



OSAC Research Needs Assessment Form

Title of research need: Error rates in Qualitative Methods of Analysis

Keywords:

Submitting subcommittee(s): Seized Drug **Date Approved:** 1/28/16

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

Background information:

1. Description of research need:

The community seeks research to address statistics or measures of error rates in qualitative methods of chemical analysis. Solicitations should include measures of false positives/false negatives for individual methods of analysis—such as spectroscopic or chromatographic methods of analysis—and in analytical schemes that combine multiple methods of analysis.

New knowledge could include numerical evaluations of bias, error, and uncertainty in chemical techniques and analytical schemes. New knowledge could address how the quality of collected data influences the false positive and false negative identification rate of seized drugs. New knowledge could also include how the combination of different analytical schemes influences the false positive and false negative identification rates of seized drugs.

2. Key bibliographic references relating to this research need:

Whereas chemical methods of analysis were not directly criticized in the 2009 NAS report *Strengthening Forensic Science in the US: A Path Forward*, the report highlighted the need for all forensic disciplines to address issues about the scientific validity and level of certainty or error rate of their techniques.

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

Research results could enable a more efficient use of laboratory resources.

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

Research results would enable the community to better understand the magnitude of improvement in certainty of determinations that arise from the combination of independent methods in an analytical scheme.

Research results would enable expert witnesses to better support and express, and in a more uniform manner, the reliability of seized drug analyses.

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

The criminal justice system could operate in a more efficient manner, thus saving money. These research results will also help the forensic community communicate the results of seized drug analyses to triers of fact.

4. 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.

Subcommittee

Approval date: 1/28/16

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

SAC

1. Does the SAC agree with the research need? 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:

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