FROM GENETICS TO GENOMICS – EUROPEAN PERSPECTIVES FOR AN INTEGRATED APPROACH TO THE USE OF GENETIC EVIDENCE IN CRIMINAL INVESTIGATIONS

Peter M. Schneider, Institute of Legal Medicine, University of Cologne, Germany, and Coordinator,"European Forensic Genetics Network of Excellence – EUROFORGEN-NoE"

Challenging forensic trace evidence requires innovation both regarding the technology as well as the type of markers suitable for forensic investigations. Massively parallel DNA sequencing is currently being explored to develop such innovative solutions. Current applications include both the refined and in-depth analysis of "conventional" short tandem repeat markers at the sequence level as well as the introduction of predictive genotyping markers suitable for "Forensic DNA Phenotyping". The recently developed EUROFORGEN Global Ancestry-Informative Marker panel adds another dimension to forensic intelligence,. However, the application of FDP and ancestry markers is restricted in a number of countries due to law prohibiting the use of coding information for criminal investigations. Research networks such as EUROFORGEN-NoE are instrumental to investigate and compare the highly diverse ethical and legal landscape, and to coordinate activities aiming at a better public dissemination on the perspectives and limitations of the new technologies. An integrated approach is needed to enable a meaningful information exchange between countries beyond the current limitations in place for national DNA database systems.