OSAC RESEARCH NEEDS ASSESSMENT FORM

Title of research need: Technical Review and Verification

Describe the need: The friction ridge community will benefit from research to determine the efficacy of both the technical review and verification processes. A major aspect of this research would compare blind and non-blind verification and their respective costs and benefits in terms of error reduction, time spent, and operational cost.

Keyword(s): technical review; verification; blind verification; non-blind verification; open verification

Submitting subcommittee(s): Friction Ridge **Date Approved:** June 27, 2022

Background Information:

1. Does this research need address a gap(s) in a current or planned standard? (ex.: Field identification system for on scene opioid detection and confirmation)

It may address issues in the current proposed Best Practice Recommendations for both technical review and verification, but no awareness of any current or planned standards dedicated to these topics.

2. Are you aware of any ongoing research that may address this research need that has not yet been published (e.g., research presented in conference proceedings, studies that you or a colleague have participated in but have yet to be published)?

N. Grilli, R. Heinrich, J. Black (2021). "Evaluating the Effectiveness of Blind and Non-Blind Verification in Latent Print Examination", ongoing.

3. Key bibliographic references relating to this research need: (ex.: Toll, L., Standifer, K. M., Massotte, D., eds. (2019). Current Topics in Opioid Research. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-88963-180-3)

OSAC - Best Practice Recommendations for the Verification Component in Friction Ridge Examination;
AAAS, Forensic Science Assessments: A Quality and Gap Analysis- Latent Fingerprint Examination, (Report prepared by William Thompson, John Black, Anil Jain, and Joseph Kadane), September 2017. DOI: 10.1126/srhrl.aag2874

T.A. Busey, I.E. Dror, Special Abilities and Vulnerabilities in Forensic Expertise, in: Scientific Working Group on Friction Ridge Analysis Study and Technology (SWGFAST) et al. (Ed.) The Fingerprint Sourcebook, National Institute of Justice, Washington, D.C., 2011, pp. 15-11--15-23.
S.M. Kassin, I.E. Dror, J. Kukucka, The Forensic Confirmation Bias: Problems, Perspectives, and Proposed Solutions, Journal of Applied Research in Memory and Cognition, 2 (2013) 42-52.

Black, J.P. "Is There a Need for 100% Verification (Review) of Latent Print Examination Conclusions?" Journal of Forensic Identification, 2012, 62 (1), 80 – 100.

Black, J.P. "Friction Ridge Examination (Fingerprints): Evaluating the Extent and Scope of "Verification" in Analysis Comparison Evaluation and Verification (ACE-V)." December 2010. In: WILEY ENCYCLOPEDIA OF FORENSIC SCIENCE. John Wiley & Sons Ltd, Chichester. http://onlinelibrary.wiley.com/book/10.1002/9780470061589.fsa1017

Glenn Langenburg, Christophe Champod and Pat Wertheim,3 B.A."Testing for Potential Contextual Bias Effects During the Verification Stage of the ACE-V Methodology when Conducting Fingerprint Comparisons." J Forensic Sci, May 2009, Vol. 54, No. 3 doi: 10.1111/j.1556-4029.2009.01025.x

Glenn Langerburg. "A Performance Study of the ACE-V Process: A Pilot Study to Measure the Accuracy, Precision, Reproducibility, Repeatability, and Biasability of Conclusions Resulting from the ACE-V Process." Journal of Forensic Identification; 59 (2), 2009 \ 219

4. Review the annual operational/research needs published by the National Institute of Justice (NIJ) at https://nij.ojp.gov/topics/articles/forensic-science-research-and-development-technology-working-group-operational#latest? Is your research need identified by NIJ?

Determination of accuracy and reliability of forensic analyses and conclusions, including potential sources of error; Evaluation of the effectiveness of varied types of review and/or verification of casework, testimony, and investigative leads

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

A comparison of blind and non-blind verification will provide some meaningful data regarding the peer review process. Anticipated benefits and costs will provide guidance for friction ridge units to make informed decisions regarding the best verification approach for a given comparison or case.

6. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)?

Peer review (e.g., verification) is an essential part of the scientific method that allows a subsequent competent practitioner to question and challenge the initial practitioner's work product. It is anticipated that future studies will solidify the need for appropriate review of the friction ridge examination process to ensure that only conclusions that are properly supported by the available evidence are reported to the many and varied stakeholders.

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

Data-driven benefits and costs will provide guidance for friction ridge units to make informed decisions regarding the best verification approach for a given comparison or case, which should lead to improved efficiency and quality.

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

	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.