from different continental populations, which were collected as part of a collaborative exercise of the GHEP-ISFG working group, coordinated by Rui Pereira and Leonor Gusmão.

This visit was very important to promote knowledge exchange among participants with different experience in the field, from early Master and PhD students to Postdoctoral and Senior Researchers, and otherwise, helped to achieve new contributions to the forensic community, which are being prepared for submission and publication in the form of scientific articles.

References:

1. Manta F, Caiafa A, Pereira R, Silva D, Amorim A, Carvalho EF, Gusmão L. Indel markers: genetic diversity of 38 polymorphisms in Brazilian populations and application in a paternity investigation with post mortem material. *Forensic Sci Int Genet.* 2012;6(5):658-61.
2. Manta FS, Pereira R, Vianna R, Araujo ARBd, Gitai DLG, Silva DA, Wolfgramm EdV, Pontes IdM, Aguiar JI, Moraes MO, Carvalho EF, Gusmão L. Revisiting the genetic ancestry of Brazilians using autosomal AIM-Indels. *PLoS One.* 2013;8(9):e75145.
3. Manta FS, Pereira R, Caiafa A, Silva DA, Gusmão L, Carvalho EF. Analysis of genetic ancestry in the admixed Brazilian population from Rio de Janeiro using 46 autosomal ancestry-informative indel markers. *Ann Hum Biol.* 2013;40(1):94-8.