

OSAC RESEARCH NEEDS ASSESSMENT FORM



Title of research need: Cognitive Bias: To What Extent Does It Affect Firearm and Toolmark Comparison Outcomes

Keyword(s): bias, firearms, toolmarks, task relevant information, forensic science

Submitting subcommittee(s): Firearms & Toolmarks **Date Approved:** March 5, 2021

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

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)

Some studies have concluded that contextual information will change comparison outcomes. It is of interest to see if similar results are observed in the discipline of firearm and toolmark identification.

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)?

Unknown

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)

- Kersthol J et al. "Does Suggestive Information Cause A Confirmation Bias in Bullet Comparisons" Forensic Sci Int, 2010 (1----3) pp. 138----42.
- Dror, I. Et al "Contextual Information Renders Experts Vulnerable to Making Erroneous Identifications" Forensic Sci Int, 2006 (156) pp 74----78.

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?

No

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

Research indicates that contextual information may influence forensic science decisions and conclusions. The majority of this research has been done in the realm of fingerprint comparison. It would be interesting to know if other disciplines are prone to the same influence, or if their analysis schemes and/or nature of the evidence makes the more or less prone to outside influence.

There is a debate about how much information examiners should be given access to during their examinations, and what information is actually relevant to the task at hand. Having more research in this area will help laboratory management make intelligent decisions for their laboratory operations.

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

If different disciplines are more or less prone to influence from outside information, the forensic community could write standards that were better targeted for their disciplines. Right now, there is a “one size fits all” approach, that may not be sufficiently nuanced.

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

Additional data regarding bias and what types of information does and does not influence toolmark examinations will allow for more robust and objective examinations.

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

III

	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.