OSAC RESEARCH NEEDS ASSESSMENT FORM

Title of research need:	National Database of Handwriting
Keywords:	Handwriting, handwriting database, frequency of occurrence

R&D Need Rank: Low, Medium, High	Low	**SAC Approved Date:**	June 9, 2025

Submitting subcommittee(s):	Forensic Document Examination

Research Need Summary:

The purpose of these research needs is to build a stronger scientific foundation for forensic science standards. The information provided herein will help to evaluate and strengthen existing standards, and/or fill any standards related gaps. In the space below, please provide a brief narrative of the need to be addressed. This should include:

- The identity of any specific standards that would be affected/improved/evaluated
- A discussion on gaps that exist within the standards or standards related gaps that need to be filled
- How this work would fill those gaps
- An overview of any current or past research efforts that may be relevant to this effort
- A discussion regarding how this research might improve current laboratory capabilities and/or forensic services within the criminal justice system
- Any relevant references

A compilation of data regarding the various databases of handwritings. Separate projects would be to further the databases currently being developed, to include the frequency of occurrence of handwriting characteristics. Current research efforts could be furthered by a resurgence of funding opportunities.

Key bibliographic references related to this research need include:

1. Hecker, M., Eisermann, H.W., Forensic Identification System of Handwriting (FISH), paper presented at the 44th meeting of the ASQDE, Savannah GA, 1986.
2. Johnson, Mark E., Vastrick, Thomas W., Boulanger, Michele, Schuetzner, Ellen, Measuring The Frequency Occurrence of Handwriting and Hand-Printing Characteristics, Final Report - NIJ Award 2010-DN-BX-K273 (2016).
3. Maquire, K., Moran, T.L., Identification of Written Text Writings by the Forensic Information System of Handwriting, paper presented at the 54th meeting of the ASQDE, Washington, DC, 1996.
4. Srihari, Sargur, Cha, Sung-Hyuk, Arora, Hina, Lee, Sangjik, Individuality of Handwriting, Journal of Forensic Sciences Vol. 47, No. 4, 2002.
5. Srihari, Sargur, Huang, Chen, Srinivasan, Harish, On the Discriminability of the Handwriting of Twins, Journal of Forensic Sciences, Vol. 53, No. 2, 2008.
6. Sargur N. Srihari, Kirsten Singer, Role of automation in the examination of handwritten items, Pattern Recognition, 2014, 47, 3, 1083.
7. Wooton, Elaine X., A Preliminary Discussion of Research and Reference Materials Using the U.S. INS Collection of Handwriting from Other Countries, paper presented at the annual meeting of the ASQDE, Long Beach, CA 1994.
8. http://www.nist.gov/oles/forensics/forensic--database--questioned--documents--table.cfm

Improving current laboratory capabilities:
Current laboratory capabilities would be affected by having further research regarding the statistical approach to handwriting comparisons. There would not be an immediate effect on work within the laboratory. There would be an application at the level of testimony in courts through the providing of support for the individuality of handwriting.

Improving the scientific basis for the subcommittee:
It would allow examiners to utilize data that correlate with their examination opinions.
Databases in general provide a pool of potential writings for researchers. Development of a national database is a daunting task, and would require both the digital hardware and software to process the data, and the workers to gather and input the data.

This research need has been identified by one or more subcommittees of OSAC and is being provided as an informational resource to the community.