

# OSAC RESEARCH NEEDS ASSESSMENT FORM



**Title of research need:**

**Describe the need:**

Footwear evidence is currently underutilized in the United States. A national footwear database would help make footwear evidence much more useful in criminal intelligence. This database would allow multiple agencies to share footwear information, including determining the make/model of a shoe from shoe impressions, linking crime scenes by comparing crime-scene impressions, and linking suspects to crimes by comparing arrestee footwear with crime-scene impressions. It would also allow for easy and automated integration of existing footwear databases created by different agencies. Efficient mechanisms to search large databases and algorithms for scoring the strength of match between impressions are required. Also needed is research into the architecture of the database, data definition, data modeling and standards, data interchange standards, and interoperability standards for integrating the existing agency databases. A comprehensive review of states' laws and regulations and/or opinions from the various State Attorney Generals/District Attorneys is needed to ascertain the legal feasibility in each state of deploying such a National Footwear Database.

**Keyword(s):**

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

*(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)

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)?

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)

- Henderson J. & Armitage R., (2018) "If the Shoe Fits: Proposing a Randomised Control Trial on the effect of a digitised in-custody footwear technology compared to a paper-based footwear method.", Crime Security and Society 1(1). doi: <https://doi.org/10.5920/css.2018.02>
- Needham, J. A. and Sharp, J. S. (2016) Watch your step! A frustrated total internal reflection approach to forensic footwear imaging. Sci. Rep. 6, 21290; doi: 10.1038/srep21290

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.

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

This research would result in faster, more extensive and more reliable intelligence gathering for footwear forensics.

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

Limited value.

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

The ability to improve the reliability, speed and variety of intelligence gathering could greatly help in identifying potential suspects and solving more cases. It could also result in greater use of footwear evidence overall, including improved training for collecting evidence at crime scenes.

8. 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.*