

OSAC RESEARCH NEEDS ASSESSMENT FORM



Title of research need: Culture, Communication, Comprehension and Psychology in Friction Ridge Evidence

Describe the need: Social scientific research on: (1) the culture of the friction ridge discipline including its interaction with other social groups such as lawyers, judges, customers, other stakeholders or the general public to increase the effectiveness of interactions between examiners and these groups; (2) social scientific research on the communication of friction ridge analysis processes, outcomes, results, and limitations to stakeholders; (3) the comprehension of friction ridge analysis results to stakeholders including jurors; (4) psychological mechanisms in all of the above to better understand, identify, and mitigate sources of potential bias in the examination and interpretation processes, to better tailor articulation of results to specific audiences, to better understand how thresholds are set for decision-making, etc..

Keyword(s): Friction ridge, fingerprint, social science, jury

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)

Yes. Standard for Friction Ridge Examination Conclusions contains novel conclusion language and Standard for Reporting Results from Friction Ridge Examinations contains information about reporting results to stakeholders. Research is needed on how these procedures are understood in the disciplines, communicated, and comprehended. Many standards contain documentation requirements. Research is needed on best practices for documentation, whether it improves outcomes, whether it facilitates case review, and so on.

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)?

Yes. There are usually ongoing studies of jury comprehension of forensic evidence, including friction ridge evidence.

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)

Garrett, Brandon L., Greg Mitchell, and Nicholas Scurich. 2018. "Comparing Categorical and Probabilistic Fingerprint Evidence." *Journal of Forensic Sciences* 63 (6): 1712-1717.

Thompson, William C, Rebecca Hofstein Grady, Eric Lai, and Hal S Stern. 2018. "Perceived strength of forensic scientists' reporting statements about source conclusions." *Law, Probability and Risk* 17 (2): 133-155.

Gardner, Brett O., Sharon Kelley, and Maddisen Neuman. 2021. "Latent Print Comparison and Examiner Conclusions: A Field Analysis of Case Processing in One Crime Laboratory." *Forensic Science International* 319: 110642. <https://doi.org/10.1016/j.forsciint.2020.110642>.
<http://dx.doi.org/10.1016/j.forsciint.2020.110642>.

Koehler, Jonathan J. 2016. "Intuitive error rate estimates for the forensic sciences." *Jurimetrics* 57: 153-168.

Ribeiro, Gianni, Jason M. Tangen, and Blake M. McKimmie. 2019. "Beliefs about Error Rates and Human Judgment in Forensic Science." *Forensic Science International* 297: 138-147.
<https://doi.org/10.1016/j.forsciint.2019.01.034>.

van Straalen, Elmarije K., Christianne J. de Poot, Marijke Malsch, and Henk Elffers. 2020. "The Interpretation of Forensic Conclusions by Criminal Justice Professionals: The Same Evidence Interpreted Differently." *Forensic Science International* 313: 110331. <https://doi.org/10.1016/j.forsciint.2020.110331>.
<http://dx.doi.org/10.1016/j.forsciint.2020.110331>.

Kassin, Saul M., Itiel E. Dror, and Jeff Kukucka. 2013. "The Forensic Confirmation Bias: Problems, Perspectives, and Proposed Solutions." *Journal of Applied Research in Memory and Cognition* 2 (1): 42-52.

Swofford, Henry J., Simon A. Cole, and Valerie King. 2021. "Mt. Everest—we are going to lose many: a survey of fingerprint examiners' attitudes towards probabilistic reporting." *Law, Probability and Risk*.
<https://doi.org/doi:10.1093/lpr/mgab003>.

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?

Yes. Practical statistical approaches for the interpretation of forensic evidence; Evaluation of qualified language of association along the continuum from investigative leads to definitive conclusions.

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

Improved laboratory culture, communication, and comprehension by stakeholders.

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

None.

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

Improved communication of results to, and comprehension by, stakeholders.

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

IV

	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.