OSAC RESEARCH NEEDS ASSESSMENT FORM

Title of research need: Customer Understanding of Trace Evidence Reports

Keyword(s): conclusions, customers, interpretation, reporting

Submitting subcommittee(s): Trace Materials **Date Approved:** 02/24/2021

(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)

Yes. While we have begun addressing the ability of subject matter experts to use our interpretation and reporting conclusions document effectively, we do not know how well the various readers of the report understand and apply them.

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)?

No.

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)

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Benjamin, R.G. (2012). Reconstructing readability: recent developments and recommendations in the analysis of text difficulty. Educ Psychol Rev, 24(1):63–88.10.1007/s10648-011-9181-8

Howes, L. M. (2015). A step towards increased understanding by non-scientists of expert reports: Recommendations for readability. Australian journal of forensic sciences, 47(4), 456-468.

Howes, L. M., Kirkbride, K. P., Kelty, S. F., Julian, R., & Kemp, N. (2013). Forensic scientists' conclusions: how readable are they for non-scientist report-users?. Forensic science international, 231(1-3), 102-112.

Howes, L. M., Kirkbride, K. P., Kelty, S. F., Julian, R., & Kemp, N. (2014). The readability of expert reports for non-scientist report-users: Reports of forensic comparison of glass. Forensic science International, 236, 54-66.

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Howes, L. M. (2015). The communication of forensic science in the criminal justice system: A review of theory and proposed directions for research. Science & Justice, 55(2), 145-154.

Howes, L. M. (2017). 'Sometimes I give up on the report and ring the scientist': bridging the gap between what forensic scientists write and what police investigators read. Policing and society, 27(5), 541-559.
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Ligertwood, A., Edmond, G. (2012). Expressing evaluative forensic science opinions in a court of law, Law, Probability and Risk 11, 289–302.
Martire, K.A., Kemp, R.I., Newell, B.R. (2013). The psychology of interpreting expert evaluative opinions, Australian Journal of Forensic Sciences 45, 305–314.
Martire, K.A., Kemp, R.I., Watkins, I., Sayle, M.A., Newell, B.R. (2013). The expression and interpretation of uncertain forensic science evidence: Verbal equivalence, evidence strength, and the weak evidence effect. Law and Human Behav. 37(3):197–207.10.1037/lhb0000027.
McQuiston-Surrett, D., Saks, M.J. (2009). The testimony of forensic identification science: what expert witnesses say and what factfinders hear. Law and Human Behav. 33(5):436–453.10.1007/s10979-008-9169-1.
Park, S., & Tyner, S. (2019). Evaluation and comparison of methods for forensic glass source conclusions. Forensic science international, 305, 110003.
Rothwell, T. (2010). Presentation of expert forensic evidence, in: P. White (Ed.), Crime Scene to Court: The Essentials of Forensic Science, 3rd ed., The Royal Society of Chemistry, Cambridge, UK, pp. 507–532.
Smith, L.L., Bull, R., Holliday, R. (2011). Understanding juror perceptions of forensic evidence: investigating the impact of case context on perceptions of forensic evidence strength, Journal of Forensic Sciences 56, 409–414.
Spellman, B. A. (2017). Communicating forensic evidence: lessons from psychological science. Seton Hall L. Rev., 48, 827.
Thompson, W. C., Grady, R. H., Lai, E., & Stern, H. S. (2018). Perceived strength of forensic scientists' reporting statements about source conclusions. Law, Probability and Risk, 17(2), 133-155.

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?

Indirectly, this research need is related to these gaps/needs identified in the impression/trace evidence section:
- Scientific foundations for expert conclusions of forensic evidence
- Development and validation of standardized forensic methods and conclusions
- 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?

We would be more aware of whether our reports are correctly understood by our customers, including law enforcement officers, attorneys, and suspects/defendants. The results of research could potentially provide recommendations on report language that is scientifically accurate and understandable by our non-scientist customers.

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

We would be more aware of whether our reports are correctly understood by our customers. We could adjust our approach to ensure improved understanding.

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

We would be more aware of whether our reports are correctly understood by our customers. We could adjust our approach to ensure improved understanding.

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.