Y8   A Landscape Study of Rapid DNA Technology

Hannah M. Cawley*, Pittsburgh, PA 15210; Lyndsie N. Ferrara, PhD, Duquesne University, Pittsburgh, PA 15219

Learning Overview: After attending this presentation, attendees will have a better understanding of Rapid DNA technology and its application.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by bringing together published information as well as user interviews to provide the community with a resource for better understanding Rapid DNA technology.

Rapid DNA machines allow a single-source DNA sample to be processed in approximately 90 minutes, compared to the traditional analysis method that can take anywhere from days to weeks in a forensic laboratory. Being able to produce a DNA profile in less than two hours is significant because it can help to address the issue of backlog in the criminal justice system, provide leads to investigators, and bring closure to loved ones of mass disaster victims. All trained personnel have to do is collect the sample and insert it into the machine cartridge. The extraction, amplification, separation, detection, and allele calling are all done by the machine. If a usable profile is produced, it is compared to local and sometimes national databases in order to obtain a "hit" or match. Because forensic scientists are not needed for the analysis, Rapid DNA started as a quick screening tool to be used in police stations to compare arrestee reference samples (saliva swabs) to those DNA databases. As the technology continued to be implemented in various agencies, it has evolved to process additional media, including blood, bone, semen, and tissue samples.

The goal of this study was to compile the extensive information about Rapid DNA technology that is spread out across various sources. It also incorporated user experiences in order to show different perspectives. This is meant to be an easily accessible resource for agencies interested in adopting Rapid DNA technology and for professors and scientists that are interested in learning more or teaching about it. All information was sourced from interviews, webinars, websites, and scientific journals. There were three interviews conducted to highlight some different perspectives in the field. The first was with Anna Dadhania, a forensic scientist and administrator for the Orange County District Attorney (OCDA) DNA database, who works for the OCDA's office in California. The next interview was with Dr. Richard Selden, the founder and Chief Scientific Officer of ANDE Corporation, which is the leading developer for Rapid DNA technology and devices. The final interview was with Fred Harran, the Director of Public Safety for the Bensalem, PA, police department, who played a key role in implementing the nation's first countywide DNA database. Along with these testimonies, the research compiled information about the available Rapid DNA platforms, protocols set by the Federal Bureau of Investigation (FBI) regarding the use, who is using the technology, and how it is being used across different agencies. Public concerns about the reliability of the technology and laws surrounding DNA collection are addressed as well.

DNA Analysis, Rapid DNA, Forensic Investigation

*Presenting Author