



B167 Toward Reform: Implementing Quantitative Methods Into Practice for Latent Print Examination

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After attending this presentation, attendees will have a greater understanding of how friction ridge comparisons may be quantified, the policies and procedures guiding the use of such methods in practice, and the next steps currently under way to ensure these methods are accessible to the broader forensic community.

This presentation will impact the forensic science community by: (1) introducing a method to evaluate and express the significance of latent print examination results in quantitative terms; (2) discussing the progress of implementing this method into practice at the United States Army Criminal Investigation Laboratory; and, (3) exploring strategies to facilitate the transition of this method to other federal, state, and local forensic service providers.

Over the past several years, there has been significant emphasis on implementing reform in the pattern evidence domains by identifying, developing, and integrating relevant quantitative methods into laboratory procedures for the evaluation and interpretation of impression evidence. This emphasis has resulted in promoting awareness of the need for such methods, stimulated conversations and debates on how to effectively achieve such endeavors, and encouraged practitioners, statisticians, scientists and other relevant academia to partner to achieve a common objective. Over the past few years, the United States Army Criminal Investigation Laboratory has taken incremental steps forward to facilitate the transition from solely subjective, experience-based practices to integrating more robust, scientifically demonstrable, and data-driven practices for latent print examination. As part of this process, prototype software has been developed to quantify the correspondence between friction ridge impressions based on the geospatial arrangement of friction skin features and estimate the related likelihoods to assist analysts in their interpretation of source associations. Following robust evaluations of the method against ground truth data sets and pseudo operational trials using casework datasets, the method is being implemented into routine practice in a stepwise fashion. This presentation will provide a general explanation of the statistical methods employed, discuss policies and procedures governing its use in casework, and discuss possible strategies to transition the method to other federal, state, and local forensic service providers in an effort to assist the broader friction ridge community in its incremental progression toward reform.

The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the United States Department of the Army or United States Department of Defense.

Fingerprint, Probability, Statistics