OSAC RESEARCH NEEDS ASSESSMENT FORM

Title of research need:	Implications of Artificial Intelligence-generated handwriting/signatures and the effect on handwriting examinations conducted by forensic document examiners
Keywords:	Artificial intelligence, handwriting, pattern comparison, document examination

R&D Need Rank: Low, Medium, High	High	**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

Artificial intelligence (AI) handwriting tools such as Caligrapher.ai, HandtextAI, and TextToHandwriting.com exist to convert text into content resembling handwriting. ANSI/ASB Standard 070 Standard for Examination of Handwritten Items (First Edition, 2022) requires the FDEs to determine whether writing is original, internally consistent, complex, and contains indications of speed or distortion. Do these procedural requirements also include an assessment or determination if handwriting is generated by AI, particularly on non-original documents? As described by Wooten, "computer-generated signatures and handwriting pose an ever-increasing challenge. With knowledge of how handwriting and signatures are executed, FDEs have an advantage over non-FDEs, but this advantage will wane."[1] A research need exists to determine if Forensic Document Examiners (FDEs) can distinguish between AI-generated handwriting and normally, naturally prepared writing by human hand to fill a gap where no research has yet to be conducted.

[1]2025 American Academy of Forensic Sciences Annual Conference Proceedings. Elaine X. Wooten, K17 The Availability and Detection of Signature and Handwriting Fonts.

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