OSAC Research Needs Assessment Form

Title of research need: ACE-V Bias

Keywords: ACE-V, Bias, Blind Verification, Standard Operating Procedures, Examiner Cognition

Submitting subcommittee(s): Friction Ridge   **Date Approved:**

(If SAC review identifies additional subcommittees, add them to the box above.)

Background information:

1. Description of research need:

(1) Conduct further studies to measure and understand the influence of types of bias during the application of ACE-V (Analysis, Comparison, Evaluation, Verification). (2) Research should demonstrate a tangible benefit to blind verification over traditional non-blind verification. There has also not been research to identify which types of comparisons would benefit from blind verification. Research should compare the effectiveness against the operational cost. (3) Research the impact of verifying only identification decisions. (4) Research is needed that studies whether sequential unmasking reduces the negative effects of bias during latent print examination.

2. Key bibliographic references relating to this research need:

Please see Appendix "A" for a normative bibliography related to this research topic.

For a comprehensive and informative bibliography related to friction ridge examination please see Appendix "B": The 2011 SWGFAST response to the Research, Development, Testing & Evaluation Inter-Agency Working Group of the National Science and Technology Council, Committee on Science, Subcommittee on Forensic Science.

3a. In what ways would the research results improve current laboratory capabilities?

There is a general belief that bias adversely affects fingerprint examination decisions. A better understanding of how bias affects the examiner's daily work will ultimately improve both quality and efficiency with regard to maintaining objectivity. In addition, blind verification has been suggested as a means of reducing errors; however, there is not sufficient research to show how effective this technique is. There is an expectation that implementing blind verification will significantly increase operational cost.
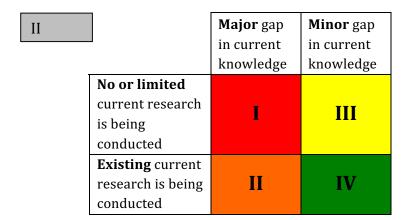
3b. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)?

Because it is unclear what types of examinations are affected and what types of bias have the greatest or least effect, the Friction Ridge Subcommittee will have a difficult task defining standards in this area. It is important for these committees to balance the utility of a standard versus the cost of the implementation.

3c. In what ways would the research results improve services to the criminal justice system?

Understanding the effects of bias will assist the criminal justice system by providing a foundation for standard operating procedures. Research will improve efficiency by determining when blind verification is necessary. It will also improve confidence in the courts and public regarding fingerprint examination techniques.

4. Status assessment (I, II, III, or IV): II

	Major gap in current knowledge	**Minor** gap in current knowledge
No or limited current research is being conducted	I	III
Existing current research is being conducted	II	IV

This research need has been identified by one or more subcommittees of OSAC and is being provided as an informational resource to the community.

Subcommittee	Approval date:	01/29/2016

(Approval is by majority vote of subcommittee. Once approved, forward to SAC.)

SA

1. Does the SAC agree with the research need?   Yes ◎

2. Does the SAC agree with the status assessment?   Yes ○

     If no, what is the status assessment of the SAC: [　　]

Approval date: 17-Mar-2016

(Approval is by majority vote of SAC. Once approved, forward to NIST for posting.)

APPENDIX "A"

Busey, T., Yu, C., Wyatte, D., Vanderkolk, J., Parada, F., and Akavipat, R., "Consistency and Variability among Latent Print Examiners as Revealed by Eye Tracking Methodologies", Journal of Forensic Identification, vol. 61 (1), pp. 60-90, 2011.

Busey, T. A. and Dror, I. E., "Chapter 15: Special Abilities and Vulnerabilities in Forensic Expertise", in The Fingerprint Sourcebook, International Association for Identification, Ed. Washington DC: National Institute of Justice, 2011, http://www.ncjrs.gov/pdffiles1/nij/225335.pdf.

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Langenburg, G., Champod, C., and Wertheim, P., "Testing for Potential Contextual Bias Effects During the Verification Stage of the ACE-V Methodology When Conducting Fingerprint Comparisons", Journal of Forensic Sciences, vol. 54 (3), pp. 571-582, 2009.

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