Article Title: Model Amicus Brief to Support Latent Print Identification

Origin: **Internet at** http://www.fingerprintidentification.net/id6.html This is William Leo's site.

Date Published: Rev 6-23-2009

Author: William Leo, MS, CLPE, Scientific Services Bureau, Retired Los Angeles Sheriff's Dept, Adjunct Professor of Administration Justice – Rio Hondo College and Chaffey College

Article's Subject Matter: The intent of this model brief is to provide a resource for latent print examiners and attorneys who are in the position of defending the admissibility of fingerprint evidence. William Leo allows readers permission to cut and paste information from this brief into their legal responses and reports. Latent print examiners can use the various sections of the brief to develop their own responses to these issues while testifying.

Key Points in Article

- Discusses Scientific Foundation, quoting from many researchers. He states that the basis for fingerprint identification can be found in three areas:
  - The fundamental Law of nature – **Biological Variation**
  - The extensive scientific and medical research that confirms all areas of friction skin are unique – **Scientific Validation**
  - The over one hundred years of practical application of this knowledge – **Empirical Knowledge**
- Discusses reliability of fingerprints in personal identification and AFIS systems. A good argument for computerization of fingerprints – the fact that fingerprint computer systems can duplicate the identification process done by latent print examiners with amazing accuracy demonstrates how objective and reliable the fingerprint identification process is.
- Briefly speaks to error rates as applied to the discipline and also the individual.
- ACEV Methodology provides a standardized language for describing the identification/ individualization process.
- Courts in the USA have found that Blind Verification is not a requirement and there is no evidence or studies that show that non-blind verification is unreliable. The verification process is a self-imposed process that the discipline imposed on itself and is not a legal requirement.
- Documentation during analysis must include original prints or copies of the print suitable for comparison showing annotations to allow opposing legal counsel or other latent print examiners to determine if the process was reliably done.
- An interesting view about DNA as compared to Friction Ridge Identification is expressed. Fingerprint examiners compare the unique arrangements of the details of the print, whereas DNA profiling relies on a comparison of profiles created from class features that are not unique. Based on how many loci match and their locations with known

markers, a statistical analysis is done to determine how often the combination of loci could be found in a population, creating a statistical DNA profile. Friction ridge comparison looks at unique features not class features which when compared will determine an individualization or elimination. There is no need for a population study or statistical analysis, because the objects being compared are unique or one of a kind. Statistical studies have been conducted in the past and a list of those is provided in the article. All of those statistical studies demonstrate that the chance of a duplicate fingerprint is many times the population of the earth. AFIS, for the last 25 years, can show us that billions of fingerprints are compared on a regular basis and no two have been found to be the same. The uniqueness of friction skin is constantly being confirmed in an unprecedented way.

- In summary, a good article for review or for use in preparing an analysis report on a friction ridge identification. It provides information in the areas that are being explored by defense as well as the academic critics.

Fallacies and or Issues

- Mathematical based models being accepted in Fingerprint Analysis

- Our discipline is approaching the era of likelihood ratio expressions for friction ridge comparisons. Penn State Assistant Professor of Forensic Science and Statistics Cedric Neumann, published recently in *Significance*, the magazine of the Royal Statistical Society and the American Statistical Association, a Likelihood Ratio Model which has been approved by the Royal Statistical Society (2012).
- SWGFAST has revised their position on expressing statistical information in their document **STANDARDS FOR EXAMINING FRICTION RIDGE IMPRESSIONS AND RESULTING CONCLUSIONS** – under the topic evaluation - section **5.3.4.4.3** - for an individualization conclusion, sufficient agreement of information must exist so that the ***likelihood the impression was made by another (different) source is so remote that it is considered as a practical impossibility***.
- **The IAI's acceptance of statistical Information is also expressed in the IAI RESOLUTION 2010-18 –** Passed July 16, 2010. The use of mathematically based models to assess the associative value of the evidence may provide a scientifically sound basis for supporting the examiner's opinion. Examiners shall only use mathematically based models that have been accepted as valid by the IAI in partnership with the relevant scientific community and in which they have been trained to competency. Mathematically based models may not be used as the sole determinant when concluding that friction ridge impressions share a common source.

- Biological Variation

- A reference for Biological Variation can be found within an article called Nature Never Repeats Itself which was originally published in "THE PRINT" Volume 12(5), September/October 1996, pp 1-3 which was obtained from the online library provided by the Southern California Association of Fingerprint Officers ***www.scafo.org***