A USER FRIENDLY LIKELIHOOD RATIO (LR) CALCULATOR THAT ESTIMATES AND INCORPORATES THE PROBABILITY OF DROPOUT (PrD)

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The International Society of Forensic Genetics (ISFG) recently recommended the use of probabilistic methods for interpreting forensic DNA profiles, including incorporation of the probability of dropout (PrD). The incorporation of PrD calculations into a likelihood ratio (LR) framework is complicated by the nature of evaluating PrD. This paper describes the development of software that calculates both the logistic regression curves that are needed to accurately estimate PrD and the final LR for two and three person mixtures. The regression curves are calculated directly by analyzing an appropriate number of low level known samples that exhibit dropout. These results are calculated using a validation module that is a part of the LR calculator. This calculator can be easily validated by any laboratory using a set of samples created with their own protocols. The calculator is seamlessly integrated into ArmedXpert, a user friendly forensic data management and analysis system.