



## Expert Working Group on Human Factors in Latent Print Analysis

### Project Management

Susan Ballou  
Program Manager  
Office of Law Enforcement Standards (OLES)  
National Institute of Standards & Technology (NIST)

Melissa Taylor  
Project Manager, OLES/NIST

### Project Dates

Start Date: December 2008  
Projected End Date: August 2010

### Project Description

Human factors analysis can be used to advance our understanding of the true nature of errors in complex work settings. Research in this area has identified factors that contribute to inefficiencies and quantified the effects of human and organizational factors on performance of critical tasks. The forensic science community can benefit from the application of the substantial body of human factors work to reduce the consequences and likelihood of human error in the scientific interpretation of evidence.

To assist the forensic community in this effort, the National Institute of Justice (NIJ) and the National Institute of Standards and Technology's Office of Law Enforcement Standards are sponsoring a series of expert panels to examine human factors in forensic analyses and develop practices to reduce the likelihood of error based on scientific research. The panels will also evaluate various approaches to numerically quantifying measurement uncertainty within forensic science analysis.

Each discipline-specific working group will be comprised of experts from relevant forensic disciplines, statisticians, psychologists, researchers, and other scientific experts, in addition to representatives from the legal community, professional organizations and other identified stakeholder groups.

The first working group in the series will focus on latent print analysis. The *Expert Working Group on Human Factors in Latent Print Analysis* is charged with examining current policies, procedures, and practices within the field of friction ridge identification to examine human factors in forensic analyses. The panel will examine current scientific research and develop practices for latent print to reduce the likelihood of error. The group will evaluate various approaches to numerically quantifying measurement uncertainty within latent print analysis and will publish its findings and recommendations.

The Latent Print Analysis working group will 1) review current research relevant to latent print examination; 2) examine current hiring and resource allocation practices, operational processes and procedures, systemic policies, and training curricula and modalities; 3) evaluate the applicability of practices and models used in other fields, including other forensic disciplines, to fingerprint analysis; 4) review the feasibility of implementing new and emerging techniques, methodologies, technologies, and standards within existing resources; 5) identify areas for further study; 6) publish findings and recommendations.

### Project Objectives

- Develop definitions for human factors terms as applied to fingerprint analysis.
- Review current practices, processes, and procedures to identify and document where uncertainty and/or variability could occur for the purpose of reducing, eliminating, and/or measuring uncertainty.
- Review current training curricula and modalities.
- Evaluate new/emerging methodologies, technologies, and standards based on the ability to achieve expected outcomes; is it
  - ✓ Realistic: Can it be followed or achieved with existing resources?
  - ✓ Reliable: Does its implementation consistently yield the same result (all factors being equal)?
  - ✓ Valid: Is it based on scientific procedures or methodologies?
  - ✓ Clear: Is it understood in the same way by everyone concerned and not subject to distortion or misinterpretation?
  - ✓ Measurable: Can performance be assessed and quantified?

### Impact/Benefit

This work will identify potential sources of uncertainty within latent print analysis and will lead to the development of guidelines, improved scientifically sound practices, and/or standards aimed at eliminating or minimizing potential sources of uncertainty as well as identifying future research in the area of quantifying uncertainty within pattern recognition disciplines.

### Membership & Collaborating Organizations

Nominees have been selected based on demonstrated and recognized expertise in the forensic sciences and/or a relevant field of work; ability to balance scientific rigor with practical and regulatory constraints; and ability to work as a member of a team. Nominees represent a range of perspectives and multiple scientific disciplines.

The NIJ and NIST Directors shall review the list of candidates, provided by the NIST/OLES project manager, against the requirements listed above and make final membership appointments.