A170 Fighting Human Trafficking With DNA — The Prokids Program

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After attending this presentation, attendees will be informed about the problems behind human trafficking and how DNA databases can help to solve and prevent this terrible crime.

This presentation will impact the forensic community by showing new applications of DNA analysis and by showing how international tutoring programs and collaboration will help in this case.

According to U.N. reports and according to different Government and Non-government agencies, human trafficking is becoming one of the main criminal problems and it is slowly becoming the most important crime in economical terms. There are different ways to fight this crime, but one of them has a scientific, criminalistic approach.

It is known that missing persons identification is a collaborative effort where DNA analysis is usually of the greatest help, specially in those cases where samples are degraded or the identification is based in badly preserved bones or partial skeletons.

In 1997, Spain established one of the first "Missing persons DNA identification" programs, developed by the Dept. of Legal & Forensic Medicine of the University of Granada and the Guardia Civil (the largest Spanish national law enforcement agency). A lot of experience was gained, and as of July 2008, over 190 remains were identified using DNA as the primary tool; once a DNA match is found, other forensic sciences are applied to confirm the identification, such as anthropology or odontology.

Nevertheless, DNA analysis is also useful to identify "other kind" of missing persons that are not dead, as it is the case of missing children. It is estimated that over 1 million kids are actively reported as "missing", although there is no doubt that there are many more missing and not reported by different reasons. Most of these kids have been taken apart from their families and are being exploited or trafficked.

At the University of Granada and with the support of the BBVA, F. Marcelino Botin and the GENNA Foundation, we have developed the PROKIDS Program to generate two independent databases that are automatically compared each other every time a new profile is entered. The first database or Reference Database (KD) is composed of DNA profiles (autosomal, Y chromosome, and mitochondrial data, basically) obtained from voluntarily donated biological samples (buccal swabs) from mothers and other family members of missing kids. Efforts are focused in obtaining samples from the biological mother in all cases, since –according to different statistics- in some areas were illegal adoptions are common, up to 25% of the alleged fathers are not the biological ones, and this fact could compromise the effectiveness of the database.

The second database or Questioned Database (QD) is composed of DNA profiles (autosomal, Y chromosome, and mitochondrial data, basically) obtained from kids that have been found without their families, or that are being exploited or known as victims of human trafficking. In 2009, autosomal and chromosome-Y SNPs will be introduced as a new tool with to different but parallel objectives; first, to obtain more statistic power in the final calculations and conclusions, and second, to be able to obtain information that could give an investigative lead regarding the geographical origin of a missing kid.

The University of Granada has already signed agreements with the governments of Mexico and Guatemala (other countries are ready to sign now) to help to collect and analyze – if necessary – the samples, and in any case, to coordinate the databases. So far, over 250 samples from missing kids have been introduced in the QD, and 354 biological samples of relatives are in the RD.

There is no doubt that a global, coordinated effort is necessary to help to stop and prevent this terrible crime, and forensic science, with the use of DNA analysis, can play an important, leading role in this attempt.

DNA, Genetic Databases, Human Trafficking

 ** Presenting Author*