OSAC Research Needs Assessment Form

Title of research need: Laboratory Techniques and Technologies at the Crime Scene

Keywords: Enhancement, analysis, databases, portable, durable, ease of use, rapid results, teleforensics

Submitting subcommittee(s): Crime Scene Investigation **Date Approved:** Sep 30, 2017

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

Background information:

1. Description of research need:

The ability to bring laboratory techniques and technologies (e.g., chemical, instrumental, database search, etc.) to the physical crime scene would allow investigators to better identify potential evidence, then properly collect, preserve and identify that evidence which would more quickly advance a criminal investigation.

2. Key bibliographic references relating to this research need:

3a. In what ways would the research results improve current laboratory capabilities?

National Academy of Science. *Strengthening Forensic Science in the United States.* (2009). Pp 72-77.
Investigative Uses of Technology: Devices, Tools, and Technologies. (2007). DOJ/OJP/NIJ.NCJ213030
Roberto S.P. King, Peter M Hallett, Doug Foster (April 2015)" Seeing into the infrared: A novel IR fluorescent fingerprint powder". *Forensic Science International,* pp. 21-6.
Mapes A.A., Kloosterman A.D., depot C.J., Van Marion V. (July 2016). "Objective data on DNA success rates can aid the selection process of crime samples for analysis by rapid mobile DNA technologies". *Forensic Science International*, Vol. 264, pp28-33.
Buxbaum Peter, (December 16, 2015). " Field Forensics, Special Operations Technology". http://www.specops-dhp.com/interesting-post/field-forensics/
Frégeau, C.J., Germain, O, Fourney, R.M. Fingerprint Enhancement Revisited and the Effects of Blood Enhancement Chemicals on Subsequent Profiler Plus™ Fluorescent Short Tandem Repeat DNA Analysis of Fresh and Aged Bloody Fingerprints, *Journal of Forensic Science*, 45(2): 354-380, April 2000

It would increase the efficacy, effectiveness and identification of potential items of evidence and better determine the probative value of this evidence. Help improve quantity and quality of evidence submitted to forensic labs which would help reduce backlogs and lower financial obligations. Teleforensics could enable more efficient collection of specialty evidence types and more probative evidence.

3b. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)?

Better enable the subcommittee to draw upon the conclusions of the research in the development of standards and guidelines.

3c. In what ways would the research results improve services to the criminal justice system?

Stronger probative value of evidentiary items resulting in more effective prosecution (e.g., plea bargaining) and case resolution. It does have the potential to decrease wrongful arrests and convictions. Increased societal awareness in the accuracy of evidence collection can also result.

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**

4. Status assessment (I, II, III, or 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.

Subcommittee Approval date: Sep. 30, 2016

(Approval is by majority vote of subcommittee. Once approved, forward to SAC.)

SA

1. Does the SAC agree with the research need? Yes (Yes) No

2. Does the SAC agree with the status assessment? Yes ( ) No

If no, what is the status assessment of the SAC:

Approval date: February 9, 2017

(Approval is by majority vote of SAC. Once approved, forward to NIST for posting.)