

STRATEGIES FOR DNA MIXTURE INTERPRETATION SOFTWARE TOOLS DEMISTIFYING MIST -PRACTICAL APPLICATIONS AND IMPLEMENTATION

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This poster will provide an overview of the reported landscape study of DNA Mixture Interpretation Software Tools (MIST) conducted by the National Institute of Justice's Forensic Technology Center of Excellence at RTI International. The objectives of this study were to investigate to what extent DNA mixture interpretation software tools have been used for DNA forensic crime laboratory applications, provide considerations from current users to inform potential technology adopters and assist with implementation planning by providing practical and technical considerations through examples of real-world applications. This study captures the current state of DNA mixture interpretation software tools and the potential benefits of adoption. The considerations and benefits described in this study were obtained through interview discussions with subject matter experts, including crime laboratory practitioners, stakeholders, technology developers, academics, and key decision makers. This study also contains a comprehensive review of secondary sources, such as journal and industry literature, for information related to need, successful use, developmental validation, and adoption criteria. In addition, we discuss the key considerations for successful implementation including comprehensive training on the software and mathematical model, the resources needed for internal validation, including planning, labor, and time, and the potential for additional support from the laboratories' information technology (IT) departments. With the continued increase of complex mixture data, the need for mixture interpretation software tools is of growing importance to the forensic DNA community. Given the availability of open-source and commercial software options, forensic DNA crime laboratories must assess their needs to find the most suitable software tool. This study was designed to inform forensic practitioners of the features and capabilities of the various software tools available in order to enable and support an informed decision-making process for adoption of this technology into forensic DNA crime laboratories.